International Civil Aviation Organization

The First Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/1)

Video Teleconference, 28 March – 01 April 2022

Agenda Item 5: Implementation of CNS/ATM Systems

TRIAL IMPLEMENTATION OF AIDC BETWEEN JAKARTA ACC AND UJUNG PANDANG ACC

(Presented by Indonesia)

SUMMARY

This paper presents information on operational trial of AIDC between Jakarta ACC and Ujung Pandang ACC.

1. INTRODUCTION

1.1 Indonesia is very concerned about the use of AIDC as a coordination need between ATS units, especially for Jakarta ACC and Ujung Pandang ACC. In this regard, Indonesia had conveyed an information paper (IP/11) at the Seventh Meeting of the Asia/Pacific ATS Inter-Facility Data-Link Communication Implementation Task Force (APA TF/7) of APANPIRG regarding the AIDC trial between Jakarta ACC and Ujung Pandang ACC.

1.2 Noting the absence of AIDC capabilities in the ATC system used at Jakarta ACC, in the fourth quarter of 2020, Airnav Indonesia has built a system in the form of Simplified AIDC which is a stand-alone system that has the ability to process data and communicate with the AIDC system in Ujung Pandang.

1.3 The trial implementation has been carried out since November 2021 and under the evaluation process until now.

2. DISCUSSION

Trial Implementation of AIDC

2.1 At the APA/TF meeting, Indonesia informed that Indonesia was conducting technical testing of AIDC between Ujung Pandang ACC and Jakarta ACC. The testing has been carried out since November 2020. The types of AIDC messages exchanged between Jakarta ACC and Ujung Pandang ACC are EST, ACP, LAM, and LRM.

2.2 For Jakarta ACC, the trial implementation was carried out using the AIDC system which was built by AirNav Indonesia. The system is stand-alone and was built as a solution to the condition of the ATC Jakarta ACC system which did not yet have AIDC capabilities. The system has the capability to receive, process, and transmit AIDC messages as per AIDC ICD. The improvement of the simplified AIDC system has been done based on AIDC technical testing evaluation results and the ATC's feedback, as the user.

2.3 Airnav Indonesia has developed in-house Simplified AIDC in an effort to improve safety in operational aspect. The system diagram is in brief as follows:

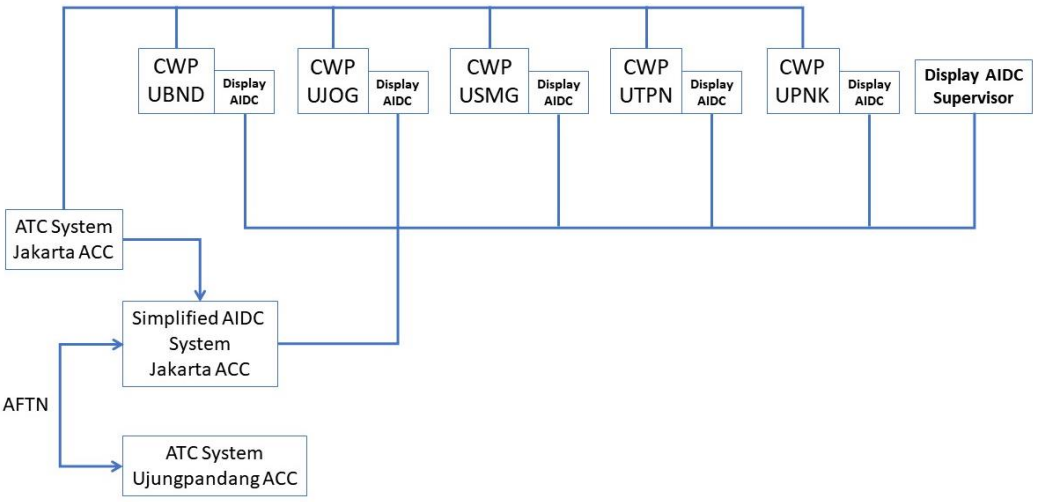

Figure 1: System diagram of Simplified AIDC in Jakarta ACC

2.4 The system captures information from Jakarta ACC ATC system that needs to deliver to Ujung Pandang ACC as AIDC message.

2.5 Trial implementation of AIDC consists of 2 phases as follows:

1) Phase 1 (5 Nov. 2021 – 10 Jan. 2022)

AIDC to be used as a monitoring tool, transfer of control to be done by voice communication, and ATC checked data to be transferred as voice coordination with data presented on AIDC Display.

