



ICAO

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

WORKING PAPER

ANI/WG/5 — WP/10
07/05/19

Fifth NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/5)
Mexico City, Mexico, 27 to 31 May, 2019

- Agenda Item 2: Review and Follow-up to Valid Conclusions/Decisions of the ANI/WG/04, NACC/WG/05 and GREPECAS/18 Meetings**
- 2.1 Follow-up and performance and monitoring assessment of the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP)**
- 2.1.1 Progress reports of the Task Forces of the ANI/WG. States' implementation status**

PROGRESS REPORT ON ATFM TASK FORCE WORK PROGRAMME

(Presented by ANI/WG ATFM TF Rapporteurs)

EXECUTIVE SUMMARY	
<p>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 Fourth NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/4) in Miami, United States, held from 21 to 24 August 2018. This Working Paper includes the results for previously identified deliverables and recommendations for improving the Task Force function and coordination.</p>	
Action:	The suggested actions are presented in Section 6.
Strategic Objectives:	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency• Economic Development of Air Transport• Environmental Protection
References:	<ul style="list-style-type: none">• NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP)• First NAM/CAR Air Navigation Implementation Working Group (ANI/WG/1) Meeting, Mexico City, Mexico, 29 July – 1 August 2013• Fourth NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/4), Miami, United States, 21-24 August 2018• Joint NAM/CAR ANI/WG ATFM Implementation Task Force Meeting (ATFM/TF)/CANSO Air Traffic Flow Management Data Exchange Network for the Americas (CADENA) Regional Implementation Group Meeting, Santo Domingo, Dominican Republic, 22 - 24 January 2019

<i>References (cont.)</i>	<ul style="list-style-type: none"> • ATFM Task Force teleconferences, webinars and e-mail correspondence
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1. Introduction

1.1 The Air Traffic Flow Management (ATFM) Implementation Task Force (TF) was established during the First NAM/CAR Air Navigation Implementation Working Group (ANI/WG/1) Meeting 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 Fourth NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/4) in 2018, the ATFM TF presented an update to the meeting on the TF progress on its work programme. The TF is comprised of members from Cuba, Curaçao, Dominican Republic, Haiti, Jamaica, Mexico, Trinidad and Tobago, United States, Central American Corporation for Air Navigation Services (COCESNA), Civil Air Navigation Services Organisation (CANSO), International Air Transport Association (IATA) and International Civil Aviation Organisation (ICAO) (See **Appendix A**).

2. ATFM TF Progress and Results

2.1 The TF held web conference meetings since August 2018. The meetings have included information on the current TF participants and ATFM capabilities. The web conferences provided updates on data sharing from the FAA and the experience of Trinidad and Tobago sharing the benefits of data exchange through System Wide Information Management (SWIM). The web conferences also provided an opportunity to discuss the routes used during high volume seasonal traffic and the contingency plans during hurricane operations.

2.2 Specifically, the following activities have been completed since August 2018:

- a) Caribbean Traffic Flow Management System (TFMS) Traffic Data: Five Air Navigation Service Providers (ANSPs) now receive traffic data from the Federal Aviation Administration (FAA) (Empresa Cubana de Navegación Aérea (ECNA), Instituto Dominicano de Aviación Civil (IDAC), Jamaica Civil Aviation Authority (JCAA), Servicios a la Navegación en el Espacio Aéreo Mexicano (SENEAM), Corporación Centroamericana de Servicios de Navegación Aérea (COCESNA)).

