



Agenda Item 2: Implementation of the Air Traffic Flow Management (ATFM) and Collaborative Decision-Making (CDM)

Follow-up on progress in the implementation of ATFM

(Presented by the Secretariat)

| SUMMARY | |
|--|--|
| The purpose of this working paper is to update the status of ATFM implementation in the Region and assess the progress of States that have not yet implemented ATFM in the ACC units under their jurisdiction. | |
| REFERENCES: | |
| - SAM/IG Meetings | |
| ICAO strategic objectives: | <i>A - Safety.</i> <i>B - Air navigation capacity and efficiency.</i> <i>E - Environmental protection.</i> |

1. Background

1.1 In the SAM Region, in 2013, 57% of States have made the corresponding runway capacity calculations. In 2014, Ecuador performed runway capacity calculations corresponding to Quito and Guayaquil, remaining Guyana, Panama, Suriname and Uruguay pending to complete these calculations. The progress registered to date is of 7% compared to 2013.

1.2 Regarding the implementation of flow management units or positions, in 2013 35% of States comply with this goal. The following table illustrates the evolution of the implementation in 2013, no progress having been registered in the implementation of flow management units during 2014.

Percentage of States that have done runway and ATC sector capacity calculations

| | ARG | BOL | BRA | CHI | COL | FGI | ECU | GUY | PAN | PAR | PER | SUR | URU | VEN |
|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2013 57% | YES | YES | YES | YES | YES | N/D | NO | NO | NO | YES | YES | NO | NO | YES |
| | ARG | BOL | BRA | CHI | COL | FGY | ECU | GUY | PAN | PAR | PER | SUR | URU | VEN |
| 2014 64% | YES | YES | YES | YES | YES | N/D | YES | NO | NO | YES | YES | NO | NO | YES |

1.3 Only two States, Ecuador and Peru, answered the ATFM survey as part of the ATFM Implementation Plan designed during the SAM/IG/11 Meeting, thus being not possible to tabulate the information. The survey is included as **Appendix A** to this working paper.

2. **Analysis**

2.1 During RAAC/13 Meeting (Colombia, December 2013), Civil Aviation Authorities of the Region committed, by the Bogota Declaration, to achieve the goal of having at least one FMU or FMP implemented at ACC by maximum 2016. In such sense, best efforts should be made to fulfill the implementation, in order to be on time to achieve the goal.

2.2 The lack of implementation of flow management units in some ACCs of the Region, will severely impact the capacity and management of air traffic, taking into account the increase in demand expected due to the Soccer World Cup by mid-2014, and the Olympic Games in 2016, to be held in Brazil.

2.3 The increase in demand has a ripple effect that will affect many States, causing delays and consequent losses in users, along with a heavy workload in ATC units in the absence of sufficient management units for due balance between capacity and demand.

2.4 **Appendix B** shows a list of focal points for ATFM issues updated with the latest available data. It is required that these focal points are included in the daily information messages sent, in order to enable the availability of reliable and authorized information of the situation in each State.

2.5 Within the updating procedures, the current ATFM Action Plan should be reviewed and completed with the information of progress made by States towards the development of tasks as well as with the responsible party in charge of its fulfillment. Said plan is contained in **Appendix C** to this working paper.

3. **Suggested action:**

3.1 The Meeting is invited to:

- a) complete the survey shown in Appendix A to this working paper by States having not yet answered it;
- b) update information of ATFM focal points and add focal points of States missing in Appendix B to this working paper; and
- c) review and complete the ATFM Action Plan shown in Appendix C to this working paper.

APPENDIX A

**SURVEY ADDRESSED TO SAM STATES AS PART OF THE ATFM
IMPLEMENTATION PLAN**

Country /State: _____ Airport: _____

Person responding the survey: _____

Date: _____

1. Regarding the SAM ATFM implementation plan, indicate if FMU/FMP units have been established. If the answer is YES, indicate the responsible unit. If the answer is NO, indicate plans for ATFM implementation based on regional requirements.

2. Indicate if you have personnel trained in ATFM implementation and if such personnel is currently performing the corresponding functions in accordance with the implementation plan.

3. If NO trained personnel is available, indicate the number of people available for receiving training in the ATFM implementation plan.

