



ICAO

*International Civil Aviation Organization***Ninth Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/9)**

Video Tele-Conference, 19 – 21 April 2022

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- Agenda Item 6:** Review and update the AMHS/ATN Implementation Status  
6.3 Update AIDC service over AMHS

## REPOSITORY OF AIDC IMPLEMENTATION STATUS IN APAC

(Presented by the Secretariat)

### SUMMARY

This paper presents the draft table of AIDC Implementation Status in APAC region proposed by the Secretariat, and invites States/Administrations to review and make further amendments if necessary in order to make the regional repository of AIDC Implementation Status.

## 1. INTRODUCTION

1.1 The Seventh Meeting of the Asia/Pacific ATS Inter-Facility Data-Link Communication Implementation Task Force (APA TF/7) was held via video tele-conference from *07 to 09 June 2021*.

1.2 The APA TF/7 meeting reviewed and updated the ATN/AMHS/AIDC implementation table, and recommended to remove AIDC and ATM System Implementation columns from the table and format it into a separate Excel Sheet. The ICAO Secretariat agreed to take necessary action to create the new excel sheet with supports from India and Singapore, and will share with Member States focal point for future updates which resulted into **ACTION ITEM 7-1** of APA TF/7.

1.3 Based on the proposal of *Dissolution of APA TF* raised by APA TF/7, which was reviewed by ACSICG/8 and ATMAS TF/2, the CNS SG/25 held from *18 to 22 October 2021* adopted the **Decision CNS SG/25/16 - Dissolution of APA TF**. The meeting was informed that upon the dissolution of APA TF, ATMAS TF would undertake AIDC implementation issues while ACSICG would handle communications-related issues.

1.4 This paper presents the draft table of AIDC Implementation Status in APAC region proposed by the Secretariat which is intended to keep a common understanding between ATMAS TF and ACSICG on AIDC implementation status in the APAC region, and invites States/Administrations to review and make further amendments if necessary to make the regional repository of AIDC Implementation Status.

## 2. DISCUSSION

2.1 The ATS Inter-facility Data Communications (AIDC) is an effective tool which can foster better collaborative air traffic management between concerned ATSU's of adjacent FIRs, and aim to replace the voice communication between ATS units by automatic message exchange. Therefore, AIDC has been regarded as FICE-B0/1 element in the Global Air Navigation Plan (GANP Sixth edition) Aviation System Block Upgrades (ASBU) framework, which has also been identified as one of the regional priority modules of the ICAO Asia/Pacific Seamless ANS Plan V3.0.

2.2 With continued growth in ATC traffic, AIDC plays an important role in improving the efficiency of coordination and transferring of control between ATS units. If, however, AIDC messages are not transmitted and received in a timely manner between ATM automation systems, there would be potential risks if AIDC does not meet the performance criteria as aircraft might cross boundaries without coordination or transfer of control responsibility taking place. In order to effectively use the AIDC application for the interchange of ATC coordination data, specified performance requirements need to be monitored between neighbouring ATSU's implementing AIDC.

2.3 In order to follow up the **ACTION ITEM 7-1** which was undertaken by ATMAS TF through **Decision CNS SG/25/16** after APA TF dissolution, the Secretariat has worked on the table formatting and removed AIDC and ATM System Implementation columns from the ATN/AMHS/AIDC implementation table into a separate Excel Sheet. The updated table containing AIDC and ATM System Implementation columns is provided in **Appendix A** to this paper.

2.4 However, since the table cannot support data statistics and analysis, and considering the necessity of a comprehensive repository for AIDC implementation status in the APAC region, along with modifying the formatting of the original table, the Secretariat with contributions from India has designed and drafted a table to monitor the AIDC Implementation Status. With reference to PAN Regional Interface Control Document (PAN ICD) and Asia/Pacific Seamless ANS Plan V3.0, the elements on the drafted table are based on the ICAO APAC e-ANP Volume II *Table CNS II – APAC-1 – ATS Inter-facility Data Communication (AIDC) Implementation Plan* with supplements of some AIDC elements had been discussed and concerned in the past APA TF meetings.

2.5 The table is intended to keep a common understanding between ATMAS TF and ACSICG on AIDC implementation status and establish the repository of the AIDC Implementation Status for APAC Region, which will collect the AIDC connections statuses from States on interface attributes and progressing, average transmission delay, AIDC messages exchanges, and bilateral agreement or AIDC version, etc. The explanation of the table and the table of the repository of AIDC implementation status in APAC are provided in **Appendix B** and **Appendix C** respectively to this paper.

