



International Civil Aviation Organization

**THE FIRST MEETING OF ASIA/PACIFIC ATS INTER-FACILITY
DATA-LINK COMMUNICATION (AIDC) IMPLEMENTATION
TASK FORCE (APA TF/1) OF APANPIRG**

Bangkok, Thailand, 16 -18 June 2015

**Agenda Item 8: Sharing of experience on AIDC implementation including training and
implementation packages**

AMHS AND AIDC IMPLEMENTATION STATUS IN APAC REGION

(Presented by the Secretariat)

SUMMARY

This paper presents the status of AMHS and AIDC implementation status in APAC region for review and updating.

1. Introduction

1.1 The Second meeting of ACSICG held in May 2015 in Bangkok reviewed and updated the regional ATN/AMHS and AIDC implementation status. The result of status was recorded in the Appendix C to the meeting report.

1.2 The SIP AIDC Seminar held in October 2014, took the opportunity had updated the information contained in Appendix B to the Seminar Report.

1.4 The updated status is provided in Appendix to this paper for review and further updates by the meeting.

2. Action by the meeting

2.1 The meeting is invited to review and update the information in the attachment.

ATN/AMHS/AIDC Implementation Status in the APAC Region

State/Organization	ATN G/G Boundary Intermediate System (BIS) Router/AMHS	AMHS Vendors Selected	AIDC	ATM System selected to support AIDC and Associated ICD (Implementation Status of the Basic 5 message set supported)	Remarks
AFGHANISTAN					
AUSTRALIA	<p>ATN tests were conducted. BIS Router and Backbone BIS Router and AMHS implemented.</p> <p>64 kbps IPLC established with Fiji. Basic AMHS circuit will be commissioned in September 2014;</p> <p>Another basic AMHS circuit planned for operational in Feb. 2015. The connectivity will be provided by CAAS's VPN.</p>	COMSOFT	<p>AFTN based AIDC Implemented between Brisbane and Melbourne, Oakland, Nadi and Auckland;</p> <p>Implemented between Melbourne and Johannesburg;</p> <p>AIDC is also in use between Melbourne and Mauritius;</p> <p>Operational trial between Brisbane and Ujung Pandang since May 2013.</p>		

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BANGLADESH	<p>Bangladesh installed ATN/AMHS at Dhaka (with User Agents at Chittagong (VGEG) and Sylhet (VGSY)).</p> <p>BIS Router and AMHS installed in Q1/2013 at Dhaka (VGHS).</p> <p>System Commissioning & SAT completed in March 2013.</p>	COMSOFT	Tentative date of implementation of AIDC is Q1 of 2018 with Kolkata and Myanmar.		<p>AMHS connectivity between Dhaka & Chittagong and Dhaka & Sylhet are already established.</p> <p>Dhaka-Mumbai AMHS connectivity is commissioned on 23 March 2015 and the circuit is operational. Dhaka-BKK AMHS connectivity is expected to be commissioned by the end of May 2015 and TMC will be signed accordingly.</p> <p>ATC Center up-gradation of Dhaka is expected to be completed by December 2017. As soon as the ATC up-gradation is completed hopefully Bangladesh will be able to implement AIDC with Kolkata and Myanmar (Q1/2018)</p>

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BHUTAN	ATN BIS Router and UA service planned for 2011.				
BRUNEI DARUSSALAM	ATN BIS Router planned for 2012 and AMHS planned for 2012				
CAMBODIA	BIS Router and AMHS installed. Cambodia (CATS) AMHS connected with Bangkok via VSAT IP link on 10 December 2013	AVITECH	AIDC function and capability made available. Ready for testing with neighbors ATS Facilities starting from 2015-2016.		
CHINA	<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>Tripartite BBIS trial completed with Bangkok and Hong Kong, China in Jan. 2003.</p> <p>ATN trial with Hong Kong using XOT over internet conducted in 2006, Further trials conducted in 2009.</p> <p>Plan for ATN/AMHS implementation with Hong Kong, China (2016).</p>	IN-HOUSE (Aero-Info Technologies Co., Ltd)	<p>AIDC between some of ACCs within China has been implemented. AIDC between several other ACCs are being implemented.</p> <p>AIDC between Sanya and Hong Kong put in to operational use since 8 Feb 2007.</p> <p>AIDC between Qingdao and Incheon planned for 2013;</p>		

