



ICAO

*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 3: Sharing of experience on AIDC implementation and update the implementation status

AIDC IMPLEMENTATION IN INDIA

(Presented by Airports Authority of India)

Summary

This paper presents the status of AIDC implementation in India – both within India as well as with international ATSUs. The procedural and operational issues encountered during implementation are also summarized in the attachment.

1. INTRODUCTION

1.1 India has four Flight Information Regions (FIRs), namely Chennai FIR, Mumbai FIR, Delhi FIR and Kolkata FIR and there are 13 adjacent International FIRs i.e. Lahore, Karachi, Muscat, Sanaa, Mogadishu, Seychelles, Mauritius, Maldives, Colombo, Jakarta, Kuala Lumpur, Yangon, Dhaka and Kathmandu.

1.2 India has been working towards successful AIDC implementation between the major ATS units in India as well as with the neighboring international FIRs. India has operationalized between some of the ATSUs and plans are underway to operationalize AIDC between other major ATSUs in phased manner.

1.3 This paper presents the status of AIDC implementation within India as well as with neighboring FIR and the operational issues encountered during implementation.

2. DISCUSSION

2.1 India is currently using APAC AIDC ICD version 3 in all the automation systems currently installed at various ATS units.

2.2 Details of AIDC Implementation status in India and the Operational issues encountered are attached to this paper as Annexure -I and are summarized as below:

Implementation within India

2.3 Trials have been carried out between various ATS units listed below and some of these ATS units are already exchanging live AIDC messages.

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- I. **Delhi:** Ahmedabad, Varanasi, Nagpur
- II. **Chennai:** Mumbai, Kolkata, Trivandrum, Mangalore, Trichy, Hyderabad, Bengaluru
- III. **Kolkata:** Chennai, Nagpur, Varanasi, Guwahati
- IV. **Mumbai:** Chennai, Ahmedabad, Nagpur

2.4 AIDC operations between Chennai and Mumbai; Delhi and Nagpur; Delhi and Ahmedabad have been put into regular operations. Also AIDC between Delhi and Varanasi is functional, only LOA to be signed shortly, which has been delayed due to Covid-situation.

Implementation with Neighboring States

2.5 The status on trails with following ATSUs of neighboring FIRs is as under:

- I. **Chennai & Kuala Lumpur (Malaysia)** – ABI, EST successful. CDN is done with voice confirmation. TOC/AOC is implemented w.e.f. 1st Jan 2021. LOA signed on 26th May 2021 effective from 1st June 2021.
- II. **Chennai & Male (Maldives)** – Trails have been successful. LOA in process. Safety Assessment conducted on 9th April 2021 for implementation.
- III. **Chennai & Colombo (Sri Lanka)** - Colombo in process to address the syntax errors in ABI. Thereafter trails will be conducted. LOA in progress.
- IV. **Chennai & Yangon (Myanmar)** – Trials commenced in January 2018. Issues observed at Chennai end have been addressed by the OEM. 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.
- V. **Mumbai & Male (Maldives)** – Safety Assessment conducted on 9th April 2021 for implementation. Final LOA to be signed shortly (delayed due to Covid-19).
- VI. **Mumbai & Mogadishu** - Successful trials conducted in March 2021. Minor adaptation system issues with Mogadishu automation system identified. Resolution awaited from Mogadishu.
- VII. **Mumbai & Muscat** - Successful trials conducted in March 2021. System issues with Muscat's automation system identified. Resolution awaited from Muscat ATCAS vendor
- VIII. **Ahmedabad & Karachi (Pakistan)** – Automatic message exchange (e.g. ABI, EST) happens for most of the East bound flights between Karachi & Ahmedabad. But, AIDC coordination of most of the west bound flights not possible due to 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 & Karachi and Ahmedabad in second and third phase respectively.
- IX. **Delhi & Lahore (Pakistan)**- 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.
- X. **Kolkata & Yangon (Myanmar)** – Trials under process. Most of the message exchanges were successful. LOA to be negotiated signed.

2.6 India is keen to conduct operational trials between Kolkata-Dhaka, Mumbai- Karachi (Pakistan), Chennai-Jakarta and Varanasi-Kathmandu subject to readiness from the concerned states. Due to restructuring of FIRs AIDC between Karachi-Delhi will not be required. Seychelles and Sana ATSU do not have a compatible ATM Automation system in place for AIDC coordination with Mumbai ATSU.