- b) The FAA Caribbean Traffic Data added 16 CANSO Air Traffic Flow Management Data Exchange Network for the Americas (CADENA) regional airports to the Operational Information System (OIS) under Airport Demand Information.
- c) The following countries have received ATFM Basic Training: Antigua and Barbuda, Aruba, Cayman Islands, Costa Rica, Cuba, Curaçao, Dominican Republic, Jamaica, Panama, Peru, Trinidad and Tobago and Turks and Caicos. Currently coordinating with SENEAM (Mexico) to provide the training.
- d) Coordinated and briefed 2018 FAA SNOWBIRD (Winter Weather Routes), Holiday Airspace Release Programme (HARP) and Florida Metroplex Y & Q routes (PBN implementation).
- e) NAM/CAR ATFM TF and CADENA agreed to work together through the ANI/WG ATFM TF co-rapporteurs: Mr. Greg Byus and Mr. Roosevelt Peña. In addition, the ANI/WG ATFM TF is working on revising CAR/SAM ATFM Concept of Operations (CONOPS).
- f) The TF proposed an update to the ATFM related Regional Performance Objectives (RPOs) in the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) (Implementation of Flexible use of airspace and improve demand and capacity balancing). The revised RPOs are included as **Appendix B**. The changes include an update of the dates, removal of some tasks considered to be completed, amendment of current tasks for clarification and the inclusion of new tasks in line with current situation and expected goals.

2.3 The ATFM TF has been promoting ATFM in the region through the CADENA weekly and Ad hoc web conferences, CADENA OIS, and CADENA Regional Implementation Group (RIG) meetings. The ATFM TF and CADENA RIG jointly hosted a meeting in Santo Domingo, Dominican Republic, from 22 to 24 January 2019.

2.4 During this joint meeting, the ICAO NACC Regional Office presented the points to be considered when integrating two groups: ATFM TF and CADENA RIG. The two groups are different in nature and scope. The ATFM TF's main relationship and responsibility is with and for the Civil Aviation Authorities (CAAs) and it has a direct requirement for deliverables related to the RPBANIP. CANSO, and thus CADENA, supports ANSPs.

2.5 The ATFM TF examined the original ATFM TF Work Programme and found many of its items have been accomplished, or the work items are more adequately addressed by ANSPs, via CADENA RIG. The ATFM TF revised its Work Programme to reflect these changes.

3. NAM/CAR ATFM Task Force Work Programme

3.1 The **Appendices C and D** contain the revised and original NAM/CAR ATFM TF Work Programme, respectively. This section describes the status and outcome of the original Work Programme work items. Also, this section describes the new items added to the revised Work Programme.

3.2 Original Work Item 1: Regional assessment of ANSPs: The ATFM TF distributed the ATFM assessment questionnaires to Central America and Caribbean States and collected the information. The information was organized and the state of ATFM readiness was assessed twice in 2015 and 2016. Though ANSPs' ability to conduct ATFM operation will continue to improve, this Work Item is closed with assessment result.

3.3 Original Work Item 2: Procedural Agreements: In addition to bilateral agreements between adjacent Flight Information Regions (FIRs), CANSO organized the region-wide Letter of Agreement and it was signed in December 2016 among seven ANSPs to facilitate the safe and efficient movement of air traffic between and through member ANSP FIRs. CADENA produced the "CADENA ATFM and Collaborative Decision Making (CDM) Procedures Manual" and will maintain this document. This Work Item is successfully closed.

3.4 Original Work Item 3: Trainings: The original Work Item 3 will continue as the revised ATFM TF Work Programme Work Item 1: Trainings and Workshops. The ATFM TF has assessed training needs of States and ANSPs, established the training subjects and contents, solicited instructors, established training schedule and conducted the fundamental ATFM training courses. Additional training items are listed below:

- Develop an ATFM Training Programme, including training requirements for each ATFM position. (Conclusion ATFM/TF/CADENA/01a)
- Training Programme should include every level of training and objectives in line with ICAO TRAINAIR Plus Methodology (Conclusion ATFM/TF/CADENA/01b)
- Training Programme shall be included as Appendix to the CAR/SAM ATFM CONOPS (Conclusion ATFM/TF/CADENA/01c)

