INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY NINTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/29)

Bangkok, Thailand, 3 to 5 September 2018

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.4: **CNS**

SUCCESSFUL IMPLEMENTATION OF COMMON AERONAUTICAL VIRTUAL PRIVATE NETWORK BETWEEN HONG KONG AND MANILA

(Presented by Hong Kong China)

SUMMARY

This working paper presents the successful implementation of Common aeRonautical Virtual Private Network (CRV) between Hong Kong China and Manila, the first city-pair in Asia Pacific Region to adopt CRV for operation. This implementation enhances the reliability of the Inter Area Speech Circuit (IASC) services and serves as a showcase encouraging States/Administrations in the region to implement CRV to reap benefits as early as practicable.

Strategic Objectives:

B: ***Air Navigation Capacity and Efficiency****—Increase the capacity and improve the efficiency of the global aviation system*

1. INTRODUCTION

1.1 The 54th DGCA Conference formulated an action for States/Administrations to expedite CRV implementation by end 2020 pursuant to their cost benefit analysis. In support of this initiative, the Civil Aviation Department of Hong Kong China (HKCAD) and Thailand (AEROTHAI) jointly conducted a successful technical trial in November 2017 which proved that CRV had been operationally ready. Further to the technical trial, taking into consideration operational needs, HKCAD has coordinated with Civil Aviation Authority of the Philippines (CAAP) to implement CRV for operational use with an aim to improving efficiency of the IASC services between Hong Kong and Manila Area Control Centres (ACCs). It is hoped that this successful case could lead to more evaluation and applications as well as expedite CRV implementation in the region.

2. DISCUSSION

2.1 The HKCAD and CAAP engaged into individual contracts with the CRV Service Provider, PCCW Global, on 6 April and 22 March 2018 respectively. The installation of CRV connections at the respective sites was completed and accepted by both ANSPs in end June 2018. According to operational needs, the implementation plan was agreed to be divided into two phases as detailed in the ensuing paragraphs.

First Phase (Voice)

2.2 Taking into consideration the CRV implementation for voice communication is of lower complexity at existing ATC systems as compared with data communication, it was decided to implement CRV for voice communication to reap early benefits. The IASC services between Hong Kong and Manila ACCs, which used to rely on point-to-point circuit, had faced challenges such as obsolescence of equipment. Migrating the IASC services into CRV had improved the service reliability. Subsequent to completion of reliability tests under operational environment with acceptance by both sides in end July, the IASC services between Hong Kong and Manila ACCs over CRV was put into operation on 14 August 2018, which is the first city-pair in the region to use CRV operationally.

Second Phase (Data)

2.3 Riding on successful implementation of the first phase, the second phase aims to exchange AMHS messages over the CRV data network. Currently, the data connections between Hong Kong and connecting ANSPs including Manila, Beijing, Bangkok and Fukuoka are built on the Aeronautical Fixed Telecommunication Network (AFTN) or Aeronautical Telecommunications Network (ATN) through point-to-point circuits. Migration to the IP-based CRV is considered a significant change requiring intensive interoperability tests and implementation of cyber security measures, which involve modification of the operational AMHS and reinforcement of the firewall system. It is planned to start the implementation of the AMHS message exchange over CRV between Hong Kong and abovementioned ANSPs in early 2019. Among these ANSPs, Manila or Beijing should work with Hong Kong first according to their latest plans.

2.4 With more States/Administrations implementing CRV, it is anticipated that more benefits could be reaped from the gradual implementation including the support for various new initiatives and technologies under the ICAO GANP/ASBU Block 1 commencing 2019, which rely on a secured and reliable data network as an enabler.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) note the successful CRV implementation achieved by the first city-pair, Hong Kong China and Manila in the region;

b) encourage States/Administrations to expedite CRV implementation for gaining early benefits; and

c) encourage States/Administrations to adopt phased approach for CRV implementation and consider to proceed with the easier implementation, such as voice communication, that is of lower complexity.

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