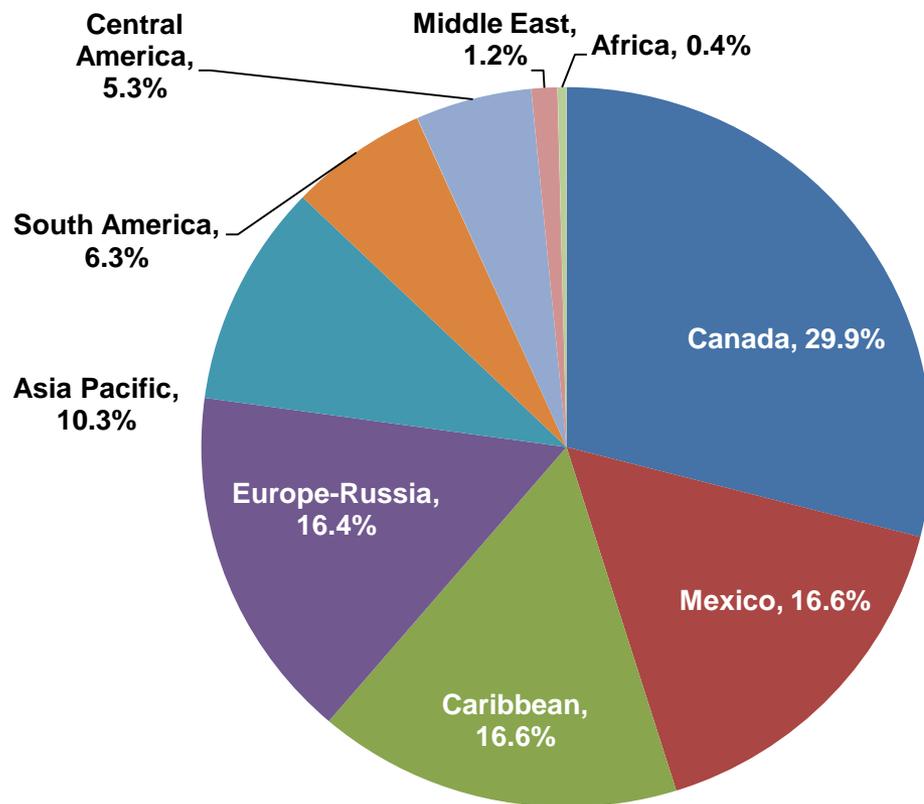# CADENA
and FAA Caribbean Initiatives

For: MIDANPIRG ATFM TF/1

Prepared by: Midori Tanino, ATO International
                Global ATM Program Manager

