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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.

GENERAL ATFM ASPECTS OF PROJECT RLA/06/901

(Presented by the Secretariat)

Summary

This working paper contains the background of air traffic flow management (ATFM) which has been incorporated into Project RLA/06/901. It also identifies the expected ATFM results upon completion of the project and submits to the consideration of the meeting the initial activities for ATFM planning and implementation in the SAM Region.

References:

- Document 9750 – Global Air Navigation Plan (third edition, 2007).
- Project RLA/06/901.

1 Background

1.1 According to the revised Global Air Navigation Plan (Doc. 9750), the planning of the global ATM system will focus on the Global Plan Initiatives (GPIs). Project RLA/06/901 intends, among other things, to assist the States and participating organizations in the application of the air traffic flow management (ATFM) concept, based on initiative six (6)--ATFM--of the global plan.

1.2 The ultimate objective of ATFM is to reach a balance between demand and air traffic service capacity and airport acceptance rates, through the application of strategic, pre-tactical, and tactical measures aimed at organizing and managing traffic flows in such a way that all the traffic that needs to be organized at any time and in any airspace or aerodrome is consistent with the capacity of the air traffic management system.

2 **Discussion**

2.1 GREPECAS has considered that early implementation of ATFM will ensure an optimum air traffic flow to or through certain areas during periods in which traffic demand exceeds capacity, generating frequent and continuous traffic delays, or when it is clear that the demand for traffic forecasts will exceed available capacity. In such cases, the appropriate ATM units, after consulting with aircraft operators, should consider the application of measures to improve the use of existing system capacity and to draft plans for increasing the capacity to meet actual or projected demand. Plans for increasing capacity should be well structured and drafted in a collaborative way.

2.2 Several States and air traffic service providers have implemented or are in the process of implementing automated technologies, and guidelines need to be provided for the application of a safe, evolutionary, and harmonious regional integration methodology, according to ICAO guidelines and the guidelines of GREPECAS and its contributory bodies. To this end, GREPECAS agreed to recommend a regional strategy for the integration of ATM automated systems, the development of which requires assistance and professional support through this project.

2.3 ATFM coordination requires the use of speech communications and automated methods to ensure full exchange of information. Both methods provide a common analytical support for the broadest situational awareness functions, such as the collection of all available data concerning capacity, traffic flows, points of congestion, peak hours, etc.

Situation foreseen upon completion of the project

2.4 Upon completion of project RLA/06/901, the implementation of air traffic flow management (ATFM) will have been completed at regional level, and demand/capacity balancing measures, commonly known as air traffic flow management (ATFM), will have been applied wherever necessary at the regional level to improve airspace capacity and operational efficiency - (GPI 6). This will enhance airspace capacity and operational efficiency through the implementation of strategic, pre-tactical, and tactical measures aimed at organizing and managing air traffic flows in such a way that all the traffic being managed at a given point in time and in a given airspace or aerodrome is consistent with the capacity of the ATM system.

2.5 In order to comply with the above, the project has identified some initial activities that will permit the harmonious implementation of the various activities.

3 **Suggested action**

3.1 The meeting is invited to:

- a) Take note of the information provided in this working paper; and
- b) When implementing air traffic flow management, take into account the ATFM activities shown in **Appendix A** to this paper.

APPENDIX A

PROJECT RLA/06/901 OBJECTIVE N° 1

<p>1.2 Regional implementation of air traffic flow management (ATFM) wherever necessary to improve airspace capacity and operational efficiency -(GPI 6)</p>	<p>1.2.1 Obtain and complete the information, learning about the current status in the participating States and organisations with respect to:</p> <ul style="list-style-type: none"> a) The methods for estimating airport and ATC capacity; b) ATFM procedures for the following phases: <ul style="list-style-type: none"> ✓ Airport strategic ✓ Airport tactical ✓ Airspace strategic ✓ Airspace tactical <p>Start-up date: week 12 Estimated duration: 1 week</p>	<p>ATM, AGA, RO</p>
	<p>1.2.2 Obtain and complete the information, learning about the current status in the participating States and organisations of the electronic databases required for the ATFM evolutionary phases, in relation to the following aspects:</p> <ul style="list-style-type: none"> a) Flow management data processing and display: <ul style="list-style-type: none"> ✓ Flight planning and flight plan processing data (FPL, RPL, etc.); ✓ Airspace and airport structure data; ✓ Display of the situation in the air; ✓ Automatic messages to support decision-making (access to SLOTS, reporting of delays, alternate routes, etc.); ✓ Monitoring of the operational status of air navigation infrastructure; ✓ Capacity of the airport acceptance regime (AAR); ✓ ATC capacity; ✓ Air traffic demand; ✓ Airspace structure and ATS route network; ✓ Radio navigation aids, radar, etc.; 	<p>ATM, AIS, AGA, CNS, MET, RO</p>