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	<p>AMHS/ATN technical tests with Macau completed in 2009. Plan for ATN/AMHS implementation with Macau, China (2016).</p> <p>ATN/AMHS circuit with ROK put into operational use since June 2011.</p> <p>ATN/AMHS tests with India started from March 2011 using 64 Kbps landline.</p> <p>ATN and AMHS technical trial with Mongolia is TBD.</p> <p>Connection tests with Thailand is TBD</p> <p>Connection tests with Nepal is TBD</p>		<p>Implemented between: Guangzhou with Nanning/Zhanjiang/Zhuhai;</p> <p>Nanning and Kunming/Guiyang/Zhanjiang in 2011; Zhanjiang/Haikou;</p> <p>Chengdu and Chongqing/Guiyang in 2011;</p> <p>Guiyang and Chongqing/Kunming in 2011;</p> <p>Started negotiation for implementation between Dalian and Incheon and Shanghai/Fukuoka.</p>		

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HONG KONG, CHINA	<p>Preliminary ATN/AMHS technical trials with China (Beijing) using VPN over Internet connection in 2006. Operational AMHS and BIS router accepted in July 2009.</p> <p>ATN/AMHS circuit with Macao put into operation use in Dec. 2009.</p> <p>ATN/AMHS circuit with Bangkok put into operation use in Sept. 2014</p> <p>ATN/AMHS interoperability tests with other adjacent communications centres commenced in late 2009, viz Taipei (2009), Japan (Planned Q4/2017), Philippines (Planned Q2/2016) and Viet Nam (Planned 2016)</p> <p>Plan for ATN/AMHS implementation with China (Beijing) (2016).</p>	COMSOFT	<p>AFTN-based AIDC with Sanya put into operational use in Feb 2007. AIDC trial with other adjacent ATS authorities for new ATC system to be commissioned by mid 2016.</p> <p>AIDC technical trial with Taipei conducted in 2010 and completed in 2012 and put into operational use in Nov. 2012</p>	Raytheon ATM system Support AIDC ICD Version 3 from mid 2016	
MACAO, CHINA	<p>ATN/AMHS interoperability test with Beijing commenced in March 2009.</p> <p>ATN/AMHS circuit with Hong Kong put into operational use in end Dec. 2009.</p>	COMSOFT	(Not applicable for using AIDC, looking into the possible application (some way) between TWR and ACC/APP).		

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COOK ISLANDS					
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	The ATN BIS Router and AMHS planned for in 2011.		With neighboring ACCs to be implemented TBD		
FIJI ISLANDS	ATN BIS Router and AMHS implemented	COMSOFT	AFTN based AIDC implemented between Nadi/ Brisbane, Auckland and Oakland.	<ul style="list-style-type: none"> - Support and implemented AIDC messaging: ABI, EST, CPL, CDN, ACP, TOC, AOC with all three centers - AIDC ICD version 2.0 implemented with Auckland and Oakland. - AIDC ICD Version 1.0 implemented with Brisbane 	
FRANCE <i>(French Polynesia Tahiti)</i>			Implementation of AIDC (based on Version 3) with adjacent centres (Oakland and Auckland) since 2009		

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INDIA	Dual stack ATN/Ip router and AMHS implemented at Mumbai in 2011	COMSOFT	<p>AIDC planned with Bangladesh, Myanmar, Thailand, Pakistan, Nepal, Seychelles, Malaysia, Indonesia, Sri Lanka, Kenya, Oman and Maldives Mauritius and Somalia.</p> <p>Successful AIDC trials done between Chennai-Kuala Lumpur, Chennai-Male, Ahmedabad-Karachi, Delhi-Karachi (One way towards Delhi)</p>	<p>1) Raytheon at New Delhi, Mumbai and Chennai</p> <p>2) Selex at Hyderabad and Bengaluru.</p> <p>3) INDRA at 39 locations</p>	<p>1) Major Indian airports and ATC centres have integrated ATS Automation Systems having AIDC capability. Successful AIDC trials have been carried out amongst major ATSUs within India.</p> <p>2) AIDC implemented between Chennai and Mumbai.</p> <p>3) AMHS implemented and working between A. BBIS: Mumbai-Singapore, Bangkok B: BIS: Mumbai, Kathmandu, Dhaka</p>
INDONESIA	<p>ATN BIS Router and AMHS planned for trial in 2009.</p> <p>Trial with Singapore planned.</p> <p>ATNBIS Router and AMHS are still ongoing trial with Singapore planned to complete by 2012. (Part D: AMHS Commission)</p>	ELSA	Makasar and Brisbane has been ongoing trial AIDC since 2013.		

