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# ATFM Regional Implementation Progress in the CAR Region

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*ICAO NACC Regional Office/September 2019*





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# ATFM Implementation Background

- ✈ Initial ATFM activities in the CAR Region started in early 2000's.
- ✈ ATFM workshops were already being provided in 2005-2006.
- ✈ GREPECAS took actions to address ATFM implementation in 2005.
- ✈ ATFM CONOPS first edition was approved in 2007.
- ✈ CAR/SAM ATFM Manual initially approved in 2010.



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# Air Traffic Growth in the CAR Region

- ✈ Traffic has maintained a relatively sustained growth.
- ✈ ATS systems have modernized to cope with the increasing demand and complexity, with some limitations.
- ✈ Personnel has been a constant challenge for the majority of States, Territories and International Organizations.
- ✈ Tourism has become a column for the Region's economic development.



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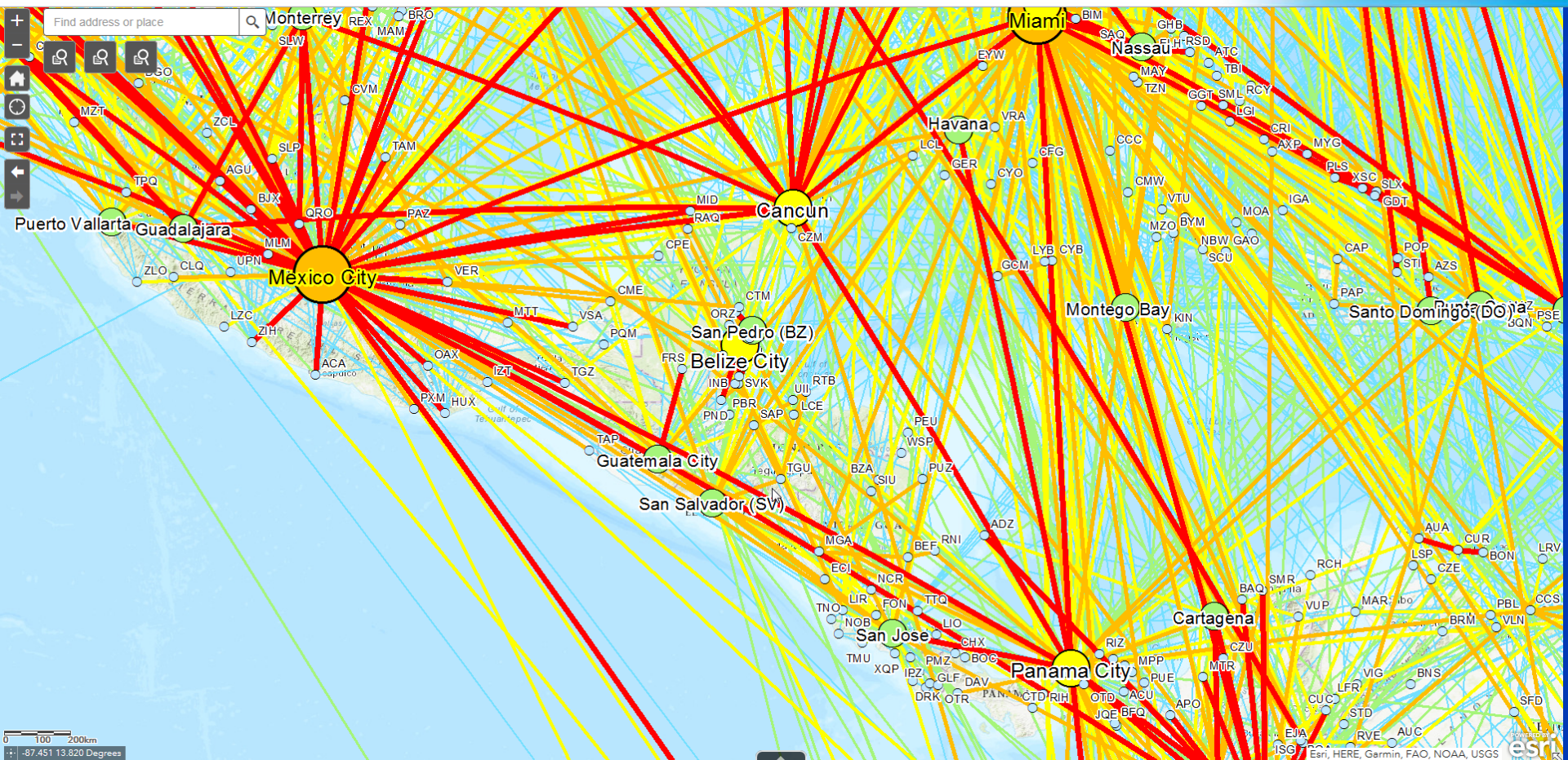