3.5 Original Work Item 4: Tools, technology and automation: The original Work Item 4 contained sub-items such as operational webpage, identification of the ATFM suite of tools such as Prediction and Monitoring Tools, and exploration of Meteorological products. In February 2017, the CANSO Latin American and Caribbean Regional Office organised an ATFM industry day kindly hosted by the Dutch Caribbean (DC)-ANSP and published a Request for Information (RFI) addressing the needs for flight data exchange and supporting tools. The ICAO ATFM TF will monitor the development of future aviation technologies (e.g., technologies from research communities such as NextGen and Single European Sky ATM Research Programme (SESAR) and ICAO Global Air Navigation Plan (GANP)/Aviation System Block Upgrade (ASBU) team) that will support the ATFM operation. The ATFM TF will also provide the guideline of baseline ATFM tools and automation capabilities in the CAR/SAM ATFM CONOPS Document. Thus, the remainder of this work is moved under the revised Work Item 2: CAR/SAM ATFM Concept of Operation Document.

3.6 Original Work Item 5: Schedule Regional ATFM Workshops: The original Work Item 5 will continue as the revised ATFM TF Work Programme Work Item 1: Trainings and Workshops. The ATFM TF will organize appropriate workshops as needed.

3.7 Original Work Item 6: Improve Demand and Capacity Balancing (DCB): The Work Item 6 is being addressed by CADENA. Published capacity information for aerodromes and airspace is accessible to ANSPs and stakeholders via CADENA OIS. The information on reductions in capacity at aerodromes and airspace is uploaded to CADENA OIS and discussed via CADENA web conferences as needed. The demand information requires demand prediction capabilities, which will require a longer time to address. The flight data exchange is needed and currently Trinidad and Tobago has successfully implemented this capability with the FAA via SWIM in 2017. COCESNA is in the process of implementation as of February 2019. Other ANSPs were strongly encouraged to do the same and CADENA is assisting them. The efforts to improve DCB will continue; however, this Work Item is closed in the ATFM TF Work Programme, and the ATFM TF will continue to provide input and guidance to CADENA's DCB improvement efforts.

3.8 Original Work Item 7: Pre-Tactical Operation Daily Briefing: The Work Item 7 is successfully addressed. The efforts to improve Pre-Tactical Operation Briefing will continue; however, this Work Item is closed in the ATFM TF Work Programme, and the ATFM TF will continue to provide input and guidance to CADENA's Pre-Tactical Operation Briefing improvement efforts.

3.9 Original Work Item 8: Flexible Use Airspace (FUA): The original Work Item 8 will continue as the revised ATFM TF Work Programme Work Item 6: Flexible Use Airspace. In addition to the original description of this Work Item, the ATFM TF will work to address the RPBANIP FUA RPO.

3.10 Original Work Item 9: Contingency Planning: The original Work Item 9 will continue as the revised ATFM TF Work Programme Work Item 3: Contingency Plans. This Work Item will provide an adequate regional response to contingencies, and will reduce the harmful impact of these contingencies to the continuous flow of air traffic.

- Develop guidelines for ATFM Contingency Plans to be included in the CAR/SAM ATFM Concept of Operations Document. (Conclusion ATFM/TF/CADENA/02a)
- Establish a clear differentiation between the ATM Contingency Plans and the ATFM Contingency Plans. (Conclusion ATFM/TF/CADENA/02a)
- Consider interoperability and seamless continuity plan into the ATFM Contingency Plans (from original ATFM Work Programme Work Item 9)

3.11 Original Work Item 10: ANI/WG Decision: The Work Item 10 will continue as the revised ATFM TF Work Programme Work Item 7: ANI/WG Decision.

