



ICAO

International Civil Aviation Organization

**Eighth Meeting of the Common aeRonautical Virtual
Private Network Operations Group (CRV OG/8)**

Video conference, 17 – 19 May 2021

Agenda Item 7: Revisit the CRV solution for small Pacific Islands and small ANSPs in APAC

**PRESENTATION OF PCCW NETWORK BASED IWXXM TRANSLATION AND
EXCHANGE SERVICES**

(Presented by PCCW Global Limited and Fiji Airports Limