



# ICAO

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North American, Central American and Caribbean Office

WORKING PAPER

NACC/WG/5 — WP/14  
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**Fifth North American, Central American and Caribbean Working Group Meeting (NACC/WG/5)**  
Port of Spain, Trinidad and Tobago, 22-26 May 2017

**Agenda Item 3: Implementation on Air Navigation Matters**  
**3.3 ANI/WG Progress on AIM, ATM and CNS**

**PROGRESS REPORT ON ATFM TASK FORCE WORK PROGRAMME**

(Presented by ANI/WG ATFM TF Rapporteur)

**EXECUTIVE SUMMARY**

This Working paper presents the progress achieved by the Air Traffic Flow Management (ATFM) Implementation Task Force (TF) since its previous progress report to the Third NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/3) in Mexico City, Mexico, 4 to 6 April 2016. This paper includes the results for previously identified deliverables and recommendations for improving the Task Force function and coordination.

<b>Action:</b>	Action Suggested in Section 3.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li></ul>
<i>References:</i>	<ul style="list-style-type: none"><li>• NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP)</li><li>• First NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/1), Mexico City, Mexico, 29 July to 1 August 2013</li><li>• Second NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/2), Puntarenas, Costa Rica, 1 - 4 June 2015</li><li>• Third NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/3), Mexico City, Mexico, 4-6 April 2016</li><li>• ATFM Task Force teleconferences, webinars and e-mail correspondence</li></ul>

## 1. Introduction

1.1 The Air Traffic Flow Management (ATFM) Implementation Task Force was established during the first ICAO NACC Air Navigation Implementation Working Group Meeting (ANI/WG/1) in 2013, to reflect the importance of Traffic Flow Management (TFM) to the Region. The objective of the ATFM TF is to work collaboratively and develop a regional and interoperable ATFM framework in the NAM/CAR Regions that is consistent with ICAO Doc 9971 — *Manual on Collaborative Air Traffic Flow Management* and other related global documents.

1.2 During the 2016 ANI/WG/3 Meeting, the ATFM Task Force presented an update to the meeting on the TF progress on its work program. At that time, the TF was comprised of members from five NACC States: Canada, Dominican Republic, El Salvador, Trinidad and Tobago, and the United States and the Civil Air Navigation Services Organization (CANSO), the International Air Transport Association (IATA) and International Civil Aviation Organization (ICAO). The TF now includes Haiti, Jamaica, COCESNA, and SENEAM. (See **Appendix A**).

## 2. ATFM TF Progress and Results

2.1 The TF has held 3 web conference meetings since June 2016. The meetings have included information on the FAA's regular Caribbean teleconferences to encourage participation from the TF Air Navigation Service Providers (ANSPs). These web conference meetings included briefings by the TF members and discussions on benefits of sharing traffic data for Cuba and Jamaica. Additional traffic data is now also being shared with Dominican Republic, COCESNA, and SENEAM for improved collaboration, transparency and greater coordination between the ANSPs. The webinars also discussed the SWIM Data exchange process with Trinidad and Tobago, ATFM basic training, and NAM/CAR Survey topics.

2.2 A follow on ATFM TF Survey was sent to members to identify changes or improvements to ATFM capabilities that had taken place since the initial survey conducted in 2015. The TF is working with States on their inputs and will analyse responses to provide a snapshot of the items that the NAM/CAR members reviewed from the 2016 Survey.

### ***Deliverables and Results***

2.3 The focus for 2017 includes continued sharing of best practices, information on demand and capacity balancing methodology, and developing a regional pre-tactical web conference for all ANSPs and stakeholders to participate and share information. (See **Appendix B** for specific tasking goals/dates of the updated work programme). With the increased information on demand available to ANSPs, States can better identify their constraints, implement flow management programs and improve their arrival and departure rates and increase their capacity within their airspace and airports.

2.4 The TF is developing a two-day *ATFM 101 Training* course for the region. Materials will include a general overview of flow management, components of traffic management system and collaborative decision-making. It will provide information and discussion on system thinking and how interactions within a system affect the quality of its overall performance, as well as airport and airspace capacity and TFM job functions.

### ***Recommendations for Improving the ATFM Implementation***

2.5 Since the ATFM TF held its first monthly web-conference in March 2016, participation has increased and resulted in stronger collaboration between the States. Discussions during the calls have expanded to include ATFM tools and meteorological products in the region and the need for ANSPs to share information on air traffic demand and capacity numbers for regional airports, sectors and airspace.

## **3. Suggested Action**

3.1 The Meeting is invited to:

- a) evaluate the progress of the ATFM TF detailed in this paper;
- b) support the recommendations for expanding TF participation; and
- c) review and update Work Program timelines and priorities.

