



ICAO

International Civil Aviation Organization

Tenth Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/10)

Bangkok, Thailand, 24 - 26 May 2023

Agenda Item 3: Review the report of the Eleventh meeting of Common Aeronautical VPN Operations Group (CRV OG/11) and CRV OG Ad-Hoc Governance Group

OUTCOMES OF THE FIRST MEETING OF CRV OG AD-HOC GOVERNANCE GROUP

(Presented by the Secretariat)

SUMMARY

This paper presents the relevant outcomes of the First Meeting of CRV OG Ad-hoc Governance Group.

1. INTRODUCTION

1.1 The First Meeting of CRV OG Ad-hoc Governance Group was held *from 22 to 23 May 2023* at ICAO APAC Regional Office, Bangkok, Thailand. The meeting was attended by **56** participants from **17** Member States/Administration and **2** Industry. The meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2023-CRV-OG-Ad-hoc-Governance-Group-and-the-ACSICG10.aspx>

1.2 This paper summarized relevant outcomes of the First Meeting of CRV OG Ad-hoc Governance Group.

2. DISCUSSION

Key Outcomes of ICAO APAC Idea Generation Workshop: CRV Governance and the Draft ToR of CRV OG Ad-Hoc Governance Group - Sec (WP/02)

2.1 The paper presented key outcomes of the *ICAO Asia Pacific Idea Generation Workshop: CRV Governance* held at the ICAO APAC Office, Bangkok, Thailand, on **31 January 2023**, and the draft ToR of CRV OG Ad-Hoc Governance Group.

2.2 The Workshop agreed to create the **CRV OG Ad-hoc Governance Group** for preparing and presenting the **potential CRV OG Governance model** to future CRV OG Meetings. Australia, Japan, Jordan, Fiji, India, Hong Kong China, New Zealand, Singapore, Thailand, and USA

volunteered to join the group led by CRV OG Co-Chairs. It was agreed that the Terms of Reference (ToR) of CRV OG Ad-hoc Governance Group would be finalized by the existing CRV OG Ad-hoc Expert Group planned to meet virtually on 20 April 2023.

2.3 The CRV OG Ad-hoc Expert Group Meeting held virtually on 20 April 2023 prepared and agreed on the draft ToR of CRV OG Ad-hoc Governance Group for further discussion in the first Meeting of CRV OG Ad-hoc Governance Group.

2.4 The First Meeting of CRV OG Ad-hoc Governance Group noted that CRV was created mainly for AMHS application. With time, several applications including SWIM are being migrated to CRV, which would require higher bandwidth in the future, potentially increasing CRV costs. Therefore, an efficient Governance model of CRV is an essential requirement. The Meeting agreed that while defining modified CRV Governance, it is crucial to consider AMHS/SWIM Transition over CRV.

2.5 The First Meeting of CRV OG Ad-hoc Governance Group reviewed and adopted the draft ToR of CRV OG Ad-hoc Governance Group. The finalized and agreed ToR of CRV OG Ad-hoc Governance Group is provided in **Appendix A** of this paper.

2.6 The First Meeting of CRV OG Ad-hoc Governance Group also recorded nominated dedicated Experts for CRV OG Ad-hoc Governance Group from volunteered Member States for future participation and contribution in further Meetings. It was suggested that every CRV User-State/Administration, join the CRV OG Ad-hoc Governance Group. The List of Experts is provided in **Appendix B** of this paper.

XML Projected Bandwidth Requirements – USA

2.7 Due to the relevance of the topic of the presentation to be shared by USA with The Tenth Meeting of the Aeronautical Communications Services (ACS) Implementation Coordination Group (ACSICG/10) and the availability of key CRV Experts in the CRV OG Ad-hoc Governance Group, USA presented the XML Projected Bandwidth Requirements.

