



ICAO

International Civil Aviation Organization  
North American, Central American and Caribbean Office

# **Air Traffic Flow Management (ATFM) Regional Implementation Meeting (ATFM/IMP)**

## **Final Report**

Mexico City, Mexico, 11 – 12 September 2019

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## **HISTORICAL**

### **ii.1 Place and Date of the Meeting**

The Air Traffic Flow Management (ATFM) Regional Implementation Meeting (ATFM/IMP) was held at the ICAO NACC Regional Office in Mexico City, Mexico, from 11 to 12 September 2019.

### **ii.2 Opening Ceremony**

The opening ceremony of the Workshop on Airport Collaborative Decision Making (ACDM) (9 – 10 September 2019) and the Regional Air Traffic Flow Management (ATFM) Implementation Meeting (11 – 12 September 2019) was made jointly on 9 September 2019.

Mr. Julio Siu, Deputy Regional Director of the North American, Central American and Caribbean (NACC) Regional Office of the International Civil Aviation Organization (ICAO), highlighted the importance of the ATFM to improve the NAM/CAR Regions air traffic flow control efficiency, its safety benefits, and the need of involvement of all stakeholders, such as authorities, service providers, industry and users. He also pointed out how the ACD-M concept is related with the ATFM major concept. He emphasized the ATFM implementation challenges and how the ICAO NACC Regional Office has been leading ATFM, from the approval of the ATFM renewed strategy, the ATFM Operational Concept (CONOPS) update, to the need of defining with this meeting a plan and tangible achievement with the implementation.

Then, Mr. Melvin Cintron, Regional Director of the ICAO NACC Regional Office thanked States, Territories and International Organizations for their work for ATFM implementation, urged the participants to take an active role and to demand from the NACC Regional Office the responsibility to assist States in achieving the established goals and formulating realistic and measurable deliverables. He welcomed the participants to the ICAO NACC Regional Office and finally officially opened the meeting.

### **ii.3 Officers of the Meeting**

The Meeting was chaired by Mr. Greg Byus, Manager, CDM and International Operations at the Federal Aviation Administration, Air Traffic Organization, NAS Operations Services, of United States. Mr. Eddian Méndez, Regional Officer, Air Traffic Management and Search and Rescue from the ICAO NACC Regional Office, served as the Secretary of the Meeting.

This Meeting offers important information that will serve as input to improve the regional ATFM implementation programmes.

#### **ii.4 Working Languages**

The working languages of the Meeting were English and Spanish. The working papers, information papers and report of the meeting were available to participants in both languages.

#### **ii.5 Schedule and Working Arrangements**

It was agreed that the working hours for the sessions of the meeting would be from 09:00 to 15:30 hours daily with adequate breaks. Ad hoc Groups were created during the Meeting to do further work on specific items of the Agenda.

#### **ii.6 Agenda**

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|-----------------------|--|
| <b>Agenda Item 1:</b> | <b>Adoption of the Provisional Agenda and Schedule</b>                 |
| <b>Agenda Item 2:</b> | <b>Why ATFM: Cause and Benefits</b>                                    |
| <b>Agenda Item 3:</b> | <b>ATFM Global Requirements and Regional Implementation</b>            |
| <b>Agenda Item 4:</b> | <b>ATFM/NOPS Concept of Operations</b>                                 |
| <b>Agenda Item 5:</b> | <b>Challenges for ATFM Implementation: Link with other ATS Systems</b> |
| <b>Agenda Item 6:</b> | <b>ATFM Solutions: Basic considerations for ATFM Tools</b>             |
| <b>Agenda Item 7:</b> | <b>ATFM Performance Measurement Methodology</b>                        |
| <b>Agenda Item 8:</b> | <b>Other Business</b>  |

## ii.7 Attendance

The Meeting was attended by 8 States from the CAR Region and 3 International Organizations, totalling 27 delegates as indicated in the list of participants.

## ii.8 List of Recommendations

The Meeting recorded its activities as Recommendations as follows:

**RECOMMENDATIONS:** Activities recommended to the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) ATFM Task Force.