4. In your State/country, how many airports have runway capacity calculation? List the most important ones. If your answer is NONE, indicate what airports have runway capacity calculation. List the most important ones. If your answer is NONE, indicate what airports you consider require such calculation.

5. In your State/country, how many airports have apron capacity calculation? List the most important ones. If your answer is NONE, which airports to you consider require such calculation?

6. In your State/country, what airports have ATS sector capacity calculation? List the most important ones. If your answer is NONE, what airports you think require it?

7. For the airport that you consider of greatest importance, indicate the following in terms of the number of operations per hour:

- Runway capacity: _____
- Apron capacity: _____
- ATS sector capacity: _____

8. For the airport that you consider of greatest importance, indicate the number of trained people in a position to calculate, in terms of operations per hour:

- Runway capacity: _____
- Apron capacity: _____
- ATS sector capacity _____

9. List the airports in which demand exceeds runway capacity and indicate the operational factors affecting them.

APÉNDICE B / APPENDIX B**LISTA DE CONTACTOS PARA PUNTOS FOCALES ATFM Y DE LAS UNIDADES ATFM ESTABLECIDAS /****LIST OF CONTACTS FOR ATFM FOCAL POINTS AND ESTABLISHED ATFM UNITS**

| Estado/ State | Responsable ATFM-Nombre, FMU/ACC, correo electrónico, teléfono / ATFM responsible-Name, MU/ACC, e-mail, telephone |
|----------------------------|---|
| ARGENTINA | <p>Víctor Marcelo de Virgilio Jefe de Departamento Gestión del Espacio Aéreo Tel.: +5411 4317-6000, Ext 15130 Cel: E-mail: marcelodevirgilio4@gmail.com.ar</p> <p>Carlos Omar Torres Administración Nacional de Aeronáutica Civil (ANAC) Jefe Departamento Programación Técnica Tel: +54 11 5941-3000, Ext. 69193 E-mail: ctorres@anac.gov.ar</p> |
| BOLIVIA | <p>Miguel Castillo Jefe de la Unidad ATM/SAR Tel.: +591 2211-4465 Cel.: +591 7204-6745 E-mail: mcastillo@dgac.gob.bo</p> <p>Daniel Bustamante Inspector ATM/SAR Tel.: Cel.: 591-7220-1865 E-mail: dbustamante@dgac.gob.bo</p> |
| BRASIL / BRAZIL | <p>Centro de Gerenciamento e Navegação Aérea – CGNA Ten. Cel. Ricardo de Brito e Maj James Short Rio de Janeiro – Brasil Tel/Fax: +5521 2101-6747 e +5521 2101-6409 E-mail: ricardo@cgna.gov.br, e shortjss@cgna.gov.br</p> <p>1-CGNA – Salão Operacional. Gerente Nacional de Fluxo Rio de Janeiro - Brasil Tel/Fax: +5521 2101-6449 E-mail: dcc@cgna.gov.br</p> |

| Estado/ State | Responsable ATFM-Nombre, FMU/ACC, correo electrónico, teléfono / ATFM responsible-Name, MU/ACC, e-mail, telephone |
|--|---|
| CHILE | <p>Mauricio Silva Cañete FMP ACC Santiago Tel.: +562 22836-4017 Cel.: E-mail: msilvac@dgac.gob.cl</p> <p>Patricio Zelada Ulloa FMP ACCS Santiago Tel.: +562 22836-4017 Cel.: E-mail: pzelada@dgac.gob.cl</p> |
| COLOMBIA | <p>Mauricio José Corredor Monroy Centro Nacional de Aeronavegación – Aeropuerto Internacional El Dorado Bogotá-Colombia E-mail: mauricio.corredor@aerocivil.gov.co</p> |
| ECUADOR | <p>Pedro William Plaza Muñoz Tel.: +5932 228-2851 Cel.: +5939 9819-9007 E-mail: pedro.plaza@dgac.gob.ec</p> <p>Galo Efraín Cevallos Alomía Tel.: +5932 254-9814 Cel.: +5939 9251-6822 E-mail: ams_transitoaereo@dgac.gob.ec</p> <p>Luis Marcelo Valencia Taco DGAC Quito Tel.: +5932 254-9814 Cel.: +5939 98350 6507 E-mail: marcelo_valencia@aviacioncivil.gob.ec</p> |
| GUYANA FRANCESA / FR.GUIANA | |
| GUYANA | |