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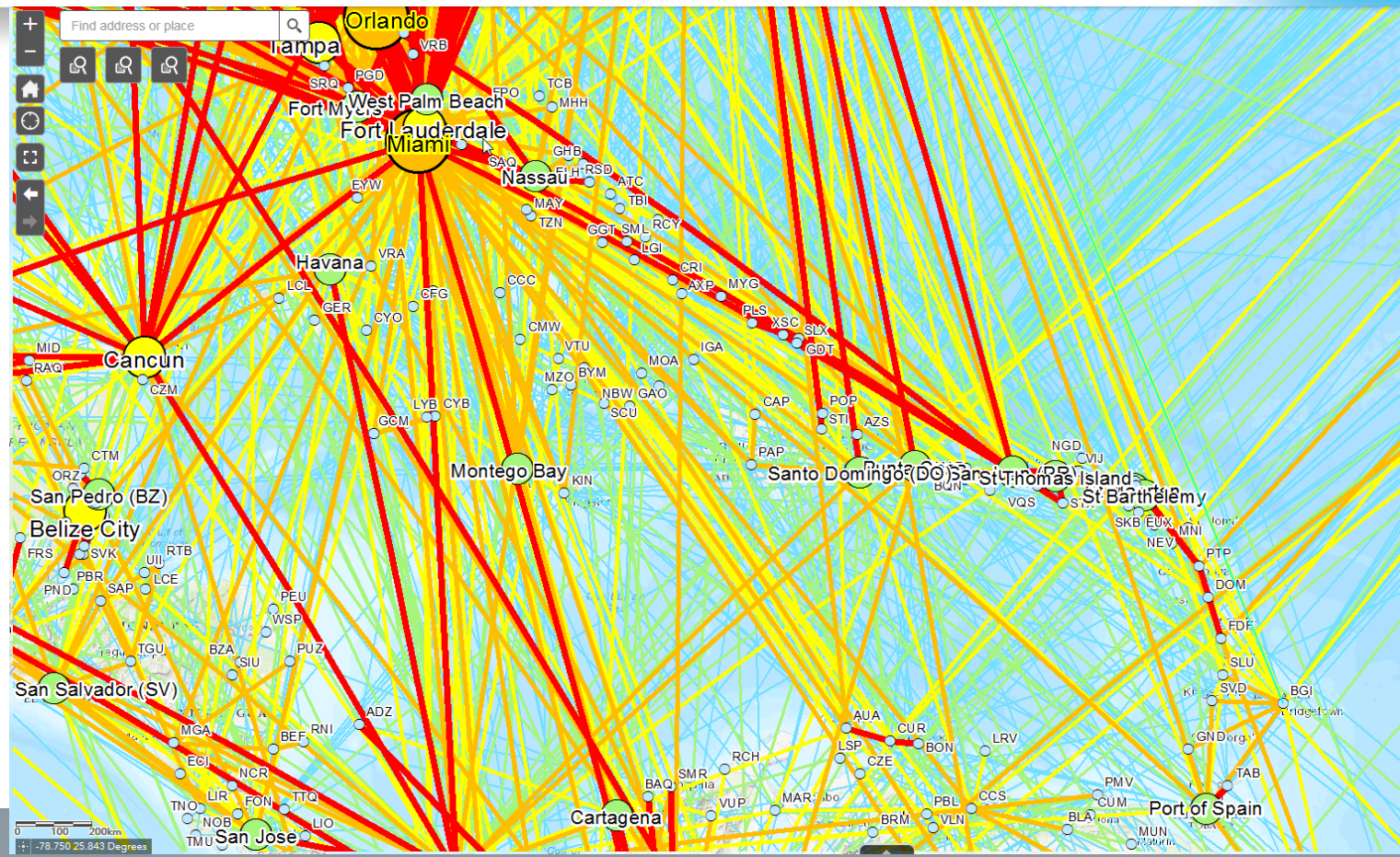




