International Civil Aviation Organization

Ninth Meeting of the Common aeRonautical Virtual Private Network Operations Group (CRV OG/9)

Video Teleconference, 25 – 27 January 2022

Agenda Item 7: States CRV Implementation and operations experience sharing

STATUS UPDATE AND EXPERIENCE SHARING OF CRV OPERATIONS IN HONG KONG, CHINA

(Presented by Hong Kong, China)

SUMMARY

This paper presents the status update and experience sharing of CRV operations in Hong Kong, China since its first operational use in 2018, including the cost benefits achieved and network performance observed.

1. INTRODUCTION

1.1 Hong Kong, China, has been adopting the CRV for operations since August 2018. With the experiences gained over the past three years, it is an opportune time to update the OG members on the status of CRV operations in Hong Kong, China, including the cost benefits achieved and the network performance observed.

2. DISCUSSION

Current CRV Operations

2.1 The 54th Conference of Directors General of Civil Aviation, Asia and Pacific Regions, and the Beijing Declaration arising from the first Asia Pacific Ministerial Conference on Civil Aviation, have formulated an action for States to expedite CRV implementation for the region. In support of this initiative, Hong Kong, China coordinated with the Civil Aviation Authority of the Philippines (CAAP) to implement CRV and commenced the first city-pair CRV operation to support the IASC services between Hong Kong and Manila in August 2018. Since then, Hong Kong, China has also put into operations AMHS connections over CRV to exchange ATS messages with aeronautical network centres of Manila, Fukuoka and Beijing in June 2019, September 2020 and April 2021 respectively.

Cost Benefits

2.2 Currently, Hong Kong, China subscribes to two Package-C 2Mbps CRV connections services (one for operation and the other one for backup). The migration to CRV has saved the cost for subscribing to traditional services riding on dedicated International Private Leased Circuit (IPLC), which the CRV had replaced 1 no. of IPLC for IASC, 3 nos. of IPLCs for AFTN and 1 no. of IPLC for AMHS/ATN-OSI router.

2.3 Apart from the mentioned cost saving, the migration also saved our efforts in managing multiple contracts for each point-to-point connection as well as negotiating with other States/Administrations for the cost sharing arrangement. Testing/trial of potential new services, such as SWIM/IWXXM, can also be easily set up by just "plug-and-play" over the subscribed CRV services.

Network Performance

2.4 The network performance of CRV has been stable and satisfactory so far. Since the operational use of CRV connections in August 2018, there was only one major incident in February 2019, causing total services outage for two hours due to human error. A holistic review of the incident was conducted and reported by PCCW Global in the CRV OG/6 in May 2019, with the root cause identified and relevant rectification measures implemented afterwards.

2.5 Since then, we have recorded five incidents related to two CRV connections up to today. All five incidents were of short duration and caused only minor impacts on our operation. Thanks to the built-in resilience of the CRV, including full path diversity in local loops, which allows for swift service resumption. There has been a prominent improvement in the service availability as compared with previous prolonged duration in trouble-shooting/recovery process experienced with traditional IPLCs, which could be out of services for days, several times a year.

2.6 Nevertheless, CRV is not immune to service outage despite all its resilience. It is advisable that, apart from contingency arrangements implemented by States themselves, States may explore additional backup communication means to minimize operational impact.

Future Plan

2.7 To continue with the efforts for promulgating use of CRV in the region, Hong Kong, China is in active discussion and coordination to plan for AMHS on CRV operations with Bangkok in 2022. We have also took an initiative to explore feasibility of potential migration to CRV to replace the legacy AFTN connection with Hochiminh, Vietnam.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) expedite CRV implementation for gaining proven benefits; and

c) discuss any relevant matter as appropriate

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