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**APPENDIX/APÉNDICE A**  
**ATFM TF MEMBERS**

State/Territory/IO	ATFM TF Member Name	Remarks
Piano, Dan	Canada	
Salazar, Vanessa	CANSO	
Vanegas, Javier	CANSO	
Espino, Edy	COCESNA	New
Luna, Pablo	COCESNA	
Soto, Fernando	COCESNA	
Peña, Roosevelt	Dominican Republic	
Legagneur, Mario Eric	Haiti	
Vidal, Marco	IATA	
Siu, Julio	ICAO	New
Finlayson, Christopher	Jamaica	
Malcolm, Courtney	Jamaica	
Avila, Arturo Enríquez	Mexico	
Pérez Galindo, Alvaro Edgar	Mexico	
Fraser, Curtis	Trinidad and Tobago	
Mohammed, Riaaz	Trinidad and Tobago	
Peters, Curtis	Trinidad and Tobago	New
Richardson, Mike	United States	New and Rapporteur
Nielson, Tom	United States	
Tanino, Midori	United States	
Hinkson, Marsha	Belize	Proposed
Torres, Gilberto	Belize	Proposed
Coello, Camilo Zuniga	Costa Rica	Proposed
Sequeira, Mario	Costa Rica	Proposed
Centella, Jorge	Cuba	Proposed
Hernandez, Rolando Cruz	El Salvadore	Proposed
Iglesias, Valdemar Antonio	El Salvadore	Proposed
Jax, Jerry	Guatemala	Proposed
Nunez, Erik Fernando	Honduras	Proposed
Pavon, Heriberto	Honduras	Proposed
Molina, Holman Humberto	Nicaragua	Proposed
Savallos, Jorge Luis	Nicaragua	Proposed

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## APPENDIX/APÉNDICE B NAM/CAR ATFM TASK FORCE WORK PROGRAMME

### **ATFM Mission Statement**

The ATFM Work Programme (WP) provides specific initiatives for the development of a regional concept of ATFM implementation in NAM/CAR Region. This is consistent with ICAO Doc. 9971 and other related global documents. It takes into consideration the execution of a simple, basic, and incremental approach of promoting, sharing and implementing a regional, interoperable ATFM framework for global harmonization.

### **INTRODUCTION**

People, automation, technology and collaboration with system stakeholders (inclusive of academia) will be the core principles of this project. The Work Programme seeks to:

1. Establish consistent regional ATFM planning and operating practices
2. Encourage a collaborative and harmonized approach to ATFM amongst States and Regions
3. Foster a systemic approach to ATFM, inclusive of all ATM community members

The document takes into consideration the diverse range of experience, technology and available resources. Each group tasking will be categorized using the following key:

**Short Term:** Achievable within 1 year time frame (Tactical)

**Medium Term:** Accomplishable within 1-2 year time frame (Pre-tactical)

**Long Term:** Obtainable within 3-5 year time frame (Strategic)

Note 1: This document shall be a guideline for establishing ATFM NAM/CAR goals and reviewed periodically throughout the year. A formal review each calendar year shall be conducted during the ANI/WG and NACC/WG meeting so as to update/revise/modify its content for currency and applicability.

Note 2: The CANSO ATFM Data Exchange Network for the Americas (CADENA) was formed and had the 1<sup>st</sup> meeting in August 2016. The CADENA and the ATFM TF have common goals and participants overlaps in many cases. This work program activities were examined to identify which activity items are executed under CADENA.

Note 3: The CADENA executed activities are noted in this ATFM TF Work Program table by “(\* CADENA)”.

Other modifications to the table. (This description should be deleted after presenting the changes to the Team.)

- (1) “Status/Remarks” section is added to each activity to record the status of that activity.
- (2) “Responsible” column was deleted because ATFM TF Team are always responsible with exception of Activity 10, Provide progress report/update for NACC/WG Chairperson. Activity 10 is TF Rapporteur’s responsibility.

No	Activity	Objective	Deliverable	Date
1	<p><b><u>Regional assessment of ANSPs</u></b></p> <ul style="list-style-type: none"> <li>• Identify participants</li> <li>• Capabilities</li> <li>• Experience (entry/intermediate/advance)</li> <li>• FMU/FMP/Ops Sup/Mgr.</li> <li>• What do ANSPs need</li> <li>• Conduct study of existing/future FMP/FMU and a Regional Centralized FM Center</li> <li>• Note: A review as to the specific methodology to solicit this info (email/survey etc.) will be determined</li> </ul>	Provide a baseline assessment of resources, needs & capabilities	Report/document to be determined	Short Term 2017 – 2018
	<p><b>Status/Remarks:</b></p> <ul style="list-style-type: none"> <li>• The ATFM capability survey was conducted in 2015 and seven out of eight ANSPs were responded. Responded were, Piarco, Santo Domingo, Port Au Prince, Kingston, Curacao, COCESNA, SENEAM. The summary report was delivered.</li> <li>• The 2nd survey questionnaire was sent out to the members in Oct 2016 and was due Dec 2016. 2016 survey responded were, Kingston, Piarco and Santo Domingo. 2016 Survey was discussed during the Jan 23, NAM/CAR ATFM Task Force telcon.</li> </ul>			

