



**Agenda Item 3: Implementation of the Air Traffic Flow Management (ATFM)**

**ATFM Project (ASBU: B0-SEQ, B0-FRTO, B0-NOPS and B0-ACDM)**

(Presented by the Secretariat)

<b>SUMMARY</b>	
<p>This working paper presents to the Meeting the status of implementation of ATFM in the Region, training investments made by Project RLA/06/901, and the difficulties encountered during implementation. It also describes the impact that the implementation of ATFM measures by States that lack ATFM units or positions has on efficiency and safety, and the recommendations formulated in this regard by the Third Meeting of the GREPECAS Programmes and Projects Review Committee (PPRC/3).</p>	
<b>References:</b>	
<ul style="list-style-type: none"> <li>• Doc 9750, Global Air Navigation Plan</li> <li>• SAM/IG/12, 13, 14, 15 and 16 meeting reports</li> <li>• GREPECAS/17 meeting report</li> <li>• Report of the Third Meeting of the Programmes and Projects Review Committee (PPRC/3)</li> </ul>	
<b>ICAO strategic objectives:</b>	<p><i>A - Safety</i>  <i>D - Economic development of air transport</i>  <i>E - Environmental protection</i></p>

**1. Background**

1.1 To analyse the achievement of ATFM goals, SAM/IG/16 Meeting established the following indicators:

- Percentage of States that have conducted runway and ATC sector capacity calculations.
- Percentage of States that have implemented ATFM in Flow Management Units (FMUs) or Flow Management Positions (FMPs).

**2. Discussion**

2.1 To date, 85% of the States of the Region have performed their ATC runway and ATC sector capacity calculations as pre-implementation tasks, as shown in the following table:

**Percentage of States that have conducted their runway and ATC sector capacity calculations**

September 2015	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN
85%	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES

2.2 To date, only 42% of the States of the Region have implemented ATFM, as shown in the following table:

**Percentage of States that have implemented ATFM Flow Management Units (FMU) or Flow Management Positions (FMP)**

September 2015	ARG	BOL	BRA	CHI	COL	FGY	ECU	GUY	PAN	PAR	PER	SUR	URU	VEN
42%	NO	NO	YES	YES	YES	NO	NO	NO	NO	YES	NO	NO	YES	YES

2.3 During SAM/IG/16 Meeting, a Strategic Planning Table was developed, as shown in **Appendix A** to this working paper, which is to be updated by the States at the Meeting.

2.4 States can also update **Appendix B** to this working paper, which shows the current list of ATFM focal points, as deemed necessary.

2.5 Likewise, the Meeting shall review and update the ATFM Action Plan and Work Programme shown in **Appendix C** to this working paper.

2.6 As a complementary task to the follow-up, it is required to updated the ATFM survey data as indicated in **Appendix D** to this working paper.

2.7 With reference to the ATFM measures applicable in Brazil, confirmation is expected on the corresponding aeronautical publication for the dissemination of all relevant information, so as to facilitate planning and operation by the operators and other users of the Brazilian airspace, as well as by the other SAM States, during the event.

2.8 Moreover, it is necessary to know in advance the Alternate Aerodrome Plan during the event, taking into account potential impacts on efficiency and safety.

**3. Suggested action:**

3.1 The Meeting is invited to:

- a) update Appendices A, B, C and D to this working paper, as appropriate to each State;
- b) analyse Brazil AIC on ATFM measures concerning Rio de Janeiro 2016 Olympic Games;
- c) update the information on FMU/FMP in States where ATFM has not yet been implemented.

STRATEGIC PLANNING TABLE FOR THE DEVELOPMENT OF ATFM														
CONC. PPRC/3-5 action of compliance	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN
	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year	Month/ Year
1- Replica of ATFM courses to speccialized personnel	09/2015 to 11/2015	10/2015	Imp.	09/2015 07/2016	Imp.	1st Quarter 2015	2015		04/2015 02/2016	11/2016	02/2016		02/2015	07/2016
2- Bilateral Letters of Agreement with appropriate ATFM procedures without impacting on safety	04/2016	02/2014	Imp.	05/2016	Imp.	2nd Quarter 2016	2015		1st Trim/2016	10/2015	05/2016			
3- Implementation of Flow Control Positions or Units (FMPs/FMUs)	2nd Sem/2016 SABE	1st Sem/2016	Imp.	Imp. FMP ACC/ 2016	Imp. unified ACC	2016	2016		06/2016	Imp.	07/2016		Imp.	Imp.

