



ICAO

International Civil Aviation Organization

Eighth Meeting of the Common aeRonautical
Virtual Private Network Operations Group

(Video Teleconference, 17-19 May 2021)

Agenda Item 9: MPLS/IP based inter-regional connection

HIGH LEVEL NETWORK OPTIONS TO REDDIG

(Presented by PCCW Global Limited)

SUMMARY

This information paper describes options and considerations for connecting REDDIG users in South America.

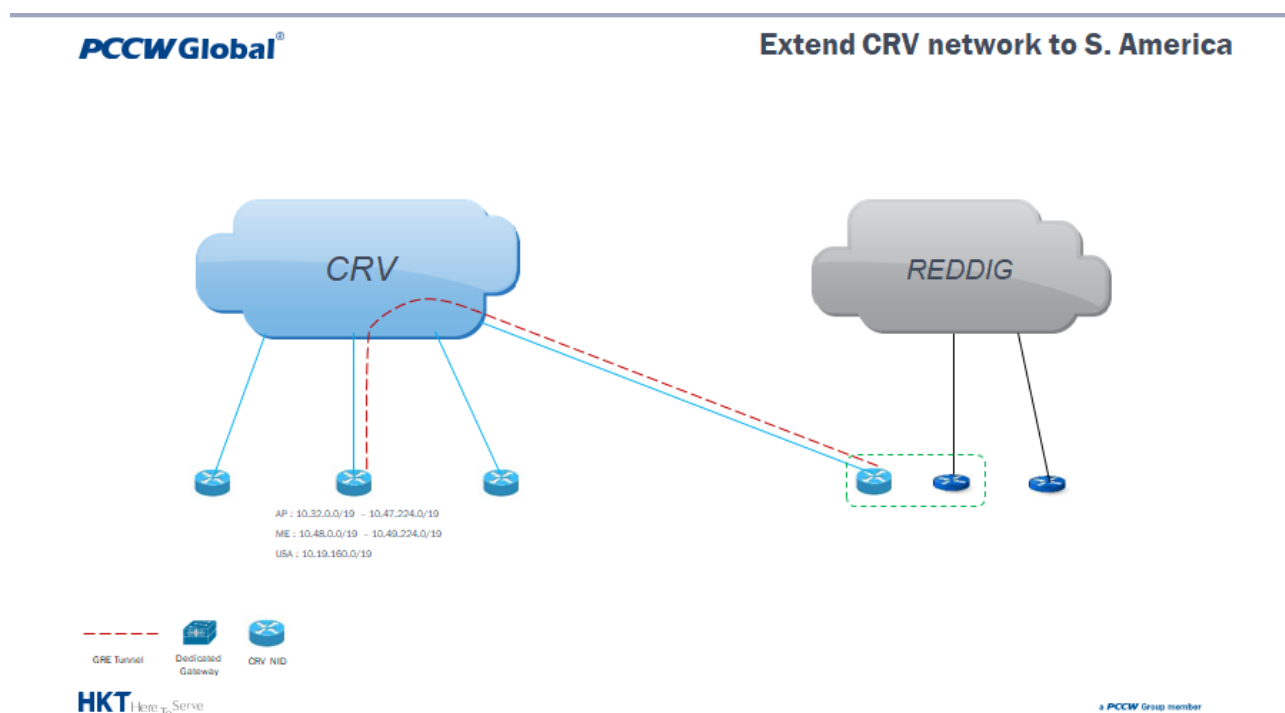
1. INTRODUCTION

- 1.1 The CRV initial coverage includes Asia Pacific and Middle East Regions. Up to now, CRV has been deployed to 12 States.
- 1.2 There is a need from CRV user, New Zealand to connect the ANSP in Santiago, Chile for AMHS traffic communication. This paper is to investigate the options for the connection to users in South America.
- 1.3 CRV is riding on PCCW Global MPLS Infrastructure which covers 150 countries and 3,000 cities. PCCW Global major nodes in South America are in Argentina (Buenos Aires), Brazil (Sao Paulo), Chile (Santiago), Colombia (Bogota), Mexico (Mexico DF), Panama (Panama City) & Peru(Lima).

2. DISCUSSION

- 2.1 This paper explores the options to connect the CRV service in other regions.
- 2.2 Option 1: CRV connection to South America (SA) ANSP
 - 2.2.1 PCCW Global MPLS infrastructure covers South America and is able to connect the user to CRV directly. Then, the CRV governance, SLA and operation work flows are applied end-to-end.
 - 2.2.2 ICAO / CRV OG assign 10.x.x.x /19 IP range to South America ANSPs.
 - 2.2.3 The users in South America could get access to all CRV users immediately, but need to manage two separated network connections (CRV & REDDIG).