3.12 Newly created: Revised Work Programme Work Item 2: CAR/SAM ATFM Concept of Operation Document: The ATFM TF will lead the development of CAR/SAM ATFM CONOPS. There are many sections to this document and several conclusions were noted work from ATFM TF and CADENA joint meeting in January 2019 as shown below:

- Training Programme to be included in the CAR/SAM ATFM Concept of Operations Document. (Conclusion ATFM/TF/CADENA/01c)
- Guidelines for ATFM Contingency Plans to be included in the CAR/SAM ATFM Concept of Operations Document. (Conclusion ATFM/TF/CADENA/02a)
- Key Performance Indicators (KPIs) along with associated guidelines are to be included in the CAR/SAM ATFM Concept of Operations Document. (Conclusion ATFM/TF/CADENA/03c)
- Include the minimum guideline of ATFM tools and automation technologies and include them in the CAR/SAM ATFM Concept of Operations Document. (Conclusion ATFM/TF/CADENA/04a)

3.13 Newly created: Revised Work Programme Work Item 4: ATFM Regional Performance Measurement: Understand operational performance and develop means and methods to improve that performance.

- Establish KPIs to be measured, for example: take-off time, off-block time and filed versus flown time. (Conclusion ATFM/TF/CADENA/03a)
- Identify when and how the KPIs will be measured, and with whom the information will be shared. (Conclusion ATFM/TF/CADENA/03b)
- Establish the guidelines of KPIs. (Conclusion ATFM/TF/CADENA/03c)
- Include the KPIs and associated guidelines into the CAR/SAM ATFM Concept of Operations Document. (Conclusion ATFM/TF/CADENA/03c)

3.14 Newly created: Revised Work Programme Work Item 5: Supporting ICAO NACC Regional Office Work Associated with ATFM

- Request States to consider implementing automated ATFM tools to predict demand and support DCB. (Conclusion ATFM/TF/CADENA/04b and 04c)
- Support RPBANIP revision in the areas of ATFM including RPOs on FUA and DCB. (Conclusion ATFM/TF/CADENA/05a)

4. Deliverables and Results

4.1 The focus for 2019 continues to be the sharing of best practices, information on demand and capacity balancing, and ATFM capabilities in the region. The TF is encouraging all ANSPs and stakeholders to participate and share information from operations at the airport level through the overlying airspace. With the information available to ANSPs, States can better identify their constraints, implement flow management programmes, improve their arrival and departure rates, and increase capacity for both airports and airspace.

5. Recommendations for Improving ATFM Implementation

5.1 Since the ATFM TF held its first web conference in March 2016, the region has had a tremendous increase in coordination and collaboration amongst the States through such efforts as CADENA and the quarterly TF web conferences. Through data sharing and information exchange, all stakeholders in the region are experiencing a greater understanding of the constraints affecting the airspace and how ATFM and CDM can assist in improving the safe and efficient flow of traffic.

6. Suggested Actions

6.1 The Meeting is invited to:

- a. evaluate the progress of the ATFM TF detailed in this paper;
- b. evaluate the updated Work Programme;
- c. support the recommendations for the update on the RPBANIP ATFM related RPOs; and
- d. review and update Work Programme timelines and priorities.

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APPENDIX A
ATFM TF MEMBERS

5. Task Force Members and Points of Contact

State/Territory/International Organization	ATFM Task Force Members	Remarks
United States	Greg Byus	Co Rapporteur
Mexico	Oscar Vargas Antonio Álvaro Edgar Pérez Galindo	
COCESNA	Fernando Soto	
Cuba	Jorge Centella Ricardo Martínez	
Jamaica	Deano Ledford	
Haiti	TBD	
Dominican Republic	Roosevelt Peña	Co Rapporteur
Curacao	Jacques Lasten	
Trinidad and Tobago	Curtis Fraser	
CANSO	Kapri Kupper	
IATA	Marco Vidal	

Points of Contact

State/Territory/International Organization	ATFM Task Force Points of Contact	Remarks
Antigua and Barbuda	TBD	
Bahamas	TBD	
Barbados	TBD	
Belize	TBD	
Canada	TBD	
Costa Rica	Mario Sequiera msequeira@dgac.go.cr Fernando Naranjo	
El Salvador	TBD	
Grenada	TBD	
Guatemala	TBD	
Honduras	TBD	
Nicaragua	TBD	
Saint Kitts and Nevis	TBD	
Saint Lucia	TBD	
Saint Vincent and the Grenadines	TBD	