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## Mexico



✈ Mexico airspace is comprised by two FIRs (MMFR, MMFO).

✈ Four ACCs.

✈ 14 APPs with ATS surveillance.

✈ 16 APPs with procedural ATC.

✈ 9 APPs combined with TWR.

✈ 57 ATC Towers.

✈ MMMX, MMUN, MMGL, MMMY and MMTJ.

✈ Main flow of traffic to and from United States

✈ Basic ATFM operation limited to Mexico City.

✈ TMMs applied occasionally for Cancun and Los Cabos.



## Central American



✈ MHTG supports six States.

✈ Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

✈ 7 TMAs.

✈ Busiest airports MROC and MSLP.

✈ Main traffic flows from Mérida to El Salvador and Panama westbound.

✈ ATFM implemented by ACNA, COCESNA ANSP, in the upper airspace.

✈ Challenges for connecting lower airspace TMAs nodes.





## Costa Rica

✈ Costa Rica handles their section of the lower MHTG.

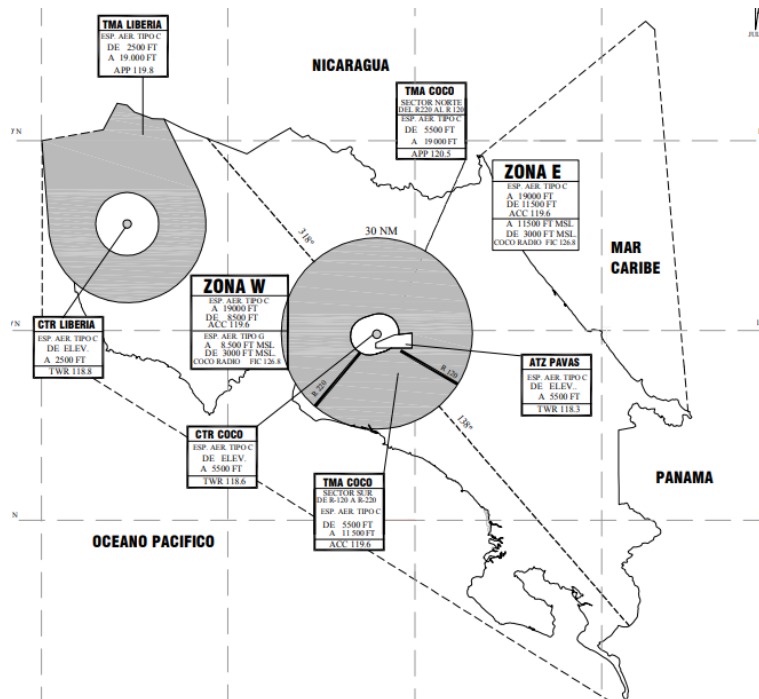
✈ 2 TMAs/APPs.

✈ Busiest airports MROC/ MRLB.

✈ Main traffic flows from EEUU and Panama.

✈ ATFM partially implemented, resourced and procedures partially established.

✈ ATFM connected to the Upper airspace ANSP (CENAMER).