Date: September 23-25, 2018

U.S. Outbound Air Traffic

Central America, 5.3%
Middle East, 1.2%
Africa, 0.4%
South America, 6.3%
Asia Pacific, 10.3%
Canada, 29.9%
Europe-Russia, 16.4%
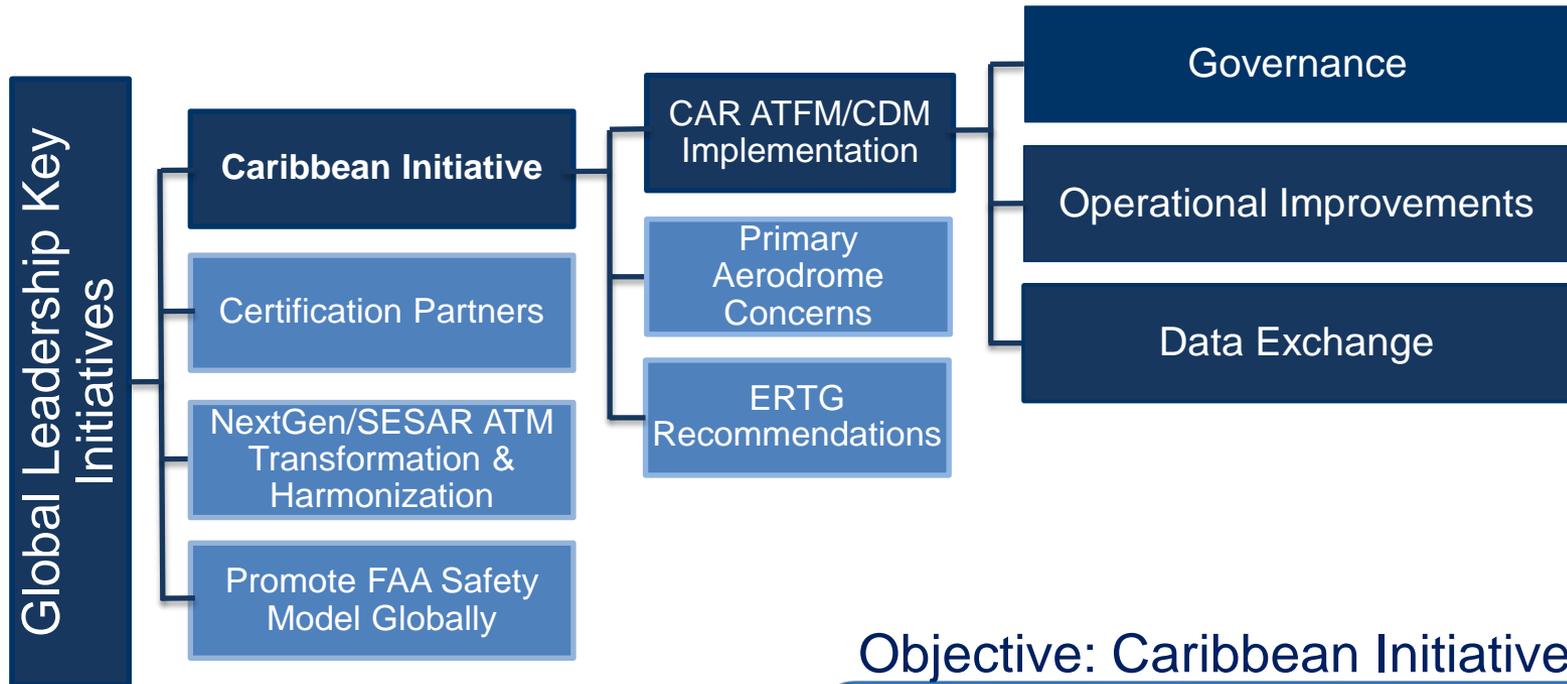Mexico, 16.6%
Caribbean, 16.6%

Mexico + Caribbean + S. America + C. America
= 44.8%

- Destinations in the Western Hemisphere accounted for 75% of U.S. outbound international travel in 2014

- Passenger travel to Caribbean destinations was in excess of 9 million in 2013, and represented 23% of all international flights in the Western Hemisphere

- Flights to Central and South America frequently fly over Caribbean airspace, adding traffic volume and complexity to flights to and from dozens of regional airports

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FAA Initiatives and CAR ATFM/CDM Implementation

