

CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)

SAM Region	PROJECT DESCRIPTION (DP)	PD N° C1	
Programme	Project Title	Starting Date	Ending Date
Automation and ATM Situational Awareness <i>(Programme Coordinator: Onofrio Smarrelli)</i>	Automation <i>Project Coordinator: Alessandro Santoro (Brazil)</i> <i>Contributing experts: Omar Gouarnalusse (Argentina) and SAM/IG ATM Automation Group</i>	May 2008	June 2016
Objective	Support States of the SAM Region in the implementation of automated systems, and in their regional interconnection		
Scope	The scope of the project includes the initial drafting of guidelines, trials for the identification of the automation level required at the Region's ATS units in the short and medium term, and the implementation of automation systems and their interconnection through the VSAT based South American digital network (REDDIG)		
Metrics	<ul style="list-style-type: none"> • Drafting of the following documents: <ul style="list-style-type: none"> ✓ Guidance document on automated systems requirements at ATS units (SSS) ✓ Guideline for the implementation of integrated automated systems ✓ Action plan for the interconnection of automated systems ✓ Preliminary interface control document (ICD) between systems for the interconnection of ACCs in the SAM Region ✓ Memorandum of Understanding (MoU) model for the interconnection of automated systems • Interconnection of automated systems between adjacent ACCs in the SAM Region: • Reduction in number of operational errors, including LHD in the SAM Region 		
Strategy	<ul style="list-style-type: none"> • All tasks will be conducted by experts nominated by States and organizations of the SAM Region members of the Project <i>Automation, and SAM States</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 • 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 		

<p>Justification</p>	<ul style="list-style-type: none"> • 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). • 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 • This project contributes towards the implementation of modules B0 FICE, B0 ASUR and B0 SNET of the <i>Air Navigation System Performance-Based Implementation Plan for the SAM Region (SAM PBIP)</i>
<p>goals</p>	<ul style="list-style-type: none"> • Initial drafting of five guideline documents in support of the implementation of automated systems interconnection for completion in the period (May 2008 – October 2012) • Initial drafting of 18 MoU for the interconnection of automated systems <ul style="list-style-type: none"> 5 MoU period 2009-2011 4 MoU for the end of 2012 9 MoU for the end of 2013 • Implementation of the interconnection of automated systems <ul style="list-style-type: none"> <i>Flight plan</i> 9 OLDI interconnections 2012-2016 1 interconnection considering Doc 44 for 2012 7 AIDC interconnections for period 2012-2016 <i>Asterix protocol radar data</i> 20 radar data exchanges using Asterix protocol period 2011-2016 1 owner exchange for 2012
<p>Related Projects</p>	<ul style="list-style-type: none"> • ATFM • Improve ATM Situational Awareness














Project Deliverables	Relationship with Performance Based Regional Plan (PFF) and ASBU Block 0 Modules	Responsible	Status of Implementation ¹	Delivery Date	Remarks
Regional guideline document for the automation level required according to the ATM service provided in airspace and international aerodromes, assessing <ul style="list-style-type: none"> • operational architecture design, • characteristics and attributes for interoperability, • data bases and software FPL, CPL, CNL, RLA, etc., and • technical requirements. 	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM 06 B0 ASUR B0 SNET	Project Coordinator and ATM Automation Group		Completed June 2011	The System and Subsystem Specifications (SSS) document has been drafted for the identification of automated requirements necessary at ATS units (ACC), and a revision process has been conducted with the support of RLA/06/901 project and SAM/IG ATM Automation Group. Document published in site www.lima.icao.int .
Guideline for the integration of automated systems and corresponding action plan	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM 06 B0 ASUR	Project Coordinator and ATM Automation Group		Completed October 2010 Completed May 2012	The following has been drafted: Guideline for the integration of automated systems and revision process. Action plan revision for the integration of automated systems and continuous revision. Both documents drafts with the support of RLA/06/901 project and the SAM/IG ATM Automation Group. Document published in site www.lima.icao.int .