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## ii.9 List of Working and Information Papers and Presentations

*Refer to the Meeting web page:*

<https://www.icao.int/NACC/Pages/meetings-2019-acdm.aspx>

### WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/01	1	Adoption of the Provisional Agenda and Schedule	12/07/19	Secretariat

### PRESENTATIONS

Number	Agenda Item	Title	Presented by
1	2	Why ATFM: Cause and Benefits	Secretariat
2	4	CAR/SAM Regions Air Traffic Flow Management Concept of Operation	Secretariat
3	5	ATFM Views – ACI	ACI



PRESENTATIONS			
Number	Agenda Item	Title	Presented by
4	3	ATFM Regional Implementation Progress in the CAR Region	Secretariat
5	2	Air Traffic Flow Management	United States
6	7	ATFM Quality Control and CDM	United States
7	6	Air Traffic Flow Management Requirements and Functions	United States
8	5	ATFM Weather Example	United States
9	6	ATFM Tools and Capabilities	CANSO
10	3	Presentations made by States	States

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**Agenda Item 1                      Adoption of the Provisional Agenda and Schedule**

1.1                      The Meeting elected Mr. Greg Byus, Manager, CDM and International Operations at the Federal Aviation Administration, Air Traffic Organization, NAS Operations Services, from United States as the Chairperson of the Meeting.

1.2                      The Secretariat presented WP/01 and invited the Meeting to approve the Provisional Agenda and Schedule. The Meeting approved the Agenda and Schedule as presented.

**Agenda Item 2                      Why ATFM: Cause and Benefits**

2.1                      Under this Agenda Item United States presented P/05 which provided an overview of ATFM, its development and link with Collaborative Decision Making (CDM). The presentation included information regarding the history of Air Traffic Management (ATM) and the evolution of ATFM in the United States. The goal of ATFM for United States is to minimize impact and maximize efficiency. The Air Traffic Control System Command Centre (ATCSCC) of United States has a direct impact in the global air transportation system and for the Caribbean in particular.

2.2                      The Secretariat presented P/01, to describe the current air traffic situation in the CAR Region, forecasted growth, and the importance of ATFM to improve safety and enhance efficiency of ATM and enable the continuous development of air transportation in the CAR Region.



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**Agenda Item 3                      ATFM Global Requirements and Regional Implementation**

3.1                      The Secretariat presented P/04 to provide an update of the ATFM regional implementation progress in the CAR Region.

3.2                      Activities to support ATFM implementation started in early 2000's. The CAR/SAM Planning and Implementation Regional Group (GREPECAS) took actions to address ATFM implementation in 2005. The CAR/SAM Air Traffic Flow Management Concept of Operation (ATFM CONOPS), first edition, was approved in 2007 and the CAR/SAM ATFM Manual initially approved in 2010. In that period, air traffic in the region maintained a relatively sustained growth. Air Traffic Services (ATS) systems have upgraded to cope with the increasing demand and complexity of air traffic, with some limitations. Tourism has become a column for the region's economic development.

3.3                      The P/04 also included information regarding the NAM/CAR ATFM Survey 2019. The survey was prepared by the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) ATFM Task Force to collect information related to the ATFM implementation progress in order to better support the ATFM implementation in the NAM/CAR Regions and evaluate the compliance with the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) Regional Performance Objectives (RPOs) (Demand and Capacity Balancing (DCB) and Flexible Use of Airspace (FUA)).

3.4                      The survey comprises 38 basic questions to assess ATFM/CDM implementation and operation, assessed by level of implementation (Not implemented, Partial implementation, Full implementation), with four additional questions to assess participation in the NAM/CAR ATFM Task Force. Nine States responded (Costa Rica, Cuba, Dominican Republic, El Salvador, Haiti, Jamaica, Nicaragua, Saint Lucia and United States).

3.5                      The survey received limited response, but constitutes a representative sample from all different levels of ANS systems. Although, some responses may require additional clarification, they provide valuable information regarding the main challenges faced by the region. Pending further analysis to use information provided to tailor the CAR Region ATFM support programme. Derived from this discussion, the following decision was taken:

RECOMMENDATION	
ATFM/IMP/01	ENHANCED SUPPORT FOR ATFM IMPLEMENTATION
<p><b>What:</b></p> <p>That, taking into consideration the importance that the adequate implementation and application of flow management functions have to ensure the safe and sustainable growth of air traffic in the CAR Region and the need to develop support programs that make adequate use of available resources,</p> <p>a) States, Territories and International Organizations, that provide air traffic services in the CAR Region, and have not yet done so, respond to the NAM/CAR 2019 ATFM Survey (Communication to the States Ref: NACC79086 dated 26 June 2019), prepared by the NAM/CAR ANI/WG ATFM Task Force; and</p> <p>b) the NAM/CAR ANI/WG ATFM Task Force make an in-depth analysis of the information received through the 2019 ATFM survey and make recommendations regarding opportunities for improvement and identified challenges to enhance the ICAO NACC Regional Office ATFM support the renovated implementation strategy, by 31 December 2019.</p>	<p><b>Expected impact:</b></p> <p><input type="checkbox"/> Political / Global  <input checked="" type="checkbox"/> Inter-regional  <input checked="" type="checkbox"/> Economic  <input checked="" type="checkbox"/> Environmental  <input checked="" type="checkbox"/> Operational/Technical</p>
<p><b>Why:</b></p> <p>To enhance the CAR Region ATFM Implementation Support Initiatives</p>	
<p><b>When:</b> By 31 December 2019</p>	<p><b>Status:</b> <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p>
<p><b>Who:</b> <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other:</p>	<p>NAM/CAR ANI/WG ATFM Task Force</p>

3.6 With regards to the ATFM implementation in the CAR Region, the Meeting noted the progress that several States of the region have been able to make towards an effective operational implementation of the ATFM. Questions were raised regarding the responses of the survey referring to partial implementation of ATFM. The Meeting agreed that an ATFM system that is not capable to balance demand and capacity has not achieved its fundamental purpose. The Meeting recognized that it takes time and high-level support to be able to make ATFM relevant in front of the traditional way of handling traffic. The change in culture is perhaps the biggest challenge to overcome.

3.7 The Meeting emphasized that CANSO's initiative, CANSO Air Traffic Flow Management Data Exchange Network for the Americas (CADENA), has had a very positive impact on the region, promoting ATFM implementation among Air Navigation Service Providers (ANSPs) and establishing a CDM platform that enables ATFM functioning at a regional level.

3.8 The Meeting recognized that there are different levels of requirements for ATFM in the region, according to different operational contexts. The CAR Region should design implementation scenarios more connected to different operational contexts in order to achieve realistic implementation.

3.9 IATA presented a proposal with criteria for three levels of implementation requirements. In this sense, the following recommendation was formulated:

RECOMMENDATION	
ATFM/IMP/02	CRITERIA FOR ATFM IMPLEMENTATION LEVELS OF REQUIREMENTS
<p><b>What:</b></p> <p>That, considering that the CAR Region is comprised by air navigation systems that range from the most advanced and complex in the world to some of the least developed with basic or no automation implemented,</p> <p>a) the NAM/CAR ANI/WG ATFM Task Force develop and agree criteria to define different levels of ATFM implementation requirements, according to individual needs and capabilities of ATS providers in the NAM/CAR Regions and propose its inclusion in the CAR/SAM ATFM CONOPS by 31 December 2019; and</p> <p>b) the ICAO NACC Regional Office raise awareness among States, Territories and International Organizations providing air traffic services in the CAR Region regarding the need to remain involved in the regional ATFM implementation initiatives regardless of their traffic demand and level of constraints.</p>	<p><b>Expected impact:</b></p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p>
<p><b>Why:</b></p> <p>To ensure a harmonized and interoperable regional ATFM system</p>	
<p><b>When:</b> By 31 December 2019</p>	<p><b>Status:</b> <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p>
<p><b>Who:</b> <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other:</p>	<p>NAM/CAR ANI/WG ATFM Task Force</p>

3.9 The States presented their progress for ATFM implementation. Costa Rica, Dominican Republic, Jamaica, Mexico and Trinidad and Tobago provided details about the ATFM functions they perform.

3.10            Among the main identified challenges are:

- lack of specific ATFM Letters of Agreement (LoAs);
- need to agree a specific set of Traffic Management Measures (TMMs) to be implemented regionally;
- limited information sources to prepare ATFM Daily Plans (ADPs);
- regionally agreed improvement Key Performance Indicators (KPIs); and
- limited level of authority required for ATFM decision making.

3.11            The Meeting noted that the daily information on ATFM (Traffic Flow Management System (TFMS)) provided by the United States Federal Aviation Administration (FAA) constitutes an important source of information available to the region. Only Trinidad and Tobago has achieved successful System Wide Information Management (SWIM) interconnection with the FAA. The connection to SWIM provides to the air navigation service providers important information for strategic decision-making in support of ATFM.

