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WORKING PAPER

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**Third NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/3)**  
Mexico City, Mexico, 4 to 6 April 2016

- Agenda Item 4: Follow-up, Performance Evaluation and Monitoring of the NAM/CAR Regional Performance Based Air Navigation Implementation Plan (NAM/CAR RPBANIP) Targets**
- 4.1 Progress Reports of the Task Forces and the ANI/WG**

**AIR TRAFFIC SERVICES INTERFACILITY DATA COMMUNICATION IMPLEMENTATION IN THE NORTH AMERICAN, CENTRAL AMERICAN, CARIBBEAN AND SOUTH AMERICAN REGIONS**

(Presented by United States)

**EXECUTIVE SUMMARY**

This paper presents information on ATS Interfacility Data Communications as a means for the exchange of notification, coordination, transfer and related data between automated ATS systems. It updates the activity within the NAM/CAR Regions in which the United States has been involved directly and indirectly by means of ICAO support activities.

<b>Action:</b>	The suggested actions can be found in Section 3.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li><li>• Environmental Protection</li></ul>
<i>References:</i>	<ul style="list-style-type: none"><li>• Doc 4444 – Air Traffic Management</li></ul>

**1. Introduction**

1.1 A communications and data interchange infrastructure significantly reduces the need for verbal coordination between Air Traffic Service Units (ATSUs). ATS Interfacility Data Communications (AIDC), or similar automation, can provide the means by which automated data exchange can be harmonized between ATSUs providing air traffic service in, and adjacent to, the Caribbean regions.

1.2 The increasing traffic demand between Flight Information Regions (FIRs) prompt the need to improve efficiency and accuracy for the Air Traffic Control (ATC) providers. Developing a harmonized process and defining protocols for exchanging 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. The ATS Interfacility Data Communications in the NAM/CAR Regions was modelled from an AIDC ICD, the ICAO Doc 4444 - *Air Traffic Management*, and currently supports twenty three operational member interfaces; through the North American Interface Control Document (NAM ICD); which documents the protocol of these interfaces.

## **2. Discussion**

2.1 The flight plan data system interface provides interoperability among automated systems allowing data exchange between ATSUs that are harmonized to a common standard. Canada, Mexico and United States drafted the NAM ICD based on the 1998 agreement of the Trilateral based on the ICAO Doc 4444 and AIDC messaging. The described functionality is adept at supporting radar and mixed domestic transition environments more than the traditional AIDC message set, which is more attuned to oceanic operations where more controller interaction is required. In many NAM interoperability environments, radar is the operational norm and non-radar the exception, wherein traditional AIDC non-radar is more the norm and radar is the exception. Both, NAM and traditional AIDC protocols, support the defined notification, coordination and the transfer of communications and control functions to different degrees between ATSUs and both are used in the NAM/CAR Regions. Full AIDC capability also supports extended equipment capabilities in time and distance based operations where different procedural separation minima are being used in adjacent airspace. The NAM ICD has included automated radar handoff messaging within the document as a future goal of cross border capability.

2.2 Both, NAM and traditional AIDC implementation, has proven highly successful. Automation gains have been realized, providing significant safety and efficiency gains. A recent estimation of a fifty per cent workload reduction for controllers working the sectors recently converted to automation at Miami Air Route Traffic Control Center. Benefits noted in their respective environments include:

- a) Reduced workload for controllers;
- b) Reduction of readback/hearback errors during coordination;
- c) Reduced “controller to controller” coordination errors and language barrier issues;
- d) Increased in support for performance based navigation initiatives and emerging technologies with automation.

2.3 The automated flight data message set found in the NAM ICD is used operationally between Canada and United States, Cuba and Mexico, Cuba and United States, Mexico and United States, Cuba and COCESNA, and Mexico and COCESNA. One of the strengths of the NAM message set is the scalability of the functionality.

2.4 Development of a strategy for the integration of automated Air Traffic Management systems will require an evolutionary approach, grounded in safety concepts, yet able to evolve into an interoperable system infrastructure. A vision which supports ATC information exchange between ATS facilities must embrace realistic requirements definition and solutions which can be scaled to meet the level of need of members of the region.

### **3. Recommendations**

3.1 The Meeting is invited to:

- a) note the information in this working paper and briefing;
- b) support measures and build on lessons learned by member States to reach the goal of a seamless, globalized air traffic management system one step at a time;
- c) encourage the development of action plans that are based on achievable results for defining automation within air navigation work plans;
- d) support the concept of a globally standardized and regionally harmonized interface;
- e) support an initiative to improve the quality of flight plan data; and
- f) look at the recent automated data exchange successes; they really are working.