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)

SUMMARY

This working paper presents to the Meeting the status of implementation of ATFM in the Region, the work programme, as well as the tasks to be developed by experts of SAM Region States to update information.

References:

- Doc 9750, Global Air Navigation Plan
- SAM/IG/12, 13, 14, 15, 16 and 17 meeting reports
- GREPECAS/17 meeting report
- Report of the Fourth Meeting of the Programmes and Projects Review Committee (PPRC/4)

ICAO strategic objectives:	*A - Safety* *D - Economic development of air transport* *E - Environmental protection*

1. **Background**

1.1 To analyse the achievement of ATFM goals, following indicators were established:

- 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

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

*French Guiana only determined runway capacity

2.2 To date, only 63% 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 2016 63%	**ARG**	**BOL**	**BRA**	**CHI**	**COL**	**FGY**	**ECU**	**GUY**	**PAN**	**PAR**	**PER**	**SUR**	**URU**	**VEN**
	NO	**NO**	**YES**	**YES**	**YES**	**NO**	**YES**	**NO**	**YES***	**YES**	**YES**	**NO**	**YES**	**YES**

* Panama (FMP in Panama FIR between 12:30 UTC and 01:00 UTC)

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 Project description shown in **Appendix C** to this working paper.

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

3. **Suggested action:**

3.1 The Meeting is invited to:

a) Analyse and update Appendices A, B, C and D to this working paper, as appropriate to each State;

b) update the information on FMU/FMP in States where ATFM has not yet been implemented.

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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 UNITS

LISTA 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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BOLIVIA (Plurinational State of) / **BOLIVIA (Estado Plurinacional de)***	ATCO Jesús I. Villca Jiménez Inspector ATM/SAR Dirección General de Aeronáutica Civil (DGAC) Teléfono: +591 2 211-4465 Cel.: +591 72023263 E-mail: jvillca@dgac.gob.bo	ATCO. Marco Sergio Barrios Barzola Supervisor ACC La Paz Jefe Navegación Aérea Reg. La Paz Tel/Fax: +591 2 281-0203 (ACC/La Paz) Tel/Fax: +591 2 282-1717 (Nav. Aérea) Tel: +591 2 223-8339 (Home/domicilio) Cel.: +591 7 052-3884 E-mail: mbarrios@aasana.bo masebarbar@hotmail.com

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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GUYANA		

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
VENEZUELA (Bolivarian Republic of) / **VENEZUELA (República Bolivariana de)***	Maribel Mayora Vallenilla Responsable ATFM Tel: +58 212 303-4532 (13:00 – 21:00 UTC) Cel: +58 416 611-0607 (H24) E-mail: atfm@inac.gob.ve m.mayora@inac.gob.ve Alfredo Dávila Coordinador Area de Trabajo ATS Tel.: + 582 12 355 2898 Cel.: + 584 166 247 667 E-mail: a.davila@inac.gob.ve	Harrynson Salazar Jefe ACC-Maiquetía Tel: +58 212 355-2912 (13:00 – 21:00 UTC) Cel: +58 416 632-6204 (H24) E-mail: Ha.Salazar@inac.gob.ve ACC-Maiquetía Tel: +58 212 355-2216 (H24) Cel: +58 416 623-6427 (H24)
Others / Otros	**INTERNATIONAL ORGANIZATIONS / ORGANIZACIONES INTERNACIONALES**	**ICAO / OACI**
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*Updated SAM/IG/16 / Actualizados en la SAM/IG/16

APPENDIX C

PROJECT B1: IMPROVE DEMAND/CAPACITY BALANCING

SAM Region	**PROJECT DESCRIPTION (DP)**	DP N° B1	
Programme	**Title of the Project**	**Start**	**End**
Air traffic flow management (ATFM) *(Programme Coordinator: Roberto Arca Jaurena)*	*Improve demand/capacity balancing* *Project Coordinator: Martha Soto Ansaldi*	2012	2016
Objective	Avoid overloading the ATC and airport systems, while strengthening safety, taking into account the reduction in the number of delays caused by meteorological and traffic conditions, thus reducing fuel consumption and contaminating emissions. Likewise, improve prediction and management of surplus demand for services in ATC sectors and aerodromes.		
Scope	The scope of this project establishes that ATFM implementation should start with airport and airspace monitoring in order to identify significant increases in ground delays and in-flight holding, as well as bottlenecks (ATC sector, runway, apron, and airport facilities). Furthermore, capacity calculation and air traffic demand analysis are important elements to improve demand/capacity balancing.		
Metrics	• % of States that have calculated runway and ATC sector capacity. • % of States that have implemented ATFM in Flow Management Units (FMU) or Flow Management Positions (FMP).		

Strategy	Project execution defines ATFM implementation in the SAM Region through an airspace demand and capacity analysis, taking into account that States that are in the process of implementation shall coordinate with the ATM community to define the actions required for ATFM implementation. The infrastructure and the database, as well as the policy, standards, and procedures, are important components for the execution of this Project.
Goals	• SAM States with experts trained in the calculation of runway capacity and airspace (ATC SECTOR) capacity of States' airspace regions. • ATFM system performance oversight plan. • CAR/SAM inter-regional coordination.
Rationale	GREPECAS considered that early ATFM implementation should ensure optimum air traffic flow to or through certain areas during periods in which demand exceeded or was expected to exceed the available capacity of the ATC system. Therefore, the ATFM system should reduce aircraft delays, both in flight as on the ground, and avoid system overload.
Related projects	• Automation.