2.6 The meeting is invited to review this draft table which contains AIDC communication link related items, including Transmission Means, Communication Signal Speed, Average Transmission Delay (One Trip Time seconds), and make further amendments if necessary. The draft table will further be reviewed and discussed by the ATMAS TF/3 meeting to be held from 8 to 10 June 2022. Once the table is agreed by the meetings, the ICAO Secretariat will take necessary actions in due course to circulate the table to collect information in order to build the repository of AIDC Implementation Status in APAC Region.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) review the explanation of the table in **Appendix B** and the table of the Repository of AIDC Implementation Status in APAC provided in **Appendix C** to this paper, amend if necessary; and
- c) discuss any relevant matter as appropriate

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State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
AFGHANISTAN			
AUSTRALIA	<p>AFTN/AMHS based AIDC Implemented between Brisbane and Melbourne.</p> <p>For neighbouring ANSP of <u>Brisbane</u>, AIDC implemented with Auckland, Nadi, Oakland, Port Moresby, Ujung Pandang</p> <p>For neighbouring ANSP of <u>Melbourne</u>, AIDC implemented with Johannesburg and Mauritius.</p>		CPL and CDN exchange limited
BANGLADESH	Tentative date of implementation of AIDC is Q4 of 2023 with Kolkata and Yangon.		Implementation of AIDC is included in the “Modernization of CNS-ATM System of CAAB” project which is going on G2G agreement with French Government and likely to be implemented by the end of 2023.
BHUTAN	Currently not applicable. If required in the future, will decide after CRV implementation.		
BRUNEI DARUSSALAM			
CAMBODIA	AIDC function and capability made available.	THALES which supports AIDC ICD Version 1.	

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	Ready for testing with neighbors ATS Facilities starting from 2017 and target date of implementation with Bangkok in 4Q2019		
<b>CHINA</b>	<p>AIDC between some of ACCs within China has been implemented.</p> <p>AIDC between several other ACCs are being implemented.</p> <p>AIDC between Sanya and Hong Kong China put into operational use since 8 Feb 2007.</p> <p>AIDC between Dalian and Incheon implemented in Nov. 2016;</p> <p>AIDC between Sanya and Hong Kong China put into operational use since February 2007.(duplicate)</p>	<p>ATN Router and AMHS including NCC deployed in 2008 which is being upgraded to support ATN/IPS with target date of completion in December 2013.</p> <p>The Beijing-Hong Kong AMHS link was put into operation in 2018;</p> <p>With Thailand is completed POT, after sign the TMC circuit and was put into operation in Q12020</p> <p>AMHS/ATN technical tests with Macau completed in 2009. Plan for ATN/AMHS implementation with Macao China in 2019.</p> <p>ATN/AMHS circuit with ROK has been put into operation since June 2011.</p> <p>ATN/AMHS tests with India has been put into operation since 2016.</p>	<p>IN-HOUSE (Aero-Info Technologies Co., Ltd)</p>

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p>AIDC between Shanghai/Guangzhou and Taipei China put into operational use since 2013.</p> <p>AIDC between Dalian and Incheon put into operational use since October 2016.</p> <p>AIDC between Guangzhou and Hong Kong China put into operational use since May 2018.</p> <p>OLDI between Shenyang and Khabarovsk put into operational use since Oct.2019.</p> <p>AIDC between Kunming and Vientiane put into pre-operational trails since January 2021.</p> <p>AIDC technical test between Beijing ACC and Ulaanbaatar ACC conducted since 2018.</p> <p>Kunming/Yangon under test and progress since May 2017</p> <p>AIDC technical test between Sanya ACC and Hanoi ACC conducted since 2019.</p>	<p>ATN and AMHS IOT with Mongolia is completed in May 2018. Plan for commissioning after POT completion in 2021</p> <p>Connection tests with Nepal is TBD. with the Beijing - Japan AMHS link was put into operation in in 2020.</p> <p>AMHS testing with Russia in 2021</p>	
<b>HONG KONG, CHINA</b>	<p>AFTN-based AIDC with Sanya put into operational use in Feb 2007.</p> <p>AIDC with Taipei FIR put into operational use in Nov 2012.</p> <p>AIDC with Guangzhou put into operational use in May 2018.</p> <p>AIDC with Manila put in operational use in May 2019.</p>	<p>Raytheon ATM system Support AIDC ICD Version 3 commissioned in November 2016.</p>	<p>Already support exchange of IWXXM messages based on FTBP.</p> <p>Support of IHE is planned since November 2020.</p>
<b>MACAO, CHINA</b>	<p>[Not applicable for using AIDC, looking into the possible application between TWR and ACC/APP]</p>		

