



**Agenda Item 7: Operational implementation of new ATM automated systems and integration of the existing systems**

**UPDATING TO THE GREPECAS C1 PROJECT ACTIVITIES - AUTOMATION**

(Presented by the Project C1 Coordinator)

SUMMARY	
This working paper has the aim of presenting the participants with the situation of the GREPECAS Project C1 activities.	
REFERENCE	
<ul style="list-style-type: none"><li>Report of the sixteenth meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS), Punta Cana, Dominican Republic, 28 March to 1 April 2011.</li></ul>	
<b>ICAO strategic objectives:</b>	<i>A – Safety C - Environmental Protection and Sustainable Development of Air Transport</i>

**1. Background**

1.1 GREPECAS/16 adopted Decision 16/45 - *New GREPECAS Organization*, modifying its organization to implement performance based regional plans in the CAR/SAM Regions, in compliance with the global Air Navigation Plan and the global ATM Operational Concept.

1.2 Decision 16/47 - Transformation of GREPECAS Subgroups, defined that the work of the GREPECAS AERMET, AGA/AOP, AIM and CNS/ATM, and their respective Task Forces, convert into programmes and projects.

1.3 Projecto C1 - Automation, whose objective is to *Support States of the SAM Region in the implementation of automated systems, and in their regional interconnection*, is under the Automation and ATM Situational Awareness Programme, originated within the CNS/ATM Subgroup.

1.4 The activities of the Automation Project started before 2009 and many deliverables have been met.

## 2. **Análisis**

2.1 The information on Project C1 is shown in **Appendices A and B**, containing the Project Description and a Gantt diagramme.

2.2 The tasks have been carried out by the experts designated by States to produce the following Project deliverables (available in [http://www.lima.icao.int/eDocuments/eDoc\\_Contents.asp?wLanguage=S&wArea=CNS#](http://www.lima.icao.int/eDocuments/eDoc_Contents.asp?wLanguage=S&wArea=CNS#)):

- a) Automated systems interconnection regional plan;
- b) Documento de Especificación de Sistemas y Subsistemas (SSS) para automatización de Sistemas ATC; y
- c) Model Memorandum of Understanding (MoU) for States interconnection of automated systems.

2.3 Pending is the deliverable *Support Manual for the Implementation of Advanced Automated Systems*, without expert defined to draft it.

## 3. **Action suggested**

3.1 The Meeting is invited to:

- a) Take note of the information contained in this working paper;
- b) Define the experts responsible for the drafting of the Support Manual for the Implementation of Advanced Automated systems, as established in the Gantt in Appendix B, items 15, 16 and 17.

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## APPENDIX A

## PROJECT AUTOMATION

SAM Region	PROJECT DESCRIPTION (DP)	PD N° C1	
Programme	Project Title	Starting Date	Ending Date
Automation and ATM Situational Awareness (Programme Coordinator: Onofrio Smarrelli)	Automation  <i>Project Coordinator: Alessandro Santoro (Brazil)</i> <i>Contributing experts: Automation Group (Brazil), Omar Gouarnalusse (Argentina) and SAM/IG ATM Automation Group</i>	September 2009	December 2014
<b>Objective</b>	Support States of the SAM Region in the implementation of automated systems, and in their regional interconnection		
<b>Scope</b>	The scope of the project includes the drafting of guidelines, trials for the identification of the automation level required at the Region's ATS units, and the implementation of automation systems and their interconnection through the VSAT based South American digital network (REDDIG)		
<b>Metrics</b>	<ul style="list-style-type: none"> <li>Drafting of the following documents: <ul style="list-style-type: none"> <li>✓ Guidance document on automated systems requirements at ATS units (SSS)</li> <li>✓ Memorandum of Understanding (MoU) model for the interconnection of automated systems</li> </ul> </li> <li>Interconnection of automated systems between: <ul style="list-style-type: none"> <li>✓ Argentina-Brazil</li> <li>✓ Argentina-Chile</li> <li>✓ Argentina-Uruguay</li> <li>✓ Brazil-Uruguay</li> <li>✓ Brazil-Venezuela</li> </ul> </li> <li>Reduction in number of operational errors, including LHD</li> </ul>		
<b>Strategy</b>	<ul style="list-style-type: none"> <li>All tasks will be conducted by experts nominated by States and organizations of the SAM Region members of the Project <i>Automation</i>, under management of the project coordinator, in coordination with the programme coordinator. Communications among project members, as well as between the project coordinator and programme coordinator, shall be carried out through teleconferences and the Internet. In addition, the programme coordinator, together with the project coordinator and the contributing experts, can convene at SAM/IG implementation meetings</li> <li>Once studies are completed, the results will be submitted to the ICAO programme coordinator as a final consolidated document for its analysis, review, approval and presentation at the GREPECAS PPRC</li> </ul>		