| Estado/ State | Responsable ATFM-Nombre, FMU/ACC, correo electrónico, teléfono / ATFM responsible-Name, MU/ACC, e-mail, telephone |
|------------------|--|
| PANAMÁ | <p>Arsenio Bethancourt</p> <p>Tel.:</p> <p>Cel.:</p> <p>E-mail: abethancourt@aeronautica.gob.pa</p> |
| PARAGUAY | <p>Sindulfo Ibarrola Aquino FMU SGAS Tel.:</p> <p>Cel.:</p> <p>E-mail: fm.asu@gmail.com</p> <p>La Unidad Central de Tráfico Aéreo – CFMU Lic. Esp. Enrique Espinoza Tel/Fax: +595-2121-0628 E-mail: cfmu@dinac.gov.py; cfmu.py@gmail.com</p> <p>Unidad de Flujo (SGES) – FMU SGES (Unidad Operativa) Lic. ATCO David Gavilán Tel/Fax: +595 6442-0815 E-mail: daga_978@hotmail.com</p> |
| PERÚ | <p>José Mondragón Hernández Inspector de Navegación Aérea Dirección General de Aeronáutica Civil Tel.: +511 615-7881 Cel.: +51 99044-0563 E-mail: jmondragon@mtc.gob.pe</p> <p>Responsable Área de los Servicios de Tránsito Aéreo: Sr. José Carlos Gómez Herrera Aeropuerto Intl. Jorge Chávez Lima-Perú Tel/Fax: +511 414-1380 E-mail: jcgomezh@corpac.gob.pe</p> <p>Responsable actual de la Unidad: Supervisor ATC Renzo Gallegos Begazo Aeropuerto Intl. Jorge Chávez Lima-Perú Tel/Fax: +511 414-1380 E-mail: rgallegos@corpac.gob.pe rgbegazo@hotmail.com</p> |

| Estado/ State | Responsable ATFM-Nombre, FMU/ACC, correo electrónico, teléfono / ATFM responsible-Name, MU/ACC, e-mail, telephone |
|--------------------------|--|
| SURINAME | |
| URUGUAY | <p>Gustavo Turcatti Jefe Departamento Operativo Tel.: +5982 604 0408 Int.5111 Cel.: E-mail: dota@dinacia.gub.uy</p> <p>Adriana San German Jefe Depto Técnico Tel.: +5982 604 0408, Int. 5109 Cel.: E-mail: dtta@dinacia.gub.uy</p> |
| VENEZUELA | <p>Maribel Mayora Vallenilla Responsable ATFM</p> <p>Wilfredo Gil Jefe ACC Tel.: +58212 355-2912 Cel.: E-mail: atfm@inac.gob.ve</p> <p>Maruska Borges R. Unidad FMU/ATFM/Venezuela ATC/Aeropuerto Intl.Maiquetía Experto ATFM Tel.: +58212 355-2912 Cel.: +(58414 299- 3995 E-mail: ma.borges@inac.gob.ve</p> |

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 | | | | |
| 1.9 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. Identify airports exceeding runway capacity. | Sep 2009 | SAM/IG/14 | States | <p style="text-align: center;">Valid</p> States that have not yet done so are encouraged to submit the required information. Item 4 has to be presented to SAM/IG/14. |
| 1.10 Notify the airports where periods exist where the demand is greater than existing capacity including simulations, if necessary, by States. | Sep/Oct 2009 | Permanent | States | <p style="text-align: center;">Permanent</p> Brazil, Paraguay and Peru presented the data. Assure States that the aim of these tasks is to share information. |
| 1.11 Determine operational factors affecting airport demand and capacity to optimise utilisation of existing capacity, including simulations, is necessary. | Sep/Oct 2009 | Permanent | States | <p style="text-align: center;">Valid</p> Brazil, Paraguay and Peru presented the data. |
| 1.13 Notify airport capacity in terms of aircraft operation in main airports. | SAM/IG/12 | | States | <p style="text-align: center;">Permanent</p> 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 | | | | |
| 2.3 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 | Permanent | 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 | | States | Valid |
| 4. Policy, standards, and procedures | | | | |
| 4.7 Ask States to submit AIP/AIC published information on ATFM. 1. Standardize this information. 2. Update the information. | SAM/IG/11 | | States | Permanent Information will be presented in each SAM/IG |
| 5. Training | | | | |
| 5.1 Draft ATFM training plans and submit them. | SAM/IG/11 | | States | Permanent |
| 5.2 Establish courses on: a) Training in FMP/FMU b) Training in airport CMD | SAM/IG/14 | | Project RLA/06/901 | |
| 5.6 Train FMP/FMU staff for application of ATFM measures for airports. | SAM/IG/11 | | States | Permanent |
| 5.7 Monitor the training of the ATM community. | SAM/IG/11 | | States | Permanent |

