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**International Civil Aviation Organization
South American Regional Office**

**FIRST WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP (SAM/IG/1)
REGIONAL PROJECT RLA/06/901**

Lima, Peru, 21 to 25 April 2008

Agenda Item 2: Implementation of air traffic flow management (ATFM) in the SAM Region.

**ACTION PLAN FOR THE IMPLEMENTATION OF STRATEGIC AND TACTICAL
MEASURES AT AIRPORTS**

(Presented by the Secretariat)

Summary

This working paper proposes to the meeting that the activities set forth in Phase 1 of the programme for the effective implementation of the strategic ATFM at airports at the regional level be started in order to improve airspace capacity and operational efficiency.

References:

- Regional Project RLA/06/901 – Assistance for the implementation of a regional ATM system, taking into account the ATM operational concept and CNS technology support.
- Report of the third meeting of the ATFM Task Force (ATFM/TF/3).

1 Background

1.1 In keeping with the work programme of the GREPECAS ATM/CNS Subgroup, ATM Committee, the Third meeting of the ATFM Task Force (ATFM/TF/3) was held in San Andrés Island, Colombia, from 19 to 22 July 2007. The meeting was held following the Second Seminar on Air Traffic Flow Management in the CAR/SAM Regions, held the day before.

1.2 In order for the States, Territories, and International Organizations to take relevant action to begin the gradual implementation of ATFM, the aforementioned meeting was presented with model action plans to improve aerodrome operations, as established in the CAR/SAM ATFM Operational Concept (CONOPS ATFM CAR/SAM). Basically, there are two model action plans that propose strategic and tactical actions pursuant to the ATFM implementation concepts included in the CAR/SAM ATFM CONOPS.

2 Discussion

2.1 The operational concept sets forth a simple implementation strategy. The implementation strategy should be developed gradually in order to ensure maximum use of available capacity and enable all stakeholders to gain sufficient experience.

2.2 The experience gained in other Regions and by some CAR/SAM States enables the States/Territories, and International Organizations to apply basic ATFM procedures at the airports without the immediate need for a centralised ATFM unit. This unit will require extensive studies to define the operational concepts, system requirements, and institutional aspects for its implementation in the CAR/SAM Regions.

Airports

2.3 According to the CAR/SAM ATFM CONOPS, the adoption of strategic ATFM measures at the airports located in low traffic density airspaces prevents congestion and saturation of such airspaces. Another aspect to be considered is that the adoption of strategic ATFM measures at the airports is simpler to apply, since it requires data collection of flight plans programmed (RPL, Official Airline Guide (OAG), etc.), and reduces the use of existing computer tools and infrastructure. In this stage, the assignment of airport slots to operators should also take into account non-scheduled flights.

2.4 The document also establishes that strategic ATFM measures at the airports should be initially limited to the use of airport slots and should be aimed at ensuring a balance between scheduled flight demand and airport capacity. The application of slots would ensure hourly distribution of flights at the airports.

2.5 ATFM measures at the airports should evolve towards the inclusion of non-scheduled flights in demand/capacity balancing procedures. Tactical ATFM measures at the airports would still be of little complexity. However, they would require an expansion of the data collection programme for non-scheduled flights to include said FPLs. In addition to using the computer tools and existing infrastructure, efficient means of communication should be established among the operators of aircraft conducting non-scheduled flights.

2.6 Strategic ATFM measures at airports are expected to be sufficient to solve specific issues at airports with a significant demand for scheduled flights, while tactical ATFM measures would be mainly applied at airports with a significant number of non-regular flights.

Airspace

2.7 The CAR/SAM ATFM CONOPS stipulates that, based on the experience gained in airport demand and capacity management, the States, Territories, and International Organizations should consider conducting an analysis of airspace capacity, mainly in areas where airport ATFM measures are not enough to resolve airspace congestion and saturation issues. The adoption of these measures would not be complicated, since it would only include its impact on the establishment of airport slots. It would require, however, the use of more sophisticated computer or tools to identify congestion or saturation in control sectors.

2.8 If demand/capacity balancing is not possible through the application of strategic airspace measures, the States/Territories, and International Organizations should resort to more complex solutions. This involves tactical ATFM measures related to the airspace, which include dynamic procedures applicable to flights that will take place in the next few hours. The adoption of tactical airspace measures would be of high complexity, since it would include the application of slots, based on a continuous analysis of the demand/capacity ratio. This analysis would require the use of computer and infrastructure tools in addition to those applied in the previous phase, to permit slot assignment and to avoid overloading of airspace sectors and airports.

2.9 It is expected that tactical ATFM measures will only be applied to airspace in the States/Territories, and International Organizations that have a clear operational requirement, taking into account that the complexity of applying tactical measures in the airspace implies a significant investment in automated systems, data bases, telecommunication systems, and human resource training.

Strategy for the implementation of centralized ATFM in the CAR/SAM Regions

2.10 GREPECAS/13 considered that two scenarios should be taken into account: CAR and SAM, which could be modified as progress is made in the development of the operational concept and implementation plans. The strategy consists in harmoniously developing a CAR and SAM inter-regional ATFM system.

