



ICAO

International Civil Aviation Organization

Eleventh Meeting of the Common aeRonautical Virtual Private Network Operations Group (CRV OG/11)

Bangkok, Thailand, 01-03 February 2023

Agenda Item 5: Review and update the APAC CRV Implementation Table

AERONAUTICAL TELECOMMUNICATION NETWORK (ATN) ROUTING AND TELECOMMUNICATION UPDATE

(Presented by Federal Aviation Administration/USA)

SUMMARY

This paper presents an up to date of the Asia/Pacific region data telecommunication infrastructure and ATN routing that includes Air Traffic Message Handling System (AMHS) and Aeronautical Fixed Telecommunication Network (AFTN). The table is updated and maintained by Aerothai

1. INTRODUCTION

- 1.1 The implementation of Common aeRonautical Virtual Private Network (CRV) has allowed expansion of the AMHS/AFTN service
- 1.2 CRV OG and ACSICG have not updated the routing accordingly

2. DISCUSSION

- 2.1 Attached please find the table that depicts the current connections of AMHS/AFTN within the States in the region as well as connections to other regions by BBIS States
- 2.2 Meeting is requested to review the information shown in the table and provide update or modification of the table format to ICAO secretariat during the meeting or provide by email after the meeting
- 2.3 Meeting is requested to provide any plan for new AMHS/AFTN connection
- 2.4 The updated information will be reviewed and update again at the ACSICG meeting before forwarding to CNS SG to finalize and publish

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

Status from AMC

Administration and Location	of Route	Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
1	2	3	4	5	6	7	8
Afghanistan Kabul (OAKB)	BIS	Intra-Regional	Pakistan	64000bps	VPN		Intra-domain
	BIS	Inter-Regional	Iran	50	AFTN		
American Samoa Pago Pago			United States				Intra-domain
Australia Brisbane	BBIS	Intra-Regional	Fiji	IP (VPN)	IPS ON CRV	VPN	Implemented SINCE JULY 2019
	BIS	Intra-Regional	Indonesia	2048K	AFTN X.25		
	BBIS	Intra-Regional	Japan	64000 bps	IPS/IP-SNDCF	VPN	Not implemented
	BIS	Intra-Regional	New Zealand	IP (VPN)	IPS ON CRV	VPN	Implemented
	BBIS	Intra-Regional	Singapore	2 M	IPS ON CRV	VPN	ATN/AMHS trial planned to completed by end 2015
	BBIS	Inter-Regional	South Africa	64000 bps	TBD		Not implemented
	BBIS	Inter-Regional	United States	64000 bps	DDN lease line/IPS		
Bangladesh Dhaka	BIS	Intra-Regional	India	64000 bps	IPS		Implemented
	BIS	Intra-Regional	Thailand	32000 bps	IPv4	VSAT	Implemented
Bhutan Paro	BIS	Intra-Regional	India	2M	IPS	VPN	Implemented 06 July 2017
Brunei Darussalam Brunei	BIS	Intra-Regional	Malaysia	2M	IPS		Plan updated 020320
	BIS	Intra-Regional	Singapore	9600 bps	IPv4	DDN	ATN/AMHS trial commence on 2017
Cambodia Phnom Penh	BIS	Intra-Regional	Thailand	64000 bps	IPv4	VSAT	Implemented 11DEC 2013
China Beijing	BIS	Intra-Regional	DPR Korea	9600 bps	X.25		Router Implemented
	BBIS	Intra-Regional	Hong Kong, China	2M	CRV	DDN	SINCE 21 APR 2021
	BBIS	Intra-Regional	India	64000 bps	X.25/IPS	DDN	SINCE 27 JUN 2016
	BBIS	Intra-Regional	Japan	2M	CRV	VPN	Implement from 2016 onwards
	BBIS	Inter-Regional	Kuwait	64000 bps	X.25		Router Implemented

