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

WORKING PAPER

NACC/WG/11— WP/31
04/09/26

Eleventh Meeting of the North American, Central American and the Caribbean Working Group (NACC/WG/11)

Guatemala City, Guatemala, September 21-25, 2026

Agenda Item 5: **Modernization of Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM), Digital Transformation and Cybersecurity for Air Navigation Services (ANS)**

Federal Aviation Administration Update on Automated Data Exchange Implementation in the NACC

(Presented by the United States)

EXECUTIVE SUMMARY

This paper summarizes the efforts and commitment of the Federal Aviation Administration (FAA) to expand the use of automated flight data exchanges across the Bahamas, Turks and Caicos Islands, and Eastern Caribbean using the North American (NAM) Common Coordination Interface Control Document (ICD). This paper highlights the expanding scope of the NAM ICD, particularly the automation interface between Area Control Centers (ACC), and Terminal Manoeuvring Areas (TMAs). In addition, it outlines current engagement the FAA has with Air Navigation Service Providers (ANSPs) in the NACC region to support their modernization and establish new automated interfaces.

Action:	See section 4.1 for Suggested Actions
Strategic Objectives:	• Every Flight is Safe and Secure • Aviation Delivers Seamless, Accessible, and Reliable Mobility for All
References:	• North American (NAM) Common Coordination Interface Control Document (ICD) Revision G • Terms-of-Reference-AIDC-TF-23-10-2017.pdf • AIDC/NAM/ICD/5 Final Report

1. Introduction

1.1 1.1 Through the standardized implementation of Automated Data Exchange (ADE) in accordance with the North American Common Coordination Interface Control Document (NAM ICD), the FAA aims to reduce ATC workload while continuously improving air traffic safety, operational efficiency, and overall situational awareness for cross-border flights. Having automation capabilities that allow the automated exchange of data provides a significantly enhanced alternative to traditional, high-workload manual and verbal coordination procedures, allowing for faster response times, reduced ATC workload, and more reliable flight data processing.

1.2 A major focus of these integration efforts is the expanding operational scope of the NAM ICD. Historically designed for automated exchanges from Area Control Center (ACC) to ACC at level flight, the FAA is now actively utilizing the NAM ICD framework to implement ADE between ACCs such as, the Miami Air Route Traffic Control Center (ARTCC) and San Juan Combined Control Facility (CCF), and ATC facilities that manage Terminal Manoeuvring Areas (TMAs) encompassed within the vertical and lateral limits of their FIR boundaries. This application poses significant automation adaptation challenges that will be discussed in section 2.3 below.

1.3 To achieve a seamless automated interface, ANSPs rely heavily on formal, bilaterally negotiated boundary agreements. These agreements are established and documented as dedicated attachments to the NAM ICD, representing the operational and technical consensus between adjacent facilities. Currently, several key boundary agreements are established and fully documented within the NAM ICD, as summarized in Table 1 below. Each boundary agreement defines the specific message set (Class 1, Class 2, or Class 3), physical interfaces, and deviations from standard formatting required to support the unique requirements of each ANSP's automation platforms.

Table 1: Current Established Boundary Agreements in the NAM ICD

Implementing Country/ANSP 1	Implementing Country/ANSP 2	NAM ICD Attachment
Mexico (SENEAM)	United States (FAA)	Attachment 1
Canada (NAV CANADA)	United States (FAA)	Attachment 2
Cuba (IACC)	United States (FAA)	Attachment 3
Cuba (IACC)	Mexico (SENEAM)	Attachment 4
Cuba (IACC)	Central America (COCESNA)	Attachment 5
Mexico (SENEAM)	Central America (COCESNA)	Attachment 6
Dominican Republic (IDAC)	United States / San Juan CERAP	Attachment 7

1.4 The establishment of these boundary agreements is essential for system implementation and software development. Since the NAM ICD itself defines only the common message formats, character sets, and syntax standards, it acts as a structural blueprint rather than an operational manual. The actual functions, interface levels (Class 1, Class 2, or Class 3), and specific operational parameters must be defined in the bilateral boundary agreements. States utilize these agreements to present clear binding implementation requirements to system vendors, ensuring that adjacent automation platforms can successfully transmit, receive, and process the actual automated coordination messages across borders.