¹ **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) and ASBU Block 0 Modules	Responsible	Status of Implementation ¹	Delivery Date	Remarks
Preliminary interface control document (SICD) between systems for the interconnection of ACCs in the SAM Region	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM 06 B0 FICE B0 ASUR	Programme Coordinator, Project Coordinator and ATM Automation Group		Completed October 2008 October 2012	Document ICD drafted. Document elaborated with the support of RLA/98/003 and later, RLA/06/901. Document published in site www.lima.icao.int. The document requires updating in view of installation of new automated and surveillance systems in the Region
Guidelines for elaboration of Memorandum of Understanding (MoU) for the implementation of the automation system interconnection	PFF SAM CNS 04 B0 FICE B0 ASUR	Project Coordinator and ATM Automation Group		Completed October 2009	A model MoU for the interconnection of automated systems has been developed, with the support of RLA/06/901 project and SAM/IG ATM Automation Group. The MoU model is published in site www.lima.icao.int.
Drafting of Memorandum of Understanding (MoU) for the interconnection of automated systems between adjacent ACCs	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM 06 B0 FICE B0 ASUR	SAM States, Project Coordinator and ATM Automation Group		October 2013	To date, six MoU have been drafted and signed between the following SAM States: Argentina-Brazil; Argentina-Chile; Argentina-Uruguay, Brazil-Uruguay; Brazil-Peru; and Brazil-Venezuela. 12 additional MoUs are planned to be drafted.

Project Deliverables	Relationship with Performance Based Regional Plan (PFF) and ASBU Block 0 Modules	Responsible	Status of Implementation ¹	Delivery Date	Remarks
Interconnection of automated systems between adjacent ACCs	PFF SAM CNS 04 PFF SAM ATM 05 PFF SAM ATM 06 B0 FICE B0 ASUR	SAM States		June 2016	<ol style="list-style-type: none"> 1. Radar data has been interconnected between Argentina-Uruguay using IP protocol through REDDIG; 2. Flight plan and radar data exchange trials have been conducted between Brazil-Venezuela through REDDIG; 3. Letter LT 12/3.54-SA130 containing a questionnaire was sent to Argentina, Brazil, Chile, Peru and Uruguay with the aim of identifying the causes for the delays and formulate recommendations permitting the completion of the interconnections. Replies were received from Argentina, Brazil and Peru; 4. Replies from Argentina, Brazil, Chile and Peru were analysed upon; 5. A mission was programmed for 6 to 10 May 2013, involving two automation experts with the aim of restarting and concluding the interconnection trials between the Brazil and Venezuela systems. Visits to the remainder States will be scheduled for June-July 2013, with presentation of results at SAM/IG/12. 6. Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, panama, Paraguay, Peru, Uruguay and Venezuela were requested for the updating of the SICD document. SICD updating was received regarding the Brazilian automated systems

Project Deliverables	Relationship with Performance Based Regional Plan (PFF) and ASBU Block 0 Modules	Responsible	Status of Implementation ¹	Delivery Date	Remarks
Monitor implementation progress of automation activities in the SAM Region		Programme Coordinator and Project Coordinator		May 2008 – June 2016	
Resources necessary	Implement facilities required by SAM States permitting the interconnection of automated systems in accordance with the dates established in the MoUs drafted and signed to this end				