No	Activity	Objective	Deliverable	Date
2	<p><b>Procedural Agreements</b></p> <ul style="list-style-type: none"> <li>Establish bi-lateral/multi-lateral LOAs between States/FMUs (* CADENA) – <b>Completed</b></li> <li>Identify high volume/prefer city pairs/routes</li> <li>Develop multi-FIR regional network of ATFM coordination (* CADENA)</li> <li>Collect, analyse, and report on demand/capacity, and delay data.</li> <li>Research guidance on qualifications and competencies for ATFM personnel and develop action plan (* CADENA)</li> <li>Data Exchange Agreements with neighbouring States (* CADENA)</li> <li>Data Exchange between ANSPs (* CADENA)</li> </ul>	Provide formalize agreements that will facilitate the safe and efficient movement of high density, constrained focused areas	Agreements and reports (as needed)	Med-Long term (2017 - 2020)
	<p><b>Status/Remarks:</b></p> <ul style="list-style-type: none"> <li>The CADENA Letter of Agreement (CADENA member ANSP ATM and CDM) was signed by DG DC-ANSP LAC3 Chair, COO FAA ATO, DG SENEAM, VP AENA with initials of participating members on Dec 6, 2016.</li> <li>The CADENA operational webcom kicked off on Dec 16, 2016. Preparation includes the establishment of the appropriate procedures, guidelines, data preparation, and training.</li> <li>TFM Data Exchange efforts are ongoing via CADENA. As of Jan 2017, Trinidad and Tobago is in the implementation phase. Dominican Republic is scheduled to have TIM with FAA in Feb 2017.</li> </ul>			
3	<p><b>Training</b></p> <ul style="list-style-type: none"> <li>Assess training needs of ANSPs</li> <li>Establish list of TNG subjects</li> <li>Solicit instructors</li> <li>Establish Schedule</li> <li>Publish/coordinate events</li> <li>Establish cross TNG, personnel exchange program</li> <li>Perform ATFM workshops/seminars/visits</li> </ul>	Provide a core foundation to build upon for Regional participants	Report listing training accomplishments as noted	Med-Long term (2017 - 2020)
	<p><b>Status/Remarks:</b></p> <ul style="list-style-type: none"> <li>Historically, this training was general ATFM training.</li> <li>The specialized training such as leading the CADENA Operational Webcom were conducted prior to the implementation of this capability.</li> <li>Possible ETMS FEA development training for SENEAM SMART office.</li> </ul>			
4	<p><b>Tools, technology &amp; automation</b></p> <ul style="list-style-type: none"> <li>Research development of Ops web page (* CADENA)</li> <li>Flight plan processing</li> <li>Identifying ATFM suite of tools such as Prediction &amp; Monitoring Tools</li> <li>Explore Meteorological Products</li> <li>Est. Sub-Team for research/development of future concept of regional ATFM system (* CADENA)</li> <li>Est. a test bed for testing and implementing future technologies for modelling</li> </ul>	Ongoing research development. Mid-Long term objective which will evaluate, strategic goals for Regional ANSPs regarding integration & harmonization of ATFM tools & technologies. This should incorporate the capability for growth & airspace modelling	An integrated, comprehensive pre-tactical web based conference which includes various stakeholders	Med-Long term (2017 - 2020)
	<p><b>Status/Remarks:</b></p> <ul style="list-style-type: none"> <li>The TFM Data Exchange related technologies were under development by Trinidad &amp; Tobago.</li> <li>The TFM Data Exchange Technical Interchange Meeting is scheduled for Dominican Republic and SENEAM.</li> </ul>			
5	<p><b>Schedule Regional ATFM Workshops</b></p> <ul style="list-style-type: none"> <li>Enhance cooperation</li> <li>Share best practices and ideas</li> <li>Forecast future growth/needs</li> <li>Encourage academia and industry participation</li> </ul>	Provide a foundational baseline of refresher & supplemental training for personnel involved in ATFM. To be accomplished in concert with stakeholder community	Schedule ATFM workshops, seminars, webinars and symposiums to further ATFM education	Med-Long term (2017 - 2020)
	<p><b>Status/Remarks:</b></p> <ul style="list-style-type: none"> <li>Identify the needs of this activity beyond CADENA activities. For example, CADENA is focused on the practical cooperation among themselves and industries and sharing of best practices. ATFM TF might want to focus on future needs that may involve academia.</li> </ul>			

