

**58<sup>th</sup> CONFERENCE OF  
DIRECTORS GENERAL OF CIVIL AVIATION  
ASIA AND PACIFIC REGIONS**

*Dhaka, Bangladesh  
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**AGENDA ITEM 4: AIR NAVIGATION**

**CRV CURRENT STATUS IN THE REPUBLIC OF KOREA AND  
PROPOSAL**

(Presented by the Republic of Korea)

**SUMMARY**

This paper introduces an overview of the background leading to the introduction of Common Aeronautical Virtual private network (CRV) in the Asia-Pacific region, highlighting the benefits of CRV implementation, along with a presentation of ROK's adoption case. Additionally, taking into account future development plans, such as SWIM, the document recommends CRV membership to ICAO Asia-Pacific states.

## CRV CURRENT STATUS IN THE REPUBLIC OF KOREA AND PROPOSAL

### 1. INTRODUCTION

1.1 This paper aims to encourage the interest and cooperation of each contracting APAC (Asia/Pacific) member States in CRV (Common Aeronautical Virtual private network) and SWIM (System Wide Information Management).

1.2 Interstate aviation communications have traditionally been based on point-to-point connections. However, with advancements in technology and the increasing need to connect more information between member states,

1.3 The number of communication circuits connecting states has also increased, along with the associated maintenance and circuit costs. To address this, a Task Force (TF) for the introduction of CRV was proposed at APANPIRG/24 in 2013. In 2016, the Asia/Pacific Regional Office selected PCCW Global Limited, a network service provider, as the CRV operator.

*\* Note. CRV enhances the efficiency and reduces the number of circuits by transitioning from point-to-point connections to a single hub based on TCP/IP (Transmission Control Protocol/Internet Protocol)*

1.4 CRV serves as a cost-effective national dedicated communication network for States. It facilitates the implementation of the Global Air Navigation Plan (GANP) and the activation or enhancement of various ASBU (Aviation System Block Upgrades) modules (B1-SWIM, B1-FICE, B1-DATM, B1-NOPS, and B1-AMET, among others). CRV also addresses current limitations, such as aging infrastructure, lack of standardization and poor escalation processes, as well as aviation communication deficiencies.

1.5 During the 7th Meeting of the ICAO APAC SWIM Task Force (SWIM TF/7) in 2023, it was resolved to transition to the SWIM information exchange system by 2030. Many APAC member states have participated in the transition to CRV, the next-generation communication network. However, it is predicted that States that do not transition to CRV may encounter difficulties in utilizing SWIM information exchange between APAC States.

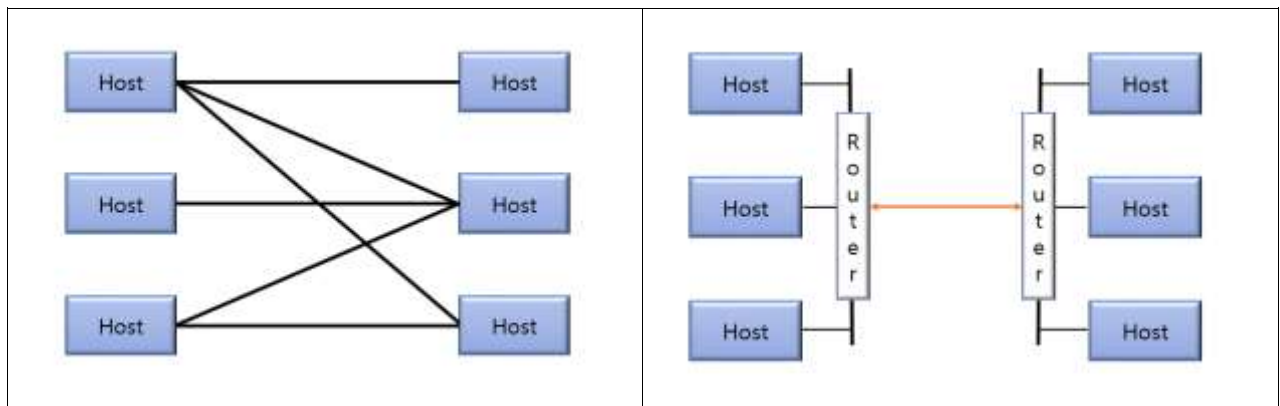
*\* Note. SWIM is an exchange system that standardizes the exchange of various aviation data, including aeronautical information, weather information and flight information, over a single communication network.*

### 2. DISCUSSION

2.1 In 2014, during the 2nd Meeting of the ICAO APAC CRV Task Force (CRV TF/2), Japan, India, and Australia presented an analysis of the benefits of CRV implementation. The key advantages are as follows:

- a) Total cost reduction of 22% over a decade
- b) Initial setup cost recovered within 1 to 2 years
- c) Single service provider managing the network
- d) Ease of network expansion

<Figure : Point-to-point VS Single hub Topology>



2.2 In 2021, the Republic of Korea (ROK) subscribed to CRV circuits and initiated coordination activities with China and Japan for Aeronautical Message Handling System (AMHS) and voice interconnection. Most of these activities have been completed, with the exception of some voice circuits.

2.3 ROK, in particular, has transitioned from dedicated circuits for specific purposes to Internet Protocol (IP) based CRV, operating a stable and high-speed information exchange network. They have achieved approximately a 30% reduction in costs compared to the previous circuit charges.

2.4 States in the Asia/Pacific region, including ROK, are planning to develop the SWIM next-generation aviation information exchange system and implement it by 2030. SWIM allows the exchange of various aviation data, including aeronautical information, weather information, and flight information, through a single exchange system, and the communication network is expected to operate with CRV.

2.5 CRV's network scalability is considered advantageous in the SWIM system via CRV communication networks, as it facilitates information sharing and the addition of subscribers, resulting in cost savings.

2.6 APAC States that do not transition to CRV are predicted to encounter difficulties in utilizing SWIM information exchange between states. To address the current limitations and deficiencies in aviation communication (aging infrastructure, lack of standardization, and poor escalation processes) and to seamless SWIM information exchange among ICAO member states, active cooperation and interest from each member state are essential.

### 3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

- a) Note the information included in this document; and
- b) Urge the active participation and cooperation of APAC member states in building the aviation information exchange system in the APAC region and implementing CRV to effectively exchange aviation information among member states or aviation authorities.