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
COOK ISLANDS			
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	With neighboring ACCs to be implemented		
FIJI ISLANDS	AFTN based AIDC implemented between Nadi/ Brisbane, Auckland and Oakland.	<ul style="list-style-type: none"> <li>- Support and implemented AIDC messaging: ABI, EST, CPL, CDN, ACP, TOC, AOC with all three centers</li> <li>- AIDC ICD version 2.0 implemented with Auckland and Oakland.</li> <li>- AIDC ICD Version 1.0 implemented with Brisbane</li> </ul>	B2B connection between Nadi AMHS and Brisbane AMHS planned for Q3, 2021 as backup for CRV.
FRANCE (French Polynesia Tahiti)	Implementation of AIDC (based on Version 3) with adjacent centers (Oakland and Auckland) since 2009.	THALES EUROCAT for AIDC	Alternate routing for backup between Tahiti and Christchurch via Tahiti/New Caledonia IP link
INDIA	<p>Initially-15-May-2017, AIDC implemented between Chennai and Kuala Lumpur with ABI and EST messages.</p> <p>India is currently using APAC AIDC ICD version 3.</p> <p><b>A. Implementation within India:</b></p> <p>Testing &amp; trials:</p> <p>I. At Delhi with: Ahmedabad, Varanasi, Nagpur II. At Chennai with: Mumbai, Kolkata, Trivandrum, Mangalore, Trichy, Hyderabad, Bengaluru</p>	<p>Mumbai: Raytheon Auto track-III</p> <p>Chennai- Raytheon Auto track-III +</p> <p>Delhi: INDRA Aircon</p> <p>Kolkata: INDRA Aircon Bengaluru: SELEX</p> <p>Hyderabad: SELEX Ahmedabad: INDRA Aircon 2100 Nagpur: INDRA Aircon 2100</p>	<p>For CRV, target of contract in 3Q2021 and implementation in 4Q2021.</p>

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p>III. At Kolkata with: Chennai, Nagpur, Varanasi, Guwahati</p> <p>IV. At Mumbai with: Chennai, Ahmedabad, Nagpur</p> <p>Operational:</p> <p>Chennai- Mumbai; Delhi-Nagpur; Delhi-Ahmedabad,</p> <p>Functional:</p> <p>Delhi-Varanasi, LOA to be signed shortly.</p> <p><b>B: Implementation with Neighboring States:</b> The status on AIDC implementation with following ATSUs of neighboring FIRs is as under:</p> <p>I. <b>Chennai &amp; Kuala Lumpur</b> (Malaysia) – ABI, EST successful. CDN is done with voice confirmation. TOC/AOC is implemented w.e.f. 1<sup>st</sup> Jan 2021. LOA signed on 26<sup>th</sup> May 2021 effective from 1<sup>st</sup> June 2021.</p> <p>II. <b>Chennai &amp; Male (Maldives)</b> –Trails have been successful. LOA in process. Safety Assessment conducted on 9<sup>th</sup> April 2021 for implementation</p> <p>III. <b>Chennai &amp; Colombo</b> (Sri Lanka) - Colombo in process to address the syntax errors in ABI. Thereafter, trails will be conducted. LOA in progress.</p> <p>IV. <b>Chennai &amp; Yangon</b> (Myanmar) – Trials commenced in January 2018. Issues of incorrect reference number in Counter CDN from Yangon persists. Yangon has intimated that, they will inform Chennai for conducting the Test, as soon as they are ready</p>	<p>Varanasi: INDRA Aircon 2100</p> <p>Guwahati: INDRA Aircon 2100</p> <p>Trivandurm: INDRA Aircon 2100</p> <p>Mangalore: INDRA Aircon 2100</p> <p>Trichy: INDRA Aircon 2100</p> <p>All these systems follow APAC AIDC ICD Ver 3.0 of 2007</p>	

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p><b>V. Mumbai &amp; Male (Maldives)</b> – Safety Assessment conducted on 9<sup>th</sup> April 2021 for implementation. Final LOA to be signed shortly.</p> <p><b>VI. Mumbai &amp; Mogadishu</b> - Successful trials conducted in March 2021. Minor adaptation system issues with Mogadishu automation system identified. Resolution awaited from Mogadishu.</p> <p><b>VII Mumbai &amp; Muscat</b> - Successful trials conducted in March 2021. System issues with Muscat’s automation system identified. Resolution awaited from Muscat ATCAS vendor</p> <p><b>VIII. Ahmedabad &amp; Karachi (Pakistan)</b> –Automatic message exchange (e.g. ABI, EST) happens for most of the East bound flights between Karachi &amp; Ahmedabad. Karachi Automation system not generating auto ACP message in response of EST messages. Pakistan is currently doing technical trials between Lahore and Delhi ACCs in first phase. Pakistan will take up test trials between Karachi and Mumbai &amp; Karachi and Ahmedabad in second and third phase respectively.</p> <p><b>IX. Delhi &amp; Lahore (Pakistan)</b>- Under test trails. During the first test trials during the March’2021 it was identified that Lahore Automation system not generating automatic ACP messages. Also Delhi system is rejecting the AIDC messages because of the extra space in messages from Lahore.</p> <p><b>X. Kolkata &amp; Yangon (Myanmar)</b>– Initial trials were conducted in Q4 of 2018 in which some ABI and message reference errors were encountered. Vendor at both ends modified the software and issues were mitigated. In the next trials in Q1 of 2020 most message exchanges were successful. LOA to be negotiated and signed.</p>		

