



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

## **UPDATE THE APAC CRV IMPLEMENTATION TABLE**

(Presented by the Secretariat)

### **SUMMARY**

This paper presents the APAC CRV Implementation Table for review and update by the meeting.

## **1. INTRODUCTION**

1.1. The Ninth Meeting of the Common aeRonautical Virtual Private Network Operations Group of APANPIRG (**CRV OG/9**) was held *from 25 to 27 January 2022* via Video Tele-Conferencing (VTC). The meeting was informed that the format of CRV Implementation table updated by CRV OG/8 needs to be modified to accommodate necessary information required by ICAO Secretariat time-to-time for monitoring the progress and implementation status of CRV and connected States by CRV for each Member State. The meeting reviewed and updated the APAC CRV Implementation Table.

1.2. The Ninth Meeting of the Aeronautical Communications Services (ACS) Implementation Coordination Group (**ACSICG/9**) was held *from 19 to 21 April 2022* via VTC. The ACSICG/9 meeting reviewed the outcomes of the CRV OG/9 and noted the CRV Implementation status provided in the CRV Implementation table.

1.3. The Twenty Sixth Meeting of the Communications, Navigation and Surveillance Subgroup (**CNS SG/26**) of APANPIRG was held *from 5 to 9 September 2022* via VTC. The meeting noted the updated CRV implementation status in the APAC Region.

## **2. DISCUSSION**

2.1. The updated CRV implementation table by CRV OG/9 meeting is provided in **Appendix A** to this paper.

2.2. The latest updates from the service provider on the planning and implementation status of CRV are as follows:

- **Under Operation**

Australia, Bhutan, China, Fiji, Hong Kong China, India, Indonesia, Japan, Malaysia, New Zealand, Philippines, PNG, Republic of Korea, Singapore, Thailand, and USA.

- **Under Provisioning**

Nepal, Mongolia, Vietnam

- **Hot Prospects in 2023**

Sri Lanka , Pakistan and New Caledonia

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) review and update the CRV implementation table provided in **Appendix A**; and
- c) discuss any relevant matter as appropriate.

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CRV IMPLEMENTATION TABLE

SN	State/ Administrati on (with* is BBIS; marked in blue- not yet join CRV/ no updates provided)	States /Administrati ons connected	Intended date for CRV cut- over	Applications targeted	Migration scheme	Prerequisites/ dependencies
1	Afghanistan					
2	Australia*	Fiji New Zealand USA PNG Singapore	Contract in May2018 and service readiness in 3Q 2018	AFTN, ADS-B, AMHS, Voice With: <u>Completed:</u>  <b>Fiji</b> March,2019 (AMHS June 2019/AIDC, Voice completed April) <b>New Zealand</b> , February, 2019 (AMHS June 2019, AFTN May 2019/AIDC), March, 2019 (Voice April 2019 completed) <b>Singapore</b> Dec, 2020 (AMHS/AIDC); <b>PNG</b> June 2021 (AFTN) Oct 2021 (Voice) <b>USA</b> March 2019 (AFTN) March 2019 (Voice)  <u>Pending:</u>  <b>South Africa TBC</b> (AMHS/AIDC, Voice); <b>Indonesia</b>	Staged approach	Termination of current COM contract

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				TBC 2022 (AMHS/AIDC, Voice, ADS-B);		
3	Bangladesh					
4	Bhutan		Contract signed on Oct 2019.  CRV installed successfully in Dec 2021.  CRV P2P Test between Paro- Mumbai & Paro- Bangkok to be done once India and Thailand join CRV	AMHS first and Voice & ADS-B will follow up after AMHS.	Staged Approach	Dependent on India and Thailand for utilization of CRV network.
5	Brunei Darussalam					

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6	Cambodia		As early as convenient, dependent on neighbouring countries			Internal decision making
7	China*	Hong Kong China Japan Republic of Korea	Contract signed on 21 June 2020.	Applications targeted: Data(AMHS) With: Hong Kong 3Q2020; Japan 4Q2020; Thailand TBD; India 2022. Republic of Korea 4Q2022 Mongolia 4Q2022 ATFM test with Japan and ROK at Sep 2020 over CRV ADP exchange with Mongolia 4Q2022	staged approach	