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JAPAN	<p>ATN BBIS router and AMHS installed at 2000. Connection tests with USA 2000 - 2004 and put into operational use in 2005.</p> <p>ATN BBIS router (to apply to Dual Stack) and AMHS (to upgrade in 2015. The connection test with each country which is not currently connecting is started after update.</p>	NEC	<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>Implemented between Fukuoka and Incheon since June 2009.</p> <p>AIDC implemented between Fukuoka ACC/Naha ACC and Taipei ACC in 2012.</p> <p>AIDC between Fukuoka ACC and Shanghai ACC under negotiation (2014)</p>		
KIRIBATI					
LAO PDR	ATN BIS Router and AMHS completed planned for implementation with Bangkok in 2010.	THALES	<p>AIDC with Bangkok planned for 2015-2016.</p> <p>Testing with Ho Chi Minh 1Q 2015</p>		

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MALAYSIA	ATN BIS Router completed 2007. AMHS planned in 2012.	FREQUENTIS	<p>AFTN AIDC planned with Bangkok ACC – Middle 2015.</p> <p>AIDC between Kuching and KK FIR already implemented. via TCP/IP. Planning for using AFTN from Nov. 2014.</p> <p>Between Kuala Lumpur and Chennai trial successful.</p> <p>Plan for trial with Singapore from Mid. November 2014.</p> <p>Plan for trial with Ho Chi Minh from 1Q 2015.</p>		
MALDIVES	Planned for 2015 as existing AFTN was upgraded recently to make it compatible with protocols of interconnected AMHS systems and the flight plan format 12.		System is AIDC ready. Trials with neighbouring ACC's 1 st half 2015.		
MARSHALL ISLANDS					
MICRONESIA (EDERATED STATES OF)					

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Chuuk					
Kosrae					
Pohnpei					
Yap					
MONGOLIA	<p>AMHS/AFTN gateway is implemented in first quarter of 2012.</p> <p>ATNBIS router will be implemented in 2013.</p> <p>Coordinating with China on ATN/AMHS connection technical trial target date TBD.</p>		<p>ATM automation system supports both AIDC and OLDI.</p> <p>Coordinating with Russia on OLDI connection in target date TBD.</p> <p>Coordinating with China on AIDC connection technical trial target date TBD.</p>		
MYANMAR	<p>AMHS including ATFTN/AMHS gateway implemented in Nov. 2011</p>	THALES	<p>ATM automation system capable to support AIDC in end of 2015.</p> <p>Plan for trial with Bangkok in 2015 with target for implementation in 2016.</p>		
NAURU					
NEPAL	<p>BIS Router and AMHS commissioned with Kathmandu Mumbai circuit on 2 June 2014.</p>	COMSOFT	<p>AIDC between Kathmandu and Beijing and KTM-BBN and KTM-CCU planned for</p>		

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			2015		
NEW CALEDONIA	New router and AMHS planned at the end of 2013 with Nadi				
NEW ZEALAND	Some external AMHS connections 2014.	COMSOFT	AIDC implemented between New Zealand, Australia, Fiji, Tahiti, Chile and USA.		
PAKISTAN	ATN/AMHS considered as Phase II implemented since 2010.	COMSOFT	Implemented between Karachi and Lahore ACCs Plan to implement AIDC with Mumbai and Muscat for 2015		Existing Radar system being upgraded.
PAPUA NEW GUINEA	Plans to create a newly duplicated digital communications line connecting with existing and new sites and replacing AFTN switch with a AMHS before 2015		To be implemented with Australia in early 2016		
PHILIPPINES	ATN G/G BIS Router/AMHS installed in 2006. Pending AMHS Interoperability tests moved to Q3/2015 both for Singapore and Hong Kong. AMHS trials with Singapore by end 2012 and	COMSOFT	AFTN based AIDC system (version 2) test plan for Dec. 2014. Plan for trial with Taipei and Singapore for 2015. Plan for trials with other ACCs TBD.		