## APPENDIX B / APÉNDICE B

LIST OF CONTACTS FOR OPERATIONAL ATFM FOCAL POINTS AND  
ESTABLISHED ATFM UNITSLISTA DE CONTACTOS PARA PUNTOS FOCALES ATFM OPERACIONALES Y  
UNIDADES ATFM ESTABLECIDAS

State/ Estado	STATE ATFM FOCAL POINTS PUNTOS FOCALES ATFM DEL ESTADO	OPERATIONAL ATFM FOCAL POINTS AND ESTABLISHED ATFM UNITS PUNTOS FOCALES ATFM OPERACIONALES Y UNIDADES ATFM ESTABLECIDAS
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State/ Estado	STATE ATFM FOCAL POINTS PUNTOS FOCALES ATFM DEL ESTADO	OPERATIONAL ATFM FOCAL POINTS AND ESTABLISHED ATFM UNITS PUNTOS FOCALES ATFM OPERACIONALES Y UNIDADES ATFM ESTABLECIDAS
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State/ Estado	STATE ATFM FOCAL POINTS PUNTOS FOCALES ATFM DEL ESTADO	OPERATIONAL ATFM FOCAL POINTS AND ESTABLISHED ATFM UNITS PUNTOS FOCALES ATFM OPERACIONALES Y UNIDADES ATFM ESTABLECIDAS
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\*Updated SAM/IG/16 / Actualizados en la SAM/IG/16

## APPENDIX C

## ACTION PLAN FOR THE IMPLEMENTATION OF ATFM AT SAM AIRPORTS

<b>A: AIRPORT</b>				
Task description	Start	End	Responsible party (designate individual or organisation in charge)	Remarks
<b>1. Airport demand/capacity (runway capacity) analysis</b>				The ATFM survey provides information on this subject
1.1 Carry out Calculation of Airport and Airspace Capacity of main airports by States. <ol style="list-style-type: none"> <li>1. Identify personnel available in each State to carry out calculation of runway capacity.</li> <li>2. Identify which airports already have calculation of runway capacity.</li> <li>3. Identify, prioritize and report what airports require calculation of runway capacity.</li> <li>4. Carry out calculation of runway capacity.</li> <li>5. Update calculation of runway capacity as necessary.</li> <li>6. Identify airports exceeding runway capacity.</li> </ol>	Sep 2009	SAM/IG/16	States	States that have yet to submit information: Suriname and Guyana
<b>2. Coordination with the ATM community</b>				
2.1 Promote seminars to the ATFM community considering the CDM concept for the implementation of ATFM and initiate corresponding coordination. <ol style="list-style-type: none"> <li>1. Consider the implementation of a CDM process in main airports.</li> <li>2. States will notify airports with this process.</li> </ol>	SAM/IG/11	2016*	States	<p style="text-align: center;"><b>VALID</b></p> ATFM operational concept, ATFM manual and ATFM roadmap will be taken into account.  Chile signed a MoU with the Airport Community.
<b>3. Infrastructure and database</b>				
3.2 Establish a data base format to be used for automation.	SAM/IG/11	SAM/IG/17	States	<b>VALID</b>

<b>A: AIRPORT</b>				
Task description	Start	End	Responsible party (designate individual or organisation in charge)	Remarks
<b>4. Policy, standards, and procedures</b>				
4.7 Provide AIP/AIC published information on ATFM to SAM/IG meetings.	SAM/IG/11	2016*	States	<b>PERMANENT</b> Information will be presented in each SAM/IG The format of the publication is in Doc 8126
<b>5. Training</b>				
5.1 Establish courses on: a) FMP/FMU training b) Airport CDM training	SAM/IG/13	2016*	States	A-CMD course carried out at ICAO Lima, under the support of RLA/06/901 Project. States must replicate the course.
5.2 Draft ATFM training plans.	SAM/IG/11	2016*	States	<b>VALID</b>
5.3 Train FMP/FMU/ATC personnel for the application of ATFM measures in airports.	SAM/IG/11	2016*	States	<b>VALID</b>
5.4 Monitor the training of the ATM community.	SAM/IG/11	2016*	States	<b>VALID</b>
<b>6. Final implementation decision</b>				
6.1 Review factors that may affect the implementation decision.			States	<b>VALID</b>
6.2 Declare the pre-operational implementation in the defined area.			States	<b>VALID</b>
6.3 Declare the final operational implementation in the defined area.			States	<b>VALID</b>
<b>7. Monitor system performance</b>				

<b>A: AIRPORT</b>				
Task description	Start	End	Responsible party (designate individual or organisation in charge)	Remarks
7.1 Develop performance indicators according to CDM manual.	SAM/IG/11	Oct/2017	States	<b>VALID</b> States which have implemented ATFM will present an information paper concerning the performance indicators.
7.2 Develop a performance indicators follow-up programme	SAM/IG/11	Oct/2017	States	<b>VALID</b>
7.3 Develop and implement an ATFM post-implementation follow-up programme at airports.	SAM/IG/13	Oct/2017	States	<b>VALID</b>