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Administration and Location	of Route	Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
1	2	3	4	5	6	7	8
	BIS	Intra-Regional	Macau, China	64000 bps	X.25		Implemented
	BIS	Intra-Regional	Mongolia	9600 bps	X.25		Router Implemented
	BIS	Intra-Regional	Myanmar	64000 bps	IPS		Implementation on going/Plan Q4/15
	BIS	Intra-Regional	Nepal	9600 bps	X.25		Router Implemented
	BIS	Intra-Regional	Pakistan	2400 bps	CONV AFTN		Router Implemented
	BIS	Intra-Regional	Republic of Korea	64000 bps	X.25		Implemented
	BBIS	Inter-Regional	Russian Federation	64000 bps	X.25		Router Implemented
	BBIS	Intra-Regional	Thailand	2 M	CLNP/X.25	DDN	SINCE APR 2018
	BIS	Intra-Regional	Vietnam	9600 bps	X.25		
Taipei	BIS	Intra-Regional	Hong Kong, China	192 K	CRV		SINCE 03 JUN 2020
	BIS	Intra-Regional	Japan	192 K	CRV		SINCE 04 APR 2020
Hong Kong, China	BBIS	Intra-Regional	China	2M	CRV		SINCE 21 APR 2021
	BIS	Intra-Regional	Macau, China	64000 bps	X.25	DDN	Implemented
	BBIS	Intra-Regional	Japan	2 M	CRV		SINCE 03 SEP 2020
	BIS	Intra-Regional	Philippines	2M	CRV		SINCE 03 JUN 2019
	BBIS	Intra-Regional	Taipei	192 K	CRV		SINCE 03 JUN 2020
	BBIS	Intra-Regional	Thailand	512 kbps	CRV		SINCE 08 AUG 2022
	BIS	Intra-Regional	Viet Nam	64000 bps	X.25	DDN	TBD
Macau, China	BIS	Intra-Regional	China	64000 bps	X.25		Implemented
	BIS	Intra-Regional	Hong Kong, China	64000 bps	X.25	DDN	Implemented
Cook Islands Rarotonga			New Zealand	796 kbps	IPS		Intra-domain
DPR Korea Pyongyang	BIS	Intra-Regional	China	9600 bps	X.25		
Fiji Nadi	BBIS	Intra-Regional	Australia	IPS	CRV	VPN	Since JUL 2019
	BIS	Intra-Regional	Kiribati	Internet	IPv4	VPN	Intra-domain (User Agent) - Implementation Q3 2015
	BIS	Intra-Regional	New Caledonia	64000 bps	IPS (IPv4)	DDN	Intra-domain - Implementation 2016 Connect with Wallis

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Administration and Location	of Route	Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
1	2	3	4	5	6	7	8
	BIS	Intra-Regional	Tuvalu	Internet	IPv4	VPN	Intra-domain (User Agent) - Implementation Q3 2015
	BBIS	Inter-Regional	United States	IPS	CRV	VPN	Converted x.25 to IPS, APR 2019
	BIS	Intra-Regional	Wallis Islands	Internet	IPv4	VPN	Connect with New Caledonia - Implemente in 2016
French Polynesia Papeete (NTAA)			New Zealand	64000 bps	IPS		Intra-domain
India Mumbai	BIS	Intra-Regional	Bangladesh	64000 bps	IPS		SINCE 23 MAR 2015
	BIS	Intra-Regional	Bhutan	64000 bps	IPS	VPN	SINCE 06 JUL 2017
	BBIS	Intra-Regional	China	64000 bps	X. 25/IPS	DDN	SINCE 27 JUN 2016
	BIS	Inter-Regional	Kenya	64000 bps	TBD	TBD	Presently using AFTN via VPN via public internet
	BIS	Intra-Regional	Nepal	64000 bps	IPS		SINCE 02 JUN 2014
	BIS	Inter-Regional	Oman	64000 bps	IPS		Implemented
	BIS	Intra-Regional	Pakistan	64000 bps	IPS		Implemented
	BBIS	Intra-Regional	Singapore	64000 bps	X.25	DDN	SINCE 22 MAR 2011
	BIS	Intra-Regional	Sri Lanka	64000 bps	IPS	DDN	SINCE 16 MAY 2017
	BBIS	Intra-Regional	Thailand	64000 bps	X. 25	DDN	SINCE 29 SEP 2014
	BBIS	Intra-Regional	Nairobi	64000 bps	IPS		
Indonesia Jakarta	BIS	Intra-Regional	Australia	64000bps	IPS		Not Implemented
	BIS	Intra-Regional	Singapore	128 K	IPv4	VSAT	Implemented
Japan Tokyo	BBIS	Intra-Regional	Australia	64000 bps	IPS/IP-SNDCF	VPN	Schedule after CRV
	BBIS	Intra-Regional	China	2 M	IPS/IP-SNDCF	CRV	Implement from 2016 onwards Schedule after CRV
	BBIS	Intra-Regional	Hong Kong, China	2 M	IPS	CRV	SINCE 30 SEP 2020
	BBIS	Inter-Regional	Europe	64000 bps	IP-SNDCF	DDN/ VPN	TBD
	BIS	Intra-Regional	Republic of Korea	2 M	IPS	CRV	Implement CRV SINCE 25 DEC 2022

