



International Civil Aviation Organization

MIDANPIRG Air Traffic Management Sub-Group

Fourth Meeting (ATM SG/4)
(Amman, Jordan, 29 April – 3 May 2018)

Agenda Item 5: Airspace Management Issues

CANSO ATFM DATA EXCHANGE NETWORK FOR THE AMERICAS (CADENA)

(Presented by CANSO)

SUMMARY

This paper presents the CANSO ATFM Data Exchange Network for the Americas (CADENA) initiative. CANSO is supporting the global implementation of ATFM/CDM and is expanding on the work being conducted by ICAO NACC and SAM.

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 Members and regional and international stakeholders. These practices shall be inclusive and transparent and provide the opportunity for exchanging operational information to facilitate a shared situational awareness and promote sound strategic and tactical planning in a CDM environment of multilateral decision-making.

This presentation is intended for the delegates attending the MIDANPIRG ATM Sub-Group to become familiar with the regional cooperation being accomplished in the Caribbean for consideration of like accords in the Middle East region for the improvement of ATM.

Action by the meeting is at paragraph 5.

REFERENCES

- CADENA ATFM and CDM Letter of Agreement
- CAR/SAM ATFM CONOPS
- Doc9971
- Port of Spain and Bogota Declaration

1. INTRODUCTION

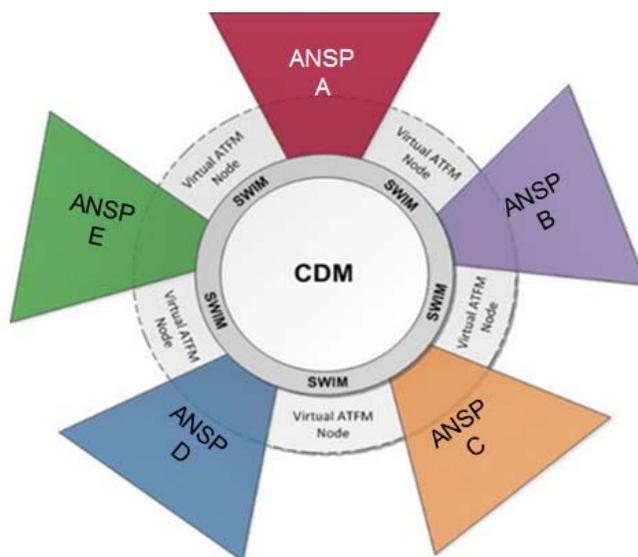
1.1 In June of 2016, the Latin America and Caribbean CANSO CEO Committee (LAC3) established an air traffic flow management (ATFM) network of air navigation service providers (ANSP) named CANSO ATFM Data Exchange Network for the Americas (CADENA). This cooperation among regional ANSPs and stakeholders contributes to a safe, orderly and expeditious flow of air traffic.

2. DISCUSSIONS

2.1 ATFM is essential for managing and operating safe and efficient airspace. It helps regulate air traffic to avoid exceeding airport or airspace capacity while ensuring that available capacity is used efficiently.

2.2 There are many essential components for successful implementation of ATFM capabilities and collaborative decision-making (CDM) processes in the region, and sharing information among stakeholders is primary. CADENA promotes situational awareness through timely communication, collaboration, and coordination of operational data and information to ANSPs, airspace users, and other stakeholders. Implementing regional, networked ATFM requires the establishment of CDM practices among Members and stakeholders.

2.3 CADENA encourages regional ANSPs to connect to System Wide Information Management System (SWIM). SWIM will provide the region with greater access to real-time information on flight data, airport operations, and weather. This 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. The end state is a virtual ATFM node concept as shown in the figure below. In this concept, each ANSP operates as an independent entity and ANSPs are interconnected by the information sharing network (i.e., SWIM), forming a virtual ATFM node. By exchanging flight information with each other, the regional traffic flow becomes apparent among participants which enhances safety and enables efficient ATFM. Participating ANSPs manage the air traffic flow and address associated issues by using recommended ICAO ATFM/CDM practices and the standard set of principles and procedures established by the CADENA governance process.



3. CADENA DEVELOPMENT

3.1 CANSO Members signed the CANSO ATFM Data Exchange Network for the Americas (CADENA) Member ANSP Air Traffic Management and Collaborative Decision-Making Letter of Agreement in December 2016. This agreement commits signatories to promote and facilitate the safe and efficient movement of air traffic in the region and enables the continuity of active operations through ATFM and CDM procedures and processes.

3.2 CADENA Regional Implementation Group (RIG) holds monthly teleconferences and has held five face-to-face meetings. During the third CADENA RIG meeting, CADENA organised an

industry day, on the first day of the event, CANSO Associate Members offered an educational session concentrated on ATFM solutions.

3.3 CADENA RIG completed a High-Level Requirements Flight Data Exchange Information document and drafted the CADENA Data Publication Business Rules document.

3.4 CADENA hosts weekly ATFM planning web-conferences following CDM processes among regional ANSPs and stakeholders. Weather, staffing, sectorization, constraints, equipment outages, traffic management measures, special events and airport configuration are some of the items openly discussed and shared among CADENA members, airlines and airports. Each week, CADENA ANSP members rotate the lead of the planning conference.

