



**Agenda Item 3: Review to the progress achieved in the implementation of the CNS/ATM Subgroup Work programmes**

**3.4 Follow-up to activities taken into account in the ground-ground and ground-air communications infrastructure programme**

**D2 - ATN GROUND-GROUND AND GROUND-AIR APPLICATIONS WORK PROGRAMME AND ACTIVITIES**

(Presented by the Project Coordinator D2)

<b>SUMMARY</b>	
This working paper presents the work carried out by Members of the Ground-Ground and Air-Ground Communications Infrastructure Programme – Project D-2 ATN Ground-Ground and Air to Ground Applications.	
<b>References:</b> <ul style="list-style-type: none"><li>• CNS/ATM/SG/1 meeting (Lima, Peru, 15 -19 March 2010); and</li><li>• CAR/SAM ATN architecture / arquitectura de la ATN CAR/SAM (Lima , Peru 19-20 May 2010)</li></ul>	
<i>ICAO Strategic Objectives:</i>	A: Safety - Enhance global civil aviation safety D: Efficiency - Enhance the efficiency of aviation operations

**1. Introduction**

1.1 The first meeting of the GREPECAS Communications, Navigations and Surveillance / Air Traffic Management Subgroup (CNS/ATM/SG/1) which took place in Lima, Peru on 15-19 March 2010 adopted the methodology based on the development of projects for the implementation of the CNS/ATM activities, replacing the methodology based on the implementation of activities by task groups. ICAO Offices will coordinate the projects.

1.1.2 Two projects were created under the Ground-Ground and Air-Ground Telecommunication Infrastructure; D-1 CAR/SAM ATN Architecture, and D-2 ATN Ground-Ground and Air Ground Applications.

1.1.3 This working paper presents the work carried out by Members of the D-2 ATN Ground-Ground and Air-Ground Applications Project.

2. **Discussion**

**CAR/SAM ATN routers and ATN ground-ground applications**

2.1 **CAR/SAM ATN Regional Plan** - During the coordination meeting of the ATN ground-ground and ground-air application project held in Lima, Peru on 19-20 May 2010, the participants reviewed and updated the Table CNS 1Ba (*Router Regional Plan*) and Table CNS 1Bb (*ATN Ground-Ground Application Plan*) of the CAR/SAM Air Navigation Plan - FASID based on information supplied by the States/Territory and International Organization of CAR/SAM Regions.

2.2 **IP routing policy** - The IP routing policy document was reviewed during the ATN ground-ground and ground-air application project meeting this document present routing policies for the Caribbean/South America (CAR/SAM) Region Aeronautical Telecommunications Network (ATN) Message Handling system (AMHS) service using the Internet Protocol. The document will be completed by the ATN ground-ground and ground-air application project in conjunction with the CAR/SAM ATN Architecture Project.

2.3 **IP CAR/SAM Regional Plan** – The CAR/SAM Region adopted an IPv4 addressing plan for its intra/interregional connections. The SAM Region completed the IPv4 addressing plan, some States have already completed their implementation, and others are in the process of implementing. The CAR Region completed the IPv4 addressing plan during the coordination meeting of the ATN ground-ground and ground-air application

2.3.1 The CAR/SAM IPv4 addressing Plan has the following format

IPv4 Addressing																																		
10				Region	State/Territory				Host's																									
0	0	0	0	1	0	1	0	.	0	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	.	0	0	0	0	0	0	0	0	1
1er. Byte				.	2do. Byte				.	3er. Byte				.	4to. Byte																			

2.3.2 Regarding IPv6, two working papers were presented by Argentina and United States during the meeting. The United States working paper proposes an IPv6 addressing plan for the CAR/SAM Aeronautical Telecommunication Network (ATN) consistent with the addressing strategy specified in ICAO Doc 9896. This proposed addressing uses the identifiers already assigned in the CAR/SAM IPv4 Addressing Plan.

2.3.3 Argentina proposed an IPv6 Addressing scheme and two proposals to encapsulate IPv4 into IPv6. The CAR/SAM ATN architecture project is analyzing the two proposed IPv6 addressing scheme in order to define the IPv6 addressing scheme for the CAR/SAM Regions.

2.4 **Guidance Material** - ICAO Doc 9880, currently in its advance unedited version, and has replaced the “*Manual of technical provisions for the Aeronautical Telecommunication Network (ATN)*”, Doc 9705 – third edition. These amendments were necessary as a result of ongoing validation, and operational experience gained during implementation of elements of the ATN: Doc 9880 Doc 9705.

2.5 **CAR/SAM Aeronautical Telecommunication Network Security Guidance Document**  
During the Coordination meeting of the ATN ground-ground and ground-air application project, the group reviewed the ATN Security Guidance Document for the CAR/SAM Region's guidance on the implementation of security for states and organizations operating in the region. The document is being reviewed by the D1 project.