Global Leadership Key Initiatives

- **Caribbean Initiative**
  - CAR ATFM/CDM Implementation
    - Governance
    - Operational Improvements
    - Data Exchange
  - Primary Aerodrome Concerns
  - ERTG Recommendations
- Certification Partners
- NextGen/SESAR ATM Transformation & Harmonization
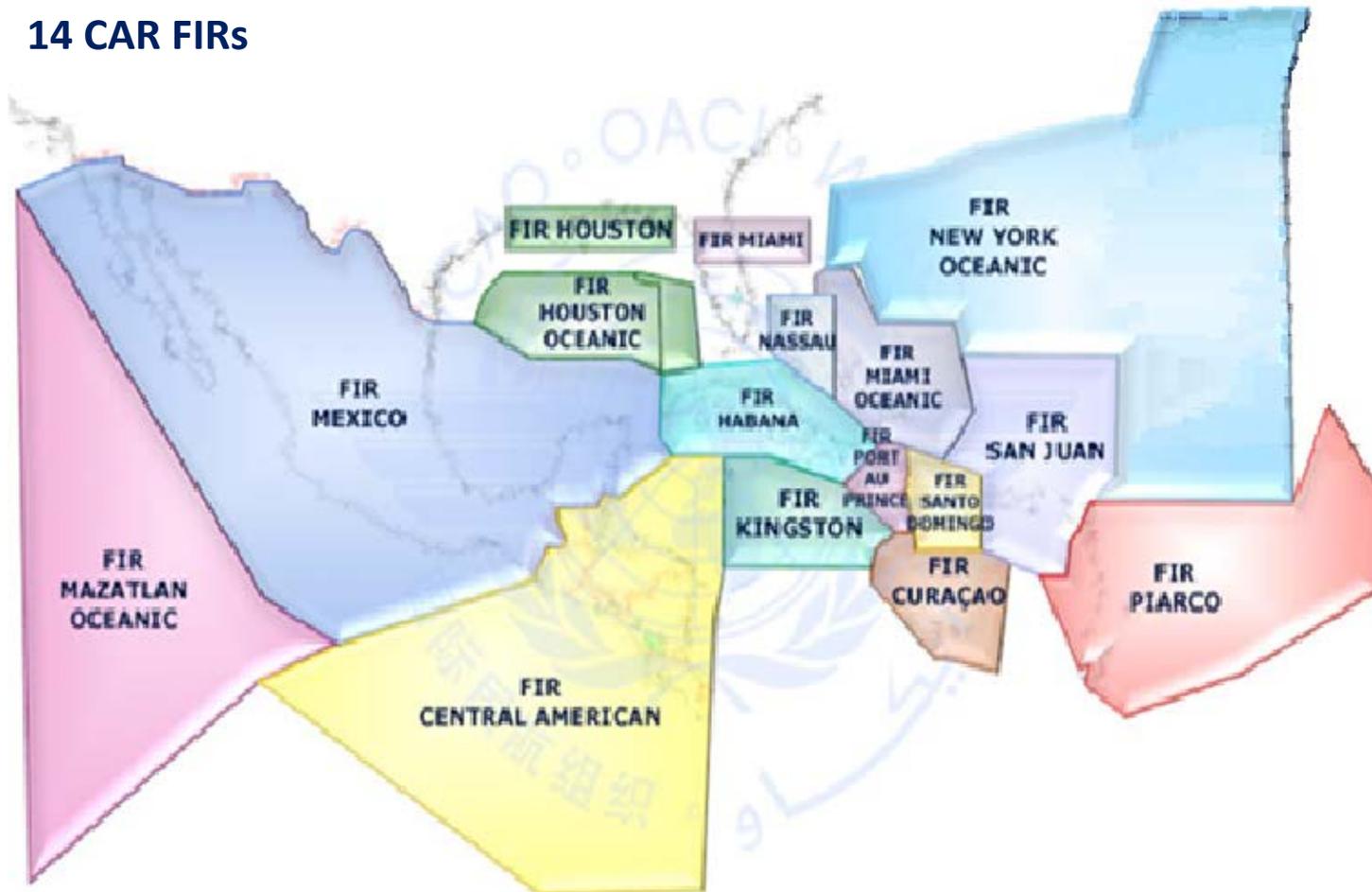- Promote FAA Safety Model Globally

Objective: Caribbean Initiative

Championing the development of a regional ATFM/CDM network across the Caribbean

CAR Region - FIRs

14 CAR FIRs

Motivation for the Region

The Caribbean Region is a High Impact Zone that:

- Has multiple Flight Information Regions (FIRs) in a compact, complex area
- Has the third-highest traffic count for outbound U.S. traffic after Canada and Mexico
- Is growing at a rapid pace (ICAO expects 5-8% annual growth)
- Is heavily reliant on aviation for tourism and trade
- Has no integrated network for situational awareness and ATFM
- Has inconsistent operations across FIR boundaries
- Has significant tropical weather disruptions and airspace complexity, causing ripple delays and disruptions

ICAO GANP/ASBU

- **ATFM** (NOPS) is one of the threads

NAM/CAR ANI/WG TF

- PBN
- **ATFM**
- AIDC
- ASBU
- AIM
- AMHS
- ADS-B

Port of Spain Declaration

Regional Air Navigation Targets

1. Approach – PBN
2. **ATFM**
3. AIM
4. G/G Digital Coordination/Transfer
5. Environmental Benefits

CADENA

- **C**ANSO (Civil Air Navigation Services Organisation)