<b>Justification</b>	<ul style="list-style-type: none"> <li>The CAR/SAM air traffic control centres have had difficulties in duly coordinating air traffic, an important factor contributing in air traffic incidents. The air traffic control automated centres' interconnection will permit a coordinated automated air traffic for the transfer of responsibilities between CAR/SAM adjacent area control centres, thus reducing the risk in aeronautical incidents generated by undue coordination activities and improving, at the same time, the planning phases for an efficient control of flights from/to corresponding Flight Information Regions (FIR).</li> <li>The interconnection of automated systems would be facilitated, in view of REDDIG (SAM VSAT regional network), which has the necessary capability to transport automated systems applications</li> <li>This project contributes towards the implementation of SAM PFF CNS 04, ATM 05 and ATM 06 of the <i>Air Navigation System Performance-Based Implementation Plan for the SAM Region (SAM PBIP)</i></li> </ul>
<b>Related Projects</b>	<ul style="list-style-type: none"> <li>ATFM</li> <li>Implementation of the New ICAO Flight Plan Model</li> <li>Improve ATM Situational Awareness</li> </ul>

Project Deliverables	Relationship with Performance Based Regional Plan (PFF)	Responsible	Status of Implementation <sup>1</sup>	Delivery Date	Remarks
Automation level required according to the ATM service provided in airspace and international aerodromes, assessing <ul style="list-style-type: none"> <li>operational architecture design,</li> <li>characteristics and attributes for</li> <li>interoperability,</li> <li>data bases and software, and</li> <li>technical requirements.</li> </ul>	PFF SAM CNS 04  PFF SAM ATM 05  PFF SAM ATM06	Project Coordinator and ATM Automation Group		Completed	The System and Subsystem Specifications (SSS) document has been drafted for the identification of automated requirements necessary at ATS units (ACC)

<sup>1</sup>

**Gray:** Activity has not started

**Green:** Activity has or will deliver planned milestone as scheduled

**Yellow:** Activity is behind schedule on milestone, but still within acceptable parameters to deliver milestone on time