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Administration and Location	of Route	Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
1	2	3	4	5	6	7	8
	BBIS	Inter-Regional	Russia Federation	64000 bps	IP-SNDCF	DDN/ VPN	TBD
	BBIS	Intra-Regional	Singapore	2 M	IPS/SNDCF	CRV	SINCE 17 NOV 2020
	BIS	Intra-Regional	Taibei	2 M	IPS	CRV	SINCE 04 APR 2022
	BBIS	Inter-Regional	United States	64000 bps	IPS	CRV	SINCE FEB 2019
Kiribati Tarawa (NGTT)	BIS	Intra-Regional	Fiji	Internet	IPv4	VPN	Intra-domain (User Agent) - Implementation Q3 2015
Lao PDR Vientiane	BIS	Intra-Regional	Thailand	32000 bps	IPv4	VSAT	SINCE 21 AUG 2018
	BIS	Intra-Regional	Viet Nam	9600 bps	X.25		
Malaysia Kuala Lumpur	BIS	Intra-Regional	Brunei	2 M	IPS		
	BIS	Intra-Regional	Singapore	2 M	IP		SINCE 27 MAR 2020
	BIS	Intra-Regional	Thailand	64000 bps	IPv4	VSAT	Implemented 01 DEC 2019
Maldives Male (VRMM)	BIS	Intra-Regional	Sri Lanka	64000 bps	X.25		
Marshall Islands Majuro (PKMJ)	BIS	Inter-Regional	United States	64000 bps	IP		VPN over Internet Intro-domain
Micronesia Federated State of Chuuk (PTKK)	BIS	Inter-Regional	United States	64000 bps	IP	VPN	VPN over Internet Intra-domain
Kosrae (PTSA)		Inter-Regional	United States	64000 bps	IP	VPN	VPN over Internet/Intra-domair
Ponapei (PTPN)		Inter-Regional	United States	64000 bps	IP	VPN	VPN over Internet/Intra-domair
Yap (PTYA)		Inter-Regional	United States	64000 bps	IP	VPN	VPN over Internet/Intra-domair
Mongolia Ulanbaatar	BIS	Intra-Regional	China	2 M	IP	VSAT	Router Implemented
Myanmar Yangon	BIS	Intra-Regional	China	64000 bps	IPS		
	BIS	Intra-Regional	Thailand	32000 bps	IPv4	VSAT	SINCE 30 JUL 2018
Nepal Kathmandu	BIS	Intra-Regional	China	9600bps	X.25		Router Implemented

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Administration and Location	of Route	Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
1	2	3	4	5	6	7	8
	BIS	Intra-Regional	India	64000 bps	IPS		SINCE 02 JUN 2014
New Caledonia Noumea (NWWW)			Fiji	64000 bps	IPS (IPv4)	DDN	Intra-domain - Implementation 2016 Connect with Wallis
New Zealand Christchurch	BIS	Intra-Regional	Australia	64000 bps	IPS	CRV	SINCE SEP 2020
			Cook Is.	2.4 K	IPS		Intra-domain
			French Polynesia	64000 bps	IPS		Intra-domain
			Samoa	2.4 K	IPS		Intra-domain
			Tonga	85000 bps	IPS		Intra-domain
	BIS	Inter-Regional	USA	64000 bps	IPS	CRV	SINCE JUN 2016
Pakistan Karachi	BIS	Intra-Regional	Afghanistan	64000 bps	IPS		
	BIS	Intra-Regional	China	64000 bps	X.25		
	BIS	Intra-Regional	India	64000 bps	IPS		IOT/POT completed. TMC to be signed
	BIS	Inter-Regional	Oman	64000 bps	-		
	BIS	Inter-Regional	Iran	64000 bps	-		
	BIS	Inter-Regional	Kuwait	64000 bps		VPN	Implement
Philippines	BIS	Intra-Regional	Hong Kong, China	2 M	IPv4	CRV	SINCE 03 JUN 2019
	BIS	Intra-Regional	Singapore	2 M	IPv4	CRV	SINCE 18 DEC 2020
		Intra-Regional	United States	2 M	IPv4	CRV	SINCE 23 APR 2021
Republic of Korea Seoul	BIS	Intra-Regional	China	64000 bps	X.25		Implemented
	BIS	Intra-Regional	Japan	2 M	IPS(IPv4)	CRV	Implement CRV SINCE 25 DEC 2022
Samoa Faleolo (NSFA)			New Zealand	1.1 Mb	IPS		Intra-domain
Singapore Singapore	BBIS	Intra-Regional	Australia	2 M	IPS	CRV	SINCE 10 DEC 2020
	BBIS	Inter-Regional	Bahrain	64000 bps	IPv4	DDN	
	BIS	Intra-Regional	Brunei	9600 bps	IPv4	DDN	ATN/AMHS trial commence on 2017
	BBIS	Intra-Regional	India	64000 bps	X.25	DDN	Implemented
	BIS	Intra-Regional	Indonesia	64000bps	IPv4	VSAT	Implemented