- **A**TFM (Air Traffic Flow Management)

- **D**ata **E**xchange

- **N**etworks

(for)

- **A**mericas

Approaches

- Setting the stage

- Near-Term: Operational Improvements

- Mid-Term: Traffic Flow Management Data Exchange

- Long-Term: Traffic Management Measures Assisted by Decision Support Tools

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Air Traffic Organization

Key Regional Stakeholders

CADENA History

- FAA proposal to CANSO LAC/3 (Mar 2016)
- 1st CADENA Mtg (Aug 2016)
- CADENA LoA signed (Dec 2016)
- CADENA Weekly Web-conference (Dec 2016)
- Airlines joined CADNA Weekly Web-conference (Jan 2017)
- CADENA Ad-Hoc Web-conf. Hurricane Training (Jun 2017)
- Ad-hoc Web-conf. to address Hurricanes (Summer/Fall 2017)
- Launched CADENA Operational Info System (OIS) (Aug 2017)
- FAA/T&T TFM Data Exchange Agreement (Sep 2017) and Operation (Oct 2017)
- FAA/SENEAM TFM Data Exchange Agreement (Sep 2018)
- CADENA ATFM Scenario-based Simulation Training (Oct 2018)
- CADENA OIS with Information Sharing Enhancement (Oct 2018)

CADENA Participants

- Argentina (EANA)
- Central America (COCESNA)
  - Belize
  - Guatemala
  - El Salvador
  - Honduras
  - Nicaragua
  - Costa Rica
- Cuba (ECNA)
- Curacao (DC-ANSP)
- Dominican Republic (IDAC)
- Jamaica (JCAA)
- Mexico (SENEAM)
- Trinidad & Tobago (TTCAA)
- USA (FAA)

Stakeholders:
ICAO, IATA, NBAA, ACI-LAC, ALTA

- Brazil (CGNA, since Feb 2017)
- Aruba (ANSA, since Mar 2018)
- Costa Rica (CAA, since Mar 2018)
- Columbia (Aeronáutica Civil, since Apr 2018)
- Cayman Islands (since, Sep 2018)

Future participants:
- Haiti
- Peru
- Paraguay
- Panama
- Ecuador
- Uruguay

Airlines:
Aeromexico, Air Canada, American Airlines, Caribbean Airlines, Copa Airlines, Delta, Jet Blue, United Airlines, Sky Airlines, Sprit, UPS, Volaris, Westjet

CADENA Letter of Agreement
CADENA member ANSP ATM and CDM

On December 6, 2016, CADENA LoA was signed by (1) CANSO LAC/3; (2) FAA; (3) SENEAM; (4) EANA; (5) COSESNA; (6) TTCAA; and (7) IDAC.
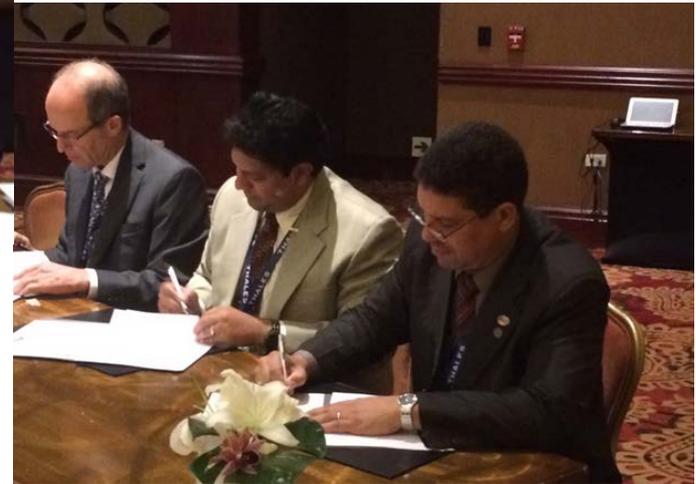
"This LoA promotes communication, collaboration and coordination between the Members regarding ATFM and CDM measures."

