



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**South American Regional Office - Regional Project RLA/06/901**

*Assistance for the implementation of a Regional ATM System, taking into account the ATM operational concept and the corresponding CNS technological support*

**Eighth Workshop/Meeting of the SAM Implementation Group (SAM/IG/8)**

(Lima, Peru, 10-14 October 2011)

SAM/IG/8-WP/08

18/09/11

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**Agenda Item 5: Implementation of air traffic flow management (ATFM) in the SAM Region**

**REVIEW OF THE ATFM ACTION PLAN**

(Presented by the Secretariat)

Summary	
This working paper proposes the Meeting to review the progress made in the Action Plan for the implementation of ATFM at airports and in the airspace of the SAM Region.	
<b>Reference:</b> <ul style="list-style-type: none"><li>• SAM/IG/7 meeting report</li></ul>	
<b>ICAO strategic objectives:</b>	<i>A – Safety</i> <i>C. Environmental protection and sustainable development of air transport</i>

**1 Background**

1.1 The SAM/IG workshops/meetings, *inter alia*, reviewed issues related with ATFM implementation in the South American Region and its associated activities.

1.2 At the SAM/IG/7 meeting, the participants reviewed the Action plan for the implementation of ATFM at airports and in the airspace (ATC sectors) of the Region, which considers tasks to be fulfilled by defined responsible parties on defined dates. The action plan, as revised by this meeting, appears in **Appendix A** to this part of the report.

**2 Discussion**

2.1 In view of the above, a periodic review of the tasks fulfilled by each responsible party designated by the Implementation Group is required. To this end, **Appendix A** to this working paper shows the tasks fulfilled, according to the information available at the Secretariat. This analysis should also take into account WP/2.

**3 Suggested action**

3.1 The Meeting is invited to:

- a) take note of the information provided; and
- b) review the progress made and, if applicable, update the action plan for the implementation of ATFM in the SAM Region that appears in **Appendix A** to this working paper.

**APPENDIX A****ACTION PLAN FOR THE IMPLEMENTATION OF ATFM AT SAM AIRPORTS**

<b>A: AIRPORT</b>				
<b>Task description</b>	<b>Start</b>	<b>End</b>	<b>Responsible party (designate individual or organisation in charge)</b>	<b>Remarks</b>
<b>1. Airport demand/capacity (runway capacity) analysis</b>	<b>Sep 2008</b>	<b>Apr 2010</b>		
1.1 Prepare ATFM survey	N/A	Aug 2008	Project RLA/06/901 Regional Office	<b>Completed</b>
1.2 Send survey to the States of the Region	Aug 2008	SAM/IG/2	Regional Office	<b>Completed</b>
1.3 Analyse the methodology presented by Brazil for estimating airport capacity (runway capacity)	June 2008	SAM/IG/2	ATFM/IG	<b>Completed</b> and analyzed through WP/08, WP/16.
1.4 Send response to survey	N/A	SAM/IG/2	States	<b>Completed</b> Except for French Guyana, Guyana, and Suriname.
1.5 Assess survey results	N/A	SAM/IG/3	ATFM/IG	<b>Completed</b>
1.6 Course offered by Brazil on Airport Capacity (runway capacity) Estimate	Mar 2009	Mar 2009	Brazil	<b>Completed</b> The course was carried out from 23 – 27 March 2009, as planned
1.7 Development of the Methodology for the Calculation of Airport (runway capacity) and Airspace Capacity in the SAM Region	Nov 2008	Jul 2009	Brazil and USA RLA/06/901	<b>Completed</b> Presented at SAM/IG/4