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## Habana



- ✈ MUFH serves the airspace from Cuba
  - ✈ An irregularly shaped area with predominant traffic from north to south and vice versa.
  - ✈ Very complex central area due to the convergence of several medium intensity routes
  - ✈ One ACC: Habana. Four TMAs: Habana, Santa Clara, Camagüey and Santiago.
  - ✈ Two APPs: Varadero and Cayo Largo.
  - ✈ 10 ATC Control Towers for International Airports and 5 for Domestic Airports.
- ✈ ATFM implemented, lacking automation tools.
- ✈ Airports normally operating under capacity.



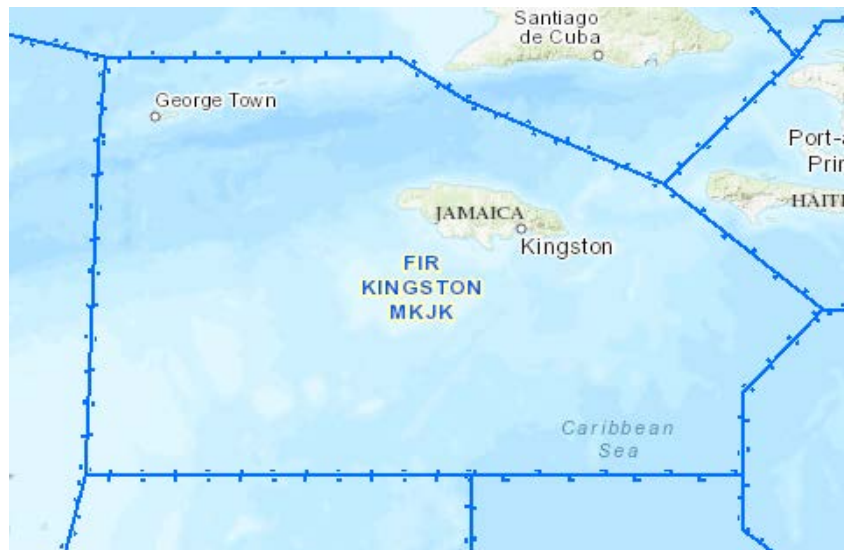
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## Kingston



- ✈ MKJK serves Jamaica and Cayman Islands.
  - ✈ 1 ACC.
  - ✈ 2 APPs
  - ✈ Cayman Islands responsible for one additional TMA/APP.
  - ✈ 5 international airports (including 2 in Cayman).
  - ✈ Montego Bay is the busiest airport.
  - ✈ Main traffic flows are overflights north-south bound and vice versa.
- ✈ ATFM partially implemented, lacking staff and formal agreements with neighboring FIRs.





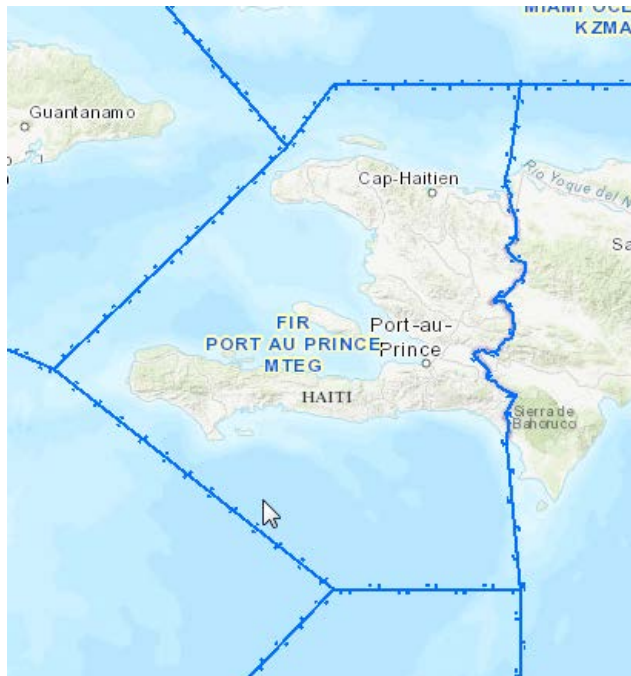
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## Port au Prince



✈ MTEG FIR serves Haiti's airspace.