Weekly Regional TFM CDM Operational Planning Web Conference

- Weekly Web Conference on Fridays
- CADENA ANSPs share the responsibility of hosting the Web Conferences
- Regional aviation stakeholders participate
- Information shared, discussed, and plan established collaboratively
- Simple and **EFFECTIVE!**

CADENA Ad-hoc Web-Conf.

- Twelve (12) Ad-hoc Web-conferences during the 2017 Hurricane season
  - TS-Bret, H-Dora, TS-Don, TS-Franklin, H-Harvey, TS-Lidia, H-Irma, H-Katia, TS-Max, H-Maria, H-Norma, TS-Pilar

- Four (4) JCAA TMM Impact Ad-hoc Web-conferences
  - Excessive TMMs due to the facility lightning strike and operating from a temporary facility

- Three (3) New Routes to MMUN and MMMD Impact Ad-hoc Web-conferences
  - Route structure changes caused issues filing the routes
  - Escalated to the face-to-face meeting for resolution

CADENA OIS

https://www.cadenaois.org

FAA's Newsletter says:

Historical Bilateral Agreement Signed with Trinidad and Tobago

The FAA Administrator Michael Huerta and Francis Regis, the Trinidad and Tobago Civil Aviation Authority (TTCAA) Director General of Civil Aviation, on September 21, 2017.

In Collaboration with ICAO

➤ ICAO DOC 9971

➤ CADENA is designed to implement the processes and procedures from DOC 9971

ICAO

Doc 9971

Manual on Collaborative
Air Traffic Flow Management (ATFM)

Third Edition, 2018
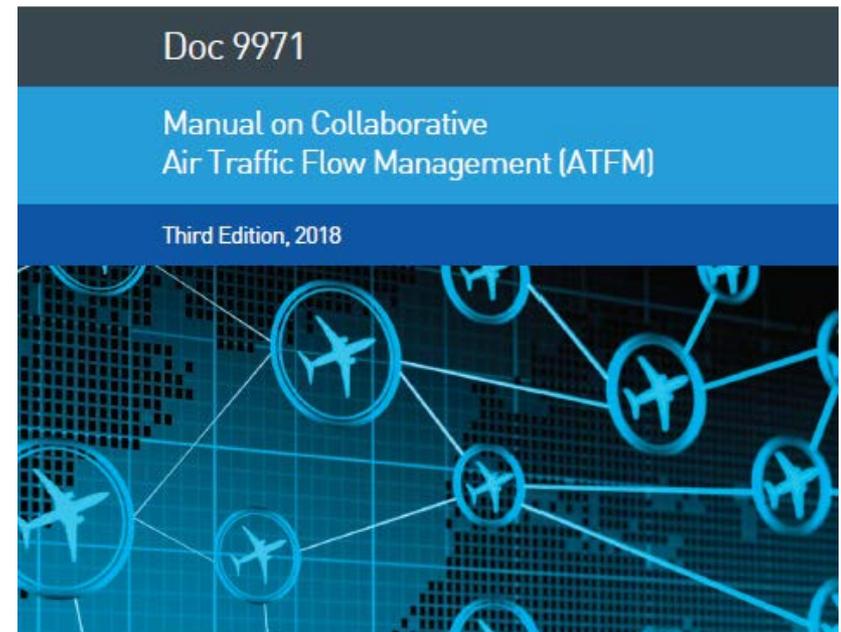
Approved by and published under the authority of the Secretary General

INTERNATIONAL CIVIL AVIATION ORGANIZATION

CADENA Implementation Roadmap

DEFINE	• **GOALS / STRUCTURE / REQUIREMENTS**
PEOPLE	• **CHAMPIONS / STAKEHOLDERS**
INFRASTRUCTURE	• **FMUS / FMPS / TOOLS / EQUIP**
PROCESS	• **COMMUNICATION / QUALITY CONTROL**
INFORM	• **WX / DEMAND / CAPACITY**
EDUCATE	• **TRAIN / OUTREACH / SOLICIALZATION**
EXECUTE	• **TEST / INCREMENTAL ROLLOUT**
REVIEW	• **METRICS / COMPLIANCE / REPORTING**