<b>A: AIRPORT</b>				
<b>Task description</b>	<b>Start</b>	<b>End</b>	<b>Responsible party (designate individual or organisation in charge)</b>	<b>Remarks</b>
1.8 Carry out exercise of Calculation of airport (runway capacity) and ATC sectors Capacity in the SAM Region as per the Course offered by Brazil	Sept 2009	SAM/IG/8	States	<b>Valid</b> Through Conclusion SAM/IG/4-5, the guidance material for the application of a common methodology for the calculation of airport and ATC sectors capacity was approved. Bolivia, Brazil, Colombia, Paraguay, Peru and Venezuela presented their preliminary exercise.
1.9 Carry out Calculation of Airport and Airspace Capacity of main airports by States.	Sept 2009	SAM/IG/8	States	<b>Valid</b> Brazil, Paraguay and Peru presented the data. Venezuela presented its runway capacity calculation for the Maiquetia airport.
1.10 Identify airports where periods exist where the demand is greater than existing capacity including simulations, if necessary, by States.	Sept/Oct 2009	SAM/IG/8	States	<b>Valid</b> Brazil, Paraguay and Peru presented the data.
1.11 Determine operational factors affecting airport demand and capacity to optimise utilisation of existing capacity, including simulations, is necessary.	Sept/Oct 2009	SAM/IG/8	States	<b>Valid</b> Brazil, Paraguay and Peru presented the data.
1.12 Present the conclusions on existing airport capacity	N/A	SAM/IG/8	States	<b>Valid</b> Brazil and Peru presented their conclusions on airport capacity (runway capacity)
<b>2. Coordination with the ATM community</b>				
2.1 Present initial AIC model	SAM/IG/2	SAM/IG/2	ATFM/IG	<b>Completed</b>
2.2 Publish initial AIC	SAM/IG/2	Next AIRAC	States	<b>Completed</b>

<b>A: AIRPORT</b>				
<b>Task description</b>	<b>Start</b>	<b>End</b>	<b>Responsible party (designate individual or organisation in charge)</b>	<b>Remarks</b>
		date/2009 after SAM/IG/3		
2.3 Promote seminars to the ATFM community, taking into account the CDM concept for ATFM implementation, and begin the relevant coordination		December 2010	States	<p><b>Completed</b></p> <p>On 29 to 31 March 2010, the First CDM Workshop was carried out in Rio de Janeiro, Brazil, with the participation of 27 experts.</p> <p>The second ATFM/CDM Workshop will be carried out in Rio de Janeiro during 26 and 27 November 2010</p>
2.4 Inform the GREPECAS CNS/ATM Subgroup	SAM/IG/3	Permanent	N/A	<p><b>Completed</b></p> <p>The GREPECAS CNS/ATM/SG/1 Meeting (Lima, Peru, 15 to 19 March 2010) was informed on the progress in the ATFM areas carried out to date in the SAM Region (see 5.4)</p> <p>The CNS/ATM/SG/2 Subgroup was also informed on the development achieved to date, and the ATFM and CDM Manuals were presented for its standard application in the CAR and SAM Regions. Both documents condensed in one were approved by GREPECAS/16 Meeting (para. 3.5.4 and Concl. 16/35) for its application in both regions.</p>
<b>3. Infrastructure and database</b>		<b>Aug 2008</b>		

<b>A: AIRPORT</b>				
<b>Task description</b>	<b>Start</b>	<b>End</b>	<b>Responsible party (designate individual or organisation in charge)</b>	<b>Remarks</b>
3.1 Send the results of the survey developed by the hired expert to the Automation Group.		Dec 2008		<b>Completed</b>
3.2 Send to the Automation Group the information obtained by the expert hired on the data bases used in the Brazil, United States and Eurocontrol units	Jan 2009	TBD		<b>Valid</b>
3.3 Coordinate implementation activities with the Automation Group			ATFM/IG	<b>Permanent</b>
<b>4. Policy, standards, and procedures</b>				
4.1 Hiring of an expert to draft the manuals on ATFM measures for airports and FMU and FMP procedures			N/A	<b>Completed.</b> Task included in 4.2
4.2 Hiring of an expert for the elaboration of the ATFM Manual		February 2009	Regional Office	<b>Completed.</b> Task developed from 6 to 17 July 2009
4.3 Detailed development of ATFM Manual chapters	Dec 2008	SAM/IG/5	Regional Office	<b>Completed</b> Approved partial draft, including ATFM concepts for airspace and airports at SAM/IG/2 Meeting. Presented at SAM/IG/4
4.4 Detailed development of the second part of ATFM Manual Chapters.	Dec 2009	Jun 2010	Regional Office (RLA/06/901)	<b>Completed</b> The ATFM Manual was analysed from 4-15 October, with the assistance of experts from Colombia and Brazil and some changes were introduced, in order to improve its structure.