✈ One ACC/APP.

✈ Procedural ATC provision.

✈ Limited automation.

✈ Main traffic flows are overflights north-south bound and vice versa.



# Santo Domingo



✈ MDCS serves the airspace of the Dominican Republic.

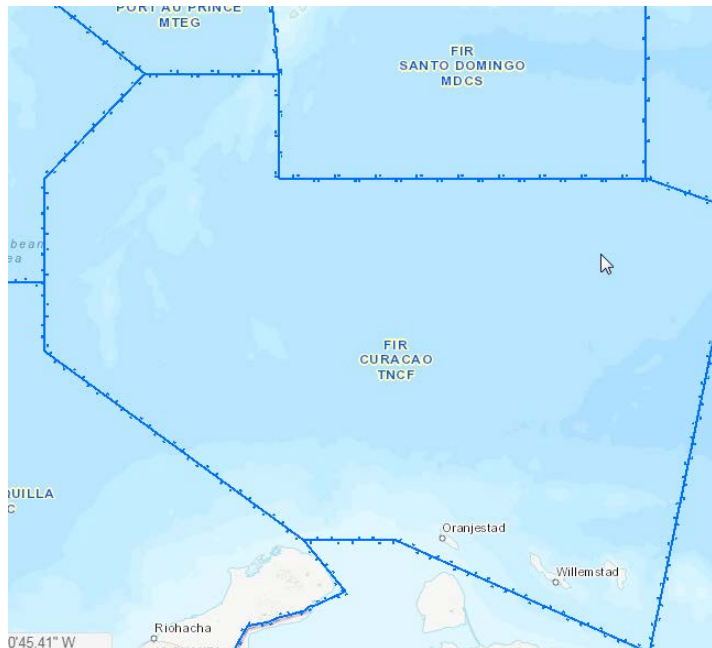
- ✈ One ACC at Santo Domingo. One CCT at Punta Cana.
- ✈ Two APPs, Las Américas and Punta Cana.
- ✈ Three TMAs.
- ✈ Eight International Airports.
- ✈ Main traffic arrivals-departures MDPC.

✈ ATFM implemented, fully staffed and operational. SOPs and training established.

✈ Manually operated, lacking an automated tool. Receive two times per day information from the FAA command center



## Curaçao



✈ TNCF serves a significant portion of airspace in the central Caribbean.

✈ Mostly covered by Radar, few gaps in coverage at the border of the FIR. Space ADS-B will enhance ATS surveillance coverage for the whole FIR.

✈ One ACC at Curacao and TMAs at Curacao, Aruba and Bonaire.

✈ 3 APPs.

✈ 3 international airports.

✈ Main air traffic flows are overflights north-south bound and vice versa.

✈ ATFM not implemented.





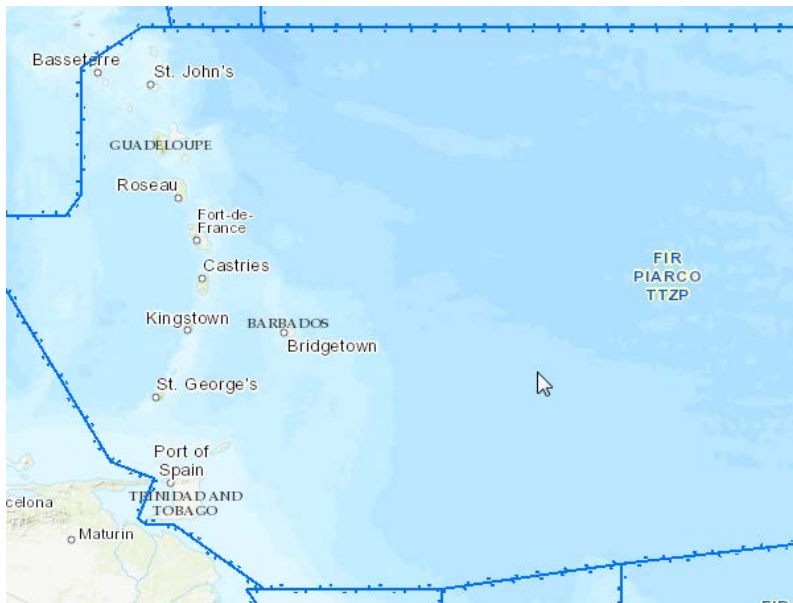
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## Piarco



