Fourth NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/4)
Miami, United States, 25 – 28 June 2018

Agenda Item 3:	**Global and Regional Air Navigation Plans**
	3.4 Other Global/Regional Air Navigation Developments
	3.4.4 The Air Traffic Services Inter-facility Data Communication (AIDC) (APAC) and NAM/ICD Protocols of the NAM/CAR Regions Implementation

PROGRESS IN THE IMPLEMENTATION OF THE AIR TRAFFIC SERVICES INTER-FACILITY DATA COMMUNICATION (AIDC) APAC PROTOCOLS AND THE NAM INTERFACE CONTROL DOCUMENT (ICD) OF THE NAM/CAR REGIONS.

(Presented by the Secretariat)

EXECUTIVE SUMMARY
This paper presents updated information on the AIDC operation performance in the NAM/CAR Regions, and the needed activities to be executed by States to ensure the correct implementation of the NAM/ICD and AIDC/ASIA PAC automated protocols.

Action:	Suggested Actions are presented in Section 3.
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency
References:	• Eighteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/18), Punta Cana, Dominican Republic, 9-14 April 2018 • NAM/CAR/SAM Regions Air Traffic Services Inter-facility Data Communication (AIDC) Implementation Meeting, Lima, Peru, 16-20 April 2018.

1. Introduction

1.1 In the aforementioned meetings, important conclusions on the automated protocols implementation were agreed, not only because its operative benefit, but also because its positive impact within safety.

1.2 The meetings concluded that it is beneficial for the Region that States integrate as basis protocols for their implementations, the NAM ICD (Version E) and AIDC (APAC Version 3), as minimum to conduct connections with their adjacent States. For any new version, the State must ensure that the new protocol is compatible with the aforementioned protocols and the ones managed by the control centres of the adjacent Sates. The Meeting information is available at the following link:
 https://www.icao.int/SAM/Pages/ES/MeetingsDocumentation_ES.aspx?m=2018-AIDC4

1.3 The CAR/SAM Planning and Implementation Regional Group (GREPECAS) indicated need States with the capacity of implementing a NAM/ICD and AIDC/APAC, update their action plans based on the need to enhance safety of the Region. Those plans should be submitted to ICAO NACC Regional Office by end August 2018. .

1.4 In the CAR Region, the Air traffic control (ATC) systems belong to two big providers, INDRA Systems and THALES. Although the standards of the automated protocols of both the AIDC/APAC and the NAM/ICD are available and are a requirement in most implementations of the Systems, States have problems of their interconnection commissioning, delaying many times over two years the implementation of a single channel.

1.5 Through an exercise conducted to the ATC System providers, both, INDRA and THALES identified several deficiencies in the AIDC implementation process and the NAM/ICD, the most important ones below:

- Lack of protocol definition, version to be used for conducting the connection implementation.
- Lack of definition of the operative interpretation of the automated connection.
- It is still necessary to define the settings and maintenance procedures of databases, previous, during, and after the implementation of the AIDC protocols.
- That the NAM/ICD protocol is not an ICAO document, as it is not a standard mandatory compliance document for system providers.

1.6 The need to update the PoCs of the AMS Systems of the entire Region and place them as an integral part of the corrective and preventive maintenance procedures aiming to have a timely coordination for the presented failures and monitor in a permanent way the aeronautical messaging for automated messages and others, was analysed.

1.7   The presence of errors in flight plans continues to be a factor that diminished the effective implementation percentage of the automated protocols and although work has been done at a local and regional level to reduce errors, it still remains a regional problem that needs to have a resolution in a short term. GREPECAS recommended the need for States to adopt regional measures that diminish the errors occurrence, and that mechanisms could be implemented and under commissioning by December 2018.

1.8   An identified mechanism to diminish errors in flight plans, is the reception in the FPL units assigned by States directly from the Airlines operations 'centres, considering that Airlines have automated in an advanced way the elaboration of flight plans

1.9   Other important factors to ensure the proper functioning of automated channels and promote safety, is that States update the information of their Integrated Aeronautical Information Packages (iAIPs) in accordance with Annex 15 - *Aeronautical Information Services*, and ICAO related documents.

2.   Analysis

2.1   The automation of the coordination of ATC operations is a mechanism that supports the increase of safety, since it reduces the controller workload helping him to focus on more important tasks. Also, it diminish the oral coordination's, makes more efficient coordination between control centres, among others. It is the basis for future facilities implementation and the increase in the air traffic management.