2) Phase 2 (since 10 Jan. 2022)

AIDC system to be used as the main coordination tool, and ATC to keep monitoring data being transferred by system with data displayed on ASD.

Evaluation of Trial Implementation of AIDC

2.6 After phase 1, the evaluation of the trial implementation of AIDC was conducted on 9 January 2022. It was concluded that the success rate in Phase 1 reached 93,46 %. The detailed results are as follows:

No	Tanggal	Failed	Timed-Out	Success	TOTAL	Percentage	No	Tanggal	Failed	Timed-Out	Success	TOTAL	Percentage
1	05-Nov-21	6	23	341	370	92,16%	31	10-Dec-21	8	25	413	446	92,60%
2	06-Nov-21	3	14	347	364	95,33%	32	11-Dec-21	10	35	422	467	90,36%
3	07-Nov-21	5	11	334	350	95,43%	33	12-Dec-21	12	20	422	454	92,95%
4	08-Nov-21	1	17	327	345	94,78%	34	13-Dec-21	6	3	414	423	97,87%
5	09-Nov-21	5	21	331	357	92,72%	35	14-Dec-21	8	15	415	438	94,75%
6	10-Nov-21	7	24	353	384	91,93%	36	15-Dec-21	12	17	431	460	93,70%
7	11-Nov-21	16	19	370	405	91,36%	37	16-Dec-21	8	21	449	478	93,93%
8	12-Nov-21	11	47	341	399	85,46%	38	17-Dec-21	5	24	432	464	93,10%
9	13-Nov-21	6	10	365	381	95,80%	39	18-Dec-21	9	18	431	458	94,10%
10	14-Nov-21	9	8	379	396	95,71%	40	19-Dec-21	2	13	454	469	96,80%
11	15-Nov-21	11	11	347	369	94,04%	41	20-Dec-21	8	28	411	447	91,95%
12	16-Nov-21	8	7	370	385	96,10%	42	21-Dec-21	5	9	422	436	96,79%
13	17-Nov-21	3	29	367	399	91,98%	43	22-Dec-21	5	7	462	474	97,47%
14	18-Nov-21	5	18	390	413	94,43%	44	23-Dec-21	7	15	436	458	95,20%
15	19-Nov-21	9	16	383	408	93,87%	45	24-Dec-21	4	18	408	430	94,88%
16	20-Nov-21	14	12	392	418	93,78%	46	25-Dec-21	9	20	314	343	91,55%
17	21-Nov-21	11	18	381	410	92,93%	47	26-Dec-21	4	19	339	362	93,65%
18	22-Nov-21	9	5	372	386	96,37%	48	27-Dec-21	5	10	340	355	95,77%
19	23-Nov-21	5	12	386	403	95,78%	49	01-Jan-22	0	3	322	325	99,08%
20	24-Nov-21	6	14	394	414	95,17%	50	02-Jan-22	4	7	388	399	97,24%
21	25-Nov-21	11	11	398	420	94,76%	51	03-Jan-22	5	4	383	392	97,70%
22	26-Nov-21	5	8	223	236	94,49%	52	04-Jan-22	6	9	375	390	96,15%
23	02-Dec-21	12	38	405	455	89,01%	53	05-Jan-22	8	8	389	405	96,05%
24	03-Dec-21	13	43	377	433	87,07%	54	06-Jan-22	9	15	382	406	94,09%
25	04-Dec-21	13	90	339	442	76,70%	55	07-Jan-22	7	11	378	405	93,33%
26	05-Dec-21	23	105	337	465	72,47%	56	08-Jan-22	4	9	410	423	96,93%
27	06-Dec-21	10	50	347	407	85,26%	57	09-Jan-22	8	6	408	422	96,68%
28	07-Dec-21	7	13	392	412	95,15%							
29	08-Dec-21	7	10	424	441	96,15%							
30	09-Dec-21	4	13	426	443	96,16%							