- ✈ Piarco serves 750,000 sq. miles of airspace.
  - ✈ Handled by the TTCAA, provides ANS excluding the Terminal Airspaces (TMA's).
  - ✈ 1 ACC with two main sectors (continental and oceanic).
  - ✈ Antigua, Guadeloupe, Martinique, St. Lucia, St. Vincent and the Grenadines, Barbados, Grenada and Trinidad and Tobago.
- ✈ ATFM partially implemented.
- ✈ Piarco OIS constitute the ATFM Daily Plan (ADP) for the Piarco FIR and E/CAR
- ✈ Successfully connected to FAA via SWIM



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# NAM/CAR ATFM Survey 2019

- To better support the ATFM implementation in the NAM/CAR Regions and evaluate the compliance with the RPBANIP RPOs (DCB and FUA).
- Prepared by the NAM/CAR ANI/WG ATFM Task Force to collect information related to the ATFM implementation progress.
- Due date 1 September 2019

NAM/CAR 2019 SURVEY  
Air Traffic Flow Management

Prepared by the NAM/CAR ANI/WG ATFM Task Force  
ICAO NACC REGIONAL OFFICE



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# NAM/CAR ATFM Survey 2019

- 38 basic questions, to assess ATFM/CDM implementation and operation, assessed by level of implementation (Not implemented, Partial implementation, Full implementation).
- 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).

NAM/CAR 2019 SURVEY  
Air Traffic Flow Management

Prepared by the NAM/CAR ANI/WG ATFM Task Force  
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# NAM/CAR ATFM Survey 2019

- Poor response, but a representative sample from all different levels of ANS systems.
- Some responses may require additional clarification.
- Provides 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.

## NAM/CAR 2019 SURVEY

Prepared by the NAM/CAR ANI/WG ATFM Task Force  
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***Pending responses, are still welcomed***



