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, 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).

References:

- Doc 9750, Global Air Navigation Plan
- SAM/IG/12, 13, 14 and 15 meeting reports
- GREPECAS/17 meeting report
- Report of the Third Meeting of the Programmes and Projects Review Committee (PPRC/3)

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

1. Background

1.1 In the SAM Region, issues related to ATFM implementation in the South American Region and all of its associated activities are reviewed at the meetings of the SAM Implementation Group (SAM/IG), where it has been noted that the States are already capable of meeting the goal of the Bogota Declaration of implementing at least one flow management position (FMP) or one flow control unit (FMU) at each area control centre (ACC).

1.2 The SAM/IG/12 and subsequent meetings of the SAM/IG (SAM/IG/12-15) continued to monitor the status of implementation of the ATFM Project, its Action Plan and its relationship with Project B1 on the improvement of demand-capacity balancing (DCB).

1.3 Since 2009 through 29 May 2015, under the ATFM training programme and the auspices of Project RLA/06/901 and the support of the Air Navigation Management Centre (CGNA) of Brazil, 6 courses on runway and ATC sector capacity calculation were conducted, in addition to ATFM and CDM theoretical-practical courses, providing training to a total of 130 experts of the South American Region.

2. **Discussion**

2.1 Implementation has not yet produced the expected results despite efforts made by both Project RLA/06/901, through the drafting and development of guidance material and facilitation of ATFM training courses, and the States themselves, through the use of such material for ATFM implementation and the training received.

2.2 It has also been noted that, in most States, the experts who received ATFM training have not replicated the courses. Training must be disseminated within the respective Administrations in order to increase the number of staff with ATFM training.

2.3 Upon analysing the reasons for delayed effective implementation of air traffic flow management units/positions (FMUs/FMPs), it has been noted that some States believe that they have not yet reached traffic levels at their airports and ATC sectors that warrant the implementation of elements and functions of an air traffic flow management system. Other States recognise that they have reached full capacity but, due to budgetary, staffing, organisational, and other reasons, they have not been able to start or proceed with their ATFM system.

2.4 Some States that have not yet implemented a minimum ATFM service issue a large amount of messages and NOTAMs, establishing entry and exit restrictions at different points of FIR boundaries for flow control.

2.5 Several of the NOTAMs issued refer to time restrictions at FIR entry or exit points, regardless of flight level, causing a severe impact on traffic in neighbouring FIRs and even FIRs in other regions because of the domino effect.

2.6 Actions thus taken, without any strategic planning, not only impact capacity but also generate a safety risk, especially for transcontinental flows affected by the measures, and affect flight and fuel planning. In some cases, the measures adopted have been disproportionate to the situation at hand.

2.7 The solution to avoid these situations is to implement at least one flow control position or one flow control unit, depending on the level of complexity, at each Area Control Centre (ACC). These positions or units could initially provide services during a selective schedule, based on peak hours. Likewise, a supervisor could cover a flow management position during low traffic hours.

2.8 This implementation is urgently required in order to establish a strategic ATFM plan that provides operational predictability and timely connectivity to users, since the absence of ATFM units affects all hubs in the Region, causing unnecessary congestion in the parking apron and huge losses to the industry.

2.9 Regarding safety, some inter-regional operations with long-haul flights carrying strict amounts of fuel may have to divert to alternate aerodromes in other States, destabilising normal air traffic flow and congesting airports, thus increasing operational expenditure by users.

2.10 In order to assess the attainment of ATFM goals, the following indicators have been established:

- Percentage of States that have conducted runway and ATC sector capacity calculations.
- Percentage of States that have implemented ATFM in flow management units/positions (FMUs/FMPs).

2.11 To date, 85% of the States in the Region have conducted runway and ATC sector capacity calculations in preparation to implementation, as shown in the following table:

Percentage of States that have conducted runway and ATC sector calculations

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

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

Percentage of States that have implemented ATFM in flow management units (FMUs) or flow management positions (FMPs)

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

2.13 It has also been noted that some States have not sent their experts to SAM/IG meetings on a consistent basis, which delays the execution of the task approved by the States themselves within the context of GREPECAS and, accordingly, under the ATFM Project designed for that purpose.