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p><b>C. Under Planning</b></p> <p>I. To conduct operational trials between Kolkata-Dhaka, Mumbai-Karachi (Pakistan), Chennai-Jakarta and Varanasi-Kathmandu subject to readiness from the concerned states.</p> <p>D. Seychelles and Sana ATSU do not have a compatible ATM Automation system in place for AIDC coordination with Mumbai ATSU</p> <p>E. Delhi – Karachi: AIDC between Delhi &amp; Karachi will not be required due to re-structuring of FIRs</p>		
INDONESIA	<p>AIDC implementation in Ujung Pandang ACC conducted as follows:</p> <p>1) Ujung Pandang ACC –Brisbane ACC: Implemented since July 2017.</p> <p>2) Ujung Pandang ACC – Manila ACC: Implemented since 4Q 2020;</p> <p>3) Ujung Pandang ACC – Kota Kinabalu ACC:</p> <ul style="list-style-type: none"> <li>- Successfully tested and target date for operational trial in 4Q2020;</li> <li>- Target date for implementation 4Q2021.</li> </ul> <p>4) Ujung Pandang ACC – Oakland ARTCC:</p> <ul style="list-style-type: none"> <li>- Successfully tested and target date for implementation in 4Q2021.</li> </ul>	Thales TopSky in Makassar able to support ICD version 3 since December 2015.	

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p>5) Ujung Pandang ACC – Port Moresby ACC;</p> <ul style="list-style-type: none"> <li>- Successfully tested on 7 July 2020;</li> <li>- Target date for operational trial in 3Q2020.</li> <li>- Target date for implementation 2Q2021.</li> </ul> <p>6) Ujung Pandang ACC – Jakarta ACC;</p> <ul style="list-style-type: none"> <li>- Target date for operational trial in 3Q2021.</li> <li>- Target date for implementation 4Q2021;</li> </ul> <p>AIDC implementation in Jakarta ACC will be carried out with the following priorities:</p> <ol style="list-style-type: none"> <li>1) Jakarta – Ujung Pandang (4Q2021);</li> <li>2) Jakarta – Chennai (2Q2022);</li> <li>3) Jakarta – Melbourne (3Q2022);</li> <li>4) Jakarta – Colombo (4Q2022);</li> <li>5) Jakarta – Singapore (2Q2023);</li> <li>6) Jakarta - Kuala Lumpur (3Q2023);</li> <li>7) Jakarta – Kota Kinabalu (4Q2023).</li> </ol>		<p>Priority is in accordance with Hot Spot identified by RASMAG/23</p>
<b>JAPAN</b>	<p>AIDC implemented between Fukuoka ATMC and Oakland ARTCC in 1998.</p> <p>AIDC implemented between Fukuoka ATMC and Anchorage ARTCC in 2005.</p> <p>AIDC implemented between Tokyo ACC/Fukuoka ACC and Incheon ACC in 2010.</p>		<p>Japan and USA conducting testing AIDC over AMHS and cutover date is 5 May 2017.</p>

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p>Implemented between Fukuoka and Incheon since June 2009.</p> <p>AIDC implemented between Fukuoka ACC/Naha ACC and Taipei ACC implemented.</p> <p>AIDC between Fukuoka ACC and Shanghai ACC under negotiation.</p>		
<b>KIRIBATI</b>			
<b>LAO PDR</b>	<ul style="list-style-type: none"> <li>- Vientiane ACC AIDC used for coordination between Bangkok and Phnom Penh ACCs since 2020.</li> <li>- Operation trials are on going with Kunming, Hanoi and Yangon ACCs.</li> </ul>	THALES which is able to support ICD Version 2	
<b>MALAYSIA</b>	<p><b><u>Kuala Lumpur ACC and Bangkok ACC</u></b></p> <p>AIDC technical test between Kuala Lumpur ACC and Bangkok ACC conducted since November 2016 (ABI/EST/ACP/LAM/LRM/CDN/REJ/TOC/AOC).</p> <p>The operational trial commenced in August 2019 (EST/ACP/LAM/ LRM).</p> <p>The operational implementation commenced on 14<sup>th</sup> March 2020 (EST/ ACP/LAM/LRM).</p> <p><b><u>Kuala Lumpur ACC and Chennai OCC</u></b></p> <p>AIDC technical test between Kuala Lumpur ACC and Chennai OCC conducted since 31<sup>st</sup> July 2013.</p>	SELEX which is able to support ICD Version 3.	

