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North American, Central American and Caribbean Office

WORKING PAPER

E/CAR/NTG/8 & E/CAR/RD/6 — WP/10
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Eight Eastern Caribbean Network Technical Group (E/CAR/NTG/8) and Sixth Eastern Caribbean Radar Data Sharing Ad-hoc Group (E/CAR/RD/6) Meetings
Saint George's, Grenada, 03 – 05 September 2018

Agenda Item 7: Other Business

7.3 Consideration for AIDC/ASIA PAC and NAM/ICD Implementation

CONSIDERATION FOR AIDC/ASIA PAC AND NAM/ICD IMPLEMENTATION

(Presented by Secretariat)

| EXECUTIVE SUMMARY | |
|--|---|
| This working paper present information about the AIDC (ATS INTERFACILITY DATA COMMUNICATIONS) and NAM/ICD (North American Common Coordination Interface Control Document (ICD)) in the region NAM/CAR/SAM. | |
| Action | The suggested actions are presented in Section 3. |
| <i>Strategic Objectives:</i> | <ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency |
| <i>References:</i> | <ul style="list-style-type: none">• RLA/06/901 - Meeting of implementation of AIDC in the NAM/CAR/SAM Regions, Lima, Peru, 16 April 2018 to 20 April 2018 |

1. Introduction

1.1 For protocol interconnection, NAM/CAR/SAM decided to implement to different protocols:

- NAM/ICD¹ For interconnection between United States and CAR States.
- AIDC/ASIA PAC, version 3 or up for the other States connections.

1.2 After the analysis the NAM/CAR/SAM 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 requirement 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

¹ Interface Control Document (ICD)

and the ones managed by the control centres of the adjacent States. The information is available at the following link:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2018-AIDC4>

1.3 Some benefits were identified related to AIDC and NAM/ICD implementation:

| Benefits of NAM / AIDC Implementation | |
|--|---|
| Benefits Automation | ICAO Strategic Objectives |
| ✦ Reduction of coordination errors of ATC operations: exist a reduction of the errors from manual operations because the automatization extract all the information from the FPL in automatically way. | ✦ Operational safety: Improve the safety of global civil aviation. |
| ✦ Reduction of the workload of the operational staff: reduction of oral communications and therefore more time to focus on the most important activities. | ✦ Air navigation capacity and efficiency: Increase capacity and improve the efficiency of the global civil aviation system. |
| ✦ Increased Efficiency: You can analyze the capacity of the sector and increase the number of operation in a control sector. | ✦ Aviation Security and Facilitation: Improving aviation security and facilitating global civil aviation. |

1.4 The Secretariat informed of the work carried out by the GREPECAS GTE scrutiny group, which had identified AIDC implementation as one of the factors that contributed to the reduction of LHDs, with a positive impact on safety. Likewise, the GTE noted that critical points had been identified in the Region, and to which close attention should be paid, such as coordination between Curacao-Dominican Republic and COCESNA-Ecuador. Therefore, AIDC implementation should be a priority for these States.

1.5 The NAM/CAR Regions, based on their experience, had identified a series of weaknesses during AIDC implementation, as well as post-implementation issues that made it difficult for the protocol to work 100%, mainly:

Pre - implementation:

- Need for a better definition of the requirements of the Air Traffic Control Systems.
- Need to improve the training of personnel responsible for the integration, configuration and operation of automated channels.
- Weaknesses in the integration and connection between ATC systems of different suppliers.
- Delivery of AIDC and NAM/ICD messages through AFTN and AMHS Systems.

Post – implementation:

- Maintenance of the ATC Systems database.
- The need to extend the training programme to the personnel responsible for maintaining the communications infrastructure and maintenance of the systems.
- Need to strengthen, evaluate and implement a procedure for continuous improvement in operational control procedures.

- Finally, the negative impact that the errors in the information of the flight plans produces in the automation and the operational risk added to it.

1.6 The Secretariat invited the providers that had implemented ATC systems to share the lessons learned and the weaknesses identified in regional AIDC implementation. The providers presented lessons learned, and common regional problems were identified that affected proper implementation of this functionality, all providers identified the following regional difficulties:

- Lack of clear system requirements.
- System protocol documentation, since providers had different interpretations thereof.
- Unclear semantics and lack of real technical/operational requirements by the States.
- Incorrect database configuration.
- Lack of properly trained personnel to fulfil system analyst functions.
- Lack of standardization.

1.7 Differences between the automated NAM/ICD and ASIA/PAC protocols are in Appendix A of this working paper.

2. Discussion

2.1 Taking into account the benefits of the AIDC and NAM/ICD implementation, and improve its implementation.

3. Suggested actions

3.1 The meeting is invited to:

- a) Take note of the information provided; and
- b) Agree to any other actions as deemed appropriate.

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APPENDIX A
Differences between the automated NAM/ICD and ASIA/PAC protocols

| <u>Phases</u> | <u>NAM</u> | <u>Additional Information</u> |
|---|---|--|
| First phase | NAM ICD automation is Class 1 which exchanges active flight plans using a CPL message | |
| Second phase | <p>The second phase of the automation is Class 2 which adds the following capabilities:</p> <ul style="list-style-type: none"> a) Exchange of Filed Flight Plan (FPL) and Estimate (EST) messages. b) Modification of a CPL or of a FPL that was activated by an EST message (MOD). c) Modification of FPL messages (CHG). | <p>Flight Data Coordination A Class 2 interface adds the following capabilities to a Class 1 interface:</p> <ul style="list-style-type: none"> a) Modification of a CPL or FPL that was activated by an EST message (MOD). b) Exchange of Filed Flight Plan (FPL) and Estimate (EST) messages. c) Cancellation of a previously sent FPL or CPL (CNL). d) Modification of FPLs (CHG). e) General Information (MIS) capability. |
| | | <p>Interface Management Class 2 Interface Management adds the following capabilities:</p> <ul style="list-style-type: none"> a) Logical Rejection Messages (LRM). b) Interface management (IRQ, IRS, TRQ, TRS, ASM). When implemented between two ATSU's, the messages which make up the interface management message set are selected by bilateral agreement based on operational need. |
| <p>Logical Acknowledgement Message (LAM) The Logical Acknowledgement Message (LAM) signifies that a message was received correctly. During Class 1, each system must determine if a message was rejected or lost, or if the interface failed by timing-out receipt of an LAM for each message sent. During the Class 2 phase, the Logical Rejection Message (LRM) provides the reason a message was rejected.</p> | | |
| <u>Third Phase</u> | <p>The third phase of the automation is Class 3 which adds the following capabilities:</p> <ul style="list-style-type: none"> a) Radar Handoff b) Radar Pointout | |
| <u>Phases</u> | <u>AIDC</u> | <u>Additional Information</u> |
| <u>First/Second and Third Phase</u> | <u>Implemented at the same time</u> | |