2.8 India is engaged towards entering into contract with M/s PCCW (CRV Service provider in APAC region) for CRV in Q3 2021 and Service readiness by Q4 2021 in line with CRV contract and service readiness by counterpart BBIS states. This would provide with a robust and reliable medium for AIDC data interchange between the adjoining FIRs of neighboring countries

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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AIDC Implementation Status in India as on 20.06.2021

AIDC Pairing Stations		AIDC Status: <i>Domestic/ International</i>	Implementation Status: <i>Operational/ Under Test Trials/ Planned</i>	LOA Status: <i>Signed/ Under negotiation</i>	Effective date of: <i>Operations/ Test Trials/ PDC (for planned)</i>	Remarks: <i>Issues faced if any/ Mitigation</i>
ATSU-1	ATSU-2					
Mumbai	Chennai-UHS	<i>Domestic</i>	<i>Operational</i>	<i>Signed</i>		
Mumbai	Chennai-UML	<i>Domestic</i>	<i>Operational</i>	<i>Signed</i>		
Mumbai	Chennai-UBL	<i>Domestic</i>	<i>Operational</i>	<i>Signed</i>		
Mumbai	Chennai-UTV	<i>Domestic</i>	<i>Operational</i>	<i>Signed</i>		
Mumbai	Ahmadabad	<i>Domestic</i>	<i>Under Test Trials</i>	<i>Under negotiation</i>		User –Application issues
Mumbai	Nagpur	<i>Domestic</i>	<i>Under Test Trials</i>	<i>Under negotiation</i>		User –Application issues
Mumbai	Male	<i>International</i>	<i>Trials conducted successfully</i>	<i>Final Signing of LOA delayed due COVID-19</i>		Operational. LOA to modified to make AIDC the primary mode of coordination. Joint Safety assessment for implementation of AIDC between Mumbai/Male conducted in April, 2021.
Mumbai	Muscat	<i>International</i>	<i>Technical Tests conducted. In February- March, 2021</i>	<i>Under negotiation</i>		<ol style="list-style-type: none"> 1. Tests partially successful. 2. Required adaptation changes made at Mumbai. 3. No confirmation form Muscat of having made the changes.
Mumbai	Seychelles	<i>International</i>		-	-	ATSU-2 not equipped with suitable system
Mumbai	Mogadishu	<i>International</i>	<i>-Technical Tests conducted.</i>	-	-	Technical issues identified are being coordinated with each other.
Mumbai	Sana	<i>International</i>	-	-	-	ATSU-2 not equipped with suitable system

AIDC Pairing Stations		AIDC Status: <i>Domestic/ International</i>	Implementation Status: <i>Operational/ Under Test Trials/ Planned</i>	LOA Status: <i>Signed/ Under negotiation</i>	Effective date of: <i>Operations/ Test Trials/ PDC (for planned)</i>	Remarks: <i>Issues faced if any/ Mitigation</i>
ATSU-1	ATSU-2					
Mumbai	Karachi	<i>International</i>	<i>Under Test Trials</i>	<i>Under negotiation</i>		Pakistan is currently doing technical trials between Lahore and Delhi ACCs in first phase. Will take up trials between Karachi and Mumbai in Second phase.
Chennai	Mumbai	<i>Domestic</i>	<i>Operational</i>	Signed	01-08-2017	<ol style="list-style-type: none"> Over continental airspace AIDC without voice confirmation. Over Oceanic airspace AIDC with voice confirmation.
Chennai	Kuala Lumpur (Malaysia)	<i>International</i>	<i>Operational</i>	LOA signed on 26th May 2021 effective from 1st June 2021	15-05-2017	<ul style="list-style-type: none"> ABI and EST messages without voice confirmation. CDN is done with voice confirmation. TOC/AOC implemented w.e.f 1st Jan 2021.
Chennai	Colombo (Sri Lanka)	<i>International</i>	<i>Under testing</i>	--	PDC will be planned after Colombo addresses the issues	Colombo would start trails after commissioning of new ATM automation system.
Chennai	Male (Maldives)	<i>International</i>	<i>Test Trials successful</i>	Final Signing of MOA delayed due COVID-19		<ul style="list-style-type: none"> Operational. LOA to modified to make AIDC the primary mode of coordination. Joint Safety assessment for implementation of AIDC between Chennai/Male conducted in April, 2021.
Chennai	Jakarta (Indonesia)	<i>International</i>	--	--	--	AIDC Functionality Status at Jakarta not known.