2.6 **Update working program for the ATN ground-ground and air-ground applications projects.** The ATN ground-ground and air-ground work program presented in the first CNS/ATM/SG meeting was reviewed during the Coordination meeting of the ATN ground-ground and ground-air application project and its presented under **Appendix A** of this working paper.

2.7 **Detailed activities of the ATN ground-ground and ground-air application project**  
Following the Decision CNS/ATM/1-8 **Appendix B** of this working paper presents the detailed sub task of each of the activity of the working program of the project D2 present in **Appendix A** defining the deliverables and the responsible of the execution of each of subtask.

2.8 The CAR/NAM Region hosted its first AMHS Workshop in Miami, FL on 19-21 October 2010.

3. **Action suggested**

3.1 The Meeting is invited to:

- a) take note of the information presented;
- b) analyze the activities realized by the ATN ground-ground and air-ground project described in section 2 of this working paper;
- c) review the work program activities of the ATN ground-ground and ground-air project presented in Appendix A and B of this working paper; and
- d) recommend any actions accordingly.

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**APPENDIX A / APENDICE A**

**PROGRAMME/PROGRAMA:** GROUND-GROUND AND AIR-GROUND TELECOMMUNICATIONS INFRASTRUCTURE/  
INFRAESTRUCTURA DE COMUNICACIONES TIERRA-TIERRA Y TIERRA-AIRE

**PROJECT/PROYECTO:** D2. ATN GROUND-GROUND AND AIR-GROUND APPLICATIONS / APLICACIONES TIERRA-TIERRA Y AIRE-TIERRA DEL ATN

**PROJECT COORDINATOR/  
COORDINADOR DEL PROYECTO:** Dulce Rosés

No.	Tarea/Task	Inicio Fin / Start End	Responsible / Responsible	Estado/Status	Entregable/ Deliverable
1	2	3	4	5	6
D 2.1	Review, update and complete initial transition plan for the evolutionary development of ATN and applications  Revisar, actualizar y completar el plan de transición inicial para el desarrollo evolutivo de la ATN y sus aplicaciones	2003-Nov 2010	Project D2 / Proyecto D2  Note: Coordination needed with Project D1 Nota: Coordinación requerida con Proyecto D1	Valid/Válida	Transition Plan for the ATN and its applications in the CAR/SAM regions  Plan de transición de la ATN y sus aplicaciones en las Regiones CAR/SAM/
D 2.2	Guide de development of ATN addressing plan according to ICAO technical principles and guidelines  Orientar el desarrollo del plan de direccionamiento ATN, de conformidad con los principios y disposiciones técnicas de la OACI	2008-Feb 2011	ICAO/States/ Territories  OACI/ Estados/ Territorios	Valid/Válida	AMHS addressing plan  Plan de direccionamiento AMHS
D 2.3	Implementation Plan for ATN Ground-ground applications (AMHS)  Plan de implantación de las Aplicacion tierra-tierra del ATN (AMHS)	2009–Jun 2011	Project D2 / Proyecto D2	Valid/Válida	1. Implementation plan for ground-ground ATN applications (AMHS) Plan de implantación de las aplicación tierra-tierra del ATN (AMHS) 2. Update proposal for CNS Table 1Bb Propuesta de actualización a Tabla CNS 1Bb

No.	Tarea/Task	Inicio Fin / Start End	Responsable / Responsible	Estado/Status	Entregable/ Deliverable
1	2	3	4	5	6
D 2.4	Implementation Plan for ATN Ground-ground applications (AIDC) Plan de implantación de las Aplicaciones tierra-tierra del ATN (AIDC)	2009-Dec 2011 / 2009–Dic 2011	Project D2 / Proyecto D2	Valid/Válida	1. Implementation Plan for Ground-ground ATN Applications (AIDC) Plan de implantación de las aplicaciones tierra-tierra del ATN (AIDC) 2. Proposal to update of CNS Table 1Bb Propuesta de actualización a Tabla CNS 1Bb
D 2.5	Coordination and trials for ATN ground applications implementation Coordinación y prueba para aspecto de implantación de aplicaciones tierra tierra de la ATN	2009-Dic 2012 / 2009–Dec 2012	Project D2 / Proyecto D2	Valid/Válida	Evaluation and recommendations on the AMHS coordination and trials conducted Evaluación y recomendaciones a la coordinación y pruebas realizadas sobre el AMHS
D 2.6	Develop a VDL implementation Plan and its application Desarrollar un plan de implantación VDL y su aplicación	Jun 2011– Jun 2012	ICAO/ OACI	Valid/Válida	CAR/SAM VDL Implementation Plan and its applications Plan de implantación del VDL y sus aplicaciones para las Regiones CAR y SAM
D 2.7	Monitor VDL implementation trials and its applications Monitorear iimplementación de ensayos de VDL y sus aplicaciones	Jun 2011- Jun 2013	Project D2 / Proyecto D2	Valid/Válida	Evaluation of results on the trials for the implementation of VDL and its applications Evaluación de los resultados de los ensayos para la implementación del VDL y sus aplicaciones
D 2.8	Initial transition plan of ground/air ATN application Plan de transición inicial de las aplicaciones tierra aire de la ATN	2009-Jun 2012	Project D2 / Proyecto D2	Valid/Válida	Transition plan for ground air ATN applications Plan de transición de las aplicaciones tierra aire de la ATN
D 2.9	Monitor implementation of technology available to facilitate ground and onboard applications Monitorear la implantación de tecnologías disponibles para facilitar aplicaciones en tierra y a bordo	2008-Jun 2013	ICAO/States/ Territories OACI/ Estados/ Territorios	Valid/Válida	Monitor available implementation technology for ATN ground air applications Monitorear la implantación de tecnología disponible para las aplicaciones tierra aire de la ATN

