



**GREPECAS Programmes and Projects Committee (PPRC) Third Virtual Meeting
 (ePPRC/03)
 Online, 22 – 23 July 2021**

**Agenda Item 2: Follow-up on GREPECAS Programmes and Projects
 2.2 Air Navigation Services (ANS) Implementation in the CAR/SAM
 Regions**

**CANSO ATFM DATA EXCHANGE NETWORK FOR THE AMERICAS (CADENA) PROJECT
 ADVANCEMENTS**

(Presented by Jamaica Civil Aviation Authority, Trinidad and Tobago Civil Aviation Authority, Empresa Argentina de Navegación Aérea (EANA), Empresa Cubana de Navegación Aérea (ECNA), Civil Air Navigation Services Organisation (CANSO), Corporación Centroamericana de Servicios Navegación Aérea (COCESNA), International Air Transport Association (IATA))

EXECUTIVE SUMMARY

CANSO is supporting the harmonized implementation of ATFM/CDM at a global level. CANSO’s CADENA initiative offers a regional, cross-border ATM communications protocol and a seamless operational atmosphere that incorporates operational procedures and practices. Implementing regional, networked ATFM requires the establishment of CDM practices among participating Air Navigation Service Providers (ANSPs) and regional and international stakeholders. These practices are inclusive and transparent and allow exchanging operational information to facilitate a shared situational awareness and promote sound strategic, pre-tactical, and tactical planning in a CDM environment of multilateral decision-making.

Actions:	Described in Section 4
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"> • Air Navigation Capacity and Efficiency • Economic Development of Air Transport • Environmental Protection
<i>References:</i>	<ul style="list-style-type: none"> • CAR/SAM ATFM CONOPS • ICAO Doc9971, Manual on Collaborative Air Traffic Flow Management. • CADENA ATFM-CDM Procedures Manual • CADENA Air Traffic Management and Collaborative Decision-Making Letter of Agreement • CANSO and Federal Aviation Administration (FAA) Air Traffic Organization (ATO) Space Operations Letter of Agreement • CADENA Requirements document and Business Rules Document • High-Level CADENA Data Exchange Implementation Requirements and Information Request for Connectivity and Data Handling

1. Introduction

1.1 CANSO is supporting the harmonized implementation of ATFM/CDM at a global level.

1.2 In June 2016, the Latin America and Caribbean CANSO CEO Committee (LAC3) established a multi-nodal Air Traffic Flow Management (ATFM) network named CANSO ATFM Data Exchange Network for the Americas (CADENA) among Air Navigation Service Providers (ANSPs) and stakeholders to contribute to a safe, orderly, and expeditious flow of air traffic.

1.3 Instituto Dominicano de Aviación Civil (IDAC), holds the CADENA chairmanship, and Empresa Argentina de Navegación Aérea, EANA, is the vicechair of CADENA.

1.4 Since its initiation in 2016, CADENA started working with the varying capability and readiness levels that were needed to implement ATFM and Collaborative Decision-Making (CDM). Therefore, the CADENA Regional Implementation Group (RIG) worked together to incrementally and straight forwardly promote CDM, ATFM, and a harmonised system to share information and vital operational data. Over time, CADENA has proven to be valuable to its participants and has made significant advances.

1.5 From the beginning, the CADENA was run by the policy of inclusiveness and transparency. Although the CADENA team was lead by CANSO, CANSO membership was not required to become a CADENA participant. The CADENA participant list has grown and includes ANSPs, airlines, international organizations, and regional stakeholders. One of the tangible benefits of CADENA has been the day-to-day sharing of operational information among this growing community, which improves coordination, enhances everyday situational awareness, and allows for better decision making among the regional aviation community.

1.6 CADENA ANSP participation includes: ANSA, COCESNA, Colombia Aerocivil, Costa Rica CAA ANS, DC-ANSP, EANA, Ecuador CAA - ATFM, ECNA, FAA (DCC, ZMA, SJU, ZHU, FAA Space Operations Office), IDAC, INAC, Jamaica CAA ANS, MWCR, OFNAC, SENEAM, and Trinidad and Tobago CAA ANS.

1.7 CADENA stakeholder participation includes: ACI-LAC, ALTA, IATA, ICAO, NBAA, Caribbean Aviation Resilience and Recovery Group (CARRG), Aerolineas Argentinas, Aeromexico, Air Canada, American Airlines, Atlas Air, Avianca Airlines, Azul Brazilian Airlines, Caribbean Airlines, COPA Airlines, Delta Airlines, FedEx, JetBlue, MESA Airlines, Sky Airlines, Spirit Airlines, United Airlines, UPS, Viva Air, Volaris, and WestJet.

2. Discussion

2.1 There are many essential components needed for successfully implementing ATFM capabilities and CDM processes. Sharing information among stakeholders is one of the primary components. CADENA promotes universal situational awareness through timely communication, collaboration, and coordination of operational data and information to ANSPs, airspace users, and other stakeholders. Implementing a harmonized, regional, networked ATFM has required the establishment of robust CDM practices among participating ANSPs and stakeholders.