<b>A: AIRPORT</b>				
<b>Task description</b>	<b>Start</b>	<b>End</b>	<b>Responsible party (designate individual or organisation in charge)</b>	<b>Remarks</b>
4.5 Present the model AIC Supplement		SAM/IG/6	ATFM/IG	<b>Completed</b> With the assistance of an expert from Peru, an AIP Supplement Model, to be used by States as reference, was prepared and developed (see SAM/IG/6 WP/08).
4.6 Approve the AIC Supplement		SAM/IG/6	ATFM/IG	<b>Completed</b> The AIC supplement model was approved by SAM/IG/6
4.7 Publish the AIP Supplements		SAM/IG/7	States	<b>Valid</b>
<b>5. Training</b>				
5.1 Draft ATFM training plans and submit them		TBD	States	<b>Permanent</b>
5.2 Train the team on decision-making at airports		December 2011	States	<b>Completed</b> See 5.1.
5.3 Hiring of an expert to draft Manual on the Introduction to ATFM for the ATM Community		TBD	Regional Office	<b>Completed</b> The ATFM Manual was prepared and submitted to CNS/ATM/SG. Guidelines to inform ATM community on ATFM and CDM general concepts. These guides may be provided in courses, seminars or others.

A: AIRPORT				
Task description	Start	End	Responsible party (designate individual or organisation in charge)	Remarks
5.4 Present and assess the Manual for the Introduction to ATFM for the ATM Community		SAM/IG/6	RLA/06/901	<p><b>Completed</b></p> <p>Through the hiring of experts, the ATFM manual was developed. GREPECAS/16 Meeting adopted the manual for the CAR and SAM Regions through Conclusion 16/35.</p> <p>It has been planned to develop a second part of such manual.</p>
5.5 Train the members of the ATM community in the CDM and ATFM concepts		TBD	States	<p><b>Completed</b></p> <p>The ATFM SAM Course was held in Rio de Janeiro, Brazil, from 22 to 26 March, 18 experts participated and the holding of tele-conferences was agreed, same which started on 12 April with excellent results.</p> <p>The First CDM Workshop was held from 29 to 31 March 2010, with the participation of 27 experts.</p> <p>The Second ATFM SAM course was held in Rio de Janeiro, Brazil, from 23 to 25 November 2010, with the participation of 29 experts.</p> <p>On 26 and 27 November 2010, the Second CDM Workshop was held in Rio de Janeiro, Brazil was held, with the participation of 29 experts.</p> <p>The Second Seminar/Workshop on airport capacity calculation</p>

<b>A: AIRPORT</b>				
<b>Task description</b>	<b>Start</b>	<b>End</b>	<b>Responsible party (designate individual or organisation in charge)</b>	<b>Remarks</b>
				and ATC sectors was held in Rio de Janeiro, Brazil, from 21 to 25 March 2011, with 23 participants.
5.6 Train FMP/FMU staff for application of ATFM measures for airports		TBD	States	<b>Permanent</b>
5.7 Monitor the training of the ATM community		SAM/IG/7	States	<b>Valid</b>
<b>6. Final implementation decision</b>				
6.1 Identify and review factors that may affect the implementation decision		SAM/IG/8	States	<b>Valid</b>
6.2 Declare the pre-operational implementation in the defined area		SAM/IG/8	States	<b>Valid</b>
6.3 Declare the final operational implementation in the defined area		SAM/IG/9	States	<b>Valid</b>
<b>7. Monitor system performance</b>				
7.1 Draft the ATFM post-implementation follow-up programme at airports	SAM/IG/6	SAM/IG/8	ATFM/IG	<b>Valid</b>
7.2 Implement the ATFM post-implementation follow-up programme at airports	SAM/IG/7	SAM/IG/9	States	<b>Valid</b>
<b>Tentative pre-operational implementation date</b>		SAM/IG/8	<b>States</b>	<b>Valid</b>
<b>Tentative definitive implementation date</b>		<b>SAM/IG/8</b>	<b>States</b>	<b>Valid</b>