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ATSU-1	ATSU-2					
Chennai	Yangoon (Myanmar)	<i>International</i>	Under testing	--	Testing commenced from January, 2018	<ul style="list-style-type: none"> • Incorrect reference number in Counter CDN by both systems. • Issue observed at Chennai end have been addressed by the OEM. • Issue projected to Yangon and Yangon has intimated that, they will inform Chennai for conducting the Test, as soon as they are ready.
Chennai	Nagpur	<i>Domestic</i>	Initially testing done with all the Four ATC units which has INDRA Automation system. The issues identified during the testing (shown in Remarks column) could not be resolved by the stations since there was no OEM support. Hence the AIDC testing had to be stopped with these stations.			<ul style="list-style-type: none"> • The ICAO route truncation indicator is not supported by Aircon2100 system. • Even after sending a rejection or counter coordination message by Chennai, the sending station continues to send the CDN message. • Airspace configuration issue faced during vertical consolidation of LML/UML and LTV/UTV..
Chennai	Trivandrum (India)	<i>Domestic</i>				
Chennai	Mangalore (India)	<i>Domestic</i>				
Chennai	Trichy	<i>Domestic</i>				
Chennai	Hyderabad	<i>Domestic</i>	Initially testing done with the two ATC units which has SELEX Automation system. The issues identified during the testing (shown in Remarks column) could not be resolved by the Chennai since there was no OEM support. Hence the AIDC testing had to be stopped with these stations.			The SSR Codes received through AIDC. The Issue is resolved at the Chennai end. The Testing will be commencing shortly.

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ATSU-1	ATSU-2					
Chennai	Bengaluru	Domestic	Under Trials	Signed	Q1 2020	1. Limited trials have been conducted from 18.02.2020 to 20.02.2020. 2. COP adaptation because of Airspace restructuring (LBL) has been carried out. 3. ABI messages originated by VOMMAIDC is using route truncation which is deleting the allocated STAR at VOBL. 4. It has been decided to continue trials with disabling ABI from 24.02.2020
Bengaluru	Chennai					
Chennai	Kolkata	Domestic	Trial Operations. Phase-2 trails in progress.	Signed	November, 2019	1. The ICAO route truncation indicator is not supported by INDRA system. 2. 80% of the time AIDC message exchanges are successful. 3. 20% failure is due to timeout.
Kolkata	Chennai					
Kolkata	Nagpur	Domestic	Under Test Trial	Under negotiation	Not determined	In earlier trials ABI, EST, ACP, TOC, AOC were successful. Route Truncation not supported. AMSS needs to be upgraded. Trial has been suspended.
Nagpur	Kolkata					
Kolkata	Varanasi	Domestic	Under Test Trial	Signed	07/03/2018	ABI, EST successful, ACP not sent due to some software glitch. AMSS needs to be upgraded. Trial has been suspended.
Varanasi	Kolkata					

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ATSU-1	ATSU-2					
Kolkata	Guwahati	Domestic	Under Test Trial	Under negotiation	Not determined	In earlier tests ABI, EST, ACP were successful. AMSS needs to be upgraded. Trial has been suspended.
Kolkata	Yangon	International	Under Test Trial	Not signed	Q4 2018	Most of the message exchanges were successful.
Kolkata	Dhaka	International		Not signed	Not determined	No AIDC capable system at Dhaka.
Kolkata	Kathmandu	International		Not signed	Not determined	No AIDC capable system at Kathmandu.
Hyderabad	Bengaluru	Domestic	Under Trial	Signed	Q1 2020	<ol style="list-style-type: none"> 1. OEM has updated the FDPS on 05.02.2020 2. Limited trials have been conducted from 18.02.2020 to 20.02.2020. 3. COP adaptation because of Airspace restructuring (LBL) has been carried out. 4. Further trials will be carried out after 24.02.2020 and if found satisfactory, AIDC can be implemented by end of March 2020. 5. Vendor support is also available to resolve the issues if found any..
Bengaluru	Hyderabad	Domestic				