2.3 The System Wide Information Management System (SWIM) provides greater access to real-time information with respect to flight data, airport operations, and weather. This expanding connectivity will help ensure that the entire region has common situational awareness of traffic demand and constraints to enhance safety, improve efficiency, and better manage resources. CADENA continuously

encourages regional ANSPs to connect to SWIM. Trinidad and Tobago CAA connected to the FAA SWIM network, COCESNA has completed the flight data exchange tests, and other ANSPs in the region are developing their business cases.

2.4 CADENA’s processes, procedures, best practices, and regional experience have become the foundation for the establishment of a new global initiative called CANSO Air Traffic Flow Management (ATFM) Data Exchange Network for Cooperative Excellence, CADENCE. Recognising that each region is unique, CANSO will consult with ANSPs in each region to support regional action teams on implementing globally harmonized ATFM/CDM. The creation of CADENCE is an acknowledgement of the LAC region’s dedication, collaboration, and cooperation

3. Development

3.1 At the request of CADENA participants (ANSPs and airlines), the CADENA Operational Information System (OIS) web platform, that was initially launched on August 28, 2017, has undergone several upgrades. Some of the enhancements include:

- Airport arrival and delay information
- Standard template to enter Planned Airways System Alternative (PASA) route requests
- The ability for ANSPs and airlines to save and re-use PASA route request submissions
- Airline homepage
- Email push notification of important operational entries
- Additional chat enabling communications with a single ANSP or airline.

3.2 The OIS enables common situational awareness and allows regional ANSPs to exchange information, including ATFM Daily Plans, expected demand, planned and implemented traffic management measures, constraints, weather and geological issues, special events, and runway closures – all of which improve operational planning and collaborative decision-making. Figure 3.2 shows the CADENA OIS home page that can be accessed by the public at www.cadenaois.org.

Figure 3.2: CADENA OIS Home Page

3.3 The CADENA OIS has provided a standardised process to share operational information throughout the region. It has helped ensure that all parties are up-to-date on planned and actual traffic management measures, constraints, weather, reroutes, expected demand, special events, and equipment outages. It enhances the efficiency of regional operations and enables aviation stakeholders to manage their resources more efficiently. Our airline partners have reported that this has increased their on-time performance.

3.4 Accomplishments by CADENA participants include the development and use of the CADENA Procedures Manual, CADENA ANSP Contingency Form, and the Letter of Agreement from Flow Management Unit (FMU) to FMU, Space Launch and Recovery Protocols LoA, the PASA routes, Quarterly Operational Contingency Training Exercises, to mention a few.

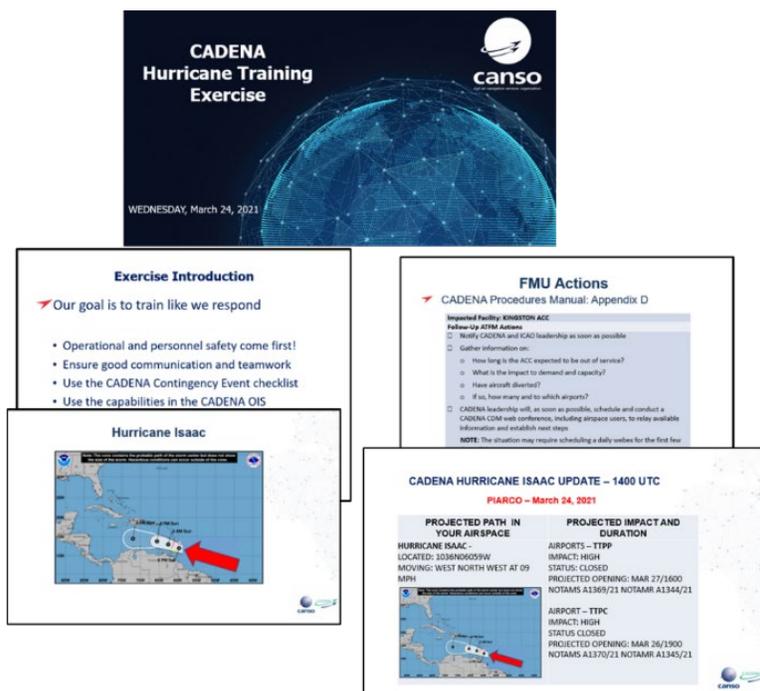


Figure 3.4: CADENA quarterly operational contingency training exercise

3.5 Other examples: CADENA participants took advantage of this established collaborative approach, and American Airlines activated the CADENA PASA route protocol, requesting a Vaccine Priority Flight with callsign AA957 from Miami (KMIA) to Santiago de Chile (SEL) (refer to Figure 3.5). The dispatcher included “Vaccine Priority Flight” in Field 18 when filing the flight plan through an agreed procedure. It meant that before AA957 departed from Miami, the air navigation service providers (ANSP) on the route of flight, including Miami, Cuba, Jamaica, Panamá, Colombia, Ecuador, Perú, and Chile, along with American Airlines, CANSO, and IATA, received the request and acknowledged the high priority mission. The ANSPs coordinated an optimum route through their respective flight information region (FIR) and notified air traffic controllers and supervisors who prioritised AA957, ensuring a smooth and efficient journey.

