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WORKING PAPER

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**Third North American, Central American and Caribbean Working Group (NACC/WG)
Air Traffic Flow Management (ATFM) Implementation Task Force Meeting
(ATFM/TF/3)**

ICAO NACC Regional Office, Mexico City, Mexico, 17 to 19 May 2022

Agenda Item 3: ATFM Performance Framework

CAR REGION AIR TRAFFIC FLOW MANAGEMENT (ATFM) PERFORMANCE

(Presented by the Secretariat)

EXECUTIVE SUMMARY	
This Working Paper presents basic information regarding Air Traffic Flow Management (ATFM) performance and a proposal to support the Regional ATFM performance decision making.	
Action:	Suggested actions are included in Section 7.
Strategic Objectives:	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency
References:	<ul style="list-style-type: none">• Doc 9854 - <i>Global Air Traffic Management Operational Concept</i>• Doc 9883 - <i>Manual on Global Performance of the Air Navigation System</i>• Doc 9971 - <i>Manual on Collaborative Air Traffic Flow Management (ATFM)</i>• ICAO APAC, Air Traffic Flow Management Post-Operations Analysis Recommended Framework

1. Introduction

1.1 Organizations in many industries have long since discovered the value of a Performance-Based Approach (PBA) to:

- improve the effectiveness of the day-to-day economic management of their business;
- channel efforts towards meeting stakeholder expectations and improving customer satisfaction; and
- manage change in a dynamic environment.

1.2 Likewise, the Air Traffic Management (ATM) industry can reap significant benefits from adopting a performance-based approach. For the best results, ATM community members need to cooperate in a performance-based manner. Members of the ATM community will have differing performance demands of the system. All will have either an explicit or implicit expectation of safety. Some will have explicit economic expectations, others efficiency and predictability. For optimum system performance, each of these sometimes competing expectations will need to be balanced.

2. Background

2.1 Demand and capacity balancing

2.1.1 Demand and capacity balancing will strategically evaluate system-wide traffic flows and aerodrome capacities to allow airspace users to determine when, where and how they operate, while mitigating conflicting needs for airspace and aerodrome capacity. This collaborative process will allow for the efficient management of the air traffic flow using information on system-wide air traffic flows, weather and assets.

2.1.2 Demand and capacity balancing will allow airspace users to optimize their participation in the ATM system while mitigating conflicting needs for airspace and aerodrome capacity. Collaborative usage of decision-making support tools will ensure the most efficient use of airspace resources, provide the greatest possible access to airspace resources, provide equitable access for all airspace users, accommodate user preferences and ensure that demand on an airspace resource will not exceed its capacity.

2.2 Purpose of ATFM

2.2.1 ATFM is an enabler of ATM efficiency and effectiveness. It contributes to the safety, efficiency, cost-effectiveness and environmental sustainability of an ATM system. It is also a major enabler of global interoperability in the air transport industry.

2.2.2 Initial implementations of ATFM were meant to manage air traffic demand where and when it exceeded capacity of air traffic control (ATC) services. The modern concept of ATFM has evolved to facilitate the safe, orderly and expeditious flow of air traffic by not only ensuring that ATC capacity is optimized and utilized to the maximum extent possible, but also allowing the traffic demand to be compatible with ATC capacity.

3. ATFM performance analysis

3.1 The evolution and enhancement of the ATM system will be directly related to the ATM community's ability to clearly define performance expectations, set a relevant performance framework, set achievable targets and implement change cost-effectively, based on capabilities at any particular time along the planning horizon.

3.2 Like any other component of the ATM system, ATFM must be evaluated to ensure that the ATM community's expectations of it are being met. The ATFM programme performance can be evaluated, generically, from three perspectives:

- a. ATFM programme effectiveness: How effective is the ATFM measure implemented in delivering the intended level of traffic?
- b. Compliance assessment: How well do stakeholders comply with the ATFM measure?
- c. Impact analysis: Who are impacted by the ATFM programme, and how?

4. ATFM Post-operations analysis

4.1 The final phase in the ATFM planning and management process is post-operations analysis. During this phase, an analytical process is carried out to measure, research and report on operational processes and activities. This process is the cornerstone in developing best practices and/or lessons learned that will further improve the operational processes and activities. It should cover all ATFM domains and all the external units relevant to an ATFM service.

4.2 The post-operations analysis should be carried out by evaluating the ATFM Daily Plan and its results. Reported issues and operational statistics should be evaluated and analysed in order to learn from experience and to make the appropriate adjustments and improvements in the future.

5. ATFM performance link with the CAR/SAM e-ANP Volume III project.

5.1 The CAR and SAM Regions are working collaboratively to develop the CAR/SAM e-ANP Volume III. The CAR/SAM e-ANP Volume III will bring a performance based framework for Air Navigation Services (ANS) planning and implementation in the CAR/SAM Regions.

5.2 As part of this process, the CAR/SAM Region identified the GANP KPI07 En-route ATFM delay, to integrate the ANS performance framework for these Regions.

6. Conclusions

6.1 Although the regionally agreed line to start with the measurement of the performance of the air navigation systems is clear, there are still points to be defined to support an objective verification of the performance of the ATFM systems. Important considerations to support the application of the performance framework for ATFM programmes must be addressed and shared regionally for an adequate completion of this process.

6.2 The ATFM Task Force must be the main advisor for the Region on this point and the forum for the regional unification of the criteria required by the ATM community.

6.3 The ICAO APAC Regional Office has developed and published a document that can provide guidance for the *AIR TRAFFIC FLOW MANAGEMENT POST-OPERATIONS ANALYSIS RECOMMENDED FRAMEWORK*.

<https://www.icao.int/APAC/Documents/edocs/Asia-Pacific%20ATFM%20Post%20Operations%20Analysis%20Recommended%20Framework.pdf>

7. Suggested actions

7.1 The Meeting is invited to:

- a. Take note and analyze the information provided in this working paper;
- b. Make recommendations regarding the collaboration mechanism to support the ATFM Performance measurement in the CAR/SAM Regions; and
- c. Suggest any other action deemed appropriate.

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