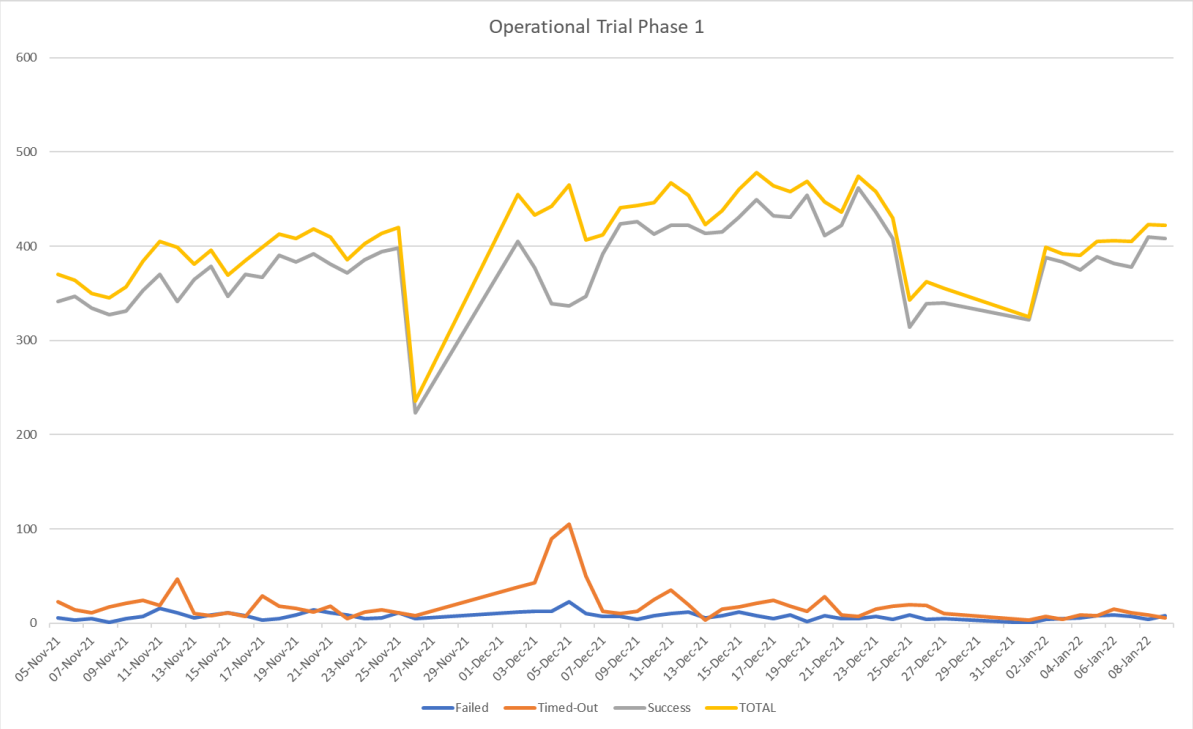

Figure 2: The evaluation results of Phase 1 trial implementation of AIDC

2.7 Then after Phase 1 evaluation, the trial implementation for phase 2 has started from 10 January 2022 until now. The first evaluation of phase 2 was held on 1st March 2022 to identify quickly if there were any issues happened. The result showed that the success rate in Phase 2 from the beginning until 28 February 2022 has reached 96,71 %. The detailed results are as follows:

No	Tanggal	Failed	Timed-Out	Success	TOTAL	Prosentase	No	Tanggal	Failed	Timed-Out	Success	TOTAL	Prosentase
1	10-Jan-22	5	6	362	373	97,05%	26	04-Feb-22	5	4	398	407	97,79%
2	11-Jan-22	3	6	378	387	97,67%	27	05-Feb-22	4	9	389	402	96,77%
3	12-Jan-22	6	5	405	416	97,36%	28	06-Feb-22	8	3	405	416	97,36%
4	13-Jan-22	8	8	390	406	96,06%	29	07-Feb-22	5	1	360	366	98,36%
5	14-Jan-22	4	10	398	412	96,60%	30	08-Feb-22	6	9	368	383	96,08%
6	15-Jan-22	8	5	383	396	96,72%	31	09-Feb-22	1	2	365	368	99,18%
7	16-Jan-22	5	27	376	408	92,16%	32	10-Feb-22	6	9	364	379	96,04%
8	17-Jan-22	6	53	227	286	79,37%	33	11-Feb-22	1	5	336	342	98,25%
9	18-Jan-22	7	5	358	370	96,76%	34	12-Feb-22	3	11	351	365	96,16%
10	19-Jan-22	3	3	397	403	98,51%	35	13-Feb-22	0	3	354	357	99,16%
11	20-Jan-22	1	7	397	405	98,02%	36	14-Feb-22	3	3	324	330	98,18%
12	21-Jan-22	2	4	397	403	98,51%	37	15-Feb-22	6	5	323	334	96,71%
13	22-Jan-22	5	11	376	392	95,92%	38	16-Feb-22	1	5	361	367	98,37%
14	23-Jan-22	4	3	391	398	98,24%	39	17-Feb-22	5	3	346	354	97,74%
15	24-Jan-22	2	3	363	368	98,64%	40	18-Feb-22	1	55	276	332	83,13%
16	25-Jan-22	5	4	356	365	97,53%	41	19-Feb-22	8	18	311	337	92,28%
17	26-Jan-22	5	8	370	383	96,61%	42	20-Feb-22	3	3	353	359	98,33%
18	27-Jan-22	10	4	392	406	96,55%	43	21-Feb-22	0	2	321	323	99,38%
19	28-Jan-22	1	6	397	404	98,27%	44	22-Feb-22	9	3	315	327	96,33%
20	29-Jan-22	5	12	387	404	95,79%	45	23-Feb-22	2	4	340	346	98,27%
21	30-Jan-22	2	4	381	387	98,45%	46	24-Feb-22	4	1	366	371	98,65%
22	31-Jan-22	7	4	321	332	96,69%	47	25-Feb-22	1	2	400	403	99,26%
23	01-Feb-22	1	5	386	392	98,47%	48	26-Feb-22	3	6	366	375	97,60%
24	02-Feb-22	4	5	374	383	97,65%	49	27-Feb-22	4	2	359	365	98,36%
25	03-Feb-22	6	9	368	383	96,08%	50	28-Feb-22	2	4	345	351	98,29%

