



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 13: Review ToR and update Action Items of CRV OG

REVIEW CRV OG ToR AND ACTION ITEMS

(Presented by the Secretariat)

SUMMARY

The paper presents current Terms of Reference (ToR) and Action Items of CRV Operations Group (CRV OG) for review and update by the meeting.

1. INTRODUCTION

1.1 The Twenty Seventh Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/27) was held in Bangkok, Thailand, from 5 to 8 September 2016. The meeting adopted the **Decision APANPIRG/27/33: Creation of the Common Aeronautical VPN (CRV) Operations Group (CRV OG)** to establish the CRV OG.

1.2 The CRV OG rules and procedures were drafted and agreed upon by the CRV Task Force (CRV TF). The APANPIRG/27 meeting reviewed and adopted the ToR of CRV OG provided in Appendix B to APANPIRG/27-WP/9.

1.3 Since then, CRV OG developed various action items, which were consolidated as an Action List during CRV OG/2 and renamed as a Subject Task list in CRV OG/5.

1.4 This paper shares the latest CRV OG ToR and Subject Task List for the meeting review.

2. DISCUSSIONS

2.1 The Twenty Third Meeting of the Communications, Navigation, and Surveillance Sub-Group (CNS SG/23) of APANPIRG was held in Bangkok, Thailand, from 2 to 6 September 2019. The meeting reviewed the changes proposed by CRV OG/5 to the CRV OG ToR for the amendment to the title of CRV (the Common aeRonautical VPN) to undertake continuous CRV service improvements for future needs and agreed on the **Decision CNS SG/23/2 (ACSICG/6/2 - CRV OG/5/1) - Revised Terms of Reference of CRV OG**.

2.2 The Ninth Meeting of the Common aeRonautical Virtual Private Network Operations Group of APANPIRG (CRV OG/9) held from 25 to 27 January 2022 via video teleconference updated ToR with minor editorial corrections provided in **Appendix A** of this paper.

2.3 The Subject Task List for CRV OG was reviewed and updated by the CRV OG/9 & CRV OG/10 meetings, which is provided in **Appendix B** of this paper.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) review the ToR of CRV OG provided in **Appendix A** of this paper;
- b) review and update the Subject Task List for CRV OG provided in **Appendix B**;
and
- c) discuss any relevant matter as appropriate.

**Common ~~Regional~~ aeRonautical Virtual Private Network (VPN) Operations Group (OG) of
Asia/Pacific Air Navigation Planning and
Implementation Regional Group (APANPIRG) (APANPIRG CRV OG)**

TERMS OF REFERENCE

1. Background

The establishment of APANPIRG CRV OG was proposed during the deliberations of the CRV Task Force (TF) as a dedicated group to provide oversight of the CRV operations and the performance of the CRV Service Provider. The APANPIRG CRV OG is formally established by APANPIRG Decision 27/33.

2. Terms of Reference

The Common aeRonautical Virtual Private Network (VPN) Operations Group (OG) will provide oversight of the function and performance of the CRV and the performance of the Service Provider. The following are the activities to be performed:

- a) Oversee the implementation of the CRV post Contract Award;
- b) Manage issues arising from the transition with CRV TF, if any;
- c) Co-ordinate and standardize the establishment or upgrade of CRV services as required;
- d) Co-ordinate activities with other ICAO CRV OGs, if any, to make sure that decision making and communication with CRV Service Provider is consistent and timely;
- e) Oversee the performance of the CRV Service Provider, including customer service;
- f) Oversee the performance of the CRV network;
- g) Oversee the escalation and solving by the CRV Service Provider of issues associated with the provision of the CRV, including safety and security related issues;
- h) Assist with the resolution of issues associated with the provision of the CRV among the CRV Users as required, including safety and security related issues;
- i) Assist with the migration of Aeronautical Fixed Services (AFS) onto the CRV, in line with the GANP and seamless ATM plan;
- j) Maintain CRV OG documentation associated with the function, performance and management of the CRV, including the CRV OG Operations Manual, a list of CRV users and a record of variations to the common tender package;
- k) Accept deliverables from the CRV Service Provider on behalf of the CRV Users as required;
- l) Promote the use of CRV;

- m) Undertake continuous service improvements review to ensure CRV meets future needs; and
- n) Perform any other activity as required by CRV operations.