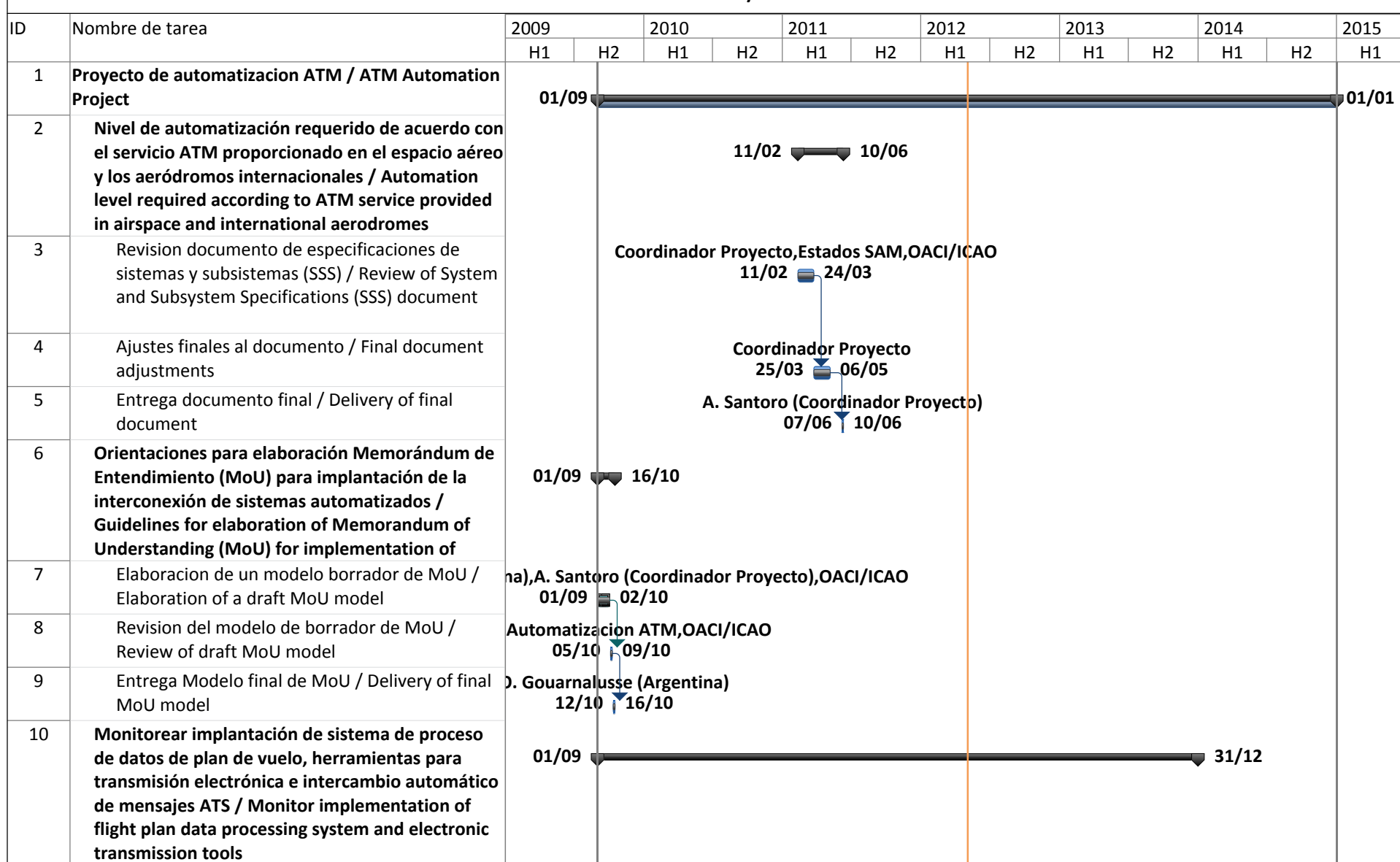
**Red:** Activity has failed to deliver milestone on time, mitigation measures need to be identified and implemented

Project Deliverables	Relationship with Performance Based Regional Plan (PFF)	Responsible	Status of Implementation <sup>1</sup>	Delivery Date	Remarks
Guidelines for elaboration of Memorandum of Understanding (MoU) for the implementation of the automation system interconnection	PFF SAM CNS 04	Project Coordinator and Omar Gouarnalusse (Argentina)		Completed	A model MoU for the interconnection of automated systems has been developed
Monitor the implementation of flight plan data processing system and electronic transmission tools	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM06	Project Coordinator		July 2013	<p>A regional action plan to monitor automated systems interconnection between adjacent ACCs has been drafted.</p> <p>With regard to automated systems interconnection, five MoUs have been drafted and signed between SAM States: Argentina-Brazil; Argentina-Chile; Argentina-Uruguay; Brazil-Uruguay; Brazil-Venezuela.</p> <p>Radar data has been interconnected between Argentina-Uruguay using IP protocol through REDDIG.</p> <p>Flight plan and radar data exchange trials have been conducted between Brazil-Venezuela.</p> <p>It is expected that by July 2013, automated systems interconnection is completed between States having drafted and signed the MoUs, as well as new MoU developed as new automated systems are implemented in the Region</p>