2.2   It is necessary, that all persons involved, take action in the implementation of the recommended activities by the experts, to overcome the identified weaknesses and ensure the proper functioning of the AIDC and the NAM/ICD protocols.

3.   Suggested Actions:

3.1   The Meeting is inviteD to:

a)   Take note of the information presented in this paper to ensure the proper implementation and functioning of automated channels; and

b)   endorse the work plan presented in **Appendix A** of this paper.

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APPENDIX

Activities proposed to the States for their approval and that are monitored by the AIDC Task Force and FPL Ad hoc Monitoring Group.
Activities must be finalized in December 2018.

Activities	Objectives	Comments
✓ Review by the State of the AFTN connections and the means of transmission of the aeronautical information (Ensure its correct transmission and means of communication)		
✓ Ensure the exchange of radar data between each of the adjacent States and that have these facilities.		
✓ Update the Points of Contact of the AMHS responsible technicians and ensure that this information is available on the WEB.	1. Failure coordination facility 2. Constant traffic monitoring 3. Establish coordination deadlines	
✓ Submit the AIDC implementation plans (update the plan and submit it to ICAO)	1. Support the implementation 2. Facilitate coordination	See comments provided by manufacturers
✓ Adopt measures that minimize the occurrence of errors in flight plans.	1. Increase the level of effectiveness of automated coordination's 2. Improve safety	
✓ That the States take into account the recommendation of the AIDC meeting/FPL errors, which indicates that the States must take into account that the airlines have automated in an advanced way the preparation of their flight plans and that the States facilitate the reception of these through an automatic form from the operation centres of the airlines. In this sense, it is expected to:	1. Safety 2. Efficiency 3. Implementation of a Regional Procedure	

1. States update their AIP and publish a single AFTN address that is responsible for receiving and validating the flight plan information. 2. That the States implement messages of feedback to the airlines of the received information.		
✓ Integration of mechanisms to validate the databases of their systems to ensure their integrity, availability and that they have the most up-to-date information. For them, States must ensure: 1. Have personnel responsible for the maintenance and updating of the databases of their systems. 2. Integrate technical/operational mechanisms that ensure the integrity and quality of the information. 3. That they establish mechanisms that ensure the coordination and validation of information between their State and the adjacent States.	1. Safety 2. Availability of current AIP data 3. Proper validation of flight plans	

INTEGRATED RECOMMENDATIONS FROM INDRA SYSTEMS, THALES AND ATECH

Recommendations for the implementation of AIDC in the latest generation systems of suppliers:

- Indra Systems SA and ATECH recommend that Brazil establish a work plan in conjunction with Colombia and Peru in order to coordinate tests as of mid-July 2018 when the new ATECH system is implemented in the Amazonian FIR, which has latest software version "SAGITARIO" and which has among its improvements the management capacity of FPL2012 and the latest implementations in the AIDC protocol.
- According to our experience, we consider that the new software versions of the systems contemplate all the necessary parameters for the correct coordination of the systems with the AIDC protocol. If any State considers that some parameter should be implemented in the future, it can make its consultation or suggestion so that the suppliers can indicate if they have this possibility or if it can be implemented as per request within a new contract.

Recommendations before bidding:

- Clearly define the protocol, version to be used, and establish in the specification the level of coordination with which it should communicate with each adjacent state.
- It is recommended to specify in the specifications any operational case that is considered to be implemented.

Short-term recommendations for states:

- That all states have systems with FPL2012 capacity.
- Have specific contracts of support and guarantee for the AIDC operational implementation.

Recommendations to ICAO for the prior validation of a system:

- It is recommended that ICAO develop a semantic validation tool for different protocols and versions that allows providers to validate their systems autonomously.
- Incorporate technical and operational courses to the working meetings of the states. For the

Certification of technicians:

- It is recommended that technicians have continuous training. These courses of refreshment should be oriented mainly to the operation staff of the systems that will in turn give greater support to the controllers.
- It is recommended that technicians be more involved in operational and conceptual aspects of the operation of an ATC system.
- Theoretical-practical exam in specific operating systems in the country or control center.
- Theoretical-practical exam of the working mode of the installed system (supplier application).

Recommendations to ICAO regarding queries from system suppliers:

- The NACC and SAM Offices should designate a focal point to respond to clarification requests regarding ICD specifications from the system suppliers. ICAO clarifications should be distributed to all providers of AIDC systems.

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