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*International Civil Aviation Organization***Seventh Meeting of Asia/Pacific ATS Inter-facility Data-link Communication Implementation Task Force (APA TF/7) Of APANPIRG**

Video Teleconference, 7 – 9 June 2021

Agenda Item 3: Status of implementation plan focusing those connections identified with priorities**AIDC IMPLEMENTATION IN SINGAPORE**

(Presented by Singapore)

SUMMARY

This paper aims to update the progress of the ATS Inter-facility Data-link Communication (AIDC) implementation in Singapore.

1. INTRODUCTION

1.1. Under the Aviation System Block Upgrades (ASBU) block 0 upgrades, ATS Inter-facility Data-link Communication (AIDC) has been identified as a component to support Flight and Flow Information for the Collaborative Environment (FF-ICE that would bring about increased interoperability, efficiency and capacity through ground-ground integration.

1.2. Singapore's AIDC implementation journey with adjacent Area Control Centres (ACC)/Air Traffic Control Centres (ATCC) began with Ho Chi Minh ACC (Viet Nam) in July 2014, then with Kuala Lumpur ATCC (Malaysia), Manila ACC (Philippines) in November 2019 and with Kuching ATCC (Malaysia) in February 2021.

1.3. This paper also shares some of the implementation and operational issues which could be taken into consideration by other States in their implementation of AIDC.

2. IMPLEMENTATION STATUSHo Chi Minh ACC and Singapore ACC

2.1. Singapore implemented AIDC with Ho Chi Minh ACC in July 2014 after operational trials were conducted successfully. The benefits were improvement to the coordination process and reduction of errors associated with voice coordination. The following ATS routes were utilized for the AIDC trial; L625, L642, L644, M753, M768, M771 and N892 which constituted about 21% of the total traffic operating in Singapore FIR.

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2.2. The following AIDC messages were implemented in the first phase: EST, ACP, LAM and LRM. The sampled statistics for EST messages exchanged between the 2 ATS units from January to April 2021 are as follows:

	EST messages	Successful EST with ACP/REJ	Unsuccessful EST	Remarks
Total	15,995	14,235 (89%)	1,760 (11%)	Please refer to Section 3 for implementation issues
Incoming	7,990	6,711 (84%)	1,279 (16%)	
Outgoing	8,005	7,524 (94%)	481 (6%)	

Kota Kinabalu ATCC, Kuching ATCC and Kuala Lumpur ATCC with Singapore ACC

2.3. Singapore implemented AIDC with Kuala Lumpur ATCC and Kuching ATCC in November 2019 and February 2021 respectively after successful AIDC operational trials. The following AIDC messages were implemented in the first phase: EST, ACP, LAM and LRM. The sampled statistics for EST messages exchanged between the 2 ATS units from January to April 2021 are as follows:

	EST messages	Successful EST with ACP/REJ	Unsuccessful EST	Remarks
Total	18,061	16,616 (92%)	1,445 (8%)	Please refer to Section 3 for implementation issues
Incoming	9,360	8,517 (91%)	843 (9%)	
Outgoing	8,701	8,178 (94%)	523 (6%)	

2.4. After conducting technical tests, operational trials with Kota Kinabalu ATCC commenced in November 2020 for EST, ACP, LAM and LRM messages. The operationalization of AIDC has been planned for 3Q2021.

Manila ACC and Singapore ACC

2.5. Singapore implemented AIDC with Manila ACC since November 2019 after successful operational trials. The following AIDC messages were implemented during first phase: EST, ACP, AOC, TOC, LAM and LRM. The sampled statistics for EST messages exchanged between the 2 ATS units in from January to April 2021 are as follows:

	EST messages	Successful EST with ACP/REJ	Unsuccessful EST	Remarks
Total	3,026	2,784 (92%)	242 (8%)	Please refer to Section 3 for implementation issues
Incoming	1,775	1,562 (88%)	213 (12%)	
Outgoing	1,251	1,213 (97%)	38 (3%)	

Summary table

2.6. In summary, the various activities that has been conducted or planned for AIDC implementation with adjacent FIRs are summarized in the table below:

State/ATS unit	Technical test commencement	Implementation date	AIDC messages	Remarks
Vietnam/Ho Chi Minh ACC	December 2013	24 th July 2014	Phase 1 (24 th July 2014): EST, ACP, LAM, LRM Phase 2 (TBA): ABI, TOC, AOC	Phase 2 operational trials deferred until further notice.
Malaysia/ Kuala Lumpur, Kota Kinabalu and Kuching ATCCs	December 2014	Kuala Lumpur ATCC: 1 st November 2019 Kuching ATCC: 1 February 2021 Kota Kinabalu ATCC: 3Q 2021	EST, ACP, LAM, LRM	Operational trials between Operational trials between Kota Kinabalu ATCC and Singapore had commenced 16 November 2020.
Philippines/ Manila ACC	December 2014	1 st November 2019	EST, ACP, LAM, LRM, TOC, AOC	Phase 2 operational trials discussions to be initiated in 3Q2020.
Indonesia/Jakarta ATSC	TBA	TBA	ABI, EST, ACP, LAM, LRM, TOC, AOC	TBA

3. IMPLEMENTATION ISSUES

3.1. As reported in past meetings, disruption of the connection links would result in unsuccessful AIDC message transmission/exchanges due to message non-reception/timeouts. As more connection links are being upgraded, these link latency issues are expected to be reduced further. The use of the APAC Regional Common aeRONautical Virtual Private Network (CRV) would also be a potential solution to address existing latency issues associated with AFTN routing setups.

3.2. It has been observed that most of the unsuccessful EST message exchanges have been attributed to 2 main reasons: 1) flight plan has been manually coordinated before EST message is received and 2) missing FPL information in the ATM system of the receiving ACC. Regular user-training/and reminders will remain in place to handle these automation handling and flight planning issues.

4. ACTION BY THE MEETING

4.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) note the revised AIDC implementation plan in Singapore;
- c) discuss the issues encountered during AIDC implementation, and;
- d) discuss any relevant matter as appropriate.