3. Reporting

The CRV OG will report to Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) through ACSICG and CNS SG.

4. Participation

The CRV OG will include all APAC Member States/Administrations, and any other organization as needed. Member States and/or inter-regional entry/exit Administrations in other ICAO regions may also be invited or request to participate in the activities of CRV OG.

5. Conduct of the work

It is anticipated that the CRV OG will conduct its work primarily by Web Conferences, teleconferences and other electronic means of communications. Face to Face meetings of CRV OG may be required on an annual basis.

The ICAO APAC Regional Office will provide secretariat support for the CRV OG.

6. Rapporteur

There will be two Co-Chairpersons of the CRV OG, one primarily responsible for Asia coordination and the other for Pacific coordination.

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SN	Reference	Who	What	Due date	Status	Completed on	Result	Comment
1	1-1	ICAO RO	After inclusion by ICAO TCB of the revised budget and procurement clauses, ICAO Regional Office to send an ICAO State letter to all Pioneer States in order to propose the draft of revised annex 1 for acceptance. CRV OG/6 made Decision OG/6/3 to develop SOW for the concrete proposal.	20 February 2017 1/22/2022	close	The revised Annex 1 had been developed in CNS SG/21 report but no concrete proposal.	Close as it will be covered in 4-4 (CRV OG/9)	CRV OG/2 has agreed to first explore the possible solutions through a small working group - action postponed to 1 Dec 17. The TCB expects more concrete proposal for the 2nd phase. OG chair seeking comments from poineers states for be reviewed at CRV OG/6 meeting
2	1-2	All member States	All States to complete their CBA and send to ICAO APAC Office	28-Apr-17	close	CRV OG/6	CBA by DSN, Jordan, UAE, Behrain, Saudi, Egypt, Bhutan, New Caledonia, Myanmar, Fiji, Malaysia	Not all CBA have been received by CRV OG/2 - action postponed to 1 dec 17 (CRV OG/3) Not all CBA have been received by CRV OG/2 - action postponed to 1 dec 18 (CRV OG/5) Not all CBA have been received by CRV OG/4 - action postponed to 10 May 19 (CRV OG/6)
3	1-3	Terence Palmer, Australia	Australia to include provisions in the CRV-OG operating manual for a small implementation team	1-Dec-17	close	CRV OG/7		CRV OG/5: Need to confirm whether the small implementation team is still required after its two meetings had been conducted. The draft COR Operating Manual has been posted to CRV OG/6 for review. CRV OG/06: No record CRV OG/07- Item removed from the list