2.14 At its third meeting, the GREPECAS Programmes and Projects Review Committee approved Conclusion PPRC/3-5: "*Actions for ATFM implementation in the SAM Region*", encouraging SAM States to:

a) Locally replicate ATFM training received by their experts at the courses sponsored by Project RLA/06/901, in order to improve ATFM knowledge of their specialised personnel;

b) Avoid implementing ATFM measures that affect users and that impact safety, especially those Administrations that have not created units responsible for strategic management of flow control measures;

c) Introduce in their bilateral letters of agreement the appropriate procedures to regulate the strategic application of such measures, avoiding their impact on efficiency and safety;

d) Implement flow control positions or units (FMPs/FMUs) as soon as possible in order to avoid capacity/demand imbalances caused by scheduled or unforeseen events; and

e) Report to the PPRC/4 meeting the action taken pursuant to the previous paragraphs.

2.15 In order to follow up on Conclusion PPRC/3-5, a Strategic Planning Table has been developed, as shown in **Appendix A** to this working paper, for States to report to the Secretariat their plans concerning this conclusion.

2.16 The list of current ATFM Focal Points is shown in **Appendix B** to this working paper, which the Meeting is requested to update as necessary.

2.17 The Action Plan and ATFM working programme, which the Meeting is requested to analyse, is included in **Appendix C** to this working paper.

2.18 Moreover, the Meeting is requested to update the data of the ATFM survey contained in **Appendix D** to this working paper.

3. **Suggested action:**

3.1 The Meeting is invited to:

a) review this working paper and make comments or propose actions as it may deem advisable to expedite ATFM implementation;

b) complete the Strategic Planning Table shown in Appendix A to this working paper;

c) update the information requested in Appendix B to this working paper; and

d) update the ATFM Action Plan and the data of the ATFM survey included in Appendices C and D to this working paper.

- - - - -

APPENDIX A

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	11/2015				N/A	1st Trim/2015			04/2015 02/2016	11/2016	02/2016		OK	
2- Bilateral Letters of Agreement with appropriate ATFM procedures without impacting on safety	04/2016					2nd Sem/2016			1st Trim/2016	10/2015	05/2016			
3- Implementation of Flow Control Positions or Units (FMPs/FMUs)	2nd Sem/2016 SABE				unified ACC	2016			06/2016		12/2015		OK	

Note: If your State has already implemented ATFM, place only the date foreseen for compliance 2.

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
ARGENTINA*	Héctor Luis Sánchez Jefe de Departamento Registro y Estadísticas Dirección Proyectos de Navegación Aérea Administración Nacional de Aviación Civil (ANAC) Tel: +54 11 5941-3000, Ext. 69773 E-mail: hsanchez@anac.gov.ar	Víctor Marcelo de Virgilio Jefe del Departamento Gestión del Espacio Aéreo Tel.: +5411 5789 8400, Ext 68454 E-mail: dsna@faa.mil.ar
BOLIVIA (Plurinational State of) / **BOLIVIA (Estado Plurinacional de)***	ATCO Daniel Bustamante Leyton Dirección General de Aeronáutica Civil (DGAC) Inspector ATM/SAR Cel.: +59 1 7220-1865 E-mail: dbustamante@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
BRAZIL / BRASIL*	TCel Luiz Roberto Barbosa Medeiros Centro de Gerenciamento e Navegação Aérea – CGNA Chefe Geral Tel.: +55 21 2101-6531 Cel.: +55 21 99499-1658 E-mail: medeiros@cgna.gov.br Cap José Airton Patricio Centro de Gerenciamento e Navegação Aérea – CGNA Oficial ATM Tel.: +55 21 2101-6448 Cel.: +55 21 98554-4425 E-mail: patriciojap@cgna.gov.br	Gerente Nacional – GNAC Tel.: +55 21 2101-6409 E-mail: gnac@cgna.gov.br Gerente Nacional de Fluxo – GNAF Tel.: +55 21 2101-6546 E-mail: grt@cgna.gov.br Gerencias Regionais – GER Tel.: +55 21 9949-6492 / +55 21 2101 98554 3598 E-mail: gr1@cgna.gov.br / gr2@cgna.gov.br
CHILE*	Jorge Caro Gálvez Dirección General de Aeronáutica Civil Dirección de Aeródromos y Servicios Aeronáuticos (DASA) Subdepartamento de Servicios de Tránsito Oficina ATFM Tel.: +56 2 2836-4022 E-mail: jcarog@dgac.gob.cl Patricio Zelada Ulloa FMP ACC Santiago Tel.: +56 2 22836-4017 Cel.: +56 9158-1865 E-mail: pzelada@dgac.gob.cl	Supervisor ATC de turno ACC Santiago Cel.: +56 9 158-1865