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**Agenda Item 4                      ATFM/NOPS Concept of Operations**

4.1                      Under this Agenda Item the Secretariat showed P/02 to provide information regarding the CAR/SAM Regions Air Traffic Flow Management Concept of Operations and the ATFM Manual. The initial version of the CAR/SAM ATFM CONOPS, approved in 2007, considered ATFM should be implemented within a region or within other defined areas as a centralized ATFM organization, with the support of Flow Management Units (FMU) established in each Area Control Centre (ACC) within the region or area of application. The initial regional ATFM implementation principle for the CAR/SAM Regions was to establish two centralized ATFM facilities, one for each Region, with the support of Flow Management Positions (FMPs) established in each ACC within the Region of application.

4.2                      The establishment of a single ATFM organization for each region was not feasible due to political and institutional considerations, which resulted in a considerable delay in the expected implementation of ATFM in the CAR and SAM Regions. In response to these circumstances, the CAR/SAM CONOPS was updated to make emphasis on a multi-nodal cross border ATFM concept, as it was approved by the Fifth Meeting of the Programmes and Projects Review Committee (PPRC/5) of GREPECAS, held in Mexico City, Mexico, 16 to 18 July 2019, on its version 2.1 <https://www.icao.int/NACC/Pages/edocs-atm.aspx>.

4.3                      Experience in other regions proves that this approach is not totally free of challenges. Although, in principle, the multi-nodal approach may seem an appropriate option for the implementation and development of basic capacities by States and ANSPs, the reality is that at a certain point it is necessary to be able to make decisions from a regional perspective, and not individually. In due time, measures should be taken to determine how these decisions would be made, whether through regional agreements or the implementation of a centralized decision making system.

4.4                      For the CAR Region, the role of distributed multi-nodal ATFM network concept can be perfectly supported by the Civil Air Navigation Service Organisation Air Traffic Flow Management Data Exchange Network for the Americas (CADENA). Given the fact that a significant number of CAR ANSPs have already signed the Letter of Agreement that would allow the CDM procedures to enable regional functioning; the CADENA Operational Information System (OIS) is an interconnected information-sharing framework that can support the regional decision making.

4.5                      The Meeting also considered important the establishment of a clear set of rules to allow regional decision making and collaboration.

4.6                      With regards to the CAR/SAM ATFM Manual, the current version from 2010 requires to be updated in order to reflect the latest version of the ICAO Doc 9971- — *Manual on Collaborative Air Traffic Flow Management*. When the CAR/SAM ATFM Manual was initially approved, ICAO had not published a global guidance material to support ATFM implementation. Subsequently, three versions of the ICAO ATFM Manual have been published, without the regional manual being updated. Taking into consideration that the main reference for ATFM implementation is the ICAO Doc 9971, the Meeting agreed that the CAR/SAM ATFM Manual has no reason to be maintained. Given that the CAR/SAM ATFM

Manual serves both regions and is related to ICAO NACC and SAM Regional Offices, these considerations should be shared with the ICAO SAM Regional Office for a consensual decision.

4.7 The meeting was reminded of the regional renovated strategy approved by the Directors in the Eighth Meeting of the North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/08), held in Ottawa, Canada, 28 to 30 August 2018; after analysing the considerations set forth above, and the context in which the different States of the region have been able to move forward in the implementation of the ATFM, the Meeting found it feasible to make the following recommendations in order to enhance the ATFM regional implementation strategy for the Caribbean:

#### 4.8 Phased Strategy

##### Stage 1

Ensure (support) implementation, operation and improvement of the Flow Management Functions for continental FIRs of the CAR Region:

- FIR Mexico (MMFR)
- FIR Central American (MHTG)
- FIR Havana (MUFH)
- FIR Kingston (MKJK).
- FIR Santo Domingo (MDCS)
- FIR Curaçao (TNCF)
- FIR Piarco (TTZP)
- FIR Port-au-Prince (MTEG), Port-au-Prince FIR has limited automation capabilities; therefore another neighboring FIR could provide support to perform ATFM functions

##### Stage 2

Establish CDM procedures among continental FIRs for the CAR Region and between continental FIRs of the CAR Region and the FAA Command Center.

##### Stage 3

Implement CDM among continental FIRs for the CAR Region and between continental FIRs of the CAR Region and the FAA Command Center.

4.9 For these strategy to work, this has to be made an integral part of the regional planning and implementation mechanism, i.e. the GREPECAS projects.