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p>The operational trial implemented in phases from September 2016 (ABI/EST/MAC/LAM/LRM/ACP). Review on the CDN message implementation conducted in August 2017. SOP signed 26 April, 2017. The MOU signed on March 2020.</p> <p>The operational implementation commenced on 1<sup>st</sup> April 2020 (ABI/EST/ ACP/LAM/LRM/CDN/REJ/MAC).</p> <p>The operational trial for TOC/AOC started on 1<sup>st</sup> July until 1<sup>st</sup> August 2020.</p> <p>The operational implementation for TOC/AOC commenced on 1<sup>st</sup> January 2021.</p> <p>The updated LOA signed on 26<sup>th</sup> May 2021.</p> <p><b><u>Kuala Lumpur ACC and Singapore ACC</u></b> AIDC technical test between Kuala Lumpur ACC and Singapore ACC conducted since April 2015 (ABI/EST/ ACP/LAM/LRM/CDN/REJ). The operational trial started on September 2018 (EST/ACP/LAM/ LRM). The operational implementation commenced on 1<sup>st</sup> November 2019 (EST/ ACP/LAM/LRM).</p> <p><b><u>Kuala Lumpur ACC and Ho Chi Minh ACC</u></b> AIDC technical test between Kuala Lumpur ACC and Ho Chi Minh ACC To Be Discussed (TBD).</p> <p><b><u>Kuala Lumpur ACC and Jakarta ACC</u></b> AIDC technical test between Kuala Lumpur ACC and Jakarta ACC TBD.</p> <p><b><u>Kota Kinabalu ACC and Manila ACC</u></b> AIDC Technical Test 1 between Kota Kinabalu ACC and Manila ACC started on 21 – 22<sup>nd</sup> May 2019 (ABI / EST / ACP / LAM / LRM / TOC / AOC / MAC).</p>		

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p>Technical Test 2 was conducted on 21 – 22<sup>nd</sup> October 2019 (ABI / EST / ACP / LAM / LRM / TOC / AOC / MAC). Upcoming AIDC Technical Test between Kota Kinabalu ACC and Manila ACC to be conducted in Q32021</p> <p><b><u>Kota Kinabalu ACC and Ujung Pandang ACC</u></b> AIDC Technical Test 1 between Kota Kinabalu ACC and Ujung Pandang ACC started on 7 – 8<sup>th</sup> August 2019 (ABI / EST / ACP / CDN / LAM / LRM / REJ / MAC). Technical Test 2 was conducted on 23 – 24<sup>th</sup> October 2019 (ABI / EST / ACP / LAM / LRM / TOC / AOC / MAC). Technical Test 3 was conducted on 11<sup>th</sup> March 2020 (EST / ACP / LAM / LRM). Upcoming AIDC Technical Test between Kota Kinabalu ACC and Ujung Pandang ACC to be conducted in Q32021</p> <p><b><u>Kota Kinabalu ACC and Jakarta ACC</u></b> AIDC Technical Test between Kota Kinabalu ACC with Jakarta ACC is to be discussed.</p> <p><b><u>Kota Kinabalu ACC and Singapore ACC</u></b> AIDC Technical Test between Kota Kinabalu ACC and Singapore ACC started on 22<sup>nd</sup> September 2015 (ABI / EST / ACP / CDN / LAM / LRM / REJ / MAC). AIDC Technical Test 1 was conducted on 18 – 19<sup>th</sup> November 2019 (ABI / EST / ACP / CDN / LAM / LRM / REJ / MAC).</p>		