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8	<b>Hong Kong, China*</b>	Philippines China Japan Thailand Vietnam	Contract signed on 6 April 2018.  Connection was installed successfully in June 2018.	<b>With Manila</b> CRV-Voice put into operation in August 2018 CRV-AMHS put into operation in May 2019  <b>With Fukuoka</b> CRV-AMHS put into operation in September 2020  <b>With Beijing</b> CRV - AMHS POT in March and operation in April 2021  <b>Bangkok and Hochiminh</b> Subject to their readiness	staged approach	Need to coordinate with relevant CAAs/ANSPs in joining CRV in a harmonized manner, etc.
9	Macau China		December 2022	To be confirmed	Staged approach	Migration from X.25 to IPS
10	Cook Islands					
11	Democratic People's Republic of Korea		Contract in 3Q2018 and service readiness in 4Q2018	AFTN and VoIP		

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12	<b>Fiji*</b>	Australia New Zealand USA	Contract in May 2018 and service readiness in 3Q 2018.	Data (AMHS) and VoIP With: Australia ATS voice April 2019 completed, AMHS completed in July 2019, NZ ATS voice completed April 2019 and USA ATS voice completed in March 2019 and AMHS completed in April 2019.	Staged approach	CBA, safety case
13	<b>France:</b>  -New Caledonia  -French Polynesia	<b>Fiji</b>  <b>New-Zealand &amp;USA</b>	<b>Q2/2022</b>  <b>Q1/2023</b>	<b>ATS Voice, AMHS</b>  <b>AIDC, AMHS with USA, AFTN/AMHS with NZ.</b>	<b>Staged approach</b>	<b>Depends on :</b>  - <b>solving legal issues raised in 2021 with PCCWG</b>  - <b>an agreement with peer States on adding a layer of encryption (PSK) over CRV</b>  <b>if we are able to sign the contract in 2022</b>

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14	India*		Contract for CRV implementation with M/s PCCW in India will be signed by Feb 2022.	AFTN/AMHS,ADS-B,AIDC,ATS Voice	Staged approach	Internal Administrative/financial approvals & safety case
15	Indonesia		Contract in 3Q2021 and service readiness in 4Q2021.	AFTN, AMHS, ADS-B and voice		CBA completed  Delayed by 2022 due to COVID-19 (CRV OG/9 updates)
16	Japan*	Hong Kong China USA Singapore China RoK	Contract signed in Nov.2017 and service readiness in1Q 2018 for Fukuoka	Data first with: Hong Kong completed 3Q2020 USA completed 1Q2019 Singapore completed 4Q2020 China completed 1Q2021  Voice Plan with: USA 2Q 2021 Daegu and Incheon (R.O.K) started in1Q2021 Philippines, Taipei FIR, add R.O.K will start from 1Q 2022	In progress	

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17	Kiribati					
18	Lao PDR					
19	Malaysia		<p>In the process of settling the CRV contract terms and signing of the CRV contract between Malaysia and PCCWG</p> <p>Implementation status: CRV service started in Nov 2021. Service cut over will be in stages, starting with AHMS in Q1 2022.</p>	AFTN, AMHS, ADS-B and ATS voice	staged approach	
20	Maldives					
21	Marshall Islands					

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22	<b>Micronesia (Federated States of)</b>					
23	<b>Mongolia</b>	CAAM and PCCWG made ICMP package test in 2021.	Contract in 1Q2022 and service readiness in 4Q2022	AFTN, ADS-B, AMHS, Voice With: <b>China</b> Dec, 2022(AMHS), (ADP) TBD Voice, ADS-B, AFTN <b>Russia</b> TBD (AFTN, ADS-B, AMHS, Voice)	staged approach	Negotiations with neighbouring countries and stakeholders on CRVs and its use are critical to implementation.
24	<b>Myanmar</b>		Contract will be signed after discussed with PCCW Global. Implementation was targeted in 3Q/2023 depends on PCCW's proposal quotation, and getting the Budget approval from Authority concerned.	AFTN/AMHS, AIDC, ADS-B and Voice	staged approach	One of counterparts join in
25	<b>Nauru</b>					