4	2-1	Vaughan Hickford, New Zealand:	to develop the flowchart to manage change requests to the common provisions and establish agreements between counterparts on CRV and integrate those flowcharts in the CRV Operating Manual	7-Jul-17	close	CRV OG/7	CRV Operating Manual	Flow chart had been developed by CRV OG/4 and it will be included in the CRV Operating Manual. CRV OG/6: Identify sections where to be inserted? CRV OG/7: No record
5	2-2	Tom Beschler, USA	to share the 10 key points of the validation of the pioneer implementation once they are agreed on	30-May-17	close	01-Apr-18		
6	2-3	all points of contact for the review of engineering	to submit their comments to husnaeen@icao.int at their earliest convenience but no later than 7 July 2017	7-Jul-17	close	CRV OG/3		
7	2-4	Vaughan Hickford, New Zealand:	to review the procedure to establish a contract with PCCW Global, Ltd and present it as a flowchart to be included in the CRV operating manual	30-May-17	close	CRV OG/3	CRV Operating Manual	
8	2-5	Augustine Lau, Singapore:	to include the updated CRV Implementation schedule into the v0.5 of the implementation plan and circulate the v0.5 to all participants for acceptance	30-Aug-17	close	01-Apr-18	CRV Implementation Plan	
9	2-6	USA/Hong Kong China/New Zealand/Secretariat	to propose a way forward regarding the MSA	1-Dec-17	close			Realloted as action item 4-4 Meeting of 15 Nov 2021 for outstanding conclusion recommended to revise Decision OG/6/3 and add global interconnectivity a proposed task
10	4-1	All member States	Complete contract with PCCW Global by no later than 12/2020	12/31/2021 Dec 2022 (in CRV OG/9)	Open	on-going		Report on the status at each CRV OG meeting & update the CRV Implementation status table Pakistan contacted to get more information. Contact estb with PCCWG
11	4-2	ICAO Secretariat	conduct CRV OG/6 and SWIM TF currently for joint development SWIM Architecture based on construction of CRV	8-May-19	close			It has been coordinated and the meetings are scheduld in May 2019-COMPLETED
12	4-3	PCCW Global & Member States	PCCW Global to reissue an updated (a)-1 Terms and Conditions on starting and ending dates of initial contract. States to note the changes and take necessary action in the contract.	1-Dec-18	close	CRV OG/7		CRV OG/5: The contracts with States are still being processed
13	4-4	CRV OG co-chair (Asia) and & poineer CRV member States	To investigate use the MSA funds to undertake the independent satety assessment and seek approval from Pioneer States	1/1/2022 CRV OG/11 (in CRV OG/9)	Open		Depend on final fund decision from poineer MS.	same as item 2-6 Meeting of 15 Nov discussed to revise Appx D of conclusion and will be presented to CRV OG/9
14	4-5	New Zealand	further develop and maintain an additional CRV portal for use by the APAC CRV members and provide access procedure to those members that wish to access the portal.	Apr. 19	close	CRV OG/5		CRV OG/5: COMPLETED, New Zealand to provide updates.