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
COLOMBIA*	Mauricio José Corredor Monroy Unidad Administrativa Especial de Aeronáutica Civil (UAEAC) Jefe Grupo ATFCM Tel.: + 57 1 296-2628 E-mail: mauricio.corredor@aerocivil.gov.co Skype: mauricio.jose.corredor.monroy	Unidad de Gestión de Afluencia de Tránsito Aéreo y Capacidad – FCMU COL (DE 1100 A 0500 UTC) E-mail: cfmu.dsna@aerocivil.gov.co Please copy to / Favor copiar a: E-mail: cns.fmu@aerocivil.gov.co aga.fmu@aerocivil.gov.co Telefonos: MANAGER: +57 1 296-2656 CNS: +57 1 296-2100 AGA: +57 1 296-2200 DEPARTURE FLOW MANAGEMENT: +571 296-24 06 Celular: MANAGER: +57 317 517-10 46 AGA: +57 317 363- 88 11 CNS: +57 318 330-73 74

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
ECUADOR	Marcelo Valencia Taco Responsable ATM Nacional Tel. Ofic.: +593 2 2947400 Ext.: 4084 Móvil: +593 9 79097292 E-mail: marcelo_valencia@aviacioncivil.gob.ec marcelovalencia_qa@hotmail.com *(particular)* mailto:pedro.plaza@dgac.gob.ec	Supervisor Centro de Control: DDI: +593 4 228-2851 REDDIG: 5060/5051/5052/ 5053 Vicente Navarrete Sarasti vicente.navarrete@aviacioncivil.gob.ec Tel.: 5932 294-7400 - Ext. 4086 mailto:pedro.plaza@dgac.gob.ec
FR.GUIANA / GUYANA FRANCESA		
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
PANAMÁ*	Gabriel Bernard Administración de Aeronáutica Civil Tel.: +50 7 6511-0730 +50 7 315-9871 E-mail: gabibernard24@hotmail.com	Focal point in control center / Punto focal en el Centro de Control: Supervisor: +507 315-9871 Emergency focal point / Punto focal de Emergencia: Flor Silvera Tel.: +50 7 6982-1215/ 315-9846 E-mail: fsilvera@aeronautica.gob.pa
PARAGUAY*	Lic. Esp. Enrique Espinoza Dirección Nacional de Aeronáutica Civl (DINAC) Gerencia Unidad Central de Tráfico Aéreo – CFMU (Unidad Normativa) Edificio Ministerio de Defensa Nacional, 6to. piso Tel./Fax: +595 21 210-628 Cel.: +595 982 348-350 E-mail: cfmu@dinac.gov.py cfmu.py@gmail.commailto:abethancourt@aeronautica.gob.pa	1-Unidad de Flujo (SGAS) – FMU SGAS (Unidad Operativa). Current responsible / Responsable actual de dicha Unidad: ATCO. Sindulfo Ibarrola Tel./Fax: +595 21 758-5110 Cel.: +595 983 35-0815 E-mail: fmu.asu@gmail.com Mariano Roque Alonso-Paraguay Edificio del Nuevo Centro de Control Unificado. 2-Unidad de Flujo (SGES) – FMU SGES (Unidad Operativa). Current responsable / Responsable actual de dicha Unidad: Lic. ATCO. David Gavilán Tel./Fax: +595 64 420-842 Cel.: +595 983 830-404 E-mail: daga_978@hotmail.com Minga Guazú-Paraguay Aeropuerto Internacional Guaraní. E-mail: mailto:abethancourt@aeronautica.gob.pa

