Agenda Item 1: Follow-up to the performance of AIDC operation and results of the AIDC interconnection trials between the NAM/CAR/SAM Regions

EVOLUTION OF THE UNITED STATES AUTOMATED DATA EXCHANGE INTERFACE WITHIN THE NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN (NACC) REGION – 2018 UPDATE

(Presented by the United States of America)

SUMMARY

This paper presents activities of historical and current Automated Data Exchange **activities of the United States** as examples to help states formulate individual planning strategies for integrating automated data exchange between ATS systems and plan for regional implementation of standardized automation in support of current and future flying environment.

Action:	Utilize the information and examples within this working paper to plan the development of individual state Automated Data Exchange strategies to support successful regional implementation
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Security & Facilitation • Economic Development of Air Transport • Environmental Protection
References:	• ICAO 4444, North American (NAM) Common Interface Control Document (ICD)

1. Introduction

1.1 A communications and data interchange infrastructure significantly reduces the need for verbal coordination between Air Traffic Service Units (ATSUs). A secondary benefit but equally important is the coordination of complex flight data between adjacent ATSUs in today's flying environment. Automated Data Exchange (ADE) encompasses North American Common Interface Control Document (NAM ICD) and can include ATS Interfacility Data Communications (AIDC), or similar automation protocol under the AIDC functional umbrella. ADE can provide the means by which data exchange can be harmonized between ATSUs providing air traffic service in, and adjacent to, the North American, Central American and Caribbean region. Air Traffic Service (ATS) providers in most regions have identified the requirement to exchange flight plan and radar data information between adjacent ATC facilities utilizing automated data exchange. The increasing traffic demands between FIRs prompt the need to improve efficiency, safety and accuracy for the ATC providers. Developing a harmonized process and defining protocols for exchange of data between multiple States/Territories/International Organizations within and across regions is critical to achieving this derived objective. As ATS providers develop their automation systems, consideration should be given to meeting the capabilities identified within an Interface Control Document (ICD), which serves to meet the requirements of the region.

1.2 The attached briefing provides an update to the ADE interface activities of the United States and regional partners to highlight the efforts within the region in improving the quality of the ATC infrastructure. Two distinct areas are examined within the brief; the first area covered is the activity of an analysis of the Caribbean airspace and the shortfalls identified by a subject matter expert team of FAA, airline and flight service professionals who analysed areas and tasks to improve traffic flow through the region. This group was called the Eastern Regional Task Group and operated under the auspices of the (RTCA) Tactical Operations Committee to provide analysis and report the results to FAA management. The second area covered in the attached brief explores the ongoing activity of developing the NAM ICD Class 3 Handoff capability between Canada and the United States. Success within these areas can provide huge benefits in the automation infrastructure for air traffic service within and between adjacent FIRs.

2. Discussion

2.1 The flight plan data interface provides interoperability among automated systems allowing data exchange between ATSUs that is harmonized to a common standard. Traffic flow environments in the Caribbean and Central American corridors require individual state and regional attention to keep pace with the growing demand. Both the NAM and traditional AIDC protocols support the notification, coordination and the transfer of communications and control functions to different degrees which is essential between Air Traffic Service Units (ATSU). The NAM ICD has included automated radar handoff messaging definitions within the document as a future goal of cross-border interoperability evolution.

2.2 The benefits to our customers' safety and efficiency interests extend beyond the borders of our airspace system. Operational efficiencies gained in our airspace should be continuous to the extent possible as aircraft travel into other regions and service providers. Traditional benefits noted in their respective environments from automation include:

- Reduced workload for controllers;
- Reduction of read back/hear back errors during coordination;
- Reduced "controller to controller" coordination errors; and language barrier issues
- Increased in support for performance based navigation initiatives and emerging technologies with automation

2.3 The FAA is planning for automation interconnectivity and believes the NAM ICD to be the primary standard for surveillance to surveillance operations and mixed non-radar environments, like those found in North America, Caribbean and Central America. This has been proven in operational implementation of AIDC functionality in over 20 operational interfaces in the NACC Region.

3. Conclusion

3.1 Our customers' safety and efficiency interests extend beyond the borders of our airspace system. Operational efficiencies gained in shared borders yield benefits as aircraft travel into other regions and service providers. As our aircraft operators invest in aircraft technology, they expect it to be compatible with systems and procedures used by other air navigation service providers (ANSP). Ideally, they would prefer to use the technology for the same safety and efficiency gains achieved here in North America and adjacent regions, serving as stepping stones to greater automation productivity. Standardization of automated data exchange technologies such as AIDC and NAM ICD and procedures critical to cross-border, regional and multi-regional interoperability. This, in turn, drives the seamless operation of regional and global systems. Such technical and operational alignment can take many forms, depending on the target technology or procedure. The overarching international goal of future automation interface activities is to achieve harmonization of systems and procedures to ensure interoperability across international boundaries. Such harmonization supports safety objectives through standardization and promotes economic efficiencies. A harmonized system cannot be built without partnerships with our international counterparts.

4. Action by the Meeting

4.1 The meeting is invited to: Request individual NACC and SAM states to utilize the current interface information within this working paper to gather the necessary information, evaluate the operational/technical requirements and formulate the interface strategies for successful implementation and enhancement of Automated Data Exchange.

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