2.8 USA informed that recent amendments to ICAO Annex 3 define requirements that Member States shall transmit their weather data in the ICAO Meteorological Information Exchange Model (IWXXM) instead of the current use of Traditional Alphanumeric Code (TAC) data. Additionally, IWXXM requires the use of AMHS for international exchange, and the example was given to compare the METAR in the TAC version and IWXXM format. The Meeting was informed that IWXXM/XML message without compression is expected to be 68 times of current message formats used by AMHS. For AMHS transport, the IWXXM messages are compressed using gzip, which will result in 8 times the bandwidth required to carry TAC format.

2.9 It was proposed that close coordination and collaboration within CRV OG, SWIM TF, and other groups using CRV to do any trial or prepare solutions must be done. Additionally, it was recommended that CRV OG should be informed about the types and amount of data being planned by various Member States to transmit on CRV so that CRV OG can anticipate future CRV requirements and restrict some non-safety critical data from sharing over CRV if needed, to maintain cost-efficient CRV circuits.

2.10 CRV Governance Ad-hoc group will also consider future CRV bandwidth requirements, security measures, and other technical specifications while defining modified CRV Governance.

Review of CRV Governance Model - A New CRV Management Strategy - CRV OG Co-Chairs (SP/01)

2.11 CRV OG Co-Chairs presented the current CRV governance model and proposed a new CRV management strategy.

2.12 It was noted that based on the current CRV governance model, the CRV OG manages the operational issues related to CRV shared by Member States. At the same time, network operations are primarily the responsibilities of the CRV Service provider (PCCWG) and concerned States. The Member States bring any issues and ideas to the CRV OG. The presentation also compared the CRV Governance model with other regional networks, including REDDIG (South American Network) and New PENS (European Network). By reviewing the early CRV governance conception, the Meeting was informed that the role of the CRV coordinator was included in the initial draft of the CRV Concept of Operations at the time of the launch of CRV.

2.13 Furthermore, three options for CRV governance models, including a model similar to the REDDIG II Governance model without network monitoring, a model similar to the REDDIG II Governance model with network monitoring, and a model similar to New PENS Governance, were presented and elaborated in detail. The proposed future work processes were summarized together with timelines.

2.14 The First Meeting of CRV OG Ad-hoc Governance Group was informed that the presented options were prepared and proposed by CRV OG Co-Chairs and ICAO Secretariat based on the current CRV Governance, REDDIG II and new PENS Governance models. However, there may be other potential options and the meeting was requested to brainstorm other options, review and discuss on the best solution, and recommend a way forward.

Outcomes of Brainstorming Session

2.15 The First Meeting of CRV OG Ad-hoc Governance Group agreed that Option 2 utilized by REDDIG II Network, might be feasible for SAM Member States because of fewer Member States (13 Member States/49 Nodes) in SAM Region than APAC Region (39 Member States/xx nodes). Additionally, the New PENS Governance model is costly and supported by Eurocontrol, a dedicated organization funded by the European Union. Both models may not be directly adopted for Asia/Pacific Region, which is vast and enormous in geographical size with many small Member States.

2.16 The First Meeting of CRV OG Ad-hoc Governance Group noted the heavy workload of the current CRV OG Ad-hoc Expert Group and agreed that the workload would increase in future and require a dedicated paid group to do the necessary work for the management of CRV. However, it was recommended to start by defining a List of problems exists with the CRV OG Ad-hoc Expert Group in the management of the CRV. The Member States were encouraged to do more participation and contributions to CRV Ad-hoc Expert Group.

2.17 Based on the problem statement, a gap analysis can be prepared to contemplate and propose potential solutions. A cost estimate can be prepared for each possible solution, and a final resolution can be adopted based on various factors, including a cost-efficient solution. For a way forward, the Meeting agreed to break down the current governance model step by step and document the model, issues, and resolution options.

2.18 The First Meeting of CRV OG Ad-hoc Governance Group drafted the first version of the problem statement, which is provided in **Appendix C** of this paper that will be reviewed in future CRV OG Ad-hoc Governance Group meetings.