| 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/14 | States | Valid States will present an information paper concerning the performance indicators. |
| 7.2 Develop a performance indicators follow-up programme | SAM/IG/11 | SAM/IG/15 | States | Valid |
| 7.3 Develop and implement an ATFM post-implementation follow-up programme at airports. | SAM/IG/13 | SAM/IG/15 | 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 | | | | |
| 1.2 Carry out ATC sectors calculation. 1. Identify personnel available in each State to carry out calculation of air space capacity. | SAM/IG/11 | SAM/IG/13 | States | Permanent States that have not yet done so are encouraged to submit the required information. |

| 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. 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. | | | | |
| 1.4 Carry out the States estimate airspace ATC sector capacity calculation and their terminal areas at the major airports. | Sep 2009 | SAM/IG/13 | States | Valid |
| 1.5. Identify airspace sectors where demand sometimes exceeds capacity, including simulations by the States, if necessary. | TBD | | States | Permanent 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. | TBD | | States | Permanent Brazil has presented their studies. |
| 1.7 Present conclusions on the existing airspace capacity. | TBD | | States | Permanente Brazil has presented their studies. |
| 2. Coordination with the ATM community | | | | |
| 2.2 Promote seminars to the ATFM community considering the airspace capacity concept for the implementation of ATFM and initiate corresponding coordination. | SAM/IG/11 | | States | Valid |
| 3. Infrastructure and database | | | | |
| 3.1 The ATFM/IG Group will present the basic requirements for a regional automated system. | SAM/IG/12 | SAM/IG/13 | ATFM/IG | Valid Brazil has already implemented. Colombia presented their preliminary requirements. |

| 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 |
| 3.2 Coordinate implementation activities with the Automation Group. | SAM/IG/13 | | ATFM/IG | Valid Depends on information of 3.1. |
| 4. Policy, standards, and procedures | TBD | Jun 2013 | States | |
| 4.2 Develop a regional strategy and framework for the implementation of Centralized ATFM units. | 2008 | 2014 | Project RLA/06/901 | Valid |
| 4.3 Develop template/contents for operational agreements between Centralized ATFM units for interregional demand/capacity balancing. | 2008 | 2014 | Project RLA/06/901 | Valid |
| 4.4 Define common elements of situational awareness between FMUs; <ul style="list-style-type: none"> • common traffic displays; • common weather displays (Internet); • communications (teleconferences, web); | 2008 | | States | Permanent |
| 4.5 Review the regional ATFM implementation roadmap to be used by States as FMU/FMP implementation guide. | SAM/IG/11 | Permanent | States | Valid |
| 4.6 Develop a regional strategy to implement the use of a flexible upper airspace (FUA): <ul style="list-style-type: none"> • 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; | 2008 | 2015 | 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 |
| <ul style="list-style-type: none"> 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. | | | | |
| 5. Training | TBD | TBD | | |
| 5.3 Train personnel in the sector capacity calculation and subjects related to ATFM for the airspace. | TBD | TBD | States | Permanent |
| 5.4 Prepare plans and ATFM training material | TBD | TBD | States | Valid |
| 5.5 Conduct training of personnel involved. | TBD | TBD | States | Valid |
| 6. Final implementation decision | | | | |
| 6.1 Analyse factors affecting the implementation decision. | N/A | | States | Valid |
| 6.2 Declare pre-operational implementation in the area defined. | N/A | | States | Valid |
| 6.3 Declare definitive operational implementation in the area defined. | N/A | | States | Valid |
| 7. Monitor system performance | | | | |
| 7.1 Draft performance indicators | 2010 | | Project RLA/06/901 | Valid |
| 7.2 Develop an indicators follow-up programme. | TBD | | States | Valid |