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15	4-6	New Zealand	Finalize the draft CRV Operations Manual	Apr. 19	close	CRV OG/7	Conclusion CNS SG/24/4 - Publishing of CRV operational manual to provide the information and directions required for CRV OG performance and CRV operations	CRV OG/5: Progress updates; Draft to be ready for reviews by CRV OG/6 meeting 2019. SL Ref.:T 8/9.1 – AP262/20 (CNS), 22 December 2020, Subject: The availability of various regional guidance materials for implementation of Air Navigation Facilities and Services in the Asia and Pacific Regions, Conclusion CNS SG/24/4 - Publishing of CRV operational manual to provide the information and directions required for CRV OG performance and CRV operations
16	4-7	USA	Develop a WP on AMHS over IPS protocol only for BBIS	1-Jun-18	close	CRV OG/5		
17	5-1	Australia, Hong Kong China and Japan	Prepare a working paper for SWIM TF/3 meeting on the CRV support for SWIM	30-Apr-19	close	SWIM TF/3	SWIM TF/3: (7-10 May 2019) WP/06 - APAC Regional SWIM Implementation Options ; WP/20 - Network Capability and Security of CRV in Carrying SWIM Data; and WP/05 - SWIM-Enabled MET Information Services Developed by Hong Kong China;	Inform SWIM TF about the Conclusion of CRV OG/5 on the relation between CRV and SWIM.
18	5-2	ICAO RO	Disribute a State Letter to inform States of POC result	15-Mar-19	close	06-Mar-19	State Letter: Ref.: T 8/2.10 – AP025/19 (CNS), 6 March 2019, Subject: Notification of successful result of the CRV Proof of Concept Testing and Urging earlier implementation of CRV in APAC Region	the ICAO Secretariat was requested to notify States/Administrations of the successful result of the Proof of Concept Testing carried out over the period from 7/1/2019 to 18/1/2019 by Pilot Project States (New Zealand, Australia, Fiji, USA and PCCW Global).
19	7-1	China, Nepal, PCCWG	Study on use of existing VSAT infrastructure linking with CRV	Jan-22	close			feasibility on use the existing infrastructure email sent on 10 November 2021 to China and Nepal for coordiation and action In CRV OG/7, China, Nepal and PCCW have a discussion in the meeting break and reached a consensus. Currently the Vsat station can not applicate in CRV network due to the technical and management issues
20	7-2	PCCW Global & New Zealand	Pacific solution on inter-connection with PASNET, Feasibility for interconnection	5/1/2022 Dec 2022 (CRV OG/9)	Open			The PASNET is hosted by Airways, New Zealand. As per Airways, unfortunately the connectivity via PASNet is not ideal. PCCW and Airways couldn't finalise and agreed on a proposals. Hence, the option we now have for the islands is either: 1. Use the Airways CRV connection into PASNet and the islands are treated as LAN Traffic on PASNet. 2. The Islands use Package D. For Option 1, this poses several IP addressing, security and cost issues that need to be thoroughly investigated. get it ready for endorsement and adoption
21	7-3	Australia and New Zealand	Polishing draftt First CRV Operations Manual	May-20	close		Conclusion CNS SG/24/4 - Publishing of CRV operational manual to provide the information and directions required for CRV OG performance and CRV operations	SL Ref.:T 8/9.1 – AP262/20 (CNS), 22 December 2020, Subject: The availability of various regional guidance materials for implementation of Air Navigation Facilities and Services in the Asia and Pacific Regions, Conclusion CNS SG/24/4 - Publishing of CRV operational manual to provide the information and directions required for CRV OG performance and CRV operations.
22	7-4	PCCWG & USA,Australia	maintain APAC dial plan and posted on CRV OG portal	Jan-22	close			consolidated by PCCWG and posted on the portal
23	7-5	AFSSP WG	encourging member states of CRV to participate	20-Jan-22	close		State Letter Ref.: T 8/2.10: AP018/20 (CNS) Subject: 2020 APAC Aeronautical Fixed Service Safety and Protection Planning Working Group Meeting (AFSSP WG 2020), 16 January 2020.	Inform Administration to participate and contribute The meeting of 2020 postponed till further notice The meeting is cancelled, proposed to close
24	7-6	Hong Kong China	SWIM demonstration over mini-CRV by HK, Singapore and Thailand	1/1/2022 CRV OG/11 (CRV OG/9)	Open		HK is conducting POC with PCCWG in terms of concept for sharing surveillance data (CRV OG/9)	present the outcome of the demo to ACSICG/7 and SWIMTF/4 Postponed due to COVID-19
25	7-7	Australia and PCCWG	High level concept for inter-regional MPLS/IP connection	21-Apr-20	close		WP/09: MPLS/IP BASED INTER-REGIONAL CONNECTION, ICAO Sec WP/11: HIGH LEVEL NETWORK OPTIONS TO REDDIG, PCCWG	provide initia proposal at AFSSP WG
26	7-8	PCCWG & Australia, Fiji	Charging structure for an ANSP service provider on surveillance	20-Mar	close		IP/11 presented in OG/9 with solution	