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p>Technical Test 2 was conducted on 16<sup>th</sup> January 2020 (EST / ACP / LAM / LRM). AIDC Operational Trial started since 16<sup>th</sup> November 2020 and to be extended until 30<sup>th</sup> June 2021. Agreement on Operational Implementation has been materialized on 3<sup>rd</sup> June 2021. Operational Implementation is agreed to be conducted on 1<sup>st</sup> July 2021 (EST / ACP / LAM / LRM)</p> <p><b><u>Kuching ACC and Singapore ACC</u></b> AIDC Technical Test (First and Second) between Kuching ACC and Singapore ACC was conducted both on 11 November 2015 and 24-25 November 2015 (ABI, EST, LAM, CDN, ACP, REJ, and LRM). However, it was discontinued until November 2019</p> <p>The AIDC Technical Test (Third and Fourth) was conducted both on 20-21 November 2019 and 14 January 2020 (ABI, EST, LAM, CDN, ACP, REJ, and LRM) AIDC Operational Trial was started on 20 July until 18 October 2020. Then it was continuing until 31 January 2021. Agreement on Operational Implementation has been materialized on 12 January 2021 via videoconference. The operational implementation was on 1 February 2021. The AIDC messages included for exchange are EST, LAM, LRM and ACP.</p> <p><b><u>Kuching ACC and Jakarta ACC</u></b> AIDC between Kuching ACC and Jakarta ACC TBD.</p>		
MALDIVES	<p>Connection established with all the adjacent ATSUs.</p> <p>Interoperability tests successfully completed in 2017.</p>	SELEX which is able to support ICD Version 3.	

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	<p>LOA signed for operational trials between Mumbai, Chennai, and Trivandrum. Operational trials were also successful with these ATSUs, while several issues were resolved from both ends.</p> <p>Ready to sign LOA with Melbourne and is expected during the 2nd quarter of 2019.</p> <p>Trials with Colombo had few issues, which Colombo is working to resolve it on their end with the automation system supplier.</p> <p>Connections between all 5 ATSUs are turned ON in the ATS automation system to conduct pre-notified operational trials.</p>		
<b>MARSHALL ISLANDS</b>			
<b>MICRONESIA (EDERATED STATES OF)</b>			
<b>Chuuk</b>			
<b>Kosrae</b>			
<b>Pohnpei</b>			
<b>Yap</b>			
<b>MONGOLIA</b>	<p>ATM automation system supports both AIDC and OLDI.</p> <p>Coordinating with Russia on OLDI connection in target date 2016.</p> <p>Coordinating with China on AIDC connection between Beijing/Ulaanbaatar technical trials in progress.</p> <p>Planned date of testing in 2019.</p>	INDRA Aircon 2100 supporting AIDC ICD Version 2.	

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
MYANMAR	AIDC connection pre- operation test with Thailand conducted in 4Q2017 and Target date of implementation 4Q2020; AIDC testing with Chennai, Kolkata and Vientiane conducted in 2020. Myanmar improved ATS Surveillance Coverage at coordination point with China and will start AIDC test again with Kunming ACC in 2020.	THALES Automation system (Topsky ATC) supports APAC AIDC ICD Ver. 2.	AMHS including AFTN/AMHS gateway implemented in Nov 2011.
			Connection with Thailand implemented in 4Q2016.
			Planned for AMHS connection with Beijing. Target date TBC.
NAURU			
NEPAL	Nepal uses custom built ATM system from NEC. Some issues regarding ICD need to be resolved in order to proceed ahead with AIDC testing with India and China.		
NEW CALEDONIA			
NEW ZEALAND	AIDC implemented between New Zealand, Australia, Fiji, Tahiti, Chile and USA.	Supported the Basic 5 message set. ATM systems are LEIDOS and ADACEL	
PAKISTAN	Implemented between Karachi and Lahore ACCs.	ATM system from Indra AIRCON 2100 version-2 in Lahore and Karachi ACC,	Existing ATM system are likely to be upgraded in Lahore and Karachi ACC.
	Lahore/Delhi ACC AIDC trials are being carried out which started in March 2021 (Phase-1), Karachi/Mumbai & Karachi/Ahmedabad are planned in Phase-2.	Si-ATM version-3 in Islamabad ACC	

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	After modification of Lahore/Karachi FIRs boundaries, trials between Karachi/Delhi ACC are not required.		
<b>PAPUA NEW GUINEA</b>	AIDC using AFTN operational with Australia, testing/trial with Oakland (USA) started late last year and in progress. AIDC implementation with Indonesia to happen after CRV implementation this year.	New ATM System from Thales (TopSky-ATC) implemented and operational now supports AIDC V3.	
<b>PHILIPPINES</b>	AIDC implementation status/update over AMHS with the following FIR's;  <b>HONG KONG</b> – Implemented, May 2019  <b>SINGAPORE</b> – Implemented, December 2020  <b>TAIPEI</b> – Implemented, December 2019  <b>UJUNG PANDANG</b> – Implemented, December 2020 via BBIS  <b>HO CHI MINH</b> – Awaiting OPS trial. Technical Test conducted on June 15-16, 2021.  <b>KOTA KINABALU</b> – Next progress AIDC test to be scheduled, target 3Q2021  <b>OAKLAND</b> – 1 <sup>st</sup> test to be scheduled, target 3Q2021	THALES which is able to support ICD Version 2.	The New ATN/AMHS of Manila CNS/ATM center has been in domestic operations since March 2018. And with the implementation of CRV, AMHS connection has been implemented with the following adjacent FIR's;  <b>-HONG KONG</b>  <b>-TAIPEI</b>  <b>-SINGAPORE</b>  <b>-OAKLAND</b>
<b>REPUBLIC OF KOREA</b>	AIDC implemented between ACC and Fukuoka ATMC in 2010	Rockheed Martin System	

