



Agenda Item 5: Assessment of operational requirements for the implementation of communication, navigation, and surveillance (CNS) improvements for en-route and terminal area operations

**FOLLOW-UP TO THE IMPLEMENTATION OF THE NEW
SOUTH AMERICAN DIGITAL NETWORK -- REDDIG II**

(Presented by the Secretariat)

SUMMARY	
As a follow up to the activities contemplated in project SAM ATN Architecture (Project D1), this paper presents information on the status of implementation of the new South American digital network -- REDDIG II.	
REFERENCES	
<ul style="list-style-type: none">• Report of the Eleventh Workshop/Meeting of the SAM Implementation Group (SAM/IG/10) (Lima, Peru, 13-17 May 2013); and• Technical/operational meeting for the implementation of REDDIG II (Lima, Peru, 9-13 September 2013).	
ICAO Strategic Objectives:	<i>A – Safety C – Environmental protection and sustainable development of air transport</i>

1. Introduction

1.1 The contract signed between ICAO and the awardee of the REDDIG II bidding process, the INEO & Level 3 Consortium, was signed on 9 May 2013, with the number ST-22501200.

1.2 The execution of the REDDIG contract was thus started. The contract will be executed in two phases: Phase 1, in which the awardee will develop the REDDIG II design documentation, installation procedures, training manuals, factory, site, and network acceptance documents, network management system (NMS), and Phase 2, which covers the installation of REDDIG II, starting in November 2013.

2. Discussion

2.1 As part of the activities of Phase 1, on 22 August 2013, the INEO & Level 3 Consortium submitted to the ICAO South American Regional Office, *via* DHL (WAYBILL 80 2365 3315), the following documentation foreseen in the contract:

- a) A printed set of manuals
- REDDIG II design document (VSAT and GBB SDD) (one volume)
 - Network management document (NMS SDD) (one volume)
 - Technical description documents (two volumes)
 - Document containing the acceptance test protocols (one volume)
 - Document containing the training material (two volumes)
 - Installation blueprints for each REDDIG II node (SDD PLAN PART) (one volume)
- b) Electronic copy of all the aforementioned documents.

2.2 Copy of all the electronic documentation was posted on the REDDIG website (www1.lima.icao.int/reddig/) on 21 August 2012. That same day, all REDDIG II focal points were asked to review that documentation and submit their results to the REDDIG II Technical/Operational (RTO) Meeting (Lima, Peru, 9-13 September 2013).

2.3 The final revision and approval of the documentation was done at the RTO, with the participation of all the focal points of REDDIG member States, except for Suriname and Venezuela.

2.4 The documentation reviewed and approved at the RTO was circulated to all REDDIG member States during the week of 16-20 September 2013. The comments received were incorporated into the final revision of the documentation, which was sent again to all focal points for final revision from 23 to 25 September 2013. Finally, the complete revision of the documentation thus reviewed and approved by all focal points of REDDIG II member States was sent to the Technical Cooperation Bureau in Montreal, Canada, on 26 September 2013.

2.5 The INEO & Level 3 Consortium will have 15 days to review the revision made by REDDIG member States and deliver the amended documentation foreseen for Phase I to ICAO, for revision and acceptance by all REDDIG II member States.

2.6 All REDDIG member States have made their contributions for the implementation of REDDIG II. Consequently, Phase II, Implementation of REDDIG II, would start in November 2013, with commissioning expected for September 2014.

2.7 In addition to reviewing the documentation for Phase I, the RTO reviewed the action plan for the implementation of Phase II of REDDIG. In this regard, it considered that, in addition to the activities foreseen in the action plan, a new technical/operational meeting should be held in Lima, Peru, in early March 2014, with the attendance of the INEO & Level 3 Consortium to coordinate all the implementation activities at the nodes.

2.8 Furthermore, prior to Phase II courses scheduled to be held in May 2014 in Rio, Brazil, a one-week preparatory course has been foreseen to be held in Colombia, with the support of the aeronautical administration of Colombia. The event will allow the participants of the subsequent courses on REDDIG II to acquire the corresponding basic knowledge. The preliminary REDDIG II implementation action plan is contained in the **Appendix** to this paper.

3. **Suggested action**

3.1 The Meeting is invited to:

- a) Take note of the information provided herein;
- b) review the activities to be carried out in Phase II as shown in section 2 and the Appendix to this working paper, and to update the work programme of the SAM ATN Architecture Project (D1); and
- c) discuss other aspects related to this topic as it may deem advisable.