<b>ACTION PLAN FOR ATFM IMPLEMENTATION IN THE SAM REGION</b>				
<b>B- AIRSPACE (ATC Sector)</b>				
<b>Task description</b>	<b>Start</b>	<b>End</b>	<b>Responsible party (designate individual or office in charge)</b>	<b>Remarks</b>
<b>1. Airspace demand and capacity analysis</b>				
1.1 Analyse the methodology to estimate ATC sector airspace capacity presented by Brazil	Jun 2008	SAM/IG/2		<b>Completed</b>
1.2 Prepare an airspace demand survey	TBD	TBD		
1.3 Attend the course on Airspace Capacity Estimate (ATC Sector).	Mar 2009	States		<b>Completed</b>
1.4 Carry out the States estimate airspace ATC sector capacity at the major airports	<b>Sept. 2009</b>	<b>SAM/IG/8</b>	States	<b>Valid</b> States must submit their studies before the SAM/IG/8 Meeting. Brazil has presented their studies.
1.5. Identify airspace sectors where demand sometimes exceeds capacity, including simulations by the States, if necessary	<b>TBD</b>	<b>SAM/IG/8</b>	States	<b>Valid</b> States must submit their studies before the SAM/IG/8 Meeting. Brazil has presented their studies.
1.6 Identify factors affecting airspace demand and capacity in order to optimise the use of existing capacity, including simulations if necessary	<b>TBD</b>	<b>SAM/IG/8</b>	States	<b>Valid</b> States must submit their studies before the SAM/IG/8 Meeting. Brazil has presented their studies.
1.7 Present conclusions on the existing airspace capacity.	<b>TBD</b>	<b>SAM/IG/8</b>	States	<b>Valid</b> States must submit their studies before the SAM/IG/8 Meeting. Brazil has presented their studies.
<b>2. Coordination with the ATM community</b>	<b>Sep 2008</b>	<b>Aug 2009</b>		
2.1 Consider by the ATM community the implementation	Sep 2008	<b>SAM/IG/8</b>	States	<b>Valid</b>

ACTION PLAN FOR ATFM IMPLEMENTATION IN THE SAM REGION				
B- AIRSPACE (ATC Sector)				
Task description	Start	End	Responsible party(designate individual or office in charge)	Remarks
of ATFM in airspace				States in implementation phase should coordinate with the ATM community the necessary actions for the ATFM implementation process and submit them to the Secretariat before the SAM/IG/8 Meeting.
<b>3. Infrastructure and database</b>	<b>TBD</b>	<b>Dec 2013</b>		<b>Valid</b>
3.1 Send requirements to the Automation Group, as stipulated in Appendix B of the ATFM CONOPS	<b>TBD</b>	<b>TBD</b>	ATFM/IG	<b>Valid</b>
3.2 Coordinate implementation activities with the Automation Group	N/A	Dec 2013	ATFM/IG	<b>Valid</b>
<b>4. Policy, standards, and procedures</b>	<b>TBD</b>	<b>Jun 2013</b>	States	<b>Valid</b>
4.1 Develop ATFM policies, taking into account the objectives and principles established in the CAR/SAM ATFM CONOPS	<b>TBD</b>	<b>TBD</b>	States	<b>Valid</b>
4.2 Develop a regional strategy and framework for the implementation of Centralized ATFM units	<b>2008</b>	<b>2014</b>	Regional Project RLA/06/901	<b>Valid</b>
4.3 Develop template/contents for operational agreements between Centralized ATFM units for interregional demand/capacity balancing	<b>2008</b>	<b>2014</b>	Regional Project RLA/06/901	<b>Valid</b>
4.4 Define common elements of situational awareness between FMUs; <ul style="list-style-type: none"> <li>• common traffic displays,</li> <li>• common weather displays (Internet),</li> <li>• communications (teleconferences, web), and</li> <li>• daily teleconference/messages methodology advisories</li> </ul>	<b>2008</b>	<b>2012</b>	Regional Project RLA/06/901	<b>Valid</b> States maintain web conferences for exchange of information.