4.10 Based on the above, the meeting formulated the following recommendation for the ANI/WG:

<b>RECOMMENDATION</b>	
<b>ATFM/IMP/03</b>	<b>ATFM DECISION-MAKING MECHANISM FOR THE CAR REGION</b>
<p><b>What:</b></p> <p>That, taking into account the need to make collaborative decisions and implement measures that allow an optimal regional flow of air traffic,</p> <p>a) the NAM/CAR ANI/WG ATFM Task Force develop a regional mechanism or high level ATFM framework that allows decision-making for the management of air traffic flow from a regional perspective;</p> <p>b) the NAM/CAR ANI/WG ATFM Task Force further develop the phased strategy implementation support concept and make it consistent with FIR level development definition, <b>by the NAM/CAR ANI/WG ATFM/TF/2 Meeting</b>; and</p> <p>c) the ICAO NACC Regional Office share with ICAO SAM Regional Office the considerations of the NAM/CAR ANI/WG ATFM Task Force to discontinue the CAR/SAM ATFM Manual, to take a consensus decision on it.</p>	<p><b>Expected impact:</b></p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p>
<p><b>Why:</b></p> <p>to promote collaborative decision making and interregional consensus</p>	
<p><b>When:</b> By the NAM/CAR ANI/WG ATFM/TF/2 Meeting</p>	<p><b>Status:</b> <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p>
<p><b>Who:</b> <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other:</p>	<p>NAM/CAR ANI/WG ATFM Task Force</p>

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**Agenda Item 5                      Challenges for ATFM Implementation: Link with other ATS Systems**

5.1                      Under this Agenda Item the United States showed P/08 to explain the processes being carried out by the FAA ATO Command Centre to handle air traffic flow when facing weather related events. The purpose of the presentation was to emphasize the importance of the weather information for strategic traffic management planning.

5.2                      United States emphasized the importance of the pre-coordinated routes/contingency routes being developed (agreed by) CADENA. Jamaica pointed out the difficulties to gather statistical data for the establishment of the routes. The Meeting agreed to continue working to support agreement of the pre-coordinated routes and implementation.

5.3                      The Meeting recognized that ATFM is supported by several systems and procedures that enable an enhanced air traffic situation for decision making. A special connection is required from the Aeronautical Information Management (AIM) systems, Meteorology (MET) and Aerodromes and Ground Aids (AGA).

5.4                      The Meeting emphasized the importance of the link with other ATS systems to get critical information for traffic management.

5.5                      With regards to meteorology, the Meeting noted the difficulties for not having one single entity that would share and analyse meteorology information from regional perspective. Other barriers were mentioned:

- Lack of integration of weather information (like a regional MET office)
- Need to enhance communication between regional meteorology offices
- Need to promote better coordination/align MET offices with ATFM
- Missing Significant meteorological information concerning en-route weather phenomena which may affect the safety of aircraft operations (SIGMET) information
- Currently there is MET information not being adequately disseminated by States

5.6                      The Meeting emphasized that since ATFM is more linked with MET forecast it would be beneficial to involve airlines in the equation for regional decision making regarding MET.

5.7                      *"It is recommended that States, through the Civil Aviation Authorities, require the Meteorological Authority to provide the meteorological service for international air navigation in compliance with the provisions of Annex 3, and to maintain a close liaison between those concerned with the supply and those concerned with the use of meteorological information to ensure MET Service really contributes towards the safety, regularity and efficiency of international air navigation."*



5.8 ACI showed P/03 to provide information regarding the link between airport CDM and airport operation. ACI presentation highlighted key elements to be taken into consideration to strengthen the decision-making process based on the collaboration and the integration of airport-CDM and ATFM systems. A-CDM implementations must be tailored to the operational requirements and to the ATM environment. Experiences from other countries are really valuable, but are not meant to be adapted without thorough analysis. In order to connect the various systems that perform the related functions, the following should be taken into consideration:

- ATFM
  - Demand assessment
  - Ground delay assignments
  - Departure management
  - Runway sequencing
  - Flight data Processing
  - Airport Collaborative Decision Making (A-CDM)
- Systems will need to implement appropriate data interchange methodologies
- SWIM (mainly Aeronautical Information Exchange Model (AIXM), Flight information Exchange model (FIXM)) contains the data definitions that are required to exchange information
- Best practices
  - ATM systems to implement SWIM for external exchanges
  - A-CDM systems to become SWIM-compatible
  - Airline flight planning systems to become SWIM compatible