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ATSU-1	ATSU-2					
Bengaluru	Mangalore	Domestic	Under Trials.	Signed	Q1 2020	<ol style="list-style-type: none"> 1. OEM has updated the FDPS on 05.02.2020 2. Limited trials have been conducted from 18.02.2020 COP adaptation because of Airspace restructuring (LBL) has been carried out. 3. VOMLAIDC is rejecting the LAM send for ACP messages sometimes with LRM stating WRONG MSG SEQUENCE. 4. Further trials will be carried out after 24.02.2020 and if found satisfactory, AIDC can be implemented with limited dataset for at least EST exchange and further coordination, if required over voice.to 20.02.2020.
Delhi	Lahore	<i>International</i>	<i>2 Phases of technical trails conducted in March-April, 2021.</i>	<i>Under negotiation</i>		Technical test results and data being analyzed at both ends and coordination being done.
Delhi	Ahmedabad	<i>Domestic</i>	<i>Operational</i>	<i>LoA Signed</i>	Q2 2020	1. Operational
Ahmedabad	Delhi					

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ATSU-1	ATSU-2					
Delhi	Nagpur	Domestic	Operational	Signed	Q1 2021	
Delhi	Varanasi	Domestic	Trials successful			<ol style="list-style-type: none"> 1. All Technical issues sorted out. 2. AIDC message exchanges are successful. 3. Final LOA to be signed shortly.
Ahmedabad	Nagpur	<i>Domestic</i>	<i>Under Test Trials</i>	<i>Under negotiation</i>	Automatic AIDC messages exchanged between VAAH & VANP	<ol style="list-style-type: none"> 1. Automatic AIDC messages exchanged between VAAH & VANP. 2. Full header is not being transmitted from Nagpur Automation system in case of AIDC Dupe messages. This results failure of some AIDC process.
Nagpur	Ahmedabad					
Ahmedabad	Karachi (OPKC)	<i>International</i>	<i>Under Test Trials</i>	<i>Signed</i>	Automatic AIDC messages exchanged between VAAH & OPKC	<ol style="list-style-type: none"> 1. Karachi ACC would conduct test trials in third phase after completing AIDC trials with Delhi and Mumbai.
Nagpur	Varanasi	Domestic	Trials successful	Under Negotiation	Automatic AIDC messages exchanged between VEBN & VANP.	LOA to be signed.
Varanasi	Nagpur					

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ATSU-1	ATSU-2					
Trivandrum	Male	International	Test Trials conducted in October 2017	LOA for trials signed	Not decided	Male ACC has been successfully receiving AIDC messages from Chennai, Trivandrum and Mumbai. But, Male has identified some issues in generating EST messages for flights departing from Male—only ABI messages are generated automatically.
Trivandrum	Chennai	Domestic	Trials conducted 2012 - 2015	Not signed	Not decided	<ol style="list-style-type: none"> 1. Due to dynamic sectorization of UTV between Chennai and Trivandrum, no AIDC coordination is possible for overflying aircraft. But AIDC coordination is possible for aircraft departing/ arriving from/to destinations within the lateral limits of UTV. 2. AIDC coordination not possible for level changes after the initial coordination. NOTIFIED (ABI), INITIAL COORDINATION (EST, CPL), TRANSFER OF CONTROL (TOC, AOC) is possible.
Trivandrum	Cochin	Domestic	Trials conducted 2012 - 2017	Not signed	Not decided	AIDC coordination not possible for level changes after the initial coordination. NOTIFIED (ABI), INITIAL COORDINATION (EST, CPL), TRANSFER OF CONTROL (TOC, AOC) is possible.

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ATSU-1	ATSU-2					
Trivandrum	Mangalore	Domestic	Trials successful	Not signed	Not decided	AIDC coordination not possible for Level changes after the initial coordination. NOTIFIED (ABI), INITIAL COORDINATION (EST, CPL), TRASNFER OF CONTROL (TOC, AOC) is possible.