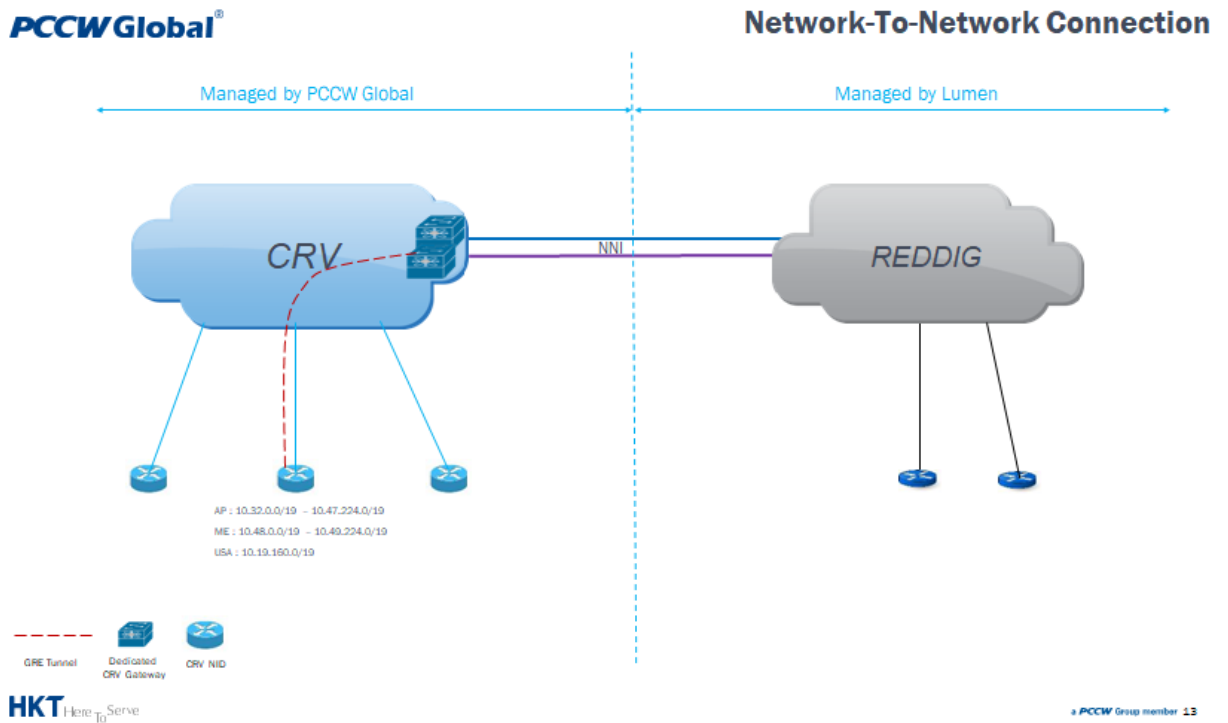
- 2.2.4 CRV users could connect to this SA user without extra cost as long as they get the bi-lateral connection agreement.
- 2.2.5 User could raise the CRV connection requirement to PCCW Global contact and then the CRV service would be quoted individually.
- 2.2.6 The high level diagram of the option 1 is depicted below.



Option 1 – CRV connection to South America ANSP

2.3 Option 2 : Network-to-Network Connection

- 2.3.1 PCCW Global sent CRV technical info to Lumen, the REDDIG provider and awaiting their technical info for further study the feasibility of building network-to-network connection.
- 2.3.2 From the high level network design, PCCW Global will consider to provision at least two NNI connections for resilience. Specific CRV NNI gateways will be built as the CRV border gateway for terminating GRE tunnels and access control to other approved regional network.
- 2.3.3 The providers will manage their own operation domains as shown in the diagram.



Option 2 – Network-to-Network Connection

- 2.3.4 The CRV governance, SLA and operation work flows are applied up to the CRV NNI gateways. The IP address and other service parameters would be further discussed with counterpart and CRV OG.
- 2.3.5 The CRV users could get access to other network users on the same link with agreed additional NNI cost.
- 2.3.6 The potential commitment is required for business case justification and the final commercial terms for the NNI service.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
 - a) note the information contained in this paper;
 - b) discuss any relevant matter as appropriate; and
 - c) invite states/ administrations advise whether this need or not.