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
PERÚ*	Martha Soto Ansaldi Dirección General de Aeronáutica Civil (DGAC) Inspector de Navegación Aérea Tel.: +51 1 615-7881 Cel.: +51 997367352 E-mail: msoto@mtc.gob.pe	Renzo Gallegos Begazo Coordinador del Centro de Control LIMA - ACC Corporación Peruana de Aeropuertos y Aviación Comercial (CORPAC S.A) Tel.: +51 1 230 1153 E-mail: rgallegos@corpac.gob.pe
SURINAME	Mr. Soeknandan Andre Chief Air Traffic Services Tel.: +59 7 530-433 Cel.: +59 7 7 216-108 Fax: +59 7 491-743 E-mail : atmcnslvd@yahoo.com	Mr. Gaddum R Coordinator ATS Supervisor ATS unit Zanderij Phone Operations : +597 032-5208 Cel: +597 853-1681 E-mail: g.rperez@hotmail.com
URUGUAY*	C.T.A. Luis A. Otheguy Dirección Nacional de Aeronáutica Civil (DINACIA) Director de Tránsito Aéreo (ATM) Tel.: +598 2 604-0408, Int. 5105 Fax: +598 2 604-0408, Int. 5155 Cel: +598 99592113 E-mail: dta@dinacia.gub.uy	ACC Montevideo Tel. directo: +598 260-00619 REDDIG

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) E-mail: Maruska Borges Rodríguez Unidad FMU/ATFM/Venezuela ATC/Aeropuerto Int´l. Maiquetía Tel.: +582 12 303-4532 (13:00 – 21:00 UTC) Cel: +584 14 299-3995 (H24) E-mail: ma.borges@inac.gob.ve

* Updated SAM/IG/15 / Actualizados en la SAM/IG/15

APPENDIX C

ACTION PLAN FOR THE IMPLEMENTATION OF ATFM AT SAM AIRPORTS

A: AIRPORT				
Task description	**Start**	**End**	**Responsible party (designate individual or organisation in charge)**	**Remarks**
1. Airport demand/capacity (runway capacity) analysis				The ATFM survey provides information on this subject
1.1 Carry out Calculation of Airport and Airspace Capacity of main airports by States. 1. Identify personnel available in each State to carry out calculation of runway capacity. 2. Identify which airports already have calculation of runway capacity. 3. Identify, prioritize and report what airports require calculation of runway capacity. 4. Carry out calculation of runway capacity. 5. Update calculation of runway capacity as necessary. 6. Identify airports exceeding runway capacity.	Sep 2009	SAM/IG/16	States	**VALID** States that have not yet done so are encouraged to submit the required information. Item 4 has to be presented to SAM/IG/14. Peru updated runway capacity calculations regarding Jorge Chavez International Airport (see Appendix A to the Report on Agenda Item 5, SAM/IG/14).
1.2 Notify the airports where periods exist where the demand is greater than existing capacity including simulations, if necessary, by States.	Sep/Oct 2009	SAM/IG/16	States	**VALID** Brazil, Paraguay and Peru presented the data. Assure States that the aim of these tasks is to share information.
1.3 Determine operational factors affecting airport demand and capacity to optimise utilisation of existing capacity, including simulations, is necessary.	Sep/Oct 2009	SAM/IG/16	States	**VALID** Brazil, Paraguay and Peru presented the data.
1.4 Notify airport capacity in terms of aircraft operation in main airports.	SAM/IG/12	SAM/IG/16	States	**VALID** Updated in each SAM/IG.

A: AIRPORT				
Task description	**Start**	**End**	**Responsible party (designate individual or organisation in charge)**	**Remarks**
2. Coordination with the ATM community				
2.1 Promote seminars to the ATFM community considering the CDM concept for the implementation of ATFM and initiate corresponding coordination. 1. Consider the implementation of a CDM process in main airports. 2. States will notify airports with this process.	SAM/IG/11	SAM/IG/16	States	**VALID** ATFM operational concept, ATFM manual and ATFM roadmap will be taken into account.
3. Infrastructure and database				
3.2 Establish a data base format to be used for automation.	SAM/IG/11	SAM/IG/17	States	**VALID**
4. Policy, standards, and procedures				
4.7 Provide AIP/AIC published information on ATFM to SAM/IG meetings.	SAM/IG/11		States	**PERMANENT** Information will be presented in each SAM/IG The format of the publication is in Doc 8196
5. Training				
5.1 Establish courses on: a) FMP/FMU training b) Airport CMD training	SAM/IG/13	SAM/IG/15	States Project RLA/06/901	The participation of an AGA and an ATFM expert is expected for the A-CMD course
5.2 Draft ATFM training plans.	SAM/IG/11	SAM/IG/15	States	
5. 3 Train FMP/FMU/ATC personnel for the application of ATFM measures in airports.	SAM/IG/11	SAM/IG/15	States	**VALID**
5.4 Monitor the training of the ATM community.	SAM/IG/11	SAM/IG/15	States	**VALID**