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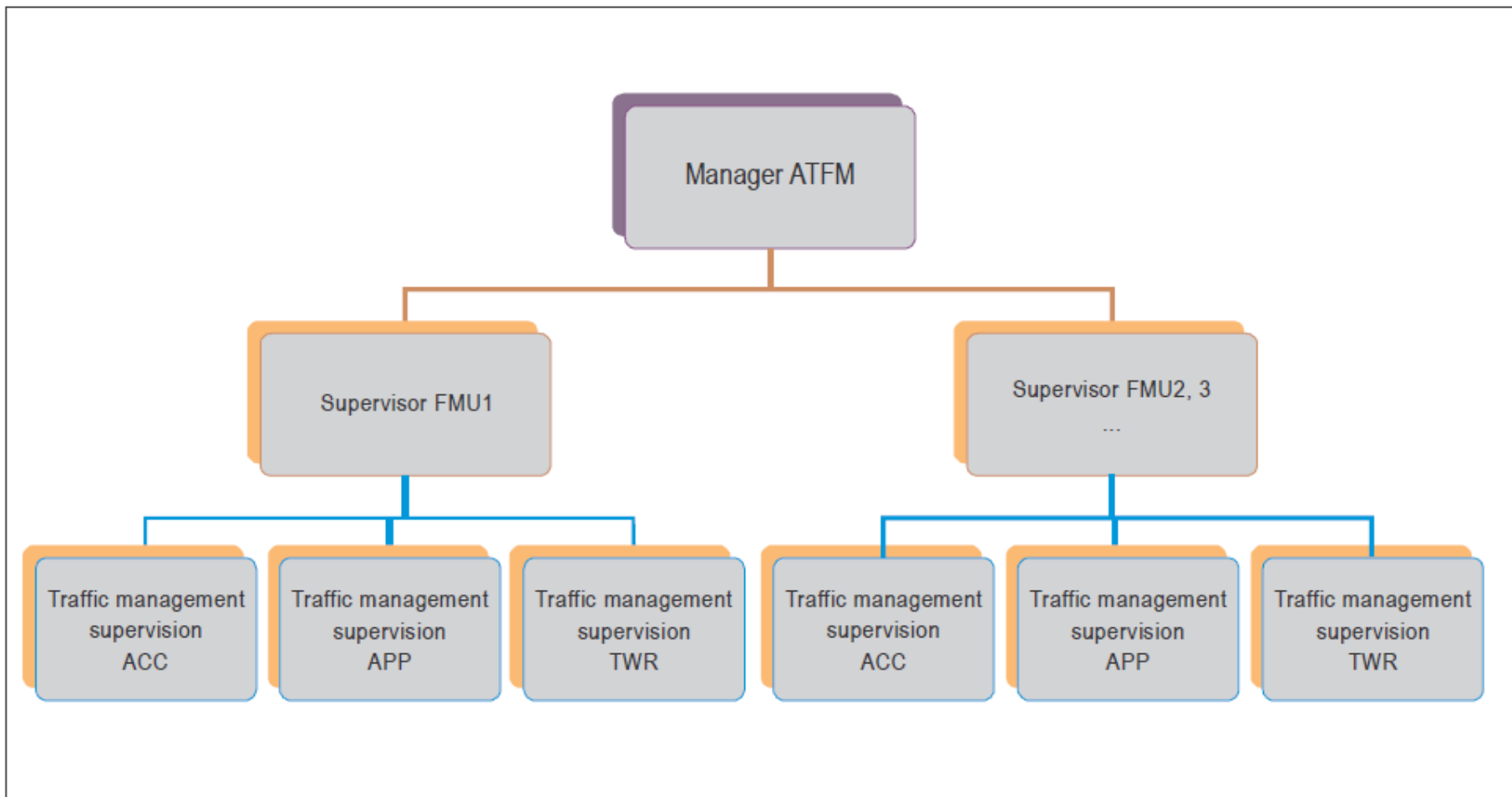
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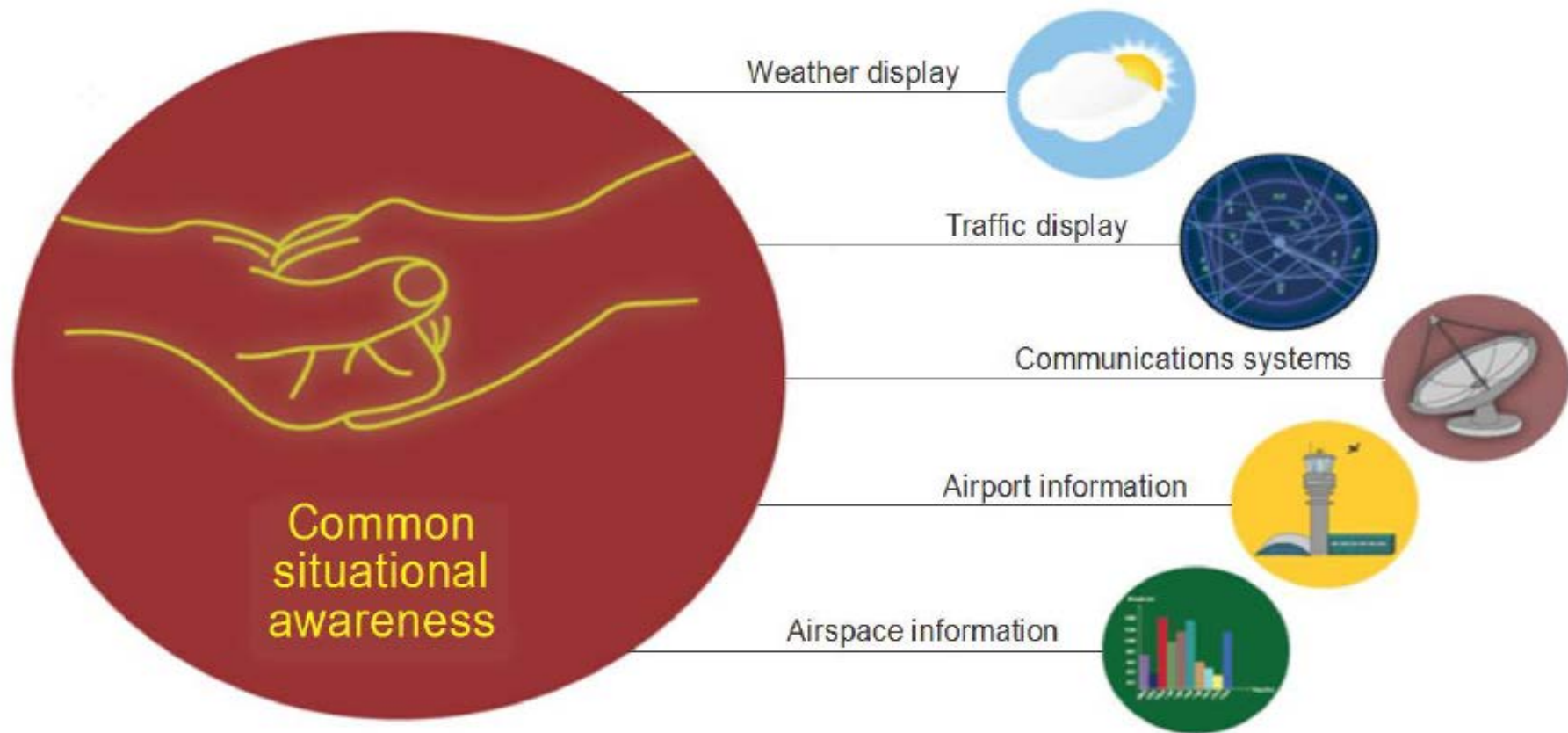
# ATFM Implementation Progress