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
	AIDC between Incheon and Dalian implemented in Nov. 2016.		
<b>SINGAPORE</b>	<ol style="list-style-type: none"> <li>1) Operational with Ho Chi Minh implemented Jul 2014.</li> <li>2) Kuala Lumpur operational trial started since Sep 2018 and is implemented Nov 2019.</li> <li>3) Implemented with Kuching ATCC in Feb 2021.</li> <li>4) Operational trial ongoing with Kota Kinabalu ATCC since Nov 2020 and implementation date on 1st July 2021.</li> <li>5) Manila operational trial started in Feb 2019. Implementation Nov 2019.</li> <li>6) Technical trials with Jakarta ACC will be initiated once the Jakarta ACC ATMS renewal is completed.</li> </ol>	THALES supports ICD Version 3 since December 2018	
<b>SRI LANKA</b>	<p>Trials with Male planned for in 3Q2019.</p> <p>Trial with Chennai on-going. Plan for implementation in 2018 and with Melbourne plan for 1Q2018.</p>	INTELCAN which is able to support ICD Version 3.	

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
<b>THAILAND</b>	<p>The implementation with</p> <ul style="list-style-type: none"> <li>• Malaysia has done since 14th March 2020</li> <li>• Lao PDR has done since 14th July 2020</li> <li>• Cambodia has done on 22nd February 2021</li> </ul> <p>In addition, it is planned to implement AIDC with Myanmar.</p>	THALES which supports AIDC feature, APAC AIDC ICD V.3.	
<b>TONGA</b>			CPDLC and ADS-C is not considered for lower airspace
<b>UNITED STATES</b>	<ul style="list-style-type: none"> <li>- Fiji, Japan, New Zealand</li> <li>- Tahiti (via New Zealand),</li> <li>- Papua New Guinea via Australia (Direct planned for 2021)</li> <li>- Philippines (2021)</li> <li>- Indonesia via Australia (Direct planned for 2022)</li> <li>- Russian Federation (pending joining CRV)</li> </ul>	IN-HOUSE which is able to support APAC and NAT ICDs currently Version 2.	
<b>VANUATU</b>			

State/Organization	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
<b>VIET NAM</b>	<p>Operational between Ho Chi Minh and Singapore since July 2014.</p> <p>Operational trial for additional messages sets on-going.</p> <p>Technical testing between Ho Chi Minh with Philippines on going</p> <p>Technical testing with Cambodia already done;            Technical testing between Hanoi and Vientiane, Lao. PDR- already done with Malaysia TBC            For operation trial TBC.            Operation trial between Ho Chi Minh and Hanoi ongoing.</p>	<p>Support ICD Version 1.0 with THALES at Ho Chi Minh ATM system.</p> <p>Support ICD Version 3.0 with Selex at Hanoi ATM System.</p>	
<b>Wallis and Futuna (FRANCE)</b>		COMSOFT	

**REPOSITORY OF ATS INTER-FACILITY DATA COMMUNICATION (AIDC)  
IMPLEMENTATION STATUS**

EXPLANATION OF THE TABLE

*Column*

- 1 State/Administration – Name of the State/Administration;
- 2 AIDC Implementation Status (Implemented or not) – AIDC has been implemented in the State/Administration or not (States have the technical capability implemented and at least one bilateral connection with adjacent ATS units in operational use will be regarded as implemented.);
- 3 Location of AIDC System ATSU1 – the location of the AIDC end system under the supervision of State/Administration identified in column 1;
- 4 ATSU2 /Correspondent State/Administration – the correspondent AIDC System;  
  
ATSU2 – location of the correspondent AIDC end system  
  
Correspondent State/Administration – the name of the State/Administration responsible for management of the correspondent AIDC end system  
  