A: AIRPORT				
Task description	**Start**	**End**	**Responsible party (designate individual or organisation in charge)**	**Remarks**
6. Final implementation decision				
6.1 Review factors that may affect the implementation decision.			States	**VALID**
6.2 Declare the pre-operational implementation in the defined area.			States	**VALID**
6.3 Declare the final operational implementation in the defined area.			States	**VALID**
7. Monitor system performance				
7.1 Develop performance indicators according to CDM manual.	SAM/IG/11	SAM/IG/16	States	**VALID** 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	SAM/IG/16	States	**VALID**
7.3 Develop and implement an ATFM post-implementation follow-up programme at airports.	SAM/IG/13	SAM/IG/16	States	**VALID**

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**
1. Airspace demand and capacity analysis				**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	**PERMANENT** States that have not yet done so are encouraged to submit the required information. Uruguay trained 30 controllers in runway and ATC sectors calculation. Argentina will present it at SAM/IG/16.
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	**VALID**
1.3 Update, as necessary, the estimate airspace ATC sector capacity calculation and their terminal areas at States' major airports	SAM/IG/14	SAM/IG/15	States	**VALID**
1.4. Identify airspace sectors where demand sometimes exceeds capacity, including simulations by the States, if necessary.	Dec 2014	SAM/IG/16	States	**VALID** Brazil has presented their studies.
1.5 Identify factors affecting airspace demand and capacity in order to optimise the use of existing capacity, including simulations if necessary.	Dec 2014	SAM/IG/16	States	**VALID** Brazil has presented their studies.
1.6 Present conclusions on the existing airspace capacity.	Dec 2014	SAM/IG/16	States	**VALID** Brazil has presented their studies.
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	**VALID**

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**
2.1. Pre-tactic and mainly tactic ATFM measures that guarantee an optimal sequencing of arrivals and departures, avoiding application of radar vectors and holdings.	SAM/IG/14	SAM/IG/16	SAM/ATFM/IG States	**VALID**
3. Coordination with the ATM community				
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	Permanent	States	**VALID**
4. Infrastructure and database				
~~4.1 The ATFM/IG Group will present the basic requirements for a regional automated system~~.	~~SAM/IG/12~~	~~SAM/IG/13~~	~~ATFM/IG~~	~~**FINALIZED**~~ ~~Brazil has already implemented. Colombia presented their preliminary requirements~~
4.2 Coordinate implementation activities with the Automation Group.	SAM/IG/13	SAM/IG/17	ATFM/IG	**VALID** Depends on information of 4.1.
5. Policy, standards, and procedures				
5.1 Develop a regional strategy and framework for the implementation of centralized ATFM units.	2008	2016	Project RLA/06/901	**VALID**
5.2 Develop template/contents for operational agreements between centralized ATFM units for interregional demand/capacity balancing.	2008	2016	Project RLA/06/901	**VALID**

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**
5.3 Define common elements of situational awareness between FMUs; • common traffic displays; • common weather displays (Internet); • communications (teleconferences, web): • IATA ITOP tool	2008	SAM/IG/16	States	**PERMANENT**
5.5 Apply a national strategy to implement the use of a flexible upper airspace (FUA), on the basis or the Guideline for the Implementation of the Flexible Use of Airspace (FUA) Concept in the South American Region: • evaluate the management processes in the use of the airspace; • improve the current domestic airspace management to adjust dynamic changes to the traffic flows in tactical stages; • 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; • 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.	2008	2016	States	**VALID**
6. Training				
6.1 Train personnel in the sector capacity calculation and subjects related to ATFM for the airspace.	Dec 2014	SAM/IG/16	States	**PERMANENT**
6.2 Prepare plans and ATFM training material	Dec 2014	SAM/IG/15	States	**VALID**
6.3 Conduct training of personnel involved.	Dec 2014	SAM/IG/16	States	**VALID**

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**
7. Final implementation decision				
7.1 Analyse factors affecting the implementation decision.	N/A		States	**VALID**
7.2 Declare pre-operational implementation in the area defined.	N/A		States	**VALID**
7.3 Declare definitive operational implementation in the area defined.	N/A		States	**VALID**
8. Monitor system performance				
8.1 Draft performance indicators	2010		Project RLA/06/901	**VALID**
8.2 Develop an indicators follow-up programme.	TBD		States	**VALID**