<b>ACTION PLAN FOR ATFM IMPLEMENTATION IN THE SAM REGION</b>				
<b>B- AIRSPACE (ATC Sector)</b>				
<b>Task description</b>	<b>Start</b>	<b>End</b>	<b>Responsible party(designate individual or office in charge)</b>	<b>Remarks</b>
4.5 Define common electronic information and minimum databases required to support decision making process and alerting systems for interoperable situational awareness between Centralized ATFM units	<b>2008</b>	<b>2014</b>	Regional Project RLA/06/901	<b>Valid</b>
4.6 Develop a regional strategy to implement the use of a flexible upper airspace (FUA): <ul style="list-style-type: none"> <li>• evaluate the management processes in the use of the airspace;</li> <li>• improve the current domestic airspace management to adjust dynamic changes to the traffic flows in tactical stages;</li> <li>• introduce improvements to the ground ATS systems and associated procedures for the extension of the FUA with dynamic management processes in the use of the airspace</li> <li>• dynamically implement ATC sectorization with the aim of providing a better balance between demand and capacity that responds in real time to changing situations in the traffic flows and to accommodate in the short-term the users preferred trajectories /</li> </ul>	<b>200/8</b>	<b>2015</b>	Regional Project RLA/06/901	<b>Valid</b>

ACTION PLAN FOR ATFM IMPLEMENTATION IN THE SAM REGION				
B- AIRSPACE (ATC Sector)				
Task description	Start	End	Responsible party (designate individual or office in charge)	Remarks
<b>5. Training</b>	<b>TBD</b>	<b>May 2013</b>		
5.1 Train the team on airspace data collection	Jun 2009	March 2011	States	<p><b>Completed</b></p> <p>A first course was carried out in March 2009.</p> <p>The second course on runway capacity and ATC sector was held in Rio de Janeiro, Brazil, from 21 to 25 March 2011, with 23 participants.</p> <p>The third seminar-workshop, focused to instructors on airport capacity and ATC sectors will be held from 24 to 28 October 2011, in Lima, Peru.</p>
5.2 Air Traffic Flow Management Course	Mar 2010	Nov 2010	Brazil	<p><b>Completed</b></p> <p>Hosted by RP RLA/06/901.</p> <p>The Second ATFM Course was held in Rio de Janeiro, Brazil, from 22 to 26 March 2010 with 28 experts, and the holding of tele-conferences was agreed, and they have been held as of 12 April 2011, with excellent results.</p> <p>The Second ATFM SAM Course was held in Rio de Janeiro, Brazil, from 23 to 25 November 2010, with 29 Experts.</p> <p>The Third Seminar-workshop on airport capacity and ATC sectors will be held in Lima,</p>

<b>ACTION PLAN FOR ATFM IMPLEMENTATION IN THE SAM REGION</b>				
<b>B- AIRSPACE (ATC Sector)</b>				
<b>Task description</b>	<b>Start</b>	<b>End</b>	<b>Responsible party(designate individual or office in charge)</b>	<b>Remarks</b>
				Peru, from 24 to 28 October 2011, addressed to instructors.
5.3 Train personnel in ATFM strategic measures for airspace	<b>TBD</b>	<b>TBD</b>	States	Permanent An ATFM CDM course was carried out in Brazil in 2010 with the participation of several States
5.4 Prepare plans and ATFM training material	<b>TBD</b>	<b>TBD</b>	States	<b>Valid</b>
5.5 Conduct training of personnel involved.	<b>TBD</b>	<b>TBD</b>	States	<b>Valid</b>
			States	<b>Valid</b>
<b>6. Final implementation decision</b>	<b>N/A</b>	<b>Sep 2013</b>	States	<b>Valid</b>
6.1 Analyse factors affecting the implementation decision	<b>N/A</b>	<b>SAM/IG/8</b>	States	<b>Valid</b>
6.2 Declare pre-operational implementation in the area defined	<b>N/A</b>	<b>SAM/IG/8</b>	States	<b>Valid</b>
6.3 Declare definitive operational implementation in the area defined	<b>N/A</b>	<b>SAM/IG/8</b>	States	<b>Valid</b>
<b>7. Monitor system performance</b>	<b>TBD</b>	<b>N/A</b>	States	<b>Valid</b>
7.1 Draft ATFM post-implementation follow-up programme	<b>TBD</b>	Aug 2013	Regional Project RLA/06/901	<b>Valid</b>
7.2 Implement ATFM post-implementation follow-up programme	Dec 2013	N/A	States	
<b>Tentative pre-operational implementation date</b>	<b>N/A</b>	<b>Jul 2013</b>	States	<b>Valid</b>
<b>Tentative definitive implementation date</b>	<b>N/A</b>	<b>Dec 2013</b>	States	<b>Valid</b>