Project Deliverables	Relationship with Performance Based Regional Plan (PFF)	Responsible	Status of Implementation <sup>1</sup>	Delivery Date	Remarks
Monitor Implementation of additional/advanced automation support tools to increase aeronautical information sharing <ul style="list-style-type: none"> <li>• ETMS or similar</li> <li>• MET information</li> <li>• AIS/NOTAM dissemination</li> <li>• Surveillance tools to identify airspace sector boundaries</li> <li>• Use of A-SMGC in specific aerodromes, as required</li> </ul>	PFF SAM CNS 04  PFF SAM ATM 05  PFF SAM ATM06  PFF SAM AGA04  PFF SAM AIM 02  PFF SAM MET 04	TBD		December 2014	Activity not started
Monitor implementation progress of automation activities in the SAM Region		ICAO		September 2009-December 2014	
Resources necessary	Designation of experts in the conduct of the deliverables. Implement facilities required to permit interconnection of automated systems in accordance with the dates established in the MoUs drafted and signed to this end				

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## PROYECTO DE AUTOMATIZACION ATM / ATM AUTOMATION PROJECT



APPENDIX B / APENDICE B

SAM/IG/9-WP/17 - NE/17

PROYECTO DE AUTOMATIZACION ATM / ATM AUTOMATION PROJECT

ID	Nombre de tarea	2009		2010		2011		2012		2013		2014		2015
		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1
11	Modelo de plan acción regional para interconexión sistemas automatizados (planes de vuelo y datos radar) / Regional action plan model for interconnection of automated systems (flight plan and radar data)	Proyecto), Grupo Automatizacion ATM,OACI/ICAO 01/09 02/10												
12	MoU revisados y firmados para interconexion de sistemas automatizados (plan de vuelo y datos radar) / Reviewed and signed MoUs for interconnection of automated systems (flight plan and radar data)	Estados SAM,OACI/ICAO,A. Santoro (Coordinador Proyecto) 19/10 31/05												
13	Implantacion de la interconexion de sistemas automatizados (Datos radar y datos de plan de vuelo)	Estados SAM,OACI/ICAO 20/05 31/12												
14	Monitorear implantación herramientas apoyo adicionales/avanzadas de automatización para incrementar compartición información aeronáutica / Monitor implementation of additional/advanced automation support tools to increase aeronautical information sharing	01/09 31/12												
15	Recoleccion de informacion / Collection of information	TBD 04/06 01/08												
16	Análisis de la información / Analysis of information	TBD 02/08 16/10												
17	Entrega documento borrador para apoyo implantación sistemas avanzados de automatización / Delivery of document in support of advanced automation systems implementation	TBD 17/10 24/10												
18	Revisión documento final / Review of final document	Coordinador Proyecto, Grupo Automatizacion ATM,OACI/ICAO 15/11 31/01												
19	Implantación de sistemas automatizados avanzados / Implementation of advanced automated systems	Estados SAM 30/08 31/12												



APPENDIX B / APENDICE B

SAM/IG/9-WP/17 - NE/17

PROYECTO DE AUTOMATIZACION ATM / ATM AUTOMATION PROJECT

ID	Nombre de tarea	2009		2010		2011		2012		2013		2014		2015
		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1
20	<b>Monitorear las actividades de implantación del proyecto Automatización ATM / Monitor implementation activities of ATM Automation project</b>													
21	Monitorear las actividades de implantación del Proyecto Automatizacion ATM / Monitor implementation activities of ATM Automation project													