ATFM SURVEY

ATFM SURVEY	ARG (ANAC)	ARG (DGCTA)	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**	**NO**	**YES**	**YES**	**YES**	**NO**			**NO**	**YES**	**NO**		**NO**	**YES**	**Argentina (ANAC)**: Discussions will be held with the air traffic service provider (DGCTA) on the possibility of implementing an FMU. **Argentina (DGCTA)**: They have not been established. The hiring of an ICAO expert has been foreseen for ATFM implementation (initially one FMU). **Brazil**: Brazil has already implemented ATFM (CGNA). **Chile**: On 1 November 2012, the FMP was established at the Santiago ACC, which is the unit responsible for that position. **Colombia:** Yes. Air traffic flow and capacity management units – FCMU COLOMBIA. **Ecuador**: To date, for various reasons, it has not been possible to implement FMU/FMPM units; however, according to the new policy of the Air Navigation Directorate concerning integration and harmonisation with ICAO regional requirements, the project for the creation of a national ATFM unit (FMU) under the administration of DNA will start in the coming months. It will be responsible for conducting a study and analysis to determine runway and ATC sector capacity at the main airports of the country, and for providing training to ATC personnel of the other aerodromes where local flow management units (FMP) need to be implemented. **Panama**: Will implement new tool for SLOT allotment in a FMP. **Paraguay**: Paraguay has a central air traffic flow unit (C.F.M.U.), which will be responsible for implementing the ATFM system in Paraguay. **Peru**: The State is in the process of implementing ATFM through an FMU. **Uruguay**: 3 trained staff. **Venezuela**: Yes, one FMU in Maiquetía

ATFM SURVEY	ARG (ANAC)	ARG (DGCTA)	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	REMARKS
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**	**NO**	**YES**	**YES**	**YES**	**NO**			**NO**	**YES**	**YES**		**YES**	**YES**	**Argentina (ANAC):** ANAC has few personnel trained in ATFM and none has received a capacity calculation course. **Argentina (DGCTA)**: Yes, the staff is performing other functions. **Brazil:** Brazil has personnel trained in ATFM, which have been updated since the implementation. **Chile**: We have an ATFM specialist and 6 runway and ATC sector calculation experts. Only 2 persons are currently performing functions related to ATFM implementation. **Colombia**: Yes, although better personnel management is required in this area. **Ecuador**: Ecuador informs that they are proceeding to train personnel. **Panama**: Experienced ATCOs are trained to work on ACC FMP. **Paraguay**: We have personnel trained in ATFM implementation, who are responsible for the regulatory (CFMU) and operational aspects (FMU-SGAS and FMU-SGES) of this activity. **Peru**: We have personnel available, but they do not perform ATFM functions. **Venezuela**: We have personnel trained in the methodology adopted from Brazil, which is now being applied in the Bolivarian Republic of Venezuela.

ATFM SURVEY	ARG (ANAC)	ARG (DGCTA)	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	REMARKS
3. If NO trained personnel is available, indicate how many persons are available to receive training in the ATFM implementation plan.		**8**	**4**	**-**	**1**	**-**	**4**			**6**	**5**	**7**		**4**	**11**	**Argentina (ANAC)**: ANAC should designate personnel for this function. **Argentina (DGCTA)**: 8 persons are available. **Chile**: Although there is an ATC specialist in ATFM, more are needed, since implementation requires a work team. We currently have 3 persons available for training. **Colombia**: At least five (5) persons are needed. **Ecuador**: For the purpose being sought, it would be advisable to train at least 4 persons. **Paraguay**: Initially, 3 persons. Pending training would include: (1) Advanced course for ATS sector capacity calculation instructors; (1) ATFM management course; (3) runway capacity calculation (airport).
4. How many airports in your State/country have runway capacity calculation? List the main ones. If the answer is NONE, indicate which airports you think require such calculations.	**1**	**1**	**3**	**48**	**8**	**1**	**2**			**1**	**2**	**2**		**0**	**5**	**Argentina (ANAC)**: Aeroparque has runway capacity calculation. **Argentina (DGCTA)**: Aeroparque. Capacity calculations are being considered for the aerodromes of Ezeiza, Cordoba, and San Fernando. **Brazil**: Brazil submitted its list at the last SAM/IG meeting, but will send an updated runway capacity calculation list. **Chile**: Currently, we have runway capacity calculations for: SCEL, SCFA, SCCF, SCIE, and SCTE. **Colombia**: Only one. Calculations are required for eleven (11) international and five (5) domestic airports. **Ecuador**: Quito, Guayaquil. **Paraguay**: International airports of "Silvio Pettirossi" in Asunción and "Guaraní" in Minga Guazú. **Peru**: Two airports, only with updated data. **Uruguay**: SUMU, and SULS. **Venezuela:** SVMI, SVMC, SVMG, SVBC, and SVPR