2. FAA Current Initiatives and Operational Updates

2.1 The United States National Airspace System (NAS) shares boundaries with seven distinct Flight Information Regions (FIRs) within the ICAO NACC region. The total number of flights crossing the United States' NACC regional boundaries in the year 2025 reached an extraordinary 2.991,349 flights, reinforcing the need to minimize manual and verbal coordination using automation. Each of these

crossings represents an opportunity where ADE could reduce controller workload and mitigate the risk of coordination errors.

2.2 The FAA is actively engaged in expanding ADE with additional neighbouring FIRs and TMAs such as the Bahamas (Nassau TMA), Curaçao ACC, Trinidad and Tobago (Piarco ACC), and Sint Maarten (Princess Juliana TMA). These expansion efforts are detailed in Table 2.

Table 2: U.S. Bordering FIRs and Active ADE Expansion Initiatives

FIR / Neighbouring State	Operational Area / Platform	Current Engagement Status
Canada (NAV CANADA)	ACC / ACC (ERAM / CAATS)	Class 3 Automated Handoff Active
Mexico (SENEAM)	ACC / ACC (ERAM / Thales)	Class 1 CPL Active
Cuba (IACC)	ACC / ACC (ERAM / Havana)	Class 1 & 2 Active
Dominican Republic (IDAC)	ACC / ACC (ERAM / Thales)	Class 1 & 2 Active
Bahamas (BANSA) (TMA)	ACC / TMA (ERAM / Thales)	Active Engagement (Operational Goal 10/2026)
Curacao (DC-ANSP)	ACC / ACC (ERAM / Indra)	Active Engagement (Operational Goal 02/2027)
Trinidad & Tobago (TTCAA Piarco)	ACC / ACC (ERAM / Leonardo)	Active Engagement (Initiate testing Fall of 2026)
Sint Maarten (Princess Juliana) (TMA)	ACC / TMA (ERAM / Thales)	Active Engagement (Operational Goal Late 2027)
Turks and Caicos (TCIAA) (TMA)	ACC / TMA (ERAM / TBD)	Preliminary assessment (Completed 2025)

2.3 Implementing ADE between ACCs and TMAs introduces unique technical and operational complexities, particularly relevant in the upcoming implementation between Miami ARTCC and Nassau TMA. Unlike traditional ACC to ACC environments where Current Flight Plans (CPLs) transfer at cruising flight levels, ACC and TMA exchanges involve CPL transfers for aircraft that are in descent/ascent profiles operating to/from terminal environments. This requires significant adaptations to the FAA's En Route Automation Modernization (ERAM) automation platform. Additionally, this requires the FAA and neighbouring ANSPs to cooperatively adjust automated CPL transfer parameters and establish specific local directives that are integrated into bilateral operational Letters of Agreements (LOAs).

2.4 As the FAA and adjacent ATC facilities finalize the parameters used to govern their new interfaces, the resulting new boundary agreements will be added to future revisions of the NAM ICD. We are currently preparing an update to the current version of the NAM ICD (revision G). Once completed, the new version (revision H), will be presented at the appropriate regional ICAO meetings.

3. Conclusion

3.1 The evolving nature of air traffic operations in the NACC region demonstrates that the NAM ICD is no longer just a static document for en-route flights. With the FAA expanding the application of the NAM ICD to support terminal operations, there is a clear and pressing need to include these efforts in future versions of the NAM ICD.

3.2 The FAA is prepared to provide lessons learned to the NACC/WG on ACC—TMA ADE implementation efforts so that it can be leveraged, where applicable, for similar cross-boundary operational efficiency gains.

4. Suggested Actions

4.1 The meeting is invited to:

a) note the information in this paper;

b) review the current NAM ICD Revision G to identify any new, modified, or planned ADE interfaces or boundary agreements between adjacent ATC facilities that are not currently captured;

c) provide feedback and inform the NACC Communications Task Force (NACC/WG/COMM TF) of any missing ADE interfaces or regional adaptations so they may be incorporated into the next planned update of the NAM ICD; and

d) discuss any related matters, as appropriate.

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