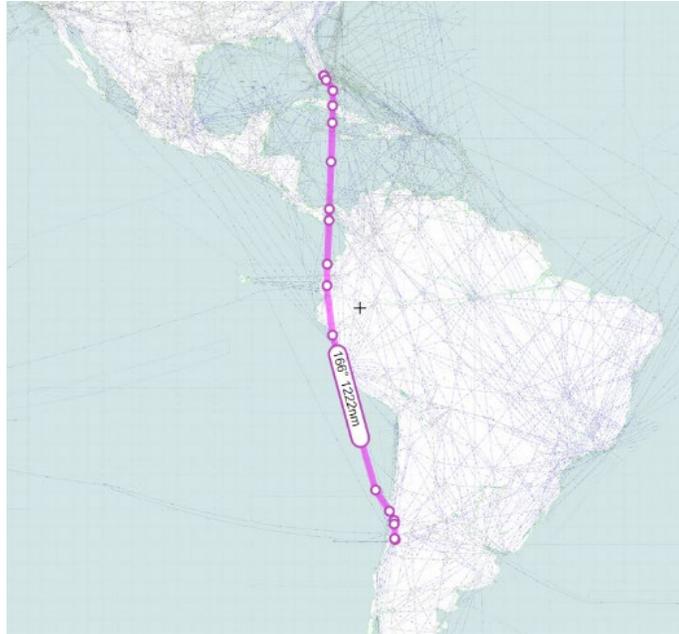


Figure 3.5: COVID-19 Vaccine Priority Flight Coordination – PASA Route Request 31 Dec 2020

3.6 During Hurricane Delta, an airline participant activated the PASA routes protocol and its push email notification, and within 30 minutes, the impacted ANSP had approved the airline's route requests. The affected airline was issued the contingency route illustrated below Figure 3.6, allowing the flight to bypass the hurricane with a safe and viable choice to destination, saving time and money. At the same time, the ANSPs were provided with advanced notification of the change in their overflight demand.

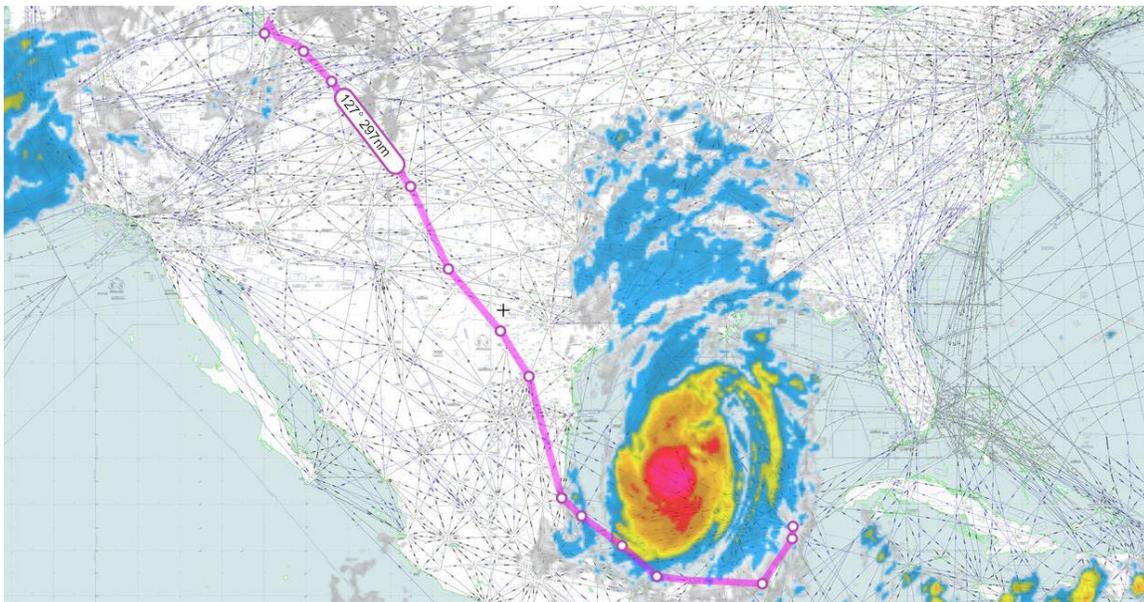


Figure 3.6: PASA route requested OCT 7, 2020

3.7 As of June 30, 2021, CADENA has held 237 weekly ATFM/CDM operational planning web conferences, 10 contingencies ad-hoc CDM web conferences, 4 Space Launch and Recovery – ATM CDM web conferences.

4. Action Required

4.1 The Meeting is invited to:

- a) Take note of the information provided in this paper;
- b) encourage the participation of ANSPs in the weekly ATFM/CDM operational planning web conference;
- c) encourage regional ANSPs to use and input data in the CADENA OIS;and
- d) participate in CADENA and use the OIS at no charge to the ANSP, airlines and aviation organizations.

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