3.5 CADENA ANSP RIG Members include: ANSA (Aruba), COCESNA, Costa Rica CAA, DC-ANSP, DECEA (CGNA), EANA, ECNA, FAA, IDAC, JCAA, SENEAM and TTCAA.

3.6 Since December 2016, CADENA has trained a total of thirteen airlines, as well as the Latin American and Caribbean Air Transport Association (ALTA), the International Air Transport Association (IATA), National Business Aviation Association (NBAA), and Airports Council International, (ACI) to participate in the weekly web planning conferences, as well as particular hurricane and other contingency planning conferences. We expect additional regional carriers to join in the future.

3.7 CADENA stakeholders and international organisation members currently include AeroMéxico, American Airlines, Azul Aerolineas, Caribbean Airlines, Copa, Delta, Jetblue, Sky Airlines, Spirit, United Airlines, UPS, Volaris, WestJet, ALTA, IATA, ACI, ICAO and NBAA.

3.8 On August 28, 2017, CADENA launched the Operational Information System (OIS) web page. The OIS enables common situational awareness and allows regional ANSPs to exchange information including ATFM Daily Plans, expected demand, traffic management measures, constraints, volcanic ash plumes, special events, and runway closures to improve planning and collaborative decision-making. The OIS data enables operational analysis and development of targeted performance improvement plans. The CADENA OIS is accessible to stakeholders as well as the public. During its first week of use, the CADENA OIS received 2,682 hits from 262 unique IP addresses. This group is invited to visit: <https://www.cadenaois.org>.

The screenshot displays the CADENA Regional Operations Plan web interface. At the top left, there are logos for CANSO and CADENA. The top right corner shows 'Regional TMM 1 Español'. The main content area is divided into two parts: a map of the Americas on the left and a list of regional operations plans on the right. The map shows the United States, Mexico, Central America, and South America. The right panel is titled 'Regional Operations Plan' and lists three regions: CGNA Brazil, COCESNA Central America, and DCANSP Curaçao. Each region has a section for 'Anticipated Demand', 'TMM Planned', 'Weather', 'Volcanic Ash', 'Constraints', 'Special Events', 'Equipment Outages', and 'Other'.

3.9 Most importantly, CADENA offers each partner the opportunity to have its say and play a central role in improving the safety, efficiency, cost-effectiveness and environmental sustainability of ATFM in the region. Partners are encouraged to lead by example, determine best practice and ultimately decide how they want to shape the future of air traffic management.

3.10 On October 27, 2017, and with the close coordination of the ICAO SAM office, CADENA welcomed as observers; Chile, Colombia, Panama, Venezuela, and Uruguay.

3.11 During November 2017, CADENA facilitated and coordinated CDM web conferences between American Airlines, COCESNA, COPA Airlines, Jamaica CAA, ECNA (Cuba), IATA, ICAO NACC office and Miami ACC (ZMA). The purpose of the CDM coordination was to reduce the delays created by the restrictions imposed by the Jamaica CAA (JCAA) in the Kingston FIR. The CADENA CDM web conference served to educate the stakeholders and neighbouring ANSPs on the extent of the operational issues faced by the JCAA, discuss and explore options for mitigating the impact, and agree on mitigation strategies. One mitigation strategy that was agreed to and implemented by JCAA, ECNA and ZMA enabled aircraft landing at Jamaica's two main international airports to be exempt from the TMMs by delivering them from ECNA to JCAA at or below FL270. FAA ZMA ACC reported this helped to reduce delays on southbound flights departing south Florida airports.

4. IDENTIFIED BENEFITS BY CADENA MEMBERS AND STAKEHOLDERS

4.1 Since CADENA began operations in August 2016, CADENA Members identified the following improvements:

- Supports operational safety
- Improved pre-planning, communications, and recovery during and subsequent to hurricanes and tropical storms
- Supports connectivity of ANSPs in the region
- Assists with ATFM implementation process and roadmap
- Increased cooperation and collaboration with adjacent FIRs in the high-volume winter season
- Improved efficiency and flow of information between FIRs through the weekly CADENA operations planning web conference
- Promoted regular teleconferences with their underlying TMA
- Established means for receiving advanced notification of all types of TMMs
- Enabled better operational planning, such as de-combining sectors and conducting training

4.2 Following the CADENA planning web conference, stakeholders, identified:

- ATFM coordination has moved from single ANSP perspective to a regional view allowing improved coordination
- CADENA initiative utilises CDM, allowing the entire aviation community to participate and provide input to the strategic planning. This provides operators with a forum to inform of deviation in the number of operations for planning purposes
- Reduction in surprise to operators allowing for improved operational performance

- Early detection of constraints and identification of real alternatives routes and trajectories
- Awareness of special events including VIP movements and expected impact to the operation
- The sharing of the agreed and documented CADENA operational plan is beneficial for coordination purposes

5. ACTION BY THE MEETING

5.1 This meeting is invited to:

- a) take note of the information provided in the working paper; and
- b) consider similar actions and cooperation which could be implemented in the middle east region to improve air traffic management, safety, and harmonization in the region

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