International Civil Aviation Organization
South American Regional Office
Sixth Meeting of Air Navigation and Flight Safety Directors of the SAM Region (ANSF/6)
(Lima, Peru, 24 to 26 June 2019)

ANFS/6-WP/06
28/05/19

Agenda Item 1: Follow up of air navigation national plans implementation

FOLLOW-UP TO ATFM IMPLEMENTATION GOALS

(Presented by the Secretariat)

SUMMARY

This working paper presents the status of implementation of ATFM in the Region.

References:

- GREPECAS/18 meeting report
- SAM/IG meeting reports
- RACC meeting reports

ICAO strategic objectives:	*B – Air navigation capacity and efficiency* *E – Environmental protection*

1. Introduction

1.1 During the last ten years, indicators in the South American Region have shown growth in air operations and transported passengers. In several SAM States, this sustained growth has not been accompanied by an expansion in airport infrastructure and air navigation services. This adverse scenario affects efforts to increase air connectivity as a means for social and economic development in the Region.

1.2 ICAO has envisaged the ATFM service to meet possible imbalances between the capacity of air navigation services and facilities and the demand for aircraft operations requiring these facilities.

1.3 The objective of ATFM is to optimise capacity utilisation so that State and Regional industry growth does not come to a halt while expanding air navigation services and facilities, without neglecting safety.

1.4 Pursuant to GREPECAS Decisions 16/45 and 16/47 for the SAM Region, the ATFM Programme was structured in association to Project B1 - Improve demand-capacity balancing (DCB). Following is a description of the progress made by this Project.

2. **Analysis**

Project B1 "Improve the balance between demand and capacity (DCB"

2.1 Achievements made in relation to ATFM implementation are not yet consolidated in the Region, despite the efforts made by States and Project RLA/06/901, drafting and developing orientation material and delivering ATFM training courses. Out of 14 States/Territories, FMP/FMUs 4 of them had not yet been implemented (Bolivia, French Guiana, Guyana, and Suriname). Accordingly, 71% implementation in the Region is still valid.

2.2 Argentina, Brazil, and Colombia are submitting operational information at the CADENA – CANSO coordination sessions every Friday. Panama, Peru, and Venezuela are participating as observers in the sessions.

2.3 Since early 2019, recurrent implementation of flow control measures had been observed in several FIRs of the Region. This situation is discussed in detail in paragraph 2.6 below.

2.4 The ATFM CONOPS is in its last stage of revision. A presentation was made of the English draft version, reviewed by the Secretariat (NACC and SAM Offices). The Meeting contributed with a comments and suggestions for improvements. A deadline of 7 June 2019 was set for receiving more contributions related to the text.

2.5 The updating of guidance material for the SAM Regional ATFM service, which includes the development of an ATFM service manual and messages format according to Doc. 9971, as well as the Guide and procedures for runway, airport and ATC sector capacity calculation, is rescheduled for September 2019.

Improper use of flow control

2.6 The improper use of NOTAMs for "flow control" in the form of an ATFM *pseudo measure*, not related to a user impact assessment and not aiming at temporary application, had dropped in 2017 and 2018. During the first quarter of 2019, this practice was resumed in several FIRs of the Region, mostly due to contingencies or CNS system limitations, which, in turn, significantly limited ATS capacity. These NOTAMs generated a domino effect in adjacent States and significantly affected airlines.

2.7 The SAM/IG/23 took note on the importance of the application of ATFM communications proceedings according to Chapter 6 of Doc 9971, which clearly defines the conditions for the use of NOTAM or SUP AIR information, as well as the distribution of the ATFM –ADP Dairy Plan and use of ATFM terminology. In the link below the report of the SAM/IG/23 including detailed discussions on this topic can be download.

https://www.icao.int/SAM/Pages/ES/MeetingsDocumentation_EN.aspx?m=2019-06901-SAMIG23

2.8 Doc 9971 item 4.2.1 specifies that, in general, ATFM measures should only be applied during periods in which demand exceeds capacity, and not on a routine basis. Frequent application of ATFM measures means that there is an imbalance between ATM capacity and traffic demand, which should be resolved in a more strategic manner.

ATFM for managing contingencies and/or special events

2.9 Colombia presented a proposal to promote an action plan to develop a cross-border ATFM concept for the SAM Region, through a planned and gradual implementation process. It was noted that Ecuador, Peru, and Panama (observer) had expressed interest in this activity at the SAMIG/22 meeting.

2.10 The capabilities of the Harmony system of Colombia were presented. This system offered flow predictability and demand anticipation, even in selected airspace sectors, which should be used to support ATS contingencies, since it would avoid the use of inconsistent 'flow control' measures.

2.11 The Meeting agreed that the cross-border ATFM proposal was interesting for purposes of creating an ATS contingency response and support network in the SAM Region. Colombia, Ecuador, Peru, and Panama would continue working on the initiative.

2.12 In turn, during SAM/IG/23 Brazil explained the South American Regional Management initiative, which involved CGNA personnel and systems, and had proven successful for international coordination among Brazil, Argentina, and Uruguay at the G-20 Summit held in Buenos Aires. ATFM measures were adopted and the countries involved did not experience imbalances as a result of the event, once the required measures had been implemented within the Brazilian airspace. In this regard, CGNA capacity to manage ATFM contingency response in the Region was recognised.