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Administration and Location	of Route	Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
1	2	3	4	5	6	7	8
	BBIS	Intra-Regional	Japan	2 M	IPS	CRV	SINCE 17 NOV 2020
	BIS	Intra-Regional	Malaysia	2 M	IPv4	CRV	Scheduled for Q 3/2022
	BIS	Intra-Regional	Philippines	2 M	IPv4	CRV	SINCE 28 NOV 2020
	BIS	Intra-Regional	Sri Lanka	2 M	IPv4	DDN	Implemented
	BBIS	Intra-Regional	Thailand	64000 bps	CLNP/X.25	DDN	Implemented SINCE 23 DEC 2014
	BBIS	Inter-Regional	United Kingdom	64000 bps	IPv4	VPN	Implemented
	BIS	Intra-Regional	Viet Nam	9600 bps	X.25	DDN	ATN/AMHS trial planned to completed by end 2015
Sri Lanka Colombo	BIS	Intra-Regional	India	64000 bps	IPS	DDN	SINCE 16 MAY 2017
	BIS	Intra-Regional	Maldives	64000 bps	X.25		TBD
	BIS	Intra-Regional	Singapore	2 M	IPv4	DDN	SINCE 28 NOV 2020
Thailand Bangkok	BIS	Intra-Regional	Bangladesh	32000 bps	IPv4	VSAT	Implemented
	BIS	Intra-Regional	Cambodia	64000 bps	IPv4	VSAT	Implemented
	BBIS	Intra-Regional	China	2 M	CLNP/X.25	DDN	
	BBIS	Intra-Regional	Hong Kong, China	512 Kbps	IPS	CRV	Implemented CRV SINCE 08 AUG 2022
	BBIS	Intra-Regional	India	64000 bps	X.25	DDN	Implemented
	BBIS	Inter-Regional	Italy	2 M	IPv4	DDN	
	BIS	Intra-Regional	Lao PDR.	32000 bps	IPv4	VSAT	Implemented
	BIS	Intra-Regional	Malaysia	64000 bps	IPv4	VSAT	Implemented
	BIS	Intra-Regional	Myanmar	32000 bps	IPv4	VSAT	Implemented
	BBIS	Intra-Regional	Singapore	512 Kbps	IPS	CRV	Implemented CRV SINCE 12 SEP 2022
	BIS	Intra-Regional	Viet Nam	64000 bps	IPv4	VSAT	PLan to implement in Q3/2023 (from Thailand)
Tonga Tongatapu (NFTF)	BIS	Intra-Regional	New Zealand	85000 bps	IPS		Intra-domain
Tuvalu Faleolo	BIS	Intra-Regional	Fiji	Internet	IPv4	VPN	Intra-domain (User Agent) - Implementation Q3 2015
United States Salt Lake City	BBIS	Inter-Regional	Australia	64000 bps	IPS	CRV	SINCE JUN 2019

Administration and Location	of Route	Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remark
1	2	3	4	5	6	7	8
			American Samoa		IP		Intra-domain
	BBIS	Inter-Regional	Fiji	9600 bps	IPS	CRV	SINCE APR 2019
	BBIS	Inter-Regional	Japan	64000 bps	IPS	CRV	SINCE FEB 2019
		Intra-Regional	Marshall Islands	64000 bps	IP		Intra-domain/Interne
		Intra-Regional	Micronesia, Federated State of	64000 bps	IP		Intra-domain
	BIS	Inter-Regional	New Zealand	64000 bps	IPS	CRV	SINCE JUN 2016
		Intra-Regional	Philippines	64000 bps	IPS	CRV	SINCE 23 APR 2021
Viet Nam Ho Chi Minh/Hanoi	BIS	Intra-Regional	China	9600 bps	X.25		
	BIS	Intra-Regional	Hong Kong, China	64000 bps	X.25	DDN	TBD
	BIS	Intra-Regional	Lao PDR.	9600 bps	X.25		
	BIS	Intra-Regional	Singapore	9600 bps	X.25	DDN	ATN/AMHS trial planned to completed by end 2015
	BIS	Intra-Regional	Thailand	64000 bps	IPv4	VSAT	PLan to implement in Q3/2023
Wallis Islands (NLWW)	BIS	Intra-Regional	Fiji	Internet	IPv4	VPN	Connect with New Caledonia - Implemente in 2016

15-Jan-23

Red character is present status in AMC