5.9 In this sense, the following recommendation was formulated:

<b>RECOMMENDATION</b> <b>ATFM/IMP/04</b>		<b>ATFM INTEGRATION WITH AIM, MET AND AGA PROJECTS</b>
<b>What:</b>  That, recognizing that ATFM implementation requires AIM, MET and AGA key elements or specific requirements,  a) the ICAO NACC Regional Office identify the enabling elements of the ATFM related to AIM, MET and AGA and verify if GREPECAS analogue projects are addressing them; and  b) the NAM/CAR ANI/WG ATFM Task Force present the results of this analysis to the Second NAM/CAR ANI/WG ATFM Implementation Task Force Meeting (ANI/WG ATFM/TF/2).	<b>Expected impact:</b>  <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical	
<b>Why:</b>  To support implementation of ATFM and supporting systems		
<b>When:</b> By the NAM/CAR ANI/WG ATFM/TF/2 Meeting	<b>Status:</b> <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed	
<b>Who:</b> <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other:	NAM/CAR ANI/WG ATFM Task Force	

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**Agenda Item 6                      ATFM Solutions: Basic considerations for ATFM Tools**

6.1                      Under this Agenda Item United States showed P/07 to describe air traffic flow management requirements and functions. The presentation provided detailed information regarding Traffic Flow Management (TFM) job functions, impact conditions, developing actions plans, and monitoring facility systems. The presentation also included a comprehensive description of TMMs.

6.2                      CANSO showed P/09, providing important guidelines for ATFM tools and capabilities. The presentation included information related to ATFM goals and needs for ANSPs, the importance to develop ATFM concept of operations, and data to support decision-making regarding the Regional/Multi-Nodal versus Traditional/Domestic ATFM. Based on the analysis presented by CANSO, 70% domestic participation is NOT met for any airport in the CAR Region. This emphasizes the need for ATFM systems in the CAR Region to be supported by adequate regional decision making.

6.3                      AFTM tools should at least provide the capability to:

- Predict and monitor demand and resulting imbalances for airports and airspace
- Model collaborative solutions to ensure the least restrictive TMM
- Provide decision support metrics for ATFM measures
- Balance demand to capacity of selected resources through initiation, monitoring, and revision of an automated ATFM measure
- Exchange automated ATFM measures to adjacent ATFM systems
- Automate CDM with aircraft operators, airport operators, and other ANSPs
- Provide common situational awareness for all stakeholders
- Perform post-operation analysis to support and align with agreed KPIs

6.4                      The Meeting considered important that the next NAM/CAR ANI/WG ATFM Task Force meeting includes a table top exercise involving all the States in the Region and give an opportunity to demonstrate the benefits of ATFM at a regional level. In this sense, the meeting agreed the following recommendation:

<b>RECOMMENDATION</b> <b>ATFM/IMP/05</b>		<b>DEVELOPMENT OF ATFM TABLETOP EXERCISES</b>
<b>What:</b>  That, considering the regional character of the ATFM and the importance of being able to identify the impact that traffic flow management initiatives have on the different Flight Information Regions, the NAM/CAR ANI/WG ATFM Task Force consider conducting table top exercises at their meetings, so that all States of the Region are involved and the opportunity to demonstrate the benefits of ATFM at the regional level is provided.	<b>Expected impact:</b>  <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical	
<b>Why:</b> To show the regional impact of ATFM		
<b>When:</b>	By the NAM/CAR ANI/WG ATFM/TF/2 Meeting	<b>Status:</b> <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed
<b>Who:</b>	<input type="checkbox"/> States <input type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other:	NAM/CAR ANI/WG ATFM Task Force

**Agenda Item 7                      ATFM Performance Measurement Methodology**

7.1                      Under this Agenda Item, United States showed P/06 to provide information regarding the importance of ATFM Quality Control and CDM. The presentation covered actions regarding the next day review of operations, the prior day review and guidelines for follow-up issues. Additionally, United States provided information regarding Traffic Management Reviews (significant event reviews).