ATFM SURVEY	ARG (ANAC)	ARG (DGCTA)	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**	**0**	**1**	**0**	**0**	**0**			**0**	**0**	**1**		**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, I think 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	**X**	**X**		**SBGR 47**	**SCEL 40**	**70 SKBO**	**29**				**SGAS 23**	**SPJC 32**		**X**	**SVMI 34**	
Apron capacity	**X**	**X**	**X**		**X**		**X**				**X**			**X**	**X**	
ATC sector capacity	**X**	**X**	**10**		**9**	**30 arrivals SKBO**	**X**				**8 (number N)**	**TMA 8**		**X**	**Sector 1 26**	

ATFM SURVEY	ARG (ANAC)	ARG (DGCTA)	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	REMARKS
			Sector 2 FIR BS												**Sector 2 28**	
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	**X**	**20**	**0**	**15**	**15**	**4**	**1**			**2**	**1**	**8**		**20**	**2**	
Apron capacity	**X**	**N/A**	**X**	**X**	**X**		**X**			**X**	**X**	**X**		**X**	**0**	
ATS sector capacity	**X**	**X**	**1**	**13**	**4**	**4**	**1**			**2**	**1**	**8**		**20**	**2**	
8. List the airports in which demand exceeds runway capacity, and indicate the operational factors affecting them.																**Argentina (ANAC)**: We do not have this information. **Argentina (DGCTA)**: We do not have the necessary information. **Brazil**: There are no airports in Brazil that operate above their capacity, since critical airports have been coordinated by CGNA. However, the airport of SBGR sometimes requires ATFM capacity/demand balancing measures, since its aprons and gates are being expanded; however, when the reduction of ATC separation minima proposed for final approach is completed, its capacity will increase. **Chile:** At peak hours, SCEL exceeds its declared capacity (40 acft/h). The factors that cause this imbalance are: airline schedules; operation of CAT A and B aircraft; adverse weather conditions (low visibility-wind); and maintenance of the manoeuvering area. **Colombia**: El Dorado; factors involved: capacity of arrival/departure sectors; fleet mix; runway distribution; DEP parallel approaches.

ATFM SURVEY	ARG (ANAC)	ARG (DGCTA)	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN	REMARKS
																Ecuador: Quito airport: routes need to be redefined; ATC sectors and airspaces, in general, need to be improved and optimised; the airport administrator must improve planning, coordination and assignment of aircraft stands. Finally and most importantly, an ATFM unit needs to be implemented to recommend policies for infrastructure and/or equipment improvement and optimisation of available resources to meet the demand of operators without neglecting safety. Airports of Cuenca, Shell Mera, Manta, Coca, and Nueva Loja: demand exceeds runway capacity, since their runway, taxiway, apron, and terminal infrastructure is too small. Likewise, a comprehensive analysis of ATC units and sectors is required in terms of equipment and ATS routes, based on ATFM management criteria. International airport of Guayaquil: as in the case of the airport of the capital city, all ATS routes, airspaces and ATC sectors must be redefined and analysed in a comprehensive manner, based on ATFM, PBN, RNAV/RNP navigation, and other criteria. **Panama**: Will expand taxiway and build South Terminal. **Paraguay**: At present, in the ASU FIR, there are no operational indicators that affect our capacity to meet demand. **Peru:** Operational factors involved: apron management and design affect personnel capacity and skill. **Uruguay**: SULS in summer. Factors: runway capacity, apron capacity, and airport capacity. **Venezuela**: International airport of Maiquetía: Capacity is affected by 45° angles of runway 10/28, departures and arrivals of aircraft of different wing spans, runway threshold displacement.