APPENDIX A / APENDICE A

TENTATIVE TIME SCHEDULE / PHASES (31 August 2012) / PROGRAMA TENTATIVO - FASES (31 agosto 2012)

ID	Nom de la tâche	Duration	Qtr 2, 2013			Qtr 3, 2013			Qtr 4, 2013			Qtr 1, 2014			Qtr 2, 2014			Qtr 3, 2014			Qtr 4, 2014			Qtr 1, 2015			Qtr 2, 2015			Qtr 3, 2015			Qtr 4, 2015			Qtr 1, 2016		
			Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1	Tentative REDDIG II implementation work programme / Programa tentativo de trabajo implantacion REDDIG II	371.71 days	[Gantt bar for Phase 1]																																			
2	Phase 1 - Project / Fase 1 - Proyecto	156 days	[Gantt bar for Phase 1]																																			
3	Documentation drafting and approval process / Proceso de elaboración y aprobación documentación	156 days	[Gantt bar for Phase 1]																																			
4	REDDIG II preliminary design installation / Preparación diseño preliminar instalación REDDIG II (SDD)	40 days	[Gantt bar for Phase 1]																																			
5	Preparation of installation and training procedures documentation and NMS documentaion preparation / Preparacion documentos de procedimiento de instalacion y capacitacion y ptrparacion documentacion del sistema NMS	15 days	[Gantt bar for Phase 1]																																			
6	FAT protocol preparation / Preparacion protocolo FAT	10 days	[Gantt bar for Phase 1]																																			
7	SAT protocol preparation / Preparacion protocolo SAT	10 days	[Gantt bar for Phase 1]																																			
8	Documentation submittance (SDD, FAT/SAT protocol, on-site installation procedure, training manuals) to ICAO / Envio documentación (SDD, protocolo FAT/SAT, procedimiento instalacion sitio, manuales de capacitación) a OACI	0 days	15/08																																			
9	Documentation review / Revision de la documentacion	12 days	[Gantt bar for Phase 1]																																			
10	Technical-operational meeting / Reunión tecnico-operacional	5 days	[Gantt bar for Phase 1]																																			
11	Final design/Diseño finalizado	23 days	[Gantt bar for Phase 1]																																			
12	Documentation reviewed and approved / Documentos revisados y aprobados	0 days	16/10																																			
13	Schedule DRM /Cronograma DRM	30 days	[Gantt bar for Phase 1]																																			
14	Phase 2 - REDDIG II implementation / Fase 2 - Implantación de la REDDIG II	246 days	[Gantt bar for Phase 2]																																			
15	Purchasing and integration of VSAT equipment / Adquisición e integración equipos VSAT	35 days	[Gantt bar for Phase 2]																																			
16	Purchasing of equipment and remittance to company HQ for integration / Adquisición de equipos y envío a la sede de la empresa ganadora para su integración	7 wks	[Gantt bar for Phase 2]																																			
17	Preparation of ground backbone network / Preparación red medular terrestre	30 days	[Gantt bar for Phase 2]																																			
18	Hiring of service for all nodes / Contratación de servicio para todos los nodos	1 wk	[Gantt bar for Phase 2]																																			
19	Equipment purchasing / Adquisición equipos	6 wks	[Gantt bar for Phase 2]																																			
20	Integration at factory, training and FAT / Integracion en fábrica, entrenamiento y FAT	45 days	[Gantt bar for Phase 2]																																			
21	Equipment assembling at factory / Ensambalar equipos en fábrica	6 wks	[Gantt bar for Phase 2]																																			
22	Network configuration and pre-test / Configuracion y pre-test de la red	8 wks	[Gantt bar for Phase 2]																																			
23	Documentation submittance for on-factory-training / Envío documentación para entrenamiento en fábrica	0 wks	03/01																																			
24	On-factory-training / Entrenamiento en fábrica	3 wks	[Gantt bar for Phase 2]																																			
25	FAT	5 days	[Gantt bar for Phase 2]																																			
26	FAT signature / Firma FAT	0 days	28/02																																			
27	REDDIG II Technical Operational Meeting/Reunión Técnica Operacional REDDIG II	5 days	[Gantt bar for Phase 2]																																			
28	RTO Meeting/Reunión RTO	5 days	[Gantt bar for Phase 2]																																			
29	Preparatory REDDIG II Course/ Curso preparatorio REDDIG II	5 days	[Gantt bar for Phase 2]																																			
30	REDDIG II preliminary course in Bogotá/ Curso preparatorio preliminar de la REDDIG II en Colombia	5 days	[Gantt bar for Phase 2]																																			
31	Remittance of equipment to sites (customs clearance 1 month approx) / Envío de los equipos a los sitios (liberación equipos aduana 1 mes tiempo estimado)	80 days	[Gantt bar for Phase 2]																																			
32	Preparation of equipment remittance / Preparación para envío de equipos	2 wks	[Gantt bar for Phase 2]																																			
33	Ezeiza	8 wks	[Gantt bar for Phase 2]																																			
34	La Paz	10 wks	[Gantt bar for Phase 2]																																			
35	Rio de Janeiro	8 wks	[Gantt bar for Phase 2]																																			
36	Santiago	10 wks	[Gantt bar for Phase 2]																																			
37	Bogota	9 wks	[Gantt bar for Phase 2]																																			
38	Guayaquil	9 wks	[Gantt bar for Phase 2]																																			