A “/” is placed between the ATSU2 and State/Administration
- 5 Intraregional/Interregional – the connection is intraregional (inside APAC) or interregional;
- 6 Transmission Means – the transmission means used for the AIDC messages exchanged between the corresponding AIDC pair, AFTN, AMHS;  
*(Reason: The carriage of AIDC messages is facilitated through existing communication network (e.g. AFTN, AMHS, etc.). The type of network that will be used for AIDC message exchange will need to be defined, including the appropriate recovery/ contingency actions that will be adopted in abnormal situations)*
- 7 Frequency of Use (days in a week) – days of AIDC used in a week;  
*(Reason: to indicate how frequently the AIDC interface has been used)*
- 8 Main/Backup Circuit – the circuit is main or backup AIDC connection;  
*(Reason: if there is two circuits between the two ATSUs, it’s better to identify which is main or backup)*
- 9 Communication Signal Speed - the communication signal speed for the AIDC messages exchanged (bps);  
*(Reason: According to Pan Regional Interface Control Document (PAN ICD) for ATS Inter-facility Data Communications (AIDC) chapter 3.3.2.3, the communication signal speed between ATS systems using AFTN/AMHS should be greater than 2400 bps.)*

- 10 Average Transmission Delay (One Trip Time Seconds) – the average transmission delay for exchanging AIDC messages;  
*(Reason: According to Pan Regional Interface Control Document (PAN ICD) for ATS Inter-facility Data Communications (AIDC), Average Transmission Delay (seconds) will influence the AIDC performance. In order to effectively use the AIDC application for the interchange of ATC coordination data, ATSUs should monitor the performance of the communication links to ensure the required performance is achieved. This monitoring should measure the latency of the AIDC message traffic between ATS systems in terms of the time measured between message transmission at the originating ATS system and receipt of the message at the receiving ATS system. The performance of the communications links should be such that 95% of all messages should be received within 12 seconds of transmission and 99.9% of all messages should be received within 30 seconds of transmission. In bilateral agreements, ATSUs, may agree on different performance requirements.)*
- 11 Implementation Date or Target Date - date of implementation of the AIDC end system in the form of yyyyymm, yyyyQx or yyyy (quarter year);
- 12 Interface Status – the AIDC interface status, including Operational (already implemented), Testing (under progressing), Planned (under plan), No plan;
- 13 Interface Protocol /Version (OLDI or AIDC Version) - the AIDC service between the corresponding ATSUs.  
*(Reason: to show which AIDC version used and supported between two ATSUs and refer to Reason under item 14)*
- 14 List of AIDC Messages Applicable between the Two ATSUs – the AIDC messages can be exchanged between the two ATSUs, including ABI, EST, PAC, CDN, CPL, ACP, REJ, TOC, AOC, MAC, LAM, and LRM; TRU, EMG, MIS, TDM, ASM, FAN, FCN; ADS;  
*(Reason: According to Asia/Pacific Seamless ANS Plan V3.0, PASL Phase II (expected implementation by 07 November 2019) and APANPIRG/24 CONCLUSION 24/16, ATS systems should enable AIDC (version 3 or later), or an alternative process that achieves at least the same level of performance as AIDC, between en-route ATC units and terminal ATC units where transfers of control are conducted consistent with FICE-B0/1, unless alternate means of automated communication of ATM system track and flight plan data are employed (Priority 1). As far as practicable, the following AIDC messages types should be implemented:*
- *Advanced Boundary Information (ABI);*
  - *Coordinate Estimate (EST);*
  - *Acceptance (ACP);*
  - *TOC; and*
  - *Assumption of Control (AOC).*
- Note: States should note the necessity to utilise Logical Acknowledgement Message processing (LAM) when implementing AIDC.)*
- 15 ATM Automation System – Make/Model of the ATM automation system used in this ATSU;
- 16 Coordination by CDN or Voice – the method used in coordination phase;  
*(Reason: to show if the AIDC process a totally automatic or not)*

- 17 Remarks – any additional information describing the AIDC connection, including issues faced if any, mitigation, and limitation;

**Other items to be considered:**

- 1 Automatic or Manual EST – the EST is sent out automatically or manually;  
*(Reason: to evaluate the automatic level of AIDC)*
- 2 A Warning Message to Controller in Case of AIDC Failure – the warning message for AIDC failure is capable or not;  
*(Reason: According to Pan Regional Interface Control Document (PAN ICD) for ATS Interfacility Data Communications (AIDC), failure to receive an operational response within timeout period  $T_{op}$  should result in a warning message being displayed to the controller. Non receipt of a response to an ASM may indicate either a communication link failure or an ATC system failure. If an ATSU that has sent an ASM message does not receive an application response within a specified time, a warning message should be displayed at an appropriate position so that local contingency procedures can be executed.)*