	<ul style="list-style-type: none"> ✓ Aircraft performance. b) Surveillance system data (SSR, ADS, etc.); c) AIS/MAP (mapping, ATFM advisories, AIRAC updates, etc.); d) Meteorological information (MET); e) Data for historical and statistical analysis of air operations, meteorology, etc.; f) Communication systems in support of collaborative decision-making (CDM) with: <ul style="list-style-type: none"> ✓ Other centralised ATFM systems; ✓ Other FMUs and/or FMPs and/or ATS units; ✓ Operators and users (airlines, general aviation, State aircraft, etc.); ✓ Airport authorities; ✓ Meteorological authorities; ✓ Aeronautical information services. g) The necessary communication requirements to effectively support centralised air traffic flow management in its linkage with: <ul style="list-style-type: none"> ✓ Other centralised ATFM systems; ✓ FMUs, FMPs and/or ATS units involved; ✓ Operators and users; ✓ Airport authorities; ✓ Meteorological authorities; ✓ Aeronautical information services; ✓ The transmission of ADS and radar data to the ATFM. <p>Start-up date: week 13 Estimated duration: 1 week</p>	
	<p>1.2.3 Develop model action plans based on the information processed under 1.2.1 and 1.2.2, to be used by the participating States and organisations for the implementation of:</p> <ul style="list-style-type: none"> a) Airport strategic ATFM; b) Airport tactical ATFM; c) Airspace strategic ATFM; and d) Airspace tactical ATFM. <p>Start-up date: week 14 Estimated duration: 4 weeks</p>	<p>ATM, RO</p>

	<p>1.2.4 Develop guidelines, based on the information processed in the preceding activities, to be used by the participating States and organisations for the implementation of flow management units (FMUs) or flow management positions (FMPs) and for the incorporation of new procedures applicable to FMUs or FMPs concerning:</p> <ul style="list-style-type: none"> a) Airport strategic ATFM; b) Airport tactical ATFM; c) Airspace strategic ATFM; and d) Airspace tactical ATFM. <p>Start-up date: week 18 Estimated duration: 4 weeks</p>	<p>ATM, RO</p>
	<p>1.2.5 Develop a model action plan, based on the material processed in the preceding activities, for the implementation of the centralised ATFM in each of the CAR and SAM Regions.</p> <p>Start-up date: week 22 Estimated duration: 1 week</p>	<p>ATM, RO</p>
	<p>1.2.6 Draft a working paper to support the submittal of the action plan for the implementation of the centralised ATFM for consideration and approval.</p> <p>Start-up date: week 23 Estimated duration: 1 week</p>	<p>ATM,RO</p>
	<p>1.2.7 Submit the working paper introducing the plan to the consideration of the corresponding GREPECAS bodies through the established channels.</p> <p>Start-up date: to be determined Estimated duration:</p>	<p>RO</p>
	<p>1.2.8 Make the necessary adjustments or changes to the plan based on the comments generated, and update the proposal and the working paper for consideration and approval by GREPECAS.</p> <p>Start-up date: to be determined Estimated duration:</p>	<p>ATM, RO</p>

	<p>1.2.9 Process, edit, and distribute the plan, introducing the amendments that GREPECAS may have made in the course of its approval.</p> <p>Start-up date: to be determined Estimated duration:</p>	<p>RO</p>
	<p>1.2.10 Identify and develop the necessary material for the implementation of the centralised ATFM, in coordination with the participating States and organisations, taking into account environmental protection practices and procedures, and including the following aspects:</p> <ul style="list-style-type: none"> a) Cost-benefit analysis; b) Definition of data collection plans; c) Determination of the required automated systems, including performance parameters and the necessary tests and assessments; d) Updating of the CAR/SAM ATFM operational concept, if necessary; e) Drafting of a handbook on common operational procedures for air traffic flow management, including, <i>inter alia</i>, the following aspects: <ul style="list-style-type: none"> ✓ Procedures applicable to the strategic, pre-tactical, and tactical phases; ✓ Procedures for coordination and teleconferencing with FMUs/FMPs, ATS units, ATFM, users, airports, and other organisations involved; ✓ Collaborative decision-making procedures; ✓ Methodology to determine airport and ATS capacity; ✓ Procedure to keep ATFM databases permanently updated; ✓ Procedures for pilots and ATC; ✓ Required ATFM messages. f) Models of the required AICs/NOTAMs and AIP supplements; g) ATFM document formats to be included in the CAR/SAM web; h) Amendment to Doc 7030, if necessary; i) Amendments to the corresponding letters of agreement; j) ATC simulations; 	<p>ATM, CNS, AIS, RO</p>

	<p>k) Harmonisation of applicable ANP requirements; l) ATFM training; m) Contingency plans.</p> <p>Start-up date: to be determined Estimated duration:</p>	
	<p>1.2.11 Provide assistance to the participating States and organisations for the execution of the ATFM implementation action plan, including the programming of the necessary coordination and training activities.</p> <p>Start-up date: to be determined Estimated duration:</p>	<p>ATM, OR</p>
	<p>1.2.12 Draft a final report of the activities carried out, including relevant recommendations.</p> <p>Start-up date: to be determined Estimated duration:</p>	<p>ATM</p>