*International Civil Aviation Organization*
CAR/SAM Regional Planning and Implementation Group (GREPECAS)
**Eighteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/18)**
Punta Cana, Dominican Republic, 9 to 14 April 2018

**Agenda Item 4: Regional air navigation planning and implementation performance framework: Review of programmes and projects**

**4.3 Projects under the Automation and ATM Situational Awareness Programme (BO-RSEQ, B0-FICE, B0-SNET, B0-ASUR and B0-SURF)**

# Status and Lessons Learned, AIDC Implementation

(Presented by Dominican Republic)

**SUMMARY**

This information paper presents the AIDC implementation status in the Dominican Republic, as well as the lessons learned during the process.

**References**:

- NAM ICD Version E

## 1. Introduction

1.1 The Dominican Institute of Civil Aviation (IDAC), by means of the Air Navigation Directorate (DINA), in charge of providing air navigation services for the Santo Domingo Flight Information Region, implemented new ATC systems in Santo Domingo and Punta Cana in 2014, which were enabled for AIDC use from the beginning. Since then there have been efforts for implementing an AIDC interface with Miami and San Juan FIRs, during which several issues have been detected.

## 2. Discussion

2.1 The NAM ICD establishes three classes of messages (I, II, and III), which represent increasing levels of coordination automation, respectively. Our system as installed had all messages up to Class III enabled, the highest level of automation. This configuration makes it difficult to exchange messages with FIRs that have only Class I or II implemented, as is the current case. At the moment Miami and San Juan FIRs only had Class I, and subsequently Class II.

2.2 The last interoperability test with the United States was carried out on February 17 and 18, 2016, with the presence of the provider's technician Santo Domingo. The test gave light to additional issues:

a) Carriage return/line feed characters were received between elements in CPL messages generated from Santo Domingo, and also from FAA via AMHS.
b) CPLs were being generated for VFR flights, where the FAA system will only accept IFR flights.
c) Our system had interface management messages enabled (IRQ/IRS/TRQ/TRS). The FAA system currently does not use those messages.

d) Difficulties in sending NAM messages manually from Santo Domingo, for testing purposes.

2.3 These issues were documented by the supplier for correction.

2.4 After several email exchanges and meetings, the system provider has recognized that the separation of messages by class is a requirement specified in the NAM ICD, thus is a compliance issue. The agreement for the software updates, including particular requests for the interaction between the Santo Domingo and Punta Cana systems, was finalized in this past month of October, 2017. The software is being update to allow, among other things, the use of messages by class.

2.5 While the software is being updated, several internal tests have been scheduled to prepare for the next testing with the FAA. These tests consisted of the following:

a) Manual generation of IRS (Initialization Response) messages to allow the establishment of the NAM ICD interface connection. As noted previously, the FAA system does not respond to interface management messages, so doing so manually could allow activating the interface and from there operate correctly. The tests could then continue.
b) Test the generation and the format of messages after establishing the interface connection. Since the interface did not go operational due to the issue described in paragraph 2.2 c) above, the messages used in the 2016 testing were ATS messages and therefore not really AIDC messages. This could account for the differences found.

2.6 There has been conversation with Curaçao to also begin AIDC testing between the two FIRs, but nothing has been agreed yet. Curaçao has stated that their system has the capability for AIDC with the Asia PAC ICD only, and our system in Santo Domingo has this capability. Therefore internal testing has also been planned with this ICD.

**3. Conclusion**

3.1 As expressed previous meetings, a very important issue is the adherence to the NAM ICD. Although the document is explicit regarding which messages belong to which class, in practice the implementation is not carried out verbatim. This is the case for the use of CPL/LAM/LRM for Class I, whereas LRM is actually a Class II message. This could be interpreted as a Class II interface, using only LRM from the Class II message set. Classes are defined in the NAM ICD for ease of transition from a non-automated to an automated state, but the particulars between adjacent FIRs will dictate which messages are important at earlier stages. In the case for Santo Domingo, it would be logical to assume that apart from CPL/LAM, LRM would be included early on for feedback on errors, and probably also FPL messages for pre-departure clearance due to the proximity of Punta Cana airport to the boundary with San Juan FIR.

3.2 From the above, it is stressed that in AIDC implementations as much flexibility as possible be granted to the use of messages, such that each adjacent States have the ability to use whatever message set considered necessary.

3.3 Finally, the importance of internal testing cannot be underestimated. It is absolutely necessary for the staff to fully understand the behavior of the software and thus e conciliating these differences with the adjacent FIRs.

**4. Action by GREPECAS**

4.1 The meeting is invited to:

a) Consider the lessons learned in this information paper.

b) Any other action deemed necessary

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