Lessons Learned

Inclusiveness | **Collaboration** | **Basic Solutions**

Upper Management Support

ATFM
= Balance (Demand vs Capacity)

Demand

CAPACITY

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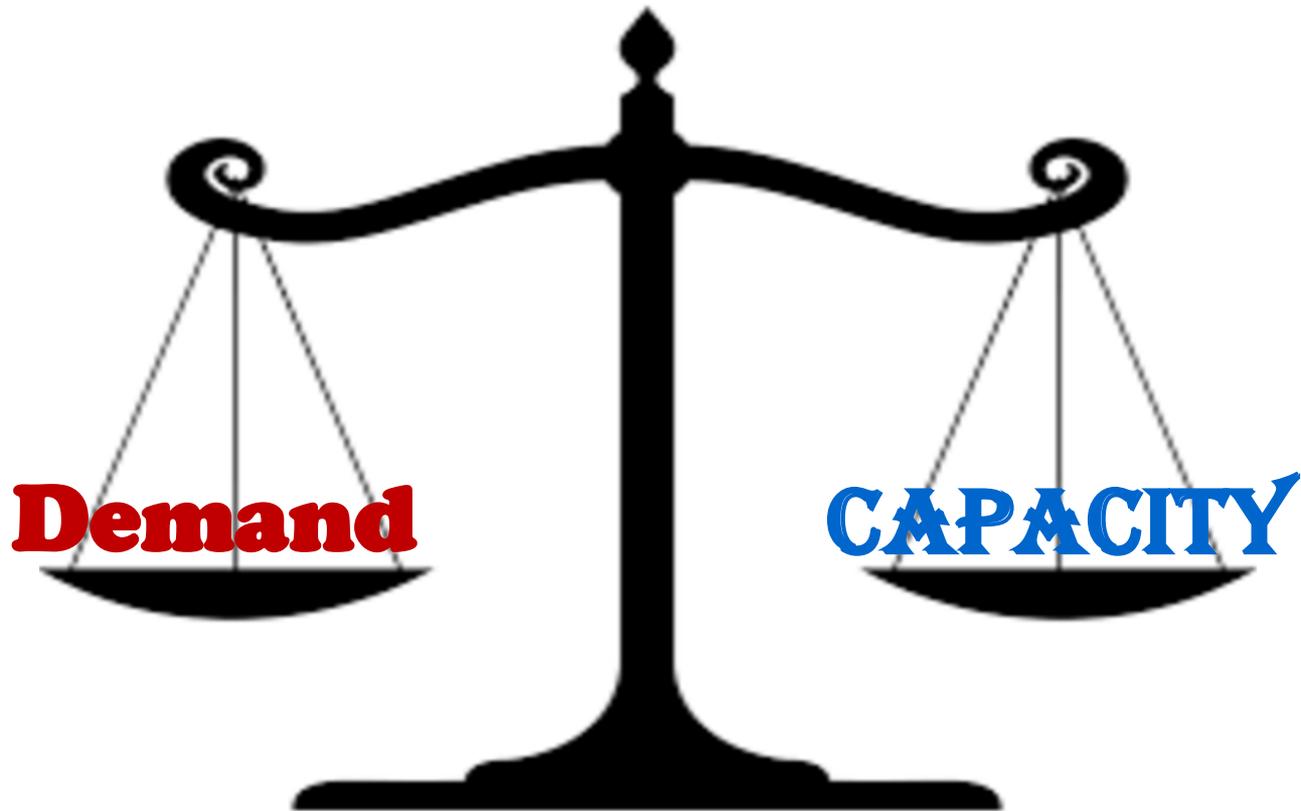
Demand Data – Today

- Use OAG-like schedule flight data

- Use airport departure data (if available)

- Receive static flight data from FAA three times per day (for 5 ANSPs - Spreadsheet)

- FAA Spreadsheet data include flight information only known to FAA

- Manually "add" flights data
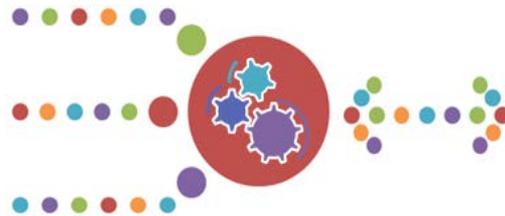
- Demand Data is far from *ideal. . . .*