ID	Nombre de tarea	Duration	Start	2008		2009		2010		2011		2012		2013		2014		2015		2016
				H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1
1	Proyecto de automatización ATM / ATM Automation Project	2129.13 days	Mon 05/05/08	5/05																
2	Nivel de automatización requerido de acuerdo con el servicio ATM proporcionado en el espacio aéreo y los aeródromos internacionales / Automation level required according to ATM service provided in airspace and international aerodromes	85.88 days	Fri 11/02/11	<p style="text-align: center;">11/02 → 10/06</p>																
3	Revisión documento de especificaciones de sistemas y subsistemas (SSS) / Review of System and Subsystem Specifications (SSS) document	29.88 days	Fri 11/02/11	<p style="text-align: center;">Coordinador Proyecto, Estados SAM, OACI/ICAO 11/02 → 24/03</p>																
4	Ajustes finales al documento / Final document adjustments	30.88 days	Fri 25/03/11	<p style="text-align: center;">A. Santoro (Coordinador Proyecto) 25/03 → 06/05</p>																
5	Entrega documento final / Delivery of final document	4 days	Tue 07/06/11	<p style="text-align: center;">A. Santoro (Coordinador Proyecto) 07/06 → 10/06</p>																
6	Guía de orientación para la implantación de la integración de los sistemas automatizados y plan de acción correspondiente/Guideline for the integration of automated systems and corresponding action plan	1063.88 days	Mon 05/05/08																	
7	Recolectar información / Collect information	64 days	Mon 05/05/08																	
8	Entrega de propuesta de borrador / Delivery of draft proposal	39 days	Fri 01/08/08																	
9	Revisión de la propuesta borrador / Review of draft proposal	22 days	Thu 25/09/08																	
10	Entrega documento final / Delivery of final document	65 days	Mon 27/10/08																	
11	Actualización guía de orientación / Updating of orientation guideline	21 days	Fri 01/10/10																	
12	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)	44 days	Tue 01/09/09																	
13	Revisión del plan de acción / Review of action plan	67 days	Wed 29/02/12																	
14	Documento preliminar de control de interfaz (SICD) entre sistemas para la interconexión de los ACC en la Región SAM y actualización de/Preliminary interface control document (SICD) between systems for the interconnection of ACCs in the SAM Region	1433.88 days	Mon 05/05/08																	
15	Recolectar información / Collect information	44 days	Mon 05/05/08																	
16	Entrega de propuesta de borrador / Delivery of draft proposal	43 days	Fri 04/07/08																	
17	Revisión de la propuesta borrador / Review of draft proposal	8 days	Wed 03/09/08																	
18	Entrega documento final / Delivery of final document	9 days	Mon 20/10/08																	

ID	Nombre de tarea	Duration	Start	2008		2009		2010		2011		2012		2013		2014		2015		2016
				H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1
19	Actualización del documento SICD /Updating of SICD document	214 days	Mon 07/01/13																	
20	Orientaciones para elaboración Memorandum de Entendimiento (MoU) para implantación de la interconexión de sistemas automatizados / Guidelines for elaboration of Memorandum of Understanding (MoU) for implementation of	33.88 days	Tue 01/09/09																	
21	Elaboración de un modelo borrador de MoU / Elaboration of a draft MoU model	24 days	Tue 01/09/09																	
22	Revisión del modelo de borrador de MoU / Review of draft MoU model	5 days	Mon 05/10/09																	
23	Entrega Modelo final de MoU / Delivery of final MoU model	5 days	Mon 12/10/09																	
24	Monitorear implantación de sistema de proceso de datos de plan de vuelo, herramientas para transmisión electrónica e intercambio automático de mensajes ATS / Monitor implementation of flight plan data processing system and electronic transmission tools	1748.88 days	Mon 19/10/09																	
25	MoU revisados y firmados para interconexión de sistemas automatizados (plan de vuelo y datos radar) / Reviewed and signed MoUs for interconnection of automated systems (flight plan and radar data)	1053.94 days	Mon 19/10/09																	
26	Implantación de la interconexión de sistemas automatizados (Datos radar y datos de plan de vuelo)	1335 days	Fri 20/05/11																	
27	Monitorear las actividades de implantación del proyecto Automatización ATM / Monitor implementation activities of ATM Automation project	2128.88 days	Mon 05/05/08																	
28	Monitorear las actividades de implantación del Proyecto Automatización ATM / Monitor implementation activities of ATM Automation project	2129 days	Mon 05/05/08																	