No	Activity	Objective	Deliverable	Date
6	<b>Improve Demand and Capacity Balancing (DCB)</b> <ul style="list-style-type: none"> <li>Establish coordination with key stakeholders (* CADENA)</li> <li>Identify major traffic flows/city pairs</li> <li>Research airport/sector capacity calculation (* CADENA)</li> <li>Compare with ICAO ATFM Global Doc</li> <li>Identify high density airports/sectors (* CADENA)</li> <li>Develop mitigation strategies (* CADENA)</li> </ul>	Provide initial steps needed to work with aviation stakeholders, identify major city pairs and focus on constrained density areas	Report/document identifying these objectives for aviation stakeholders	Med-Long term (2017 - 2020)
	<b>Status/Remarks:</b> <ul style="list-style-type: none"> <li>The CADENA is preparing the library of AAR/ADR information and move on to address sector capacity.</li> <li>The DCB mitigation strategies are considered via weekly CADENA webcom and information/applied solutions were gathered for future analysis.</li> </ul>			
7	<b>Pre-Tactical Operation Daily Briefing</b> <ul style="list-style-type: none"> <li>Solicit input from ANSPs &amp; stakeholders (* CADENA)</li> <li>Develop Ops Briefing checklist (* CADENA)</li> <li>Select Ops Telcon platform (GoTo or ATCSCC)</li> <li>Train/practice web conferences (* CADENA)</li> <li>Research Traffic Management Initiatives</li> <li>Standardization</li> <li>Notification</li> <li>Implementation</li> <li>Documentation</li> <li>Review analysis</li> <li>Publication of the Daily ATFM Plan</li> </ul>	Provide a venue for ANSPs, stakeholders and the aviation community to participate, engage & collaborate in ops info sharing	An integrated, comprehensive pre-tactical web based conference which includes various stakeholders	Med-Long term (2017 - 2020)
	<b>Status/Remarks:</b> <ul style="list-style-type: none"> <li>The CADENA operational webcom kicked off on Dec 16, 2016.</li> <li>The FAA is working to estimate the benefits of the CADENA operational webcom.</li> </ul>			
8	<b>Flexible Use Airspace</b> <ul style="list-style-type: none"> <li>Perform assessment of where FUA can be utilized/benefit</li> <li>Identify civil/military coordination entities</li> <li>Arrange for permanent liaison and cooperation between civil ATS and air defence units.</li> <li>Conduct regional review of SUA</li> <li>Assess use of airspace management process</li> <li>Review use of dynamic airspace processes</li> <li>Institute dynamic ATC sectorization and notification for demand and capacity</li> <li>Develop performance measurement programme</li> <li>Review/establish LOAs between FMUs/Military</li> <li>Data Sharing between Civil and Military Units</li> </ul>	Identify and facilitate the cooperation between Civil/Military Organizations for the movement of Air Traffic	Develop training, formalize LOA's, and pre-tactical coordination between organizations	Long term (2020 - 2025)
	<b>Status/Remarks:</b> <ul style="list-style-type: none"> <li>This action item is on-hold.</li> </ul>			
9	<b>Contingency Planning</b> <ul style="list-style-type: none"> <li>Interoperability</li> <li>Seamless continuity plan</li> </ul>	Establish a foundational baseline of education to construct a regional continuity plan of operation in the event of catastrophic occurrence	This can be accomplished via ongoing training webinars, presentations and refresher training	Long term (2020 - 2025)
	<b>Status/Remarks:</b> <ul style="list-style-type: none"> <li>This action item is on-hold.</li> </ul>			
10	<b>ANI/WG Decision 1/3</b> <ul style="list-style-type: none"> <li>Provide progress report/update for Chairperson reference NACC/WG/4</li> </ul>	Liaison with Regional Coordination Group	Work Programme and Revised ToR to ICAO R/O	2018
	<b>Status/Remarks:</b> <ul style="list-style-type: none"> <li>ATFM TF will report to the NACC/WG/5 meeting on May 22-26, 2017.</li> <li>ANI/WG meeting is biannual and the next meeting will be scheduled in 2018.</li> </ul>			

**References:**

- Manual on Collaborative Air Traffic Flow Management (Doc 9971)
- Caribbean/South American Air Traffic Flow Management Concept of Operation (CAR/SAM CONOPS ATFM)
- Global Air Traffic Management Operational Concept (Doc 9854)
- Manual on Air Traffic Management System Requirements (Doc 9882)
- Manual on Global Performance of the Air Navigation System (Doc 9883)
- Manual on Flight and Flow – Information for a Collaborative Environment (Doc 9965)
- Civil/Military Cooperation in Air Traffic Management (Cir 330-AN/189)
- Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM, Doc 4444)

— END —