2.11 It also deemed necessary that procedures during the implementation process should be carried out in a harmonious way among ATFM units, to avoid jeopardising safety. This implies the establishment of a regional and inter-regional strategy that will facilitate and harmonise the whole implementation process. The ATFM Task Force will meet these planning and harmonisation objectives. For implementation purposes, two scenarios will be established based on the operational requirements and characteristics of each CAR and SAM Region. Consideration was also given to the establishment of two ATFM implementation groups, one for each Region.

2.12 Furthermore, it agreed that the operational implementation should be carried out in phases, pursuant to Doc 9854 – Global air traffic management operational concept, in order to permit a gradual implementation and to gain the necessary capabilities for proper implementation. Consequently, it agreed to the following:

a) Action Plan for the Implementation of Strategic Measures at Airports

- Tentative pre-operational implementation date: Dec 2008
- Tentative definitive implementation date: Dec 2009

b) Action Plan for the Implementation of Tactical Measures at Airports

- Tentative pre-operational implementation date: Dec. 2009
- Tentative definitive implementation date: Dec. 2010

2.13 In view of the above, the ATFM/TF/3 meeting approved the model action plan for the implementation of the strategic ATFM at airports shown in **Appendix A** to this working paper, and agreed that CAR/SAM States, Territories, and International Organizations, as well as the Working Groups of the ATFM Task Force could use it as a reference to begin the ATFM implementation process. It also drafted a model action plan for the second implementation stage, involving tactical ATFM implementation at airports, as shown in **Appendix B** to this paper.

3 **Suggested action**

3.1 The meeting is invited to:

- a) Take note of the information provided;
- b) Begin the activities established for Phase 1 of the programme for effective regional implementation of the strategic ATFM at airports, following the model action plan shown in Appendix A to this working paper, in order to enhance airspace capacity and operational efficiency;
- c) Take note of the model action plan for effective regional implementation of tactical ATFM at airports, shown in Appendix B to this working paper; and
- d) Define the course of action to be followed in order to begin the activities.

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APPENDIX A

Model Action Plan for ATFM progressive implementation

Stage 1 – Model Action Plan for the implementation of airport strategic measures – GPI 06			
Task description	Start	End	Responsible party (designate person or office in charge)
1. Analysis of system capacity	Sep 2007	Jun 2008	
1.1 Develop methodology proposal for estimating airport capacity	Sep 2007	Dec 2007	ATFM/AC/WG
1.2 Establish/adopt methodology for estimating airport capacity	Sep 2007	Feb 2008	States, Territories and International Organizations (S/T/IO)
1.3 Define data collection plans for flight intentions (RPL, Official Airline Guide (OAG), Flight Forms, etc)	Sep 2007	Feb 2008	S/T/IO
1.4 Identify airports in which periods exist where the demand is greater than the capacity and estimate capacity of these airports	Sep 2007	Jun 2008	S/T/IO
1.5 Determine operational factors affecting demand and capacity to optimize utilization of existing capacity, including simulations, if necessary	Sep 2007	Jun 2008	S/T/IO
2. Coordinate with industry, national and international organizations	Sep 2007	Jun 2008	S/T/IO
2.1 Coordinate applicable procedures with users, including implementation date	Sep 2007	Jun 2008	S/T/IO
2.2 Report to the ATFM Task Force	N/A	ATMC/6	S/T/IO
3. Infrastructure and database	Sep 2007	Sep 2008	S/T/IO
3.1 Evaluate data base requirements and if such were the case, harmonize the same	Sep 2007	Apr 2008	SI/WG
3.2 Determine information technology and infrastructure tools required	Sep 2007	Dec 2007	S/T/IO
3.3 Implement the required information technology and infrastructure tools	Dec 2007	Sep 2008	S/T/IO

4. Policies, standards, and procedures	Sep 2007	Sep 2008	S/T/IO
4.1 Develop ATFM policies, including those related to procedures for the distribution of airport slots to operators conducting regular flights, based on airport saturation/congestion forecasts, and taking into account the objectives and principles established in Caribbean/South American ATFM Concept of Operations (CAR/SAM CONOPS ATFM).	Sep 2007	Jun 2008	S/T/IO
4.2 Develop the FMU or FMP procedural manual model	Sep 2007	Dec 2007	DOC/WG
4.3 Develop the FMU or FMP procedural manual	Jun 2008	Sep 2008	S/T/IO
4.4 Develop the AIC/NOTAM Supplement model	Sep 2007	Jun 2008	ATFM/TF
4.5 Publish the necessary AIP Supplements/NOTAMs	Jun 2008	Sep 2008	S/T/IO
5. Training	Sep 2007	Dec 2008	S/T/IO
5.1 Develop ATFM training material model	Sep 2007	Mar 2008	DOC/WG
5.2 Prepare plans and ATFM training material	Sep 2007	Jun 2008	S/T/IO
5.3 Provide training to the personnel involved	Jun 2008	Dec 2008	S/T/IO
6. Final implementation decision	N/A	Dec 2009	S/T/IO
6.1 Review the factors affecting the implementation decision	N/A	Sep 2008	S/T/IO
6.2 Declare the pre-operational implementation within the defined area	N/A	Sep 2008	S/T/IO
6.3 Declare the definitive pre-operational implementation within a defined area	N/A	Dec 2009	S/T/IO
7. Monitor system performance	Sep 2008	Dec 2009	S/T/IO
7.1 Prepare the program for post-implementation follow-up of airport strategic ATFM	Sep 2008	Dec 2008	S/T/IO
7.2 Implement the program for post-implementation follow-up of airport strategic	Dec 2008	Dec 2009	S/T/IO
			S/T/IO
Tentative date for pre-operational implementation	N/A	Dec 2008	S/T/IO
Tentative date for definitive implementation	N/A	Dec 2009	