Data Exchange Implementation by CADENA Members

Onramp onto FAA's SWIM and data exchange 24/7 with FAA's TFMS
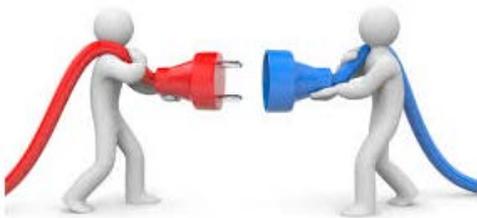
Accommodate FAA's data format

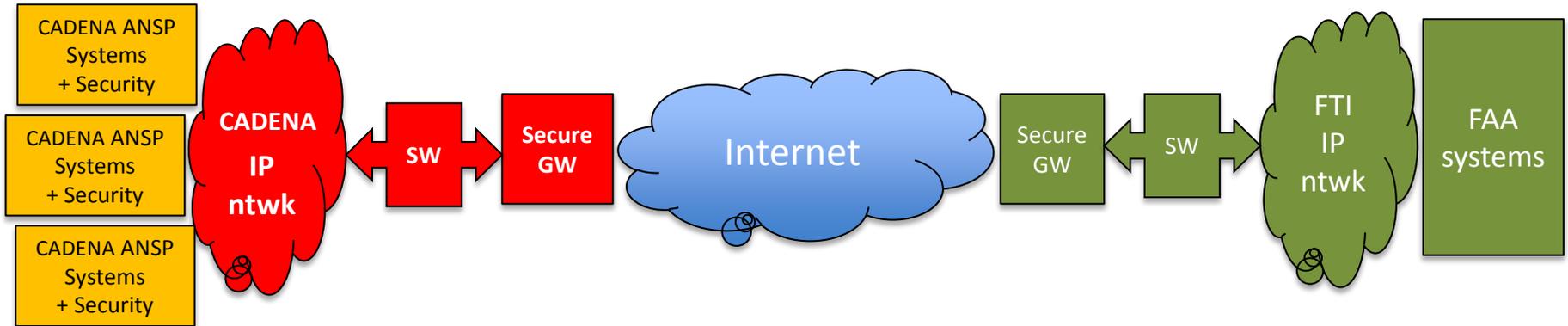Display data and provide decision support capabilities (specify capabilities)