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26	<b>Nepal</b>		SO signed with PCCW	AFTN/AMHS	Staged Approach	BBIS-state India joining the CRV network, as most traffic is routed through it
27	<b>New Zealand</b>	Australia USA Fiji French Polynesia Chile	Contract signed in July 2018 and service implemented December 2018	Australia Voice Completed March 2019 and AMHS June 2019 Completed USA Voice Completed March 2019 and AMHS March 2019 Completed  Fiji Voice Completed April 2019  French Polynesia AMHS and Voice  Chile AMHS (SAM regional network REDDIG)	Awaiting French Polynesia joining.  Awaiting outcome of inter-regional network connectivity discussion. For Chile	CBA attractive if all counterparts join in.
28	<b>Pakistan</b>					
29	<b>Palau</b>					

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30	<b>Papua New Guinea</b>	Australia USA-Oakland USA-Aireon		Australia: AFTN June 2021, Voice Oct 2021 USA-Oakland Voice November 2021 USA-Aireon Space based ADSB-July 2021	Staged approach	Completed
31	<b>Philippines</b>	Hong Kong China Singapore USA	Contract signed in March 2018 and service readiness in 2Q2018	Completed: with <b>HONG KONG</b> AIDC - 2Q2019; AMHS - 2Q2019; Voice - 3Q2018.  with <b>SINGAPORE</b> AIDC – 4Q2019; AMHS – 4Q2020; Voice – 1Q2020.  with <b>USA</b> AMHS – 2Q2021; Voice – 4Q2019. Planned: with <b>JAPAN</b> Voice – 1Q2022.	staged approach	Success transition to the New ATM center in 4Q2018

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32	<b>Republic of Korea</b>	Japan China	Contract in 3Q 2019 and service readiness in 4Q 2022	Completed: with Japan Voice –March 2021  Planned; With Japan Voice additional lines-from 2022 to 2023 Data(AMHS) POT in 4Q and operation from 4Q 2022  With China Data(AMHS) POT in July and operation from 4Q 2022	staged approach	
33	<b>Samoa</b>					
34	<b>Singapore*</b>	Australia Japan Philippines	Contract signed in May 2019 and service readiness in Dec 2019	Data (AMHS over IP) with: Australia Dec 2020 (completed); Japan Nov 2020 (completed); Philippines Dec 2020 (completed); Malaysia 2022.  Voice with: Philippines Mar 2020 (completed).	Staged approach	
35	<b>Solomon Islands</b>					

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36	Sri Lanka	Planned: Australia India Indonesia Maldives Singapore	Nov-Dec 2022	Q1 2023 - AMHS with Singapore  TBD - AMHS connectivity with Mumbai, and Male.  TBD - Direct Speech facilities with Chennai, Trivandrum, Mumbai, Male, Jakarta, Melbourne, Singapore.	Phased Approach	Package D is planned based on CBA conducted. Comparison of performance of Package D and existing IPLC circuit.
37	Thailand*		1. Contract in 3Q2021 Status: Completed 2. Service readiness in 2Q2022	Data first Then voice, subject to safety case: China 2Q2022 Hong Kong 2Q2022; Singapore 2Q2022; India 2022.	Staged approach	
38	Timor Leste					
39	Tonga					
40	Tuvalu					

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41	United States*	Australia Fiji Japan Philippines New Zealand Papua New Guinea Tahiti Russia	Contract in January 2018	1) AMHS with Australia Fiji Japan Philippines New Zealand Papua New Guinea (2021) Indonesia (2022)  2) AIDC with Fiji Japan New Zealand Papua New Guinea (Direct planned 2021) Tahiti (via New Zealand) Indonesia (Direct planned 2022) Russia (when join CRV)  3) VoIP with Fiji Japan Philippines New Zealand Papua New Guinea (direct planned 2021) Indonesia (2022)	Staged approach	

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42	Vanuatu					
43	Viet Nam	Hong Kong, China	4Q/2022	AFTN, AMHS connectivity with Hong Kong		

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