APPENDIX B

Model Action Plan for Airport Tactical measures implementation – GPI 06			
Task description	Start	End	Responsible party (designate person or office in charge)
1. System capacity analysis	Sep 2008	Jun 2009	
1.1 Establish/adopt airport capacity estimating methodology, in case it was not defined in the implementation phase of airport strategic measures	Sep 2008	Dec 2008	States, Territories and International Organizations (S/T/IO)
1.2 Define data collection plans for flight intentions (RPL, Official Airline Guide (OAG), Flight Forms, etc)	Sep 2008	Dec 2008	S/T/IO
1.3 Identify airports in which there are periods where demand is greater than the capacity and strategic management is inadequate (airports with significant demand for non-scheduled flights), and estimate the capacity of these airports	Sep 2008	Jun 2009	S/T/IO
1.4 Determine operational factors affecting demand and capacity to optimize utilization of existing capacity, including simulations, if necessary	Sep 2008	Jun 2009	S/T/IO
2. Coordinate with industry, national and international organisations	Sep 2008	Jun 2009	S/T/IO
2.1 Coordinate applicable procedures with users, including implementation date	Sep 2008	Jun 2009	S/T/IO
2.2 Report to the ATFM Task Force	N/A	ATMC/6	S/T/IO
3. Infrastructure and database	Sep 2008	Sep 2009	S/T/IO
3.1 Determine required information technology and infrastructure tools	Sep 2008	Dec 2008	S/T/IO
3.2 Implement required information technology and infrastructure tools	Dec 2008	Sep 2009	S/T/IO
3.3 Coordinate at a regional level the data base forms applied, with a view to facilitating its use in the Centralized ATFM.	Dec 2008	Sep 2009	S/T/IO
4. Policies, standards, and procedures	Sep 2008	Sep 2009	S/T/IO
4.1 Develop ATFM policies, including those related to procedures for the distribution of airport slots to operators conducting scheduled and non-scheduled flights, based on airport saturation/congestion forecasts, and taking into account the objectives and principles established in Caribbean/South American ATFM Concept of Operations (CAR/SAM	Sep 2008	Jun 2009	S/T/IO

CONOPS ATFM).			
4.2 Identify necessary changes, and if needed, modify the FMU or FMP procedures manual model	Sep 2008	Sep 2009	DOC/WG
4.3 Insert the necessary changes in the FMU or FMP procedural manual	Sep 2008	Jun 2009	S/T/IO
4.4 Develop the AIC/NOTAM Supplement model	Sep 2008	Jun 2009	ATFM-WG
4.5 Publish the necessary AIP Supplements/NOTAMs	Jun 2009	Sep 2009	S/T/IO
5. Training	Sep 2008	Dec 2009	S/T/IO
5.1 Identify necessary changes, and if needed, modify the ATFM training material model	Sep 2008	Mar 2009	DOC/WG
5.2 Insert necessary changes in the ATFM training material	Sep 2008	Jun 2009	S/T/IO
5.3 Prepare ATFM training plans and material	Sep 2008	Jun 2009	S/T/IO
5.4 Provide training to the personnel involved	Jun 2009	Dec 2009	S/T/IO
6. Final implementation decision	N/A	Dec 2010	S/T/IO
6.1 Review the factors that affect the implementation decision	N/A	Sep 2009	S/T/IO
6.2 Declare the pre-operational implementation within the defined area	N/A	Sep 2009	S/T/IO
6.3 Declare the definitive operational implementation within the defined area	N/A	Dec 2010	S/T/IO
7. Monitor system performance	Sep 2009	Dec 2010	S/T/IO
7.1 Prepare the program for post-implementation follow-up of airport tactical measures	Sep 2009	Dec 2009	S/T/IO
7.2 Implement the program for post-implementation follow-up of airport tactical measures	Dec 2009	Dec 2010	S/T/IO
Tentative date for pre-operational implementation	N/A	Dec 2009	
Tentative date for definitive implementation	N/A	Dec 2010	

Note:

S/T/OI	States, Territories and International Organizations
ATFM/AC/WG	Work Group on Airport Capacity and ATC Capacity
ATFM/DOC/WG	Work Group on Documentation
ATFM/TF	ATFM Task Force
ATFM/SI/WG	Work Group on Information Systems