International Civil Aviation Organization

Seventh Meeting of the Asia/Pacific ATS Inter-Facility Data-Link Communication Implementation Task Force (APA TF/7) of APANPIRG

Video Teleconference,

Agenda Item 4: Review implementation issues reported and discuss recommended solutions

LESSONS LEARNT FROM AIDC IMPLEMENTATION IN INDIA

(Presented by India)

SUMMARY

This paper presents various technical and operational issues that may be encountered in the process of AIDC implementation and possible solutions.

1. INTRODUCTION

1.1 India has taken commendable steps in implementation of AIDC between ATC centers within various FIRs within the country as well as with ATC Centers of other neighbouring countries. Within the country itself different ATC Centers have ATM automation system of various make and models. During the process of implementation various technical and operational issues were encountered which may be of generic nature for all the states implementing AIDC. This paper intends to highlight such issues and possible solutions for the benefit of all states.

2. DISCUSSION

2.1

Technical issues	
ISSUES	**POSSIBLE MITIGATION**
Vendors provide the AIDC application interface as an integral part of ATM Automation System which are normally COTs product and there may be very little scope for customization. Some conforms to APAC AIDC ICD ver 3.0 and some are not. For example, if one system sends ABI starting from COP and the other system from COP-1 point (correct one) then there will be error in exchange of ABI.	While floating Tender it should be clearly mentioned that AIDC should be in accordance with APAC AIDC ICD version 3.0. There should be provision of customization.

The data adaptation for AIDC with different vendors are different. Some vendors allow adaptation of more than one Center Name. Some vendors allow only one Center Name for AIDC as well as ADS/CPDLC. In such cases AIDC parameters are global for all the sectors of the ATSU. Operationally it may be required to adapt different AIDC parameters between sectors. For example, the time before EST is sent may be different for ACC sector and OCC sectors.	It should be clearly mentioned in the Tender that there shall be provisions for allowing adaptation of multiple internal Center Names.
Some system does not allow selection of individual messages to be implemented between two ATSU. Change in adaptation parameters requires a system restart which is not possible frequently.	The Tender should clearly mention that there shall be provision to select AIDC messages to be exchanged between two Centers in the adaptation.
If route truncation is not supported, many a times the flight plan gets modified on receipt of an ABI messages and the route field is modified as per the ABI creating problem for the accepting unit.	All AIDC applications shall support route truncation.
Latency is observed many a times for which the Messages are timed out.	A dedicated media or upgradation of AFTN software or change in message transmission protocol i.e. from X.25 to TCP/IP may help.
Missing of message reference number	Vendor shall be able to modify software to correct these errors

Operational issues.

ISSUES	**POSSIBLE MITIGATION**
The configuration of Controller Work Position in a sector is very important. If AIDC is provided with only the surveillance controllers' SDD it may not be possible for the controller to attend to AIDC messages all the time. Similarly, if the Planning controller is given only an FDD, he/she may not be able to attend to AIDC messages properly and the surveillance controller may not be aware of the coordination.	Proper planning of the CWP of a sector will help. Ideally both surveillance controller and the Planning Controller should have provision to handle AIDC and Normally it is better for Planning Controller (if available) to handle AIDC either through SDD of Electronic Flight Progress Strips.
If the COP area contains a lot of high-density crossing routes it involves too many CDN exchanges and counter coordination which may be difficult to handle. Controllers feel more comfortable with voice coordination.	A near 100% success rate must be ensured to build confidence in controllers. A well thought LoA may help reducing risks. A practical flow control measure could also help.

The HMI of AIDC is very important. The presentation to controller should be simple. As far as possible the coordination must be done with the Track label of SDD and should not involve too many tables. For example, for a level coordination the controlling unit should only input the exit flight level in the track label which should automatically send a CDN msg to the accepting unit which should generate a blinking level in accepting controllers Track level in a different colour. If he accepts it, it should generate an ACP and the color of XFL in controlling units track block should change. If accepting unit proposes a different level he should put it in his XFL and the controlling unit should see a blinking level and accept/renegotiate it. AOC/TOC should be just like electronic hand offs between two sectors	Effective HMI should be stated in the Tender document.
Manual intervention of messages causing extra workload. For example, a manual ACP for every EST will increase work load. As such response to an EST is only ACP. So it can very well be automatic.	Most of the message exchange should be automatic or simple to handle. There should be provision to adapt automatic and manual mode of message transmission
Complexity of presentation of a failed message leading to coordination failure	If a message exchange fails there should be a clear indication to controller to coordinate it by Voice.
Grey area in LoA between Centers.	The LOA should be meticulously drafted to avoid any confusion.

2.2 It is therefore felt prudent that a chapter with recommendation of qualitative requirement for the AIDC application in an ATM automation system including HMI may be contemplated to be included in the ICD or any other Guidance material by APAC so that all the states can be benefited while implementing ATM Automation System with AIDC application.

Conclusion/Decision XX/XX - General Qualitative Requirement of AIDC application in ATMS	
What: AIDC task force will recommend general qualitative requirement of AIDC application in an ATM automation system.	Expected impact: ☐Political / Global ☐ Inter-regional ☐ Economic ☐Environmental ☒ Ops/Technical

Why:	To bring uniformity and better interoperability	Follow-up:	☐Required from States
When:	7-Jun-21	Status:	Draft to be adopted by PIRG
Who:	☐Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: XXXX		

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matter as appropriate

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