



ICAO

*International Civil Aviation Organization***Twenty Sixth Meeting of the Communications/
Navigation and Surveillance Sub-group (CNS SG/26) of
APANPIRG**

Video Tele-Conference, 5 – 9 September 2022

Agenda Item 3: Aeronautical Fixed Service (AFS)

- 3.2. Review the AMHS readiness status for supporting IWXXM Traffic of the States/Administrations;

**AMHS READINESS STATUS FOR SUPPORTING IWXXM TRAFFIC
IN APAC REGION**

(Presented by the Secretariat)

SUMMARY

This paper presents the AMHS readiness status for supporting IWXXM Traffic of the States/Administrations in APAC Region, and States/Administrations that have no AMHS in operations such that IWXXM message would not be distributed to these States/Administrations.

1. INTRODUCTION

1.1 ICAO APAC Regional Office has been discussing and promoting the implementation of necessary infrastructure to support IWXXM exchange in the Region through APANPIRG and its contributory bodies. This paper summarizes the AMHS readiness status for supporting IWXXM Traffic of the States/Administrations in APAC Region, including States/Administrations that have no AMHS in operations, to facilitate the relevant Meteorological authorities/organisations with the dissemination of IWXXM messages accordingly to avoid overloading the AFTN.

2. DISCUSSION

2.1 Since the adoptions of Amendments 77 and 79 to Annex 3, the APAC Region has been discussing in APANPIRG and its contributory bodies on promoting the implementation of AMHS and a proper infrastructure identified for the Region to facilitate the exchange of IWXXM. The following summarized the relevant Conclusions adopted in APANPIRG and its contributory bodies.

2.2 APANPIRG/28 adopted **Conclusion APANPIRG/28/16 - Upgrade AMHS to support IWXXM traffic** urging States/Administrations to implement *Extended AMHS* or *Basic AMHS plus File Transfer Body Parts (FTBP) sub-set of Extended AMHS for Binary data exchange functional groups* as defined in Doc 9880 Part IIB section 3.4.1 by **November 2020**.

Agenda Item 3.2

05-09/09/22

2.3 CNS SG/22 adopted **Conclusion CNS SG/22/4 (CRV OG/4/2) - ATN/BBIS States/Administration Use CRV for AFTN/AMHS Traffic** to urge BBIS States/Administration to commence the transition of AMHS to CRV network as early as possible to allow more BIS State/Administrations to establish connections over CRV.

2.4 The APAC State Letter *Ref.: T 8/3.5 & T 8/2.11– AP160/20 (CNS) dated 6 August 2020 with Title: Reminder for implementation of ATS Message Handling System (AMHS) in APAC Region by 2020* was sent to States/Administration in August 2020 as a reminder to upgrade the AMHS with FTBP and deploy AMHS connect to achieve a synchronized AMHS distribution mechanism to support MET information exchange using IWXXM in the APAC Region.

2.5 CNS SG/24 requested the MET SG and CNS SG to enhance mutual coordination and sharing outcomes of related survey and seminar/workshop, and the contributory body of MET SG (Meteorological Information Exchange Working Group (MET/IE WG)) to work collaboratively with ACSICG for a way forward in APAC region. In addition, APANPIRG/32 adopted **Conclusion APANPIRG/32/11: Updating Online Register of IWXXM Exchange Status** to request States/Administrations provide timely updates to the Online Register of IWXXM Exchange Status on the latest status of AMHS capability for IWXXM exchange among ROCs and NOCs, and the availability of IWXXM MET reports.

2.6 As of August 2022, there were **12** States/Administrations provided their status on AMHS readiness and experience for supporting IWXXM Traffic with details provided in **Appendix A**, out of the **23** States/Administrations in the APAC Region which put their AMHS into operations per the AMHS Routing Directory Tables from the ATS Messaging Management Centre (AMC) as of July 2022 provided in **Appendix B**.

2.7 States/Administrations that have no active AMHS in operations per the AMHS Routing Directory Tables are provided in **Appendix C**. To avoid possible overload of the AFTN traffic, relevant Meteorological authorities/organisations should not disseminate IWXXM messages to these States/Administrations.

2.8 Although there has been a significant increase in the AMHS readiness for supporting IWXXM Traffic, the reporting gap was still identified, States/Administrations are urged to inform ICAO APAC Regional Office on their readiness and implementation progress/plan of AMHS with FTBP as soon as possible.

2.9 States/Administrations are reminded of the Beijing Declaration on “commit to implementation **by 2022**: Common ground/ground telecommunication infrastructure to support ANS applications” with reporting indicators including the status of Aeronautical Message Handling System (AMHS) with File Transfer Body Parts (FTBP) function for IWXXM data.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information in this paper; and
- b) discuss any relevant matter as appropriate.

