International Civil Aviation Organization

Seventh Meeting of the Common aeRonautical Virtual Private Network Operations Group (CRV OG/7)

Bangkok, Thailand, 20 – 22 January 2020

Agenda Item 2: Review and update the AMHS/ATN Implementation Status table and the APAC CRV Implementation Table

AIRSERVICES AUSTRALIA CRV UPDATE

(Presented by Airservices Australia)

SUMMARY

This paper presents an update on the implementation of the CRV in Australia.

1. INTRODUCTION

1.1 Airservices Australia was a Pilot State and install the CRV to demonstrate the viability of the CRV in the APAC.

1.2 After a successful pilot phase, Airservices Australia has migrated all SPAN (South Pacific Aeronautical Network) services to the CRV.

2 DISCUSSION

2.1 Airservices Australia elected to install 2 “Package C” CRV services. The first service was installed in the Brisbane Centre and the second service was installed in the Melbourne Centre.

2.2 Airservices worked with PCCW to deploy BGP (boarder gateway protocol) between Melbourne and Brisbane for failover of the CRV services in the case of a local link failure. Airservices elected to use a ping IP SLA measure to continuously test the availability of the PCCW POP from the Customer Edge router. This enables Airservices to make routing decisions if there is a NID or a POP failure.

2.3 Due to the nature of the CRV IP addresses, Airservices was unable to use the assigned ICAO IPs in the Airservices network and was required to implement a number of double network address translations to ensure that there was no clash with internal IP addresses.

2.4 Airservices did not elect to use the PCCW CRV voice services available in the NID. Airservices uses their own voice gateway and after a number of issues Airservices successfully established calls to Fiji, NZ and the USA.

2.5 For the voice services, the challenges arose with using SIP aware firewalls in the path of the voice traffic flow. Certain SIP aware firewalls do support SIP calling with double network address translations. Due to this fact, Airservices was required to use Airservices public IP addresses into the CRV to allow the SIP calling to function correctly.

2.6 The following services have been migrated to the CRV

Country	Service	Primary Route	Date
New Zealand	Intercoms	Via Brisbane	16/04/2019
Fiji	Intercoms	Via Brisbane	29/04/2019
USA - PNG	Intercoms	Via Brisbane	30/04/2019
USA	Intercoms	Via Brisbane	30/04/2019
USA	AMHS	Via Brisbane	3/06/2019
Fiji	AMHS	Via Brisbane	2/07/2019
New Zealand	AFTN over IP	Via Brisbane	12/07/2019

2.7 Since the migration of these services, Airservices has seen the greatly improved reliability of international network connections and improved voice quality of speech between controllers.

2.8 Airservices has not experienced any lose of service due to a link failure, but rather with planned maintenance. In this case Airservices network did not fail as expected. Airservices was able to work closely with PCCW post the plan maintenance loss to undertake an investigation and testing to resolve the unexpected failure.

2.9 During the investigation and testing with PCCW, Airservices was required to fail the Brisbane link. Air Traffic Control was not happy about potentially having a complete loss of AHMS to FJ, NZ and USA. Airservices has previously implemented a secure VPN tunnel over the internet to Airways NZ as a fall back for loss of the old international private line. Airservices was successfully able to redirect NZ, FJ and USA AHMS messages over the secure VPN tunnel to/via NZ thus ensuring AHMS services was still available during the investigation and testing of the CRV.

2.10 Airservices will continue to seek to establish secure VPN tunnels over the internet between our AHMS partner states to ensure the continuity of AHMS during a CRV outage.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matter as appropriate

– – – – – – – – – – – – –