APPENDIX B / APENDICE B

CNS/ATM/SG/2-WP/15 - NE/15

ID	Task Name	Start	Finish	Timeline															
				alf	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd					
				Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
1	<b>D2. ATN GROUND-GROUND AND AIR-GROUND APPLICATIONS / D2. APLICACIONES TIERRA-TIERRA Y AIRE-TIERRA DEL ATN</b>	Mon 3/22/10	Fri 6/14/13	[External Milestone]															
2	D 2.1 Review, update and complete initial transition plan for the evolutionary development of ATN and applications / Revisar, actualizar y completar el plan de transición inicial para el desarrollo evolutivo de la ATN y sus aplicaciones	Mon 3/22/10	Fri 2/25/11	[Task]															
3	<b>DELIVERABLE: Transition Plan for the ATN and its applications in the CAR/SAM regions / Plan de transición de la ATN y sus aplicaciones en las Regiones CAR/SAM</b>	Mon 3/22/10	Fri 2/25/11	[External Milestone]															
4	Revision and coordination with Project D1 of existing guidance / Revisión y coordinación con el Proyecto D1 sobre guías existentes	Mon 3/22/10	Fri 9/24/10	[Task] Input from D1 PC / Datos de PC D1															
5	Evaluation of transition aspects of ATN applications / Evaluación sobre aspectos de transición de las aplicaciones ATN	Mon 7/12/10	Fri 2/4/11	[Task] D2 PM															
6	Elaboration of Draft Plan / Elaboración de borrador de Plan	Mon 2/7/11	Fri 2/25/11	[Task] D2 PC															
7																			
8	<b>D 2.3 Implementation Plan for ATN Ground-ground applications (AMHS) / Plan de implantación de las Aplicacion tierra-tierra del ATN (AMHS)</b>	Mon 3/22/10	Fri 7/1/11	[External Milestone]															
9	<b>DELIVERABLE: Implementation Plan for Ground-ground ATN Applications (AMHS) / Plan de implantación de las aplicación tierra-tierra del ATN (AMHS)</b>	Mon 3/22/10	Fri 7/1/11	[External Milestone]															
10	Information collection on technical, operational, transition and other implementation aspects for AMHS / Recolección de información sobre aspectos técnicos, operacionales, de transición e implantación sobre AMHS	Mon 3/22/10	Fri 1/7/11	[Task] D2 PM															
11	Evaluation of information / Evaluación de la información	Mon 1/10/11	Fri 2/11/11	[Task] D2 PM															
12	Draft Plan / Borrador de plan	Mon 2/28/11	Fri 3/11/11	[Task] D2 PC															
13	Revision and new draft based on trial results / Revisión y nuevo borrador con base en resultados de ensayos	Fri 7/1/11	Fri 7/1/11	[Task] D2 PM															
14																			
15	<b>D 2.4 Implementation Plan for ATN Ground-ground applications (AIDC) / Plan de implantación de las aplicaciones tierra-tierra del ATN (AIDC)</b>	Mon 3/22/10	Fri 12/16/11	[External Milestone]															
16	<b>DELIVERABLE: Implementation Plan for Ground-ground ATN Applications (AIDC) / Plan de implantación de las aplicaciones tierra-tierra del ATN (AIDC)</b>	Mon 3/22/10	Fri 12/16/11	[External Milestone]															
17	Information collection on Technical, operational, transition and other implementation aspects for AIDC	Mon 3/22/10	Fri 9/16/11	[Task] D2 PM															
18	Evaluation of information / Evaluación de la información	Mon 9/19/11	Fri 10/21/11	[Task] D2 PM															

Project: D2 Project proposal Date: Fri 11/5/10	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	