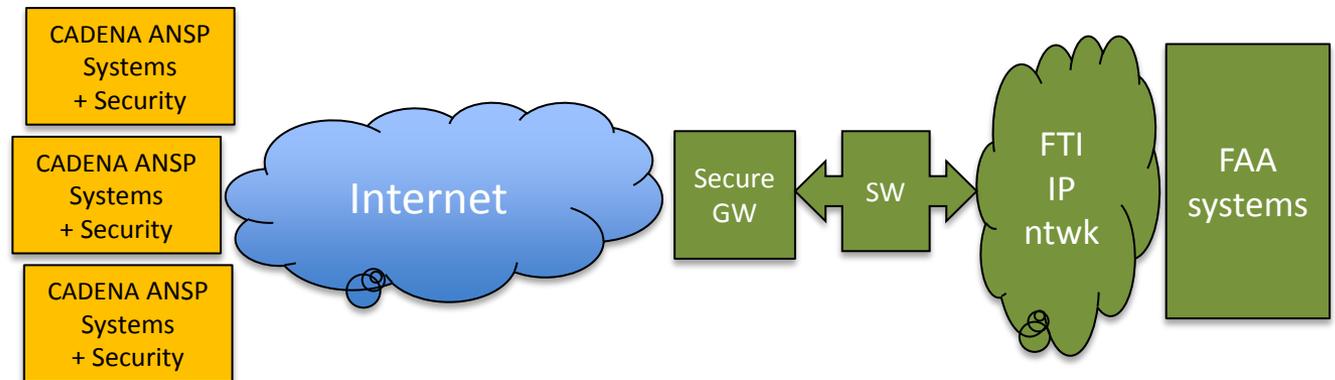# What does "SWIM Implementation" mean to CADENA members?
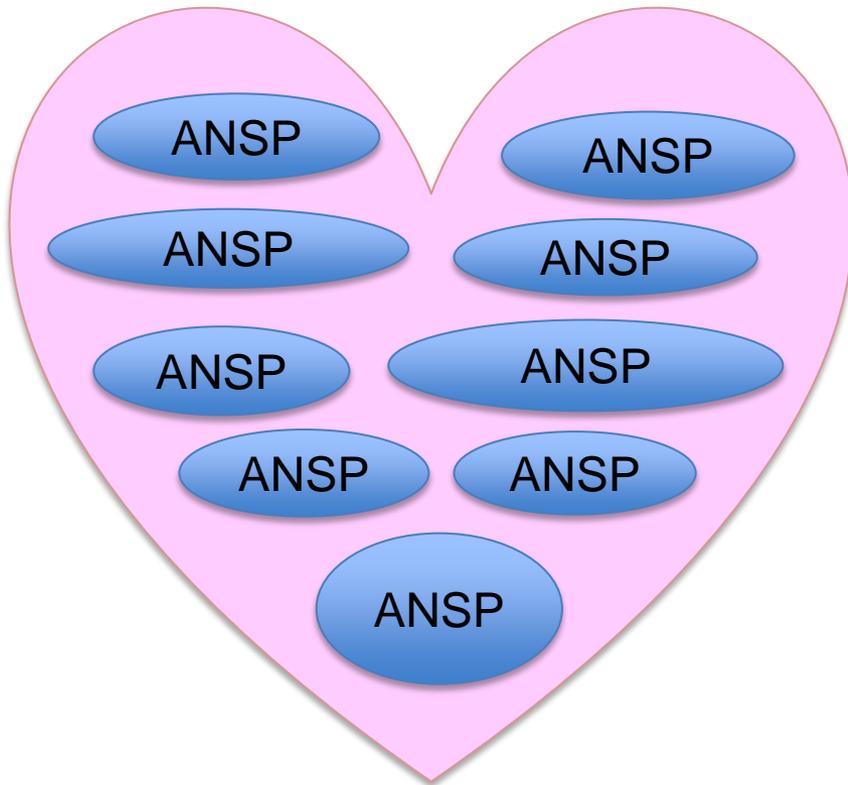
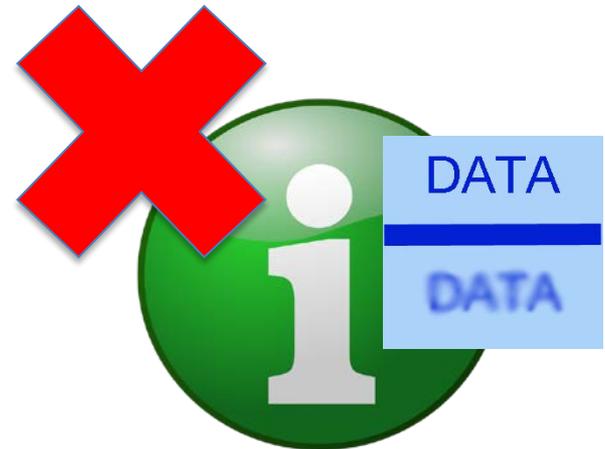# What exactly do we mean by "you need SWIM"?

Original Thinking – CADENA SWIM

CADENA ANSP Systems + Security

CADENA ANSP Systems + Security

CADENA ANSP Systems + Security

CADENA IP ntwk — **SW** — **Secure GW** — Internet — Secure GW — SW — FTI IP ntwk — FAA systems

Current Approach – Utilize FAA SWIM/TFMS

CADENA ANSP Systems + Security

CADENA ANSP Systems + Security

CADENA ANSP Systems + Security

Internet — Secure GW — SW — FTI IP ntwk — FAA systems

Who vs. Who

VS.

Questions?

MCT, OMN

Thank you!
Midori.Tanino@faa.gov