AMHS Readiness Report for Supporting IWXXM Traffic

No.	States/Administration	Name of State (Administration)/name of BBIS/BIS location where AMHS is installed:	AFTN/AMHS transition date/schedule	Readiness Status of AMHS for supporting File Transfer Body Part (FTBP), the Interpersonal Message (IPM) Heading Extension (IHE) to support for exchanging IWXXM reports of a maximum size of 4MB and FTBP of maximum 2MB:	Capacity status of the operational AFS links to support the exchange of the required meteorological information in both IWXXM GML form and TAC form:
1	Australia	Airservices - Brisbane	<p>Completed. AMHS exchange in place with USA, Fiji, New Zealand, Singapore and South Africa.</p> <p>AFTN still in place with Indonesia and PNG, migration to AMHS based on pending readiness both partners Several Pacific island nations connecting via FCO CADAS ATS Terminal, currently over AFTN. Airservices plans to migrate to AMHS P3 CADAS but will need to provide user training.</p> <p>All domestic users and data originators still on AFTN, no desire by external partners to migrate to AMHS, awaiting SWIM instead.</p>	Full compliance and support since Nov 2020	Airservices has contracted a 2.0Mbps bandwidth using CRV Package C+ for Voice & AMHS services. Bandwidth on the leased line with South Africa / Johannesburg is also 2Mbps.
2	China	Beijing	AMHS deployed in 2008 which was upgraded to support ATN/IPS in 2013 and upgraded to support exchanging IWXXM in 2020.	support	CRV bandwidth is 3M. Minimally 64kbps for each AMHS connection..
3	Hong Kong China	Hong Kong China	December 2009	Support	2MB for CRV and 64kbps for IPLCs
4	Fiji	Fiji Airport/Air Traffic Management Centre	Completed. In June 2019, Fiji completed the transition of ATN BBIS to IPS for the AMHS service from Nadi to Salt Lake, USA & Brisbane, Australia over the CRV network. The local end User still operates on AFTN terminal and is converted to AMHS over the AFTN/AMHS Gateway.	The Comsoft AMHS System supports File Transfer Body Part (FTBP). Our system has the capability of exchanging IWXXM reports of a maximum size of 4MB and FTBP of maximum.	Nadi has contracted a 1.0Mbps bandwidth using CRV Package C+ for Voice & AMHS services. The total bandwidth usage for voice and data is 768K from the total 1.0Mbps. The bandwidth for AMHS is 64Kbps each to Brisbane & Salt Lake Center. It is noted in the ACSICG/7 WP04 presented by USA that 64Kbps is the minimum recommended required bandwidth for AMHS to exchange FTBP for IWXXM.
5	India	AAI/Mumbai Airport	<p>AMHS is in operation since 2011.</p> <p>India is in the process of tendering for replacement of existing AMHS system . The Tender action stands delayed due to COVID pandemic.</p>	Presently India is not able to exchange the required 4 MB messages and 2 MB FTBP attachments.	Indian Meteorological Department is in the process of upgradation of HPC & DB to support IWXXM.
6	Japan	Japan/Fukuoka	ATN BBIS router and AMHS installed at 2000.	Already support exchange of IWXXM messages based on FTBP in August 2015.	AFS links over CRV is a Package A, Bandwidth 2M.

CNS SG/26
Appendix A to WP/06

No.	States/Administration	Name of State (Administration)/name of BBIS/BIS location where AMHS is installed:	AFTN/AMHS transition date/schedule	Readiness Status of AMHS for supporting File Transfer Body Part (FTBP), the Interpersonal Message (IPM) Heading Extension (IHE) to support for exchanging IWXXM reports of a maximum size of 4MB and FTBP of maximum 2MB:	Capacity status of the operational AFS links to support the exchange of the required meteorological information in both IWXXM GML form and TAC form:
			<p>Connection tests with USA 2000 - 2004 and put into operational use in 2005 and over CRV in February 2019.</p> <p>Put into AMHS operation with Hong- Kong and Singapore in 2021. AMHS implementation with China in 2021 , Korea and Taipei in 2022.</p>	<p>It is possible to send , receive and transfer up to 2GB for the contents such as FTBP,IPM and IHE in AMHS,and the size of IWXXM supported system by Japan Meteorological Agency is 2MB</p>	
7	Macao China	Macao China	Q4/2009	Q3/2021	To be determined
8	Philippines	Philippines/ATMC Manila	Completed March 2018	Can support IHE and FTBP maximum 1MB (tested with Taipei on 13-May-20)	<p>1MB</p> <p>Philippines has contracted 2Mbps bandwidth using CRV package "A" voice and data services.</p>
9	Republic of Korea	Gimpo international airport	<p>ATN/AMHS with China put into operational use in June, 2011.</p> <p>AMHS implementation with China and Japan over CRV will be in 4Q, 2022.</p>	AMHS implementation for supporting FTBP and IHE will be in 4Q, 2022.	AFS links over CRV is a Package A, Bandwidth 2M.
10	Singapore	Singapore	March 2011	Yes	2MB for CRV and minimally 64kbps for IPLCs
11	Thailand	Thailand	<p>BBIS/BIS Routers already implemented. AMHS has been implemented since July 2011. Connection with Bangladesh, Bhutan, Cambodia, China, India, Lao PDR, Myanmar, Singapore, Hong Kong China, and Malaysia implemented.</p> <p>Connection with SITA (SITA AMHS Gateway inter-connections) implemented.</p> <p>Bangkok - Vietnam Circuit IOT Test : Done POT Test: Planned for end of 3Q2021</p> <p>Bangkok - Rome Circuit IOT Test: Planned for 3Q2021 POT Test: Planned for 4Q2021</p>	Completed, the IWXXM exchange has been implemented since November 2020.	The capacity of links readied to support in both form.
12	USA	Federal Aviation Administration	Q4, 2020	Yes. FAA AMHS has FTBP capability. National Weather Service (NWS) projected to implement IWXXM by Q3, 2021	Yes. 2MB bandwidth over CRV