2.13 Based on the above, the SAM/IG/23 formulated the following conclusion:

CONCLUSION SAM/IG/23-01	**Implementation of ATFM measures in accordance with Doc 9971, and coordination in case of ATS contingencies**
That: SAM States prioritise the provision of the following for their ATS and ATFM services: a) Strengthen the functions of the flow management positions (FMPs) or units (FMUs), providing them with the prerogatives for coordinating and supporting ATS services; b) Define the profile and skills of the ATFM staff, and provide programmes for initial and recurrent training for the Staff; c) Mandate that ATFM measures are strictly based on the Doc. 9971 to face situations generating capacity/demand imbalance, especially in cases of ATS capacity degradation caused by unforeseen events; d) Establish instructions and supervision H24, ensuring that ATFM measures has the less impact for international flights, and all ATFM measures are agreed with adjacent ATFM or ACC dependencies; e) Mandate the correct application of the ATFM process, from the ATM planning phase to the phase of operations analysis and performance control; and f) Exclude the use of NOTAM of Flow Control to deal with situations of demand/capacity unbalance, with the only exception of the initial response that an ACC may require in the first 12 hours of ATS contingency.	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☒ Economic ☒ Environmental ☒ Technical/Operational

Why: To meet the provisions of ICAO Doc 9971 and the SARPs contained in Annex 11	
When: Immediately	**Status:** Adopted by SAM/IG/23
Who: ☒ Coordinators ☒ States ☒ ICAO Secretariat ☐ ICAO HQ ☒ Other: Users/Industry	

2.14 Brazil expressed its interest in cooperating with the States, offering ATFM training, and mentioned the course it would offer in CGNA in October 2019 for Ecuador and Panama.

3. **Conclusion**

3.1 In view of the above, States must foster the implementation of at least one ATFM position (FMP) per FIR, in order to balance demand and capacity of airspace and international aerodrome service, also taking into account the impact of meteorological events and/or temporary disruptions in air navigation services.

3.2 The update of the ATFM CONOPS is almost completed, and is scheduled an activity to the updating of Guidance documentation for Regional ATFM service.

3.3 Updated information with respect of the ATFM implementation activities are presented in the **Appendix** to this working paper.

4. **Suggested action**

The Meeting is invited to:

a) Take note and examine the information presented in this working paper;

b) request States support to compliance with Conclusion SAM/IG/23-01 and to avoid the implementation of flow control measures that affects users and impact of safety; and

c) recommend any other action it may deem appropriate.

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APPENDIX A

PROJECT B1 – IMPROVE DEMAND-CAPACITY BALANCING

SAM Region	**PROJECT DESCRIPTION (DP)**	DP N° B1	
Programme	**Project Title**	**Start**	**End**
Air traffic flow management (ATFM) *(Programme coordinator: ATM RO Fernando Hermoza Hubner)*	*Improve demand-capacity balancing* *Project coordinator: Nicolás Borovich (Argentina)*	2012	~~2019~~ 2021
Objective	Avoid overloading the ATC and airport systems, strengthening safety, taking into consideration 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	• % States that have calculated runway and ATC sector capacity • % States that have implemented ATFM in flow management units (FMUs) or flow management positions (FMPs)		

Strategy	Project activities define 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 runway and airspace capacity (ATC sector) calculation • ATFM 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 well 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	On-going 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 that have 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 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.

Training of personnel in strategic ATFM airspace measures	B0-NOPS	Project RLA/06/901		2019	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 instructors on runway and ATC sector capacity calculations was conducted in Lima. An ATFM seminar has been scheduled for June 2018 to address the proper implementation of ATFM measures.
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 are involved in other functions.
Updating of runway capacity calculations	B0-NOPS	Programme coordinator		2019	85% of States have updated runway capacity calculations. Guyana and Suriname are still lacking capacity calculations.
Updating of airspace (ATC sector) capacity calculations	B0-NOPS	Programme coordinator		2019	6 States of the Region have performed ATC sector capacity calculations prior to implementation, 5 have not performed the activity, and information is still to be received from 3 States.

Airspace monitoring processes Traffic demand analysis processes Standards on FMU/FMP procedures Implementation of preliminary ATFM measures Implementation of TMIs ATFM messaging Coordination of special events Civil/military exemptions and coordination	B0-NOPS	CGNA course Project RLA/06/901		November 2014 FINALISED	Completed on time
Replication of ATFM courses at national level	B0-NOPS	States		15/05/2015 FINALISED	The States replicated ATFM courses at national level.
ATFM measures during the Rio 2016 Olympic and Paralympic Games in Brazil	B0-NOPS	Brazil		13/05/2016 FINALISED	Details of the AIC of Brazil can be found in: http://publicacoes.decea.gov.br/?i=publicacao&id=4339
Status of implementation of ATFM	B0-NOPS	Programme coordinator		31/10/2016	By May 2017,71 % of the States had implemented ATFM.
Resources needed	Designation of experts for 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; mitigation measures are required**