Date and Venue for the Next Meeting

2.19 The First Meeting of CRV OG Ad-hoc Governance Group agreed to organize the next CRV OG Ad-hoc Governance Group Meeting as a virtual Meeting to further progress tasks listed in the Terms of Reference (ToR) on **2 October 2023 from 0800-1000 Bangkok Time (UTC+7)**. The Secretariat will issue a Meeting invitation in due course.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the outcomes of the First Meeting of CRV OG Ad-hoc Governance Group;
and
- b) discuss any relevant matters as appropriate.

TERMS OF REFERENCE
CRV OG Ad-hoc Governance Group

Objectives:

The Common aeRonautical Virtual Private Network Operations Group (CRV OG) Ad-hoc Governance Group is established to review and propose an enhancement required for an effective CRV Governance to support APAC/MID Member States.

Responsibilities:

The CRV OG Ad-hoc Governance Group shall:

1. Define the problem.
2. Clarify current CRV Governance model.
3. Review the REDDIG II and New PENS Governance models.
4. Discuss options for the CRV Governance model.
5. Document the options for a CRV Governance model detailing all aspects of the model.
6. Present the options and recommendation of a CRV Governance model to the CRV OG.
7. Support implementation of the CRV Governance model.

Considerations

The CRV OG Ad-hoc Governance Group will need to consider the following:

1. Current CRV ToR
2. Ongoing support Member States for CRV Implementation.
3. Future CRV usage for SWIM, future A/G IPS, Surveillance Data, AFTM, and Navigation data sharing, and voice service including the transition from AMHS to SWIM.
4. CRV Documentation – accessibility and availability, and administration.
5. Cost – minimised, shared evenly, salaries, portals, tools.
6. Representation, membership, accessibility, expertise, responsibility and experience.

Composition:

Co-Chairs: CRV OG Co-Chairs.

Members:

1. States/Administrations of ICAO APAC
2. International organizations recognized by ICAO.

Liaison:

SWIM TF, CRV OG, ACSICG, MET SG

Conduct of the work:

The CRV OG Ad-hoc Governance Group will meet quarterly and conduct its work preferably through web conferences, teleconferences, and other electronic means of communications. The Group may meet *In Person* only if necessary.

Reporting:

The group will report at least annually to CRV OG.

Timelines:

The Group should complete assigned task in 3 years. CRV OG may provide extension to the group based on the requirements.

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Nominated Experts of CRV OG Ad-hoc Governance Group

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL
1.		BHUTAN		
	1.	Mr. Karma Gayley	CNS Officer, Bhutan Civil Aviation Authority	kgayley@bcaa.gov.bt;
2.		CHINA		
	2.	Mr. Huang Zheng	Operation Department Manager, CAAC/ATMB	huangzheng@catc.net.cn;
3.		FIJI		
	3.	Mr. Kelepi Dainaki	Manager Air Navigation Engineering Services Fiji Airport Limited	KelepiD@fijiairports.com.fj;
4.		FRANCE		
	4.	Mr. Jérôme Patoureaux	Chef de la Division Technique Service de la Navigation Aérienne, Direction Générale de l'Aviation Civile (DGAC)	jerome.patoureaux@aviation-civile.gouv.fr;
5.		HONG KONG, CHINA		
	5.	Mr. Gene KWOK	Electronics Engineer, Civil Aviation Department, Hong Kong, China	gwhkwok@cad.gov.hk;
6.		INDIA		
	6.	Mr. Ajay Kumar	Deputy General Manager (CNS), Airports Authority of India (AAI)	ajaykumarcom@aai.aero;
	7.	Mr. Hemant M. Ramchandani	Joint General Manager (CNS) Airports Authority Of India (AAI)	hemantr@aai.aero; (not in the meeting of 22 May 2023)
7.		JAPAN		
	8.	Mr. MAEDA NAOKI	Chief of facility 4th section, Air Navigation Services Department, Japan Civil Aviation Bureau	maeda-n10fm@mlit.go.jp;
8.		MALAYSIA		