APPENDIX B
REVISED REGIONAL PERFORMANCE OBJECTIVES

2. IMPLEMENTATION OF FLEXIBLE USE AIRSPACE (FUA)				
Benefits				
Efficiency	<ul style="list-style-type: none"> • Increase airspace capacity • Improve ATS route structure efficiency 			
Continuity	<ul style="list-style-type: none"> • Ensure safe and efficient action in the event of unlawful interference • Make available military restricted airspace more hours of the day so that aircraft can fly on their preferred trajectories • Improve search and rescue services 			
Strategy				
ATM Component	TASK DESCRIPTION	START-END	RESPONSIBLE	STATUS
AOM	a) Establish civil/military coordination bodies	2013- 2019	States, Territories	Valid
	b) Arrange for permanent liaison and close cooperation between civil ATS units and appropriate air defence units	2013- 2019	States, Territories	Valid
	c) Conduct a regional review of Special Use Airspace: <ul style="list-style-type: none"> i. assess use of airspace management processes; ii. collaborate with the FUA users and develop LOAs to ensure best use of all available airspace iii. 	2013- 2023	States, Territories, Int. Orgs, ICAO	Valid
	d) implement dynamic ATC sectorization in order to provide the best balance between demand and capacity to respond in real-time to changing situations in traffic flows and to accommodate the preferred routes of users in short-term	2013-2021	States, Territories, Int. Orgs, ICAO	Valid
	e) Develop performance measurement programme	2013- 2021	States, Territories, Int. Orgs	Valid
	f) Monitor implementation progress	2013- 2023	ICAO	Valid
GPIs	GPI/1: Flexible Use Airspace			

3. IMPROVE DEMAND AND CAPACITY BALANCING (DCB)				
Benefits				
Environment	<ul style="list-style-type: none"> Reduced weather and traffic-induced holding leading to reduced fuel consumption and emissions 			
Efficiency	<ul style="list-style-type: none"> Improved and smoother traffic flows Improved predictability Improved management of excess demand for service in ATC sectors and aerodromes Improved aerodrome and airspace operational efficiency 			
Strategy				
ATM Component	TASK DESCRIPTION	START-END	RESPONSIBLE	STATUS
DCB	a) Identify key stakeholders (ATC service providers and users, military authorities, airport authorities, aircraft operators and relevant organizations) for purposes of coordination and cooperation - using a CDM process	2013- 2019	States, Territories, Int. Orgs	Valid
	b) Develop, train, and implement agreed strategic, pre-tactical, and tactical CDM processes and procedures between ANSPs and key stakeholders	2017-2020	States, Territories, Int. Orgs	Valid
	c) Develop and implement regular CDM quality review processes with key stakeholders	2017-2020	States, Territories, Int. Orgs	Valid
	d) Analyze traffic flow problems and develop, train and implement, methods for improving efficiencies, as needed for: <ul style="list-style-type: none"> i. Aerodrome capacity ii. ATS capacity iii. ATS letters of agreement iv. Airspace sector capacities v. Airspace and route optimization 	2013- 2021	States, Territories, Int. Orgs	Valid
	e) Define, train and implement, common elements of situational awareness between FMUs and Stakeholders: <ul style="list-style-type: none"> i. Common understanding of traffic demand ii. Common understanding of constraints and associated traffic management measures iii. Common weather displays iv. Communications (teleconferences, web) v. Daily teleconference/messages methodology advisories 	2013- 2021	States, Territories, Int. Orgs	Valid