- ✈ It is important to note the progress that several States of the Region have been able to make towards an effective operational implementation of the ATFM.
- ✈ Also, it is important to note that an ATFM system that is not capable to balance demand and capacity has not achieved its fundamental purpose.
- ✈ It takes time and high-level support to be able to make ATFM relevant in front of the traditional way of handling traffic.
- ✈ ATFM enabler systems are pending to be implemented.
- ✈ Change in culture is perhaps the biggest challenge to overcome.



**Figure II-7-1 Sample of an ATFM line of authority**





**Figure II-8-3. Elements of common situational awareness**



# Conclusions

- ✈ The CAR Region has maintained sustained growth in air traffic, which is expected to continue growing with considerable.
- ✈ As part of the value chain provided by the Region, the safety and efficiency of air operations is becoming increasingly important.
- ✈ CANSO's initiative, CADENA, has had a very positive impact on the Region, promoting ATFM implementation among ANSPs and establishing a CDM platform that enables ATFM functioning at a regional level.
- ✈ 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 achieve realistic implementation.



# Suggested Actions

✈ The Meeting is invited to:

- a) evaluate the ATFM implementation progress in the CAR Region;
- b) recognize the real ANS operational context and make recommendations that would enable an ATFM implementation according to different levels of requirements; and
- c) make any other recommendation deemed necessary.



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