CNS SG/26
Appendix B to WP/06

States with AMHS in Operation (Active AMHS Routing Directory found)		
State/Administrator	IWXXM Support	COM Centre with AMHS Routing
Australia	Yes	YBBB - BRISBANE (FIR/FIC/ACC/COM/MET/NOF) - Australia
Bangladesh	-	VGHS - HAZRAT SHAHJALAL INTERNATIONAL AIRPORT, DHAKA - Bangladesh
Bhutan	-	VQPR - PARO, INTL - Bhutan
Cambodia	-	VDPP - PHNOM PENH - Cambodia
China	Yes	ZBBB - BEIJING CITY - China
	-	RCTP - TAIPEI/TAIWAN TAOYUAN INTERNATIONAL - China
Fiji	Yes	NFFN - NADI/INTL - Republic of Fiji
Hong Kong China	Yes	VHHH - HONG KONG/INTERNATIONAL - Hong Kong Special Administrative Region of China
India	Yes	VABB - CHHATRAPATI SHIVAJI INTL AIRPORT, MUMBAI - India
	-	VECC - NETAJI SUBHASH CHANDRA BOSE INTERNATIONAL AIRPORT, KOLKATA - India
Indonesia	-	WIII - JAKARTA/SOEKARNO-HATTA INTL - Indonesia
Japan	Yes	RJJJ - FUKUOKA/JCAB AIR TRAFFIC MANAGEMENT CENTRE, AFTN/AMHS COM CENTER - Japan
Lao PDR	-	VLVT - VIENTIANE(WATTAY) - Lao People's Democratic Republic (the)
Macao China	Yes	VMMC - MACAO/INTL AIRPORT - Macao Special Administrative Region of China
Malaysia	-	WMKK - KL INTERNATIONAL/SEPANG - Malaysia
Myanmar	-	VYYY - YANGON INTERNATIONAL - Myanmar, the Republic of the Union of
Nepal	-	VNKT - KATHMANDU - Federal Democratic Republic of Nepal
New Zealand	-	NZCH - CHRISTCHURCH INTL - New Zealand
Pakistan	-	OPKC - KARACHI/JIAP INT'L - Pakistan
Philippines	Yes	RPLL - NINYO AQUINO INTERNATIONAL AIRPORT, MANILA - Philippines
ROK	Yes	RKSS - GIMPO - Republic of Korea
Singapore	Yes	WSSS - SINGAPORE/SINGAPORE CHANGI INTL - Singapore
Sri Lanka	-	VCCC - RATMALANA/COLOMBO - Sri Lanka
Thailand	Yes	VTBB - BANGKOK (ACC/FIC/COM CENTRE) - Thailand
United States	Yes	KSLC - SALT LAKE CITY INTL - United States of America
		KATL - HARTSFIELD - JACKSON ATLANTA INTL - United States of America
Total: 23 States	Total: 12 States	

Source: ATS Messaging Routing Directory Part II
Regional Routing Tables, Region ASIA/PAC

States without AMHS in Operation (AMHS Routing Not Found)
Afghanistan
Brunei Darussalam
Cook Islands
Democratic People's Republic of Korea
Kiribati
Maldives
Marshall Islands
Micronesia (Federated States of)
Mongolia
Nauru
Palau
Papua New Guinea
Samoa
Solomon Islands
Timor Leste
Tonga
Tuvalu
Vanuatu
Viet Nam
<i>Total: 19 States</i>

*Source: ATS Messaging Routing Directory Part II
Regional Routing Tables, Region ASIA/PAC*