Strategy				
ATM Component	TASK DESCRIPTION	START-END	RESPON-SIBLE	STATUS
	f) Develop and implement methods to establish demand/capacity forecasting	2013- 2023	States, Territories, Int. Orgs	Valid
	g) Develop and implement methods for reliable demand prediction	2019-2023	States, Territories, Int. Orgs	Valid
	h) Define common electronic information and minimum databases required for decision support and alerting systems for interoperable situational awareness between ATFM units	2013- 2023	States, Territories, Int. Orgs	Valid
	i) Develop regional KPIs for efficient and optimum use of aerodrome and runway capacity	2013- 2020	States, Territories, Int. Orgs	Valid
	j) Develop, train and implement a national ATFM Procedures Manual to manage demand/capacity balancing	2013- 2020	GREPECAS	Valid
	k) Develop regional coordination for implementation of ATFM units	2013- 2020	States, Territories, Int. Orgs	Valid
	l) Develop operational agreements between ATFM units for interregional demand/capacity balancing	2013- 2021	States, Territories, Int. Orgs	Valid
	m) Monitor implementation progress	2013- 2023	ICAO	Valid
GPIs	GPI/1: Flexible Use Airspace; GPI/6: Air Traffic Flow Management; GPI/7: Dynamic and Flexible ATS Route Management; GPI/9: Situational Awareness; GPI/13: Aerodrome Design and Management; GPI/14: Runway Operations; and GPI/16: Decision Support Systems and Alerting Systems			

APPENDIX C – Revised
NAM/CAR ATFM Task Force Work Programme

Updated March 2019

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.

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.

No	Activity	Objective	Deliverable	Date
1	Trainings and Workshops <ul style="list-style-type: none"> • Develop an ATFM Training Programme, including training requirements for each ATFM position. (ATFM/TF/CADENA/01a) • Training Program should include every level of training and objectives in line with ICAO TRAINAIR Plus Methodology. (ATFM/TF) • Training Program shall be included as Appendix to the CAR/SAM ATFM CONOPS. (ATFM/TF/CADENA/01c) • Organize appropriate workshops as needed. 	Provide a core foundation to build upon for regional participants	Trainings and workshops	31 December 2020
	Status/Remarks: <ul style="list-style-type: none"> • Much training work already accomplished (the course was delivered 2 times in 2018) 			
2	CAR/SAM ATFM Concept of Operation Document <ul style="list-style-type: none"> • Establish and include the minimum guideline of ATFM tools and automation technologies and include them in the CAR/SAM ATFM Concept of Operations Document. (ATFM/TF/CADENA/04a) • Included the guideline for the ATFM Contingency Plan in the CAR/SAM ATFM Concept of Operations Document. • Include agreed regional KPIs in the CAR/SAM ATFM Concept of Operations Document. • 	Create the ATFM Concept of Operation (CONOPS) Document that encompasses CAR and SAM to improve safety and efficiency of traffic flow between two regions.	CAR/SAM CONOPS doc	31 December 2020
	Status/Remarks: <ul style="list-style-type: none"> • Work initiated. 			
3	Contingency Plans <ul style="list-style-type: none"> • Develop guidelines for ATFM Contingency Plans to be included in the CAR/SAM ATFM Concept of Operations Document. • Establish a clear differentiation between the ATM Contingency Plans and the ATFM Contingency Plans. • Consider interoperability and seamless continuity plan into the ATFM Contingency Plans (from original ATFM Work Programme Work Item 9) 	This Work Item will provide an adequate regional response to contingencies, and will reduce the harmful impact of these contingencies to the continuous flow of air traffic.	Contingency Plans	31 December 2020
	Status/Remarks: <ul style="list-style-type: none"> • Was original Work Item 9: Contingency Planning. 			

No	Activity	Objective	Deliverable	Date
4	<p>ATFM Regional Performance Measurement</p> <ul style="list-style-type: none"> Establish Key Performance Indicators (KPIs) to be measured. For example, take-off time, off-block time and filed versus flown time. Identify when and how the KPIs will be measured, and with whom the information will be shared. Establish the guidelines of KPIs. Include the KPIs and associated guidelines into the CAR/SAM ATFM Concept of Operations Document. 	Understand operational performance and develop means and methods to improve performance.	KPI identification, definition, and associated guidelines	31 December 2020
<p>Status/Remarks:</p> <ul style="list-style-type: none"> 				
5	<p>Supporting ICAO NACC Regional Work Associated with ATFM</p> <ul style="list-style-type: none"> Support RPBANIP revision in the areas of ATFM including Regional Performance Objective (RPO), Implementation of Flexible Use Airspace and DCB Request States to consider implementing automated ATFM tools to predict demand and support demand and capacity balancing (DCB). 	Support ICAO NACC RO to accomplish ATFM related tasks	Necessary inputs, letters, papers, and documents.	31 December 2020
<p>Status/Remarks:</p> <ul style="list-style-type: none"> States will report to ICAO NACC during CY 2019 on their completion of RPOs related to ATFM implementation 				
6	<p>Flexible Use Airspace</p> <ul style="list-style-type: none"> Update Regional Performance Objective, Implementation of Flexible Use Airspace (FUA) Perform assessment of where FUA can be utilized/benefit Identify civil/military coordination entities Arrange for permanent liaison and cooperation between civil ATS and air defence units Conduct regional review of SUA Assess use of airspace management process Review use of dynamic airspace processes Institute dynamic ATC sectorization and notification for demand and capacity Develop performance measurement programme Review/establish LOAs between FMUs /Military Data sharing between civil and military units 	Identify and facilitate the cooperation between Civil/Military Organizations for the movement of air traffic	Develop training, formalize LOAs, and pre-tactical coordination between organizations	31 December 2020
<p>Status/Remarks:</p> <ul style="list-style-type: none"> 				
7	<p>ANI/WG Decision and ATFM TF Organization</p> <ul style="list-style-type: none"> Provide progress report/update for Chairperson reference NACC/WG Keep this Work Programme updated Keep ATFM TF PoC list updated Facilitate ATFM TF Web Conferences as needed Facilitate ATFM TF Meeting as needed Coordinate ATFM matters with CADENA and stakeholders as needed 	Liaison with regional coordination group	Work Programme and ToR to ICAO RO	Permanent (ANI/WG Meetings)
<p>Status/Remarks:</p> <ul style="list-style-type: none"> 				

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)

APPENDIX D – Original
NAM/CAR ATFM Task Force Work Programme

Updated on Apr 18, 2017

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 1st 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><u>Regional assessment of ANSPs</u></p> <ul style="list-style-type: none"> • Identify participants • Capabilities • Experience (entry/intermediate/advance) • FMU/FMP/Ops Sup/Mgr. • What do ANSPs need • Conduct study of existing/future FMP/FMU and a Regional Centralized FM Center • Note: A review as to the specific methodology to solicit this info (email/survey etc.) will be determined 	Provide a baseline assessment of resources, needs & capabilities	Report/document to be determined	Short Term 2017 – 2018
	<p>Status/Remarks:</p> <ul style="list-style-type: none"> • 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. • 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. 			