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27	7-9	ICAO RO, Australia and USA	State letter to States to remind joining CRV	Mar-20	close		Ref.: T 8/2.10 - AP041 /20 (CNS) Subject: Reminder for implementation of Common aeRonautical VPN (CRV) in APAC Region by 2020, 2 March 2020	late comer may compromise the benefits
28	8-1	Co chairs, ICAO RO, USA, PCCW	CRV webinar	20-Jul-21	close	20-Jul-21	The webinar was conducted successfully on 20 July 2021	Promote CRV implementation
29	8-2	ICAO RO, USA, HKCAD	Timeframe for CRV supporting SWIM	Jan-22	close		Ad-hoc group created in CRV OG/9 for this task. Under action item 9-8	Explore a timeframe for CRV planning to support SWIM USA email 11 Nov: Action 8-2 has been completed as we already concur to carry SWIM traffic. The timeframe is dependent on SWIM implementation.
30	8-3	Bhutan, Hong Kong China, Singapore, India, Thailand, USA, Co-chairs, ICAO RO, concerned parties	Use CRV to support AMHS traffic for Bhutan	6/21/2021 June 2022 (CRV OG/9)	Open			As concerned BBIS in the process to implement CRV, Bhutan request to reroute its AMHS traffic through Hong Kong temporarily till CRV implemented in Mumbai or Bangkok. All six member States (Bhutan, India, Thailand, Singapore, Australia, and New Zealand) to create an Ad-hoc group with support of the ICAO Secretariat to further discuss about implementation of Option 2. Action Item 8-4 of ACSICG. Meeting was held on 27 May, 19 August, 03 September 2021. New Zealand will act as BBIS No AMC updates required As on 15 Sep 2021, Next meeting after Bhutan and New Zealand discussion. Action item 9-7 of ACSICG: Continuation of Action Item 8-4 Bhutan and New Zealand would continue to work on on-going proposal for interconnection. The Ad-Hoc group will meet in last week of June 2022 to note the status of testing of CRV circuits between Bhutan and Thailand and progress on implementation of the temporary routing through New Zealand. An email was sent to discuss way forward for this action item. All members agreed to close the action items as Thailand joined CRV.
31	8-4	ICAO RO, PCCW, co-chairs	State Letter to inform States about the additional charges may apply to new users with billing start date later than 31 December 2022.	Jan-22	close		SL Ref.: T 8/2.10 – AP007/22(CNS) dated 12 January 2022 Subject: - To remind the target year of CRV Implementation by 31 December, 2022 in APAC Region and CRV Implementation for small Pacific Island and small ANSP in the region using CRV Solution, PCCWG SLA Package D	CRV webinar requested to extend the date by one year due to panedemic Propose to close
32	8-5	Co-Chairs, ICAO RO, Singapore, USA	Continue the feasibility study on inter-regional connection to support business case analysis	1/1/2022 CRV OG/11 (in CRV OG/9)	Open			Meeting of Lumen and PCCWG are done on 4 November. PCCWG and Lumen will submit high level proposal by 15 december 2021 Proposal submitted and agreed in CRV OG/9 but in REDDIG meeting Lumen presented another proposal claiming easier than current propsoal. However, PCCWG APAC is not agreed. We need to take a different approach to this considering that Lumen are only contracted to deliver specific to a contract and the APAC CRV relationship with PCCW is a bit more flexible. APAC CRV formally requests an interconnect between CRV and REDDIG via PCCW direct. PCCW discusses the proposal with Lumen. In the meantime CRV and REDDIG representatives discuss and co-ordinate the interconnect at their level. This would make the engagement a CRV/PCCW led engagement.
33	8-6	Fiji, PCCW	submit a paper to ACSICG/8	21-Jun-21	close		Done in ACSICG/8	IP/06: PRESENTATION OF PCCW NETWORK BASED IWXXM TRANSLATION AND EXCHANGE SERVICE PCCW Network Based IWXXM Translation and Exchange Services

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34	8-7	USA, co chairs, PCCW, ICAO RO, concerned parties (ad hoc)	Cyber threats protection for CRV	Jan-22	Open	Need to review this action item in CRV OG/11	ICAO Requirements proposed in WP/32 of CNS SG/25: a) ICAO needs to provide an IPv6 dedicated address block b) ICAO needs to propose a Name Space and field a DNS c) ICAO needs to deliver IATF recommendations for security including a Trust Framework for Digital Identities	
35	9-1	All member States	The Member States would take some time to take reference of the ATN/AHMS Guidance Tree to review it and to provide the suggestion for modification in the ATN/AHMS Guidance Tree along with locating the position to add different CRV reference documentation.	CRV OG/11	Open			
36	9-2	ICAO Secretariat	ICAO Implementation Plan will be continued to upload on ICAO APAC e-documents portal. However, the information contained under Table-1, Table-2 and Appendix A and B would not be provided on the public portal. Under Table-1, Table-2 and Appendix A and B, a message would be added to refer to ICAO APAC CRV Secure portal or CRV Portal hosted by New Zealand to get required information along with the instructions needed	Jan-22	Open		Done Propose to close	
37	9-3	Fiji, India, Japan, Singapore, New Zealand, USA, ICAO Secretariat, and PCCWG	ICAO CRV Steering Group comprised of Fiji, India, Japan, Singapore, New Zealand, USA, and ICAO Secretariat would devise the terms and conditions for addition of new services, for upgrade/downgrade of packages along with addition of new sites by contracted states into their contract	CRV OG/10 CRV OG/11	Open	Propose to close	Due date extended in CRV OG/10. Meeting scheduled on 31 March 2022 WP/03 presented to OG/10 Next Steering Group meeting on 14 July 2022 WP/4 presented to CRV OG11	
38	9-4	ICAO Secretariat	ICAO APAC Office would send a State Letter to APAC Member States, who have not joined/not process to share their intention to join CRV and when they intend to do so.	Feb-22	close		State letter Ref.: T 8/2.10 – AP026/22(CNS) 01 February 2022 Subject: - Request to share the intention to join CRV and its Tentative Timelines	
39	9-5	Fiji, India, Japan, Singapore, New Zealand, USA, ICAO Secretariat, and PCCWG	ICAO CRV Steering Group will discuss and finalise the requirements of current CRV contract extension based on feedback received from Member States who would join CRV in next few years	Mar-22	close		Meeting held on 31 March 2022. WP/02 presented to OG/10	
40	9-6	PCCWG	PCCWG is considering the current situation and will provide an official response if there is any contractual and commercial impacts for member states who sign the contract in 2022 but the installation date exceeds the standard lead time in 4 weeks to Sri Lanka, CRV OG Chairs, and ICAO Secretariat.	Feb-22	close		PCCWG agreed to consider all states on same price who will sign contract in 2022 and installation till 31 december 2023. Reply to Sri Lanka is being prepared- Updates on 14 March 2022 Sri Lanka confirmed reception of reply on 18 April 2022 by email from Mr. Vidura.	
41	9-7	ICAO Secretariat	In response to WP/18, ICAO Secretariat would present a paper to SWIM TF on behalf of CRV OG to inform about the relevant discussion in CRV OG.	May-22	Open	SWIM TF/6	Done Propose to close	
42	9-8	CRV ad-hoc expert Strategy and Design group	CRV ad-hoc expert Strategy and Design group would join SWIM TF meetings to note important discussions related to CRV and to inform CRV OG about the relevant outcomes	CRV OG/11	Open	Add it into next ad-hoc expert group meeting on 10 March 2022	Added into 10 March 2022 meeting and informed to all member states of ad-hoc group. Propose to close	
43	9-9	CRV OG Chairs, ACSICG Chairs, SURSG Chairs, PCCWG, India, Singapore, and ICAO Secretariat.	A specialised meeting would be organised to discuss and devise a method for non-aviation service provider's joining process to CRV. WP/17 by PCCWG for Non-aviation providers joining CRV should be also considered to discuss in the specialised meeting, which was supported by Singapore.	CRV OG/11	Open	Propose to close	Proposal sent for meeting from 30 May-3 June for choices by members on 21 March 2022 Final Meeting date is 2 June 2022 WP/05 was presented to CRV OG11	
44	9-10	APAC Member States	The meeting requested Member States to provide examples of activities under different categories provided in scope of supporting CRV Network as described in section 10.5 of draft report and scope of work defined in revised MSA	CRV OG/11				
45	9-11	New Zealand	Prepare the Terms of Reference (ToR) of Security and safety assessment of CRV	CRV OG/11	Open			