**Agenda Item 8                  Other Business**

8.1                  No other items were discussed.

**APPENDIX  
EXECUTIVE LIST OF RECOMMENDATIONS**

<b>Number</b>	<b>Recommendations</b>	<b>Responsible for action</b>	<b>Deadline</b>
1	<b>ENHANCED SUPPORT FOR ATFM IMPLEMENTATION</b>		
	That, taking into consideration the importance that the adequate implementation and application of flow management functions have to ensure the safe and sustainable growth of air traffic in the CAR Region and the need to develop support programs that make adequate use of available resources,		
	a) States, Territories and International Organizations, that provide air traffic services in the CAR Region, and have not yet done so, respond to the NAM/CAR 2019 ATFM Survey (Communication to the States Ref: NACC79086 dated 26 June 2019), prepared by the NAM/CAR ANI/WG ATFM Task Force; and	States, Territories and International Organizations	As soon as possible
	b) the NAM/CAR ANI/WG ATFM Task Force make an in-depth analysis of the information received through the 2019 ATFM survey and make recommendations regarding opportunities for improvement and identified challenges to enhance the ICAO NACC Regional Office ATFM support the renovated implementation strategy, by 31 December 2019.	NAM/CAR ANI/WG ATFM Task Force	31 December 2019
2	<b>CRITERIA FOR ATFM IMPLEMENTATION LEVELS OF REQUIREMENTS</b>		
	That, considering that the CAR Region is comprised by air navigation systems that range from the most advanced and complex in the world to some of the least developed with basic or no automation implemented,		
	a) the NAM/CAR ANI/WG ATFM Task Force develop and agree criteria to define different levels of ATFM implementation requirements, according to individual needs and capabilities of ATS providers in the NAM/CAR Regions and propose its inclusion in the CAR/SAM ATFM CONOPS by 31 December 2019; and	NAM/CAR ANI/WG ATFM Task Force	31 December 2019

Number	Recommendations	Responsible for action	Deadline
	b) the ICAO NACC Regional Office raise awareness among States, Territories and International Organizations providing air traffic services in the CAR Region regarding the need to remain involved in the regional ATFM implementation initiatives regardless of their traffic demand and level of constraints.	ICAO	Continuous
3	<b>ATFM DECISION-MAKING MECHANISM FOR THE CAR REGION</b>		
	That, taking into account the need to make collaborative decisions and implement measures that allow an optimal regional flow of air traffic,		
	a) the NAM/CAR ANI/WG ATFM Task Force considers the development of a regional mechanism or high level ATFM framework that allows decision-making for the management of air traffic flow from a regional perspective;	NAM/CAR ANI/WG ATFM Task Force	By the NAM/CAR ANI/WG ATFM/TF/2 Meeting
	b) the NAM/CAR ANI/WG ATFM Task Force further develop the phased strategy implementation support concept and make it consistent with FIR level development definition, by the <b>NAM/CAR ANI/WG ATFM/TF/2 Meeting</b> ; and	NAM/CAR ANI/WG ATFM Task Force	By the NAM/CAR ANI/WG ATFM/TF/2 Meeting
	c) the ICAO NACC Regional Office share with ICAO SAM Regional Office the considerations of the NAM/CAR ANI/WG ATFM Task Force to discontinue the CAR/SAM ATFM Manual, to take a consensus decision on it.	ICAO	By the NAM/CAR ANI/WG ATFM/TF/2 Meeting
4	<b>ATFM INTEGRATION WITH AIM, MET AND AGA PROJECTS</b>		
	That, recognizing that ATFM implementation requires AIM, MET and AGA key elements or specific requirements,		
	a) the ICAO NACC Regional Office identify the enabling elements of the ATFM related to AIM, MET and AGA and verify if GREPECAS analogue projects are addressing them; and	ICAO NACC Regional Office	By the NAM/CAR ANI/WG ATFM/TF/2 Meeting
	b) the NAM/CAR ANI/WG ATFM Task Force present the results of this analysis to the Second NAM/CAR ANI/WG ATFM Implementation Task Force Meeting (ANI/WG ATFM/TF/2).	NAM/CAR ANI/WG ATFM Task Force	By the NAM/CAR ANI/WG ATFM/TF/2 Meeting



Number	Recommendations	Responsible for action	Deadline
5	<b>DEVELOPMENT OF ATFM TABLETOP EXERCISES</b>		
	That, considering the regional character of the ATFM and the importance of being able to identify the impact that traffic flow management initiatives have on the different Flight Information Regions, the NAM/CAR ANI/WG ATFM Task Force consider conducting table top exercises at their meetings, so that all States of the Region are involved and the opportunity to demonstrate the benefits of ATFM at the regional level is provided.	NAM/CAR ANI/WG ATFM Task Force	By the NAM/CAR ANI/WG ATFM/TF/2 Meeting