**ACTION PLAN FOR ATFM IMPLEMENTATION IN THE SAM REGION**

<b>B- AIRSPACE (ATC Sector)</b>				
Task description	Start	End	Responsible party (designate individual or office in charge)	Remarks
<b>1. Airspace demand and capacity analysis</b>				ATFM survey has information on this subject
1.1 Carry out ATC sectors calculation. 1. Identify and train personnel available in each State to carry out calculation of air space capacity. 2. Identify which sectors already count with calculation of capacity. 3. Identify, prioritize and report what sectors require calculation of capacity. 4. Identify sectors exceeding capacity.	SAM/IG/11	SAM/IG/15	States	<b>VALID</b> Suriname and Guyana have not yet submitted information.
1.2 Carry out the States estimate airspace ATC sector capacity calculation and their terminal areas at the major airports.	Sep 2009	SAM/IG/16	States	<b>VALID</b> Suriname and Guyana have not yet submitted 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>
2. Evaluate improvement of traffic flow by sequencing (B0-RSEQ) in order to allow an optimal application of new airspace concepts based on PBN, mainly using CDO and CCO	SAM/IG/14	SAM/IG/17	SAM/ATFM/IG States	<b>VALID</b>
<b>3. Coordination with the ATM community</b>				
3.1. Promote seminars to the ATFM community considering the airspace capacity concept for the implementation of ATFM and initiate corresponding coordination.	SAM/IG/11	2016*	States	<b>VALID</b>
<b>4. Infrastructure and database</b>				
4.2 Coordinate implementation activities with the Automation Group.	SAM/IG/13	SAM/IG/17	ATFM/IG	<b>VALID</b> Depends on States' requirements.
<b>5. Policy, standards, and procedures</b>				
5.2 Develop template/contents for operational agreements between centralized ATFM units for interregional demand/capacity balancing.	2008	2017	Project RLA/06/901	<b>VALID</b>
<b>6. Training</b>				
6.2 Prepare plans and ATFM training material	Dec 2014	2016*	States	<b>VALID</b> Argentina presented ATFM training Manual
<b>7. Final implementation decision</b>				
7.1 Analyse factors affecting the implementation decision.	N/A	2016	States	<b>VALID</b>
7.2 Declare pre-operational implementation in the area defined.	N/A	2016*	States	<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>
7.3 Declare definitive operational implementation in the area defined.	N/A	2016*	States	<b>VALID</b>
<b>8. Monitor system performance</b>				
8.1 Draft performance indicators	2010	Oct/2017	Project RLA/06/901	<b>VALID</b>
8.2 Develop an indicators follow-up programme.	TBD	Oct/2017	States	<b>VALID</b>

NOTE: \*Indicates that the date is related to the Bogota Declaration

## ATFM SURVEY

ATFM SURVEY	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	REMARKS
1. Regarding the SAM ATFM implementation plan, confirm if FMUs/FMPs have been established. If YES, indicate which is the responsible unit. If the answer is NO, indicate what are your plans for ATFM implementation based on regional requirements.	NO	NO	YES	YES	YES	NO			NO	YES	NO		NO	YES	
2. Confirm if you have personnel trained in the ATFM implementation plan and if this staff is currently performing the corresponding functions according to the implementation plan.	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES	Pending Guyana and Suriname.

ATFM SURVEY	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	REMARKS
5. How many airports in your State/country have apron capacity calculations? List the main ones. If the answer is NONE, indicate which airports you think require such calculations.	0	0	1	0	0	0	1		0	1	2		0	0	<p><b>Brazil:</b> Apron capacity calculations have been performed for one airport (Guarulhos international airport in São Paulo-SP). This information was provided by GRU- (Guarulhos Airport Administration).</p> <p><b>Chile:</b> We believe that SCEL, SCIE, and Loa de Calama require this calculation.</p> <p><b>Colombia:</b> None. It is required for several airports since airport capacity is not being managed to address growing demand.</p> <p><b>Ecuador:</b> None of the airports in the country has apron capacity calculations. However, it is estimated that the airports of Quito, Guayaquil, Nueva Loja, Coca, Shell Mera, Cuenca, and Manta require these calculations.</p> <p><b>Panama:</b> Will request data from Tocumen S.A.</p> <p><b>Paraguay:</b> These calculations have not been performed due to lack of experts (specialists) duly trained for this purpose. Calculations are required for the two international airports mentioned above: “Silvio Pettirossi” in Asuncion and “Guarani” in Minga Guazú.</p> <p><b>Peru:</b> Cusco 7 C/D and 4 A/B positions.</p> <p><b>Uruguay:</b> SUMU and SULLS.</p> <p><b>Venezuela:</b> None. We still do not have personnel duly trained to conduct these calculations, which would be required for the international airport of Maiquetía.</p>
6. Number of operations per hour at the airport considered to be the most important one:															<p><b>Chile:</b> SCEL</p> <p><b>Peru:</b> SPIM.</p>
Runway capacity			SBGR 52	SCEL 40	70 SKBO	29	6		MPTO 44	SGAS 23	SPJC 32		SUMU 25 SULLS 18	SVMI 34	
Apron capacity	NO	NO	SBGR 90	NO	NO	NO	NO	NO	NO	NO	SPJC	NO	NO	NO	

ATFM SURVEY	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	REMARKS
7. For the airport considered to be the most important one, number of trained personnel capable of providing, in terms of operations per hour, calculations for:															
Runway capacity	20	12	18	15	4	1	3		2	1	8		5	2	
Apron capacity	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	3	NO	NO	NO	
ATS sector capacity	5	10	18	4	4	1	3		2	1	8		5	2	