Project deliverables	Relationship with the performance-based regional plan (PFF)	Responsible party	Status of implementation*	Delivery date	Comments
Assess the progress made in the ATFM implementation work programme	B0-NOPS	Programme Coordinator		2016	Permanent Task
Calculation of airspace (ATC SECTOR) capacity.	B0-NOPS	Juarez Franklin Gouveia		SAM/IG/9	Brazil and Colombia submitted their studies.
List of airspace sectors subject to periods in which demand exceeds the existing capacity, including, if necessary, simulations by the States.	B0-NOPS	Juarez Franklin Gouveia		SAM/IG/9 SAM/IG/10	Brazil and Colombia submitted their studies.
List of operational factors affecting demand and airspace capacity for the optimisation of the existing capacity, including simulations, if necessary.	B0-NOPS	Juarez Franklin Gouveia		SAM/IG/9	Brazil and Colombia submitted their studies. Brazil, Paraguay and Peru presented data at the SAM/IG/11 meeting.
Definition of the common elements of situational awareness	B0-NOPS	Paulo Vila		2012	The States that exchange information are: Chile, Colombia, Paraguay and Venezuela.

Personnel trained in strategic ATFM measures for airspace	B0-NOPS	Project RLA/06/901		2010	In 2010, an ATFM/CDM course was conducted in Brazil with the participation of several States. In March 2009, a course on runway and ATC sector capacity calculation was conducted in Brazil. In 2012, a course for training instructors on runway and ATC sector capacity calculation was conducted in Lima.
List of factors affecting the implementation decision	B0-NOPS	Programme Coordinator		2010	The following causes were identified at the SAM/IG/11 meeting: - States that do not have the requirement or the need to implement ATFM; - Budgetary and organisational reasons; - Lack of personnel specifically devoted to ATFM activities; - The personnel responsible for ATFM is involved in other functions.
Update the calculation of airspace (ATC SECTOR) capacity and runway capacity.	B0-NOPS	Programme Coordinator		November 2015	85% of States updated ATC sectors and runway capacity calculations. Guyana and Suriname lack capacity calculation; French Guiana lack ATC sectors calculation.

Airspace monitoring processes. Air traffic demand analysis. ATFM standards and procedures of an FMU/FMP. Implementation of preliminary ATFM measures. Implementation of TMI. ATFM messaging. Coordination of special events. Civil/military coordination processes and ATFM exemption procedures.	B0-NOPS	CGNA Course Project RLA/06/901		November 2014	Completed on schedule
Replication of ATFM courses at national level	B0-NOPS	States		15/05/2015	States replicated the ATFM courses at national level.
ATFM measures during the realization of Olympic and Paralympic Games Rio 2016 in Brazil	B0-NOPS	Brazil		13/05/2016	Detail of Brazilian AIC can be found under following link on the internet: http://publicacoes.decea.gov.br/?i=publicacao&id=4339
ATFM Implementation Status	B0-NOPS	Programme Coordinator		31/10/2015	56% of States implemented ATFM.
ATFM tool information	B0-NOPS	IATA		SAM/IG/18	
CTOT use demonstration	B0-NOPS	Project Coordinator		SAM/IG/18	Show benefits of ground delays application in ATFM management. Example Cuzco and Lima
Demonstration of possible indicators to measure system performance	B0-NOPS	Project Coordinator		SAM/IG/18	Practical examples

Benefits of the application of preliminary CDM strategic processes	B0-NOPS	Project Coordinator		SAM/IG/18	Examples of practical coordination
Review of ATFM Manual messages	B0-NOPS	Project Coordinator		SAM/IG/18	
Resources required	Designation of experts in the execution of some of the deliverables.				

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Grey *Task not started*
Green *Activity underway as scheduled*
Yellow *Activity started with some delay but expected to be completed on time*
Red *It has not been possible to implement this activity as scheduled; mitigating measures are required*

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**	**Brazil:** 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). **Chile:** We believe that SCEL, SCIE, and Loa de Calama require this calculation. **Colombia**: None. It is required for several airports since airport capacity is not being managed to address growing demand. **Ecuador**: 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. **Panama**: Will request data from Tocumen S.A. **Paraguay**: 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 "Guaraní" in Minga Guazú. **Peru**: Cusco 7 C/D and 4 A/B positions. **Uruguay**: SUMU and SULS. **Venezuela**: None. We still do not have personnel duly trained to conduct these calculations, which would be required for the international airport of Maiquetía.
6. Number of operations per hour at the airport considered to be the most important one:															**Chile**: SCEL **Peru:** SPIM.
Runway capacity			**SBGR 52**	**SCEL 40**	**70 SKBO**	**29**	**6**		**MPTO 44**	**SGAS 23**	**SPJC 32**		**SUMU 25 SULS 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 capacidty	**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**	