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	Hong Kong planned in 2012.				
REPUBLIC OF KOREA	<p>ATN/AMHS circuit with China put into operational use in June 2011.</p> <p>ATN/AMHS test with Japan to be conducted</p>	SAMSUNG	<p>AFTN based AIDC implemented between ACC and Fukuoka ATMC.</p> <p>AIDC between Incheon and Dalian under negotiation (2014)</p>		
SINGAPORE	<p>AMHS implemented.</p> <p>ATN/AMHS circuit with India put into operational use in March 2011.</p> <p>ATN/AMHS circuit with UK put into operational use in March 2012.</p> <p>ATN/AMHS circuit with Thailand put into operational use in December 2014.</p> <p>On-going ATN/AMHS trial with Indonesia and Malaysia.</p> <p>Coordinating with Australia and Viet Nam to start ATN/AMHS trial in Q3 2015.</p>	COMSOFT	<p>Operational with Ho Chi Minh implemented July 2014.</p> <p>Technical trials with Malaysia (Kota Kinabalu, Kuching and Kuala Lumpur ATCCs) on going since Dec. 2014. Planned operational implementation from Dec. 2015.</p> <p>Technical trials with Manila ACC ongoing since Dec. 2014. Planned operational implementation in Nov. 2015. Planned technical trial with Indonesia plan from Dec. 2015.</p>	LORADS III - AIDC Full set	

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SRI LANKA	ATN BIS Router Planned for 2013. AMHS (Domestic) and AMHS/AFTN Gateway implemented by Oct. 2011. <ul style="list-style-type: none"> - Mumbai testing during Q3/Q4 2014 operational in Nov. 2014; - Singapore testing in Q4 214 operational in Dec. 2014; - Male testing in Q2 2015 operational date TBD. 	IDS	Trials with Male' planned for in 2015. Plan for trial with Chennai and Melbourne for November 2014.		
THAILAND	BBIS/BIS Routers already implemented. AMHS has been implemented in July 2011. Trial with other BBIS States; Singapore, India, Hong Kong China and Italy are ongoing. Pre-operational test (POT) with India and Singapore in 2013, with Hong Kong China in May 2014, with Italy in August 2014, with Laos PDR and Malaysia over VSAT IP link conducted in 2014. Inter-Operability Test (IOT) with Bangladesh in May 2014, with Beijing China planned for 2014 and with Vietnam and Myanmar planned for 2015. Connected with Cambodia (CATS) AMHS on 10 December 2013 over VSAT IP link; Established new CLNP 64 Kbps link with AAI In June 2013 following successful IOT; Established CLNP 64 Kbps link with CAAS in July 2013 following successful IOT. Operational the AMHS service with target date within Q4 2014; Established CLNP 64Kbps with Hong Kong China CAD in May 2014, POT is scheduled for Q2 2014.	AEROTHAI's AMHS system / Ubitech System	Plan for trials with neighboring ACCs from 2015 to 2016.	ATM system Thales is being implemented with planned completion in November 2015. AIDC feature is based on APAC AFTN AIDC ICD v.3 and can support ABI, EST, ACP, TOC, AOC messages.	

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TONGA	AMHS planned for 2008. The provider is linked to the New Zealand AFTN				CPDLC and ADS-C is not considered for lower airspace
UNITED STATES	AMHS implemented. (Salt Lake City & Atlanta)	IN-HOUSE	AFTN based AIDC implemented.		
VANUATU					
VIET NAM	BIS Routers planned for 2009. ATN/AMHS trial in 2010 and operation in 2012. ATN BIS Router AMHS in 2013	IN-HOUSE	AFTN based AIDC implemented in 2009. Operational with Singapore in April 2014. Plan for trials with Lao. PDR. Cambodia, Malaysia 1Q 2015.		