No	Activity	Objective	Deliverable	Date
2	<p>Procedural Agreements</p> <ul style="list-style-type: none"> Establish bi-lateral/multi-lateral LOAs between States/FMUs (* CADENA) – Completed Identify high volume/prefer city pairs/routes Develop multi-FIR regional network of ATFM coordination (* CADENA) Collect, analyse, and report on demand/capacity, and delay data. Research guidance on qualifications and competencies for ATFM personnel and develop action plan (* CADENA) Data Exchange Agreements with neighbouring States (* CADENA) Data Exchange between ANSPs (* CADENA) 	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>Status/Remarks:</p> <ul style="list-style-type: none"> 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, ANS Dominican Republic, Executive ANS Trinidad and Tobago, President of COCESNA with initials of participating members on Dec 6, 2016. The CADENA operational webcom kicked off on Dec 16, 2016. Preparation includes the establishment of the appropriate procedures, guidelines, data preparation, and training. 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. 			
3	<p>Training</p> <ul style="list-style-type: none"> Assess training needs of ANSPs Establish list of TNG subjects Solicit instructors Establish Schedule Publish/coordinate events Establish cross TNG, personnel exchange program Perform ATFM workshops/seminars/visits 	Provide a core foundation to build upon for Regional participants	Report listing training accomplishments as noted	Med-Long term (2017 - 2020)
	<p>Status/Remarks:</p> <ul style="list-style-type: none"> Historically, this training was general ATFM training. The specialized training such as leading the CADENA Operational Webcom were conducted prior to the implementation of this capability. Possible ETMS FEA development training for SENEAM SMART office. 			
4	<p>Tools, technology & automation</p> <ul style="list-style-type: none"> Research development of Ops web page (* CADENA) Flight plan processing Identifying ATFM suite of tools such as Prediction & Monitoring Tools Explore Meteorological Products Est. Sub-Team for research/development of future concept of regional ATFM system (* CADENA) Est. a test bed for testing and implementing future technologies for modelling 	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>Status/Remarks:</p> <ul style="list-style-type: none"> The TFM Data Exchange related technologies were under development by Trinidad & Tobago. The TFM Data Exchange Technical Interchange Meeting is scheduled for Dominican Republic and SENEAM. 			
5	<p>Schedule Regional ATFM Workshops</p> <ul style="list-style-type: none"> Enhance cooperation Share best practices and ideas Forecast future growth/needs Encourage academia and industry participation 	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>Status/Remarks:</p> <ul style="list-style-type: none"> 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. 			

No	Activity	Objective	Deliverable	Date
6	<u>Improve Demand and Capacity Balancing (DCB)</u> <ul style="list-style-type: none"> Establish coordination with key stakeholders (* CADENA) Identify major traffic flows/city pairs Research airport/sector capacity calculation (* CADENA) Compare with ICAO ATFM Global Doc Identify high density airports/sectors (* CADENA) Develop mitigation strategies (* CADENA) 	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)
	Status/Remarks: <ul style="list-style-type: none"> The CADENA is preparing the library of AAR/ADR information and move on to address sector capacity. The DCB mitigation strategies are considered via weekly CADENA webcom and information/applied solutions were gathered for future analysis. 			
7	<u>Pre-Tactical Operation Daily Briefing</u> <ul style="list-style-type: none"> Solicit input from ANSPs & stakeholders (* CADENA) Develop Ops Briefing checklist (* CADENA) Select Ops Telcon platform (GoTo or ATCSCC) Train/practice web conferences (* CADENA) Research Traffic Management Initiatives Standardization Notification Implementation Documentation Review analysis Publication of the Daily ATFM Plan 	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)
	Status/Remarks: <ul style="list-style-type: none"> The CADENA operational webcom kicked off on Dec 16, 2016. The FAA is working to estimate the benefits of the CADENA operational webcom. 			
8	<u>Flexible Use Airspace</u> <ul style="list-style-type: none"> Perform assessment of where FUA can be utilized/benefit Identify civil/military coordination entities Arrange for permanent liaison and cooperation between civil ATS and air defence units. Conduct regional review of SUA Assess use of airspace management process Review use of dynamic airspace processes Institute dynamic ATC sectorization and notification for demand and capacity Develop performance measurement programme Review/establish LOAs between FMUs/Military Data Sharing between Civil and Military Units 	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)
	Status/Remarks: <ul style="list-style-type: none"> This action item is on-hold. 			
9	<u>Contingency Planning</u> <ul style="list-style-type: none"> Interoperability Seamless continuity plan 	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)
	Status/Remarks: <ul style="list-style-type: none"> This action item is on-hold. 			
10	<u>ANI/WG Decision 1/3</u> <ul style="list-style-type: none"> Provide progress report/update for Chairperson reference NACC/WG/4 	Liaison with Regional Coordination Group	Work Programme and Revised ToR to ICAO R/O	2018
	Status/Remarks: <ul style="list-style-type: none"> ATFM TF will report to the NACC/WG/5 meeting on May 22-26, 2017. ANI/WG meeting is biannual and the next meeting will be scheduled in 2018. 			

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)