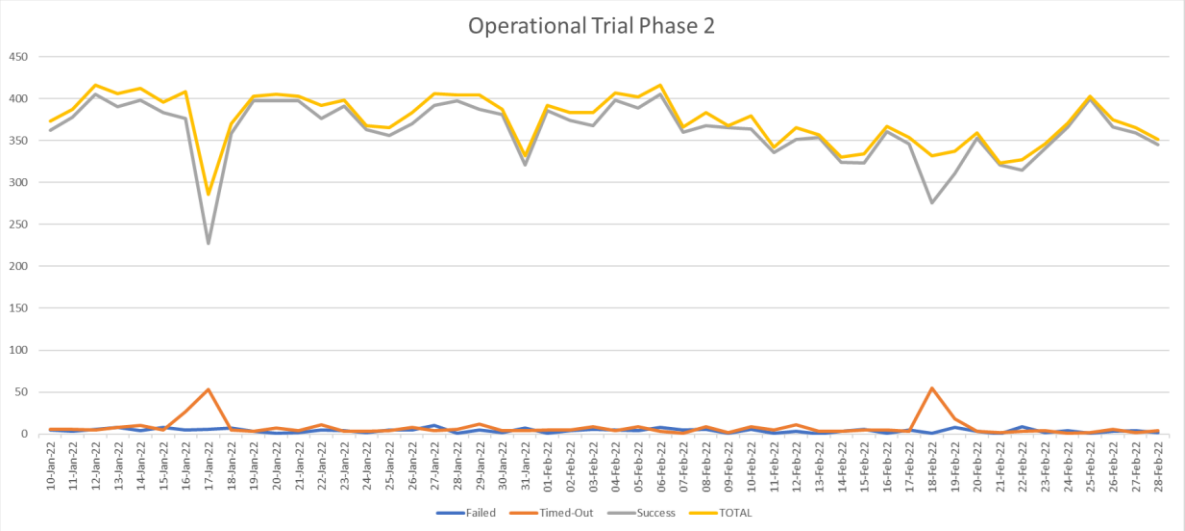

Figure 3: The evaluation results of Phase 2 trial implementation of AIDC

2.8 Because the AIDC system has been simplified to support the absence of AIDC capability in the ATC System used in Jakarta ACC, ATC in Jakarta ACC has to enter data into ATC System for the traffic incoming for Jakarta FIR based on the data presented on the AIDC display.

2.9 It needs to be noticed, although ATC still does a manual process but it is only for incoming traffic to Jakarta FIR. For outgoing traffic, ATC only monitors data displayed on the AIDC display to overcome AIDC failure. Meanwhile, Ujung Pandang ACC AIDC process is fully operating in the ATC system.

Benefit of Trail Implementation of AIDC

2.10 Benefits that can be acquired by implementing of AIDC are as follows:

- reduce ATC workload in Jakarta ACC mostly in Ujung Pandang ACC;
- potentially reduce LHD;
- capability to communicate with ATC System with fully AIDC Compliance; and

- safety risk mitigation for the ATC system that has the absence of AIDC capability.

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 matters as appropriate.

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