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	STATE/NAME		TITLE/ORGANIZATION	E-MAIL
	9.	Mr. Mior Adli Bin Mior Sallehuddin	Acting Deputy Director CNS, Civil Aviation Authority of Malaysia	mior.adli@caam.gov.my;
	10.	Mr. Syahroni Chek Rus	Assistant Director - CNS, Civil Aviation Authority of Malaysia (CAAM)	syahroni@caam.gov.my;
9.	MALDIVES			
	11.			
10.	NEW ZEALAND			
	12.	Mr. Vaughan Hickford	Team Leader Network Design, Airways New Zealand	vaughan.hickford@airways.co.nz;
11.	PHILIPPINES			
	13.	Ms. April Rose Emmanuel	CNS Systems Officer V, Civil Aviation Authority of the Philippines	aprilroseemmanuel@gmail.com;
	14.	Engr. Gimar Tiro	CNS Systems Officer V / Facility in Charge, Manila CNS ATM	gimar.tiro@gmail.com
12.	REPUBLIC OF KOREA			
	15.	Mr. Sooho Lee	Manager, Korea Airports Corporation	lsh1208@airport.co.kr;
13.	SINGAPORE			
	16.	Mr. Augustine Lau	Principal Engineer (Communications), Civil Aviation Authority of Singapore	Augustine_lau@caas.gov.sg;
14.	SRI LANKA			
	17.	Mr. Vidura Thammitage	Senior Electronics Engineer, Electronics & Air Navigation Engineering Division Airport & Aviation Services (Sri Lanka) Limited	vidura.eane@airport.lk;
15.	THAILAND			

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	STATE/NAME		TITLE/ORGANIZATION	E-MAIL
	18.	Mr. Chavalit Ithiapa	ANS Officer, The Civil Aviation Authority of Thailand	chavalit.i@caat.or.th;
	19.	Mr. Nattaporn Pornsawat	Officer, The Civil Aviation Authority of Thailand (CAAT)	nattaporn.p@caat.or.th;
	20.	Mr. Arthit Tosukolvan	Engineer, AEROTHAI, Aeronautical Radio of Thailand Ltd.	arthit.to@aerothai.co.th;
	21.	Mr. Dhivatbodi Sivajdhanachoti	Strategic Planning Assistant Manager (Engineering), AEROTHAI, Aeronautical Radio of Thailand Ltd.	Dhivatbodi.si@aerothai.co.th;
	22.	Mr. Amornsak Thorasin	Air Traffic Engineering Manager, Aeronautical Radio of Thailand	amornsak.th@aerothai.co.th;
16.	USA			
	23.	Mr. Hoang Tran	International Telecommunications Lead Federal Aviation Administration ATO, Program Management Organization	hoang.tran@faa.gov;
	24.	Mr Will Turner	NEMC Operations Support – Contract Support Federal Aviation Administration FAA Atlanta NEMC	will.ctr.turner@faa.gov;
17.	VIET NAM			
	25.	Mr. PHAM HUNG SON	Deputy Director of CNS Dept., Viet Nam Air Traffic Management Corporation (VATM)	sonph@vatm.vn;
	26.	Mr Nguyen Hong Heip	Head of IT Division- CNS Technical Department	nguyenhonghiepbk@vatm.vn

First Draft of Problem Statement

The advancement of the CRV is based on the input of a core group of CRV OG members. The list of tasks is increasing the more the network is operated. This requires more effort and faster turnaround on making decisions to make changes to the CRV network configuration and associated documentation.

We meet once per year to discuss, agree and endorse changes. This is slow. The four Ad Hoc Expert Subgroups have not met separately but met each time as a group for expediency.

The list of tasks is growing. CRV II is coming soon.

We need to change, to allow groups to act autonomously with ownership of actions, make decisions, and regular reporting without having to wait for an annual meeting to make the decisions and reliance on specific members.

The CRV OG uses the Co-Chairs and Secretariat as the points of contacts which can often create confusion from other taskforces and groups regarding who they should be talking to provide potential solutions.

Information and documentation need to be accessible by all.

The solution needs to consider and minimise any extra costs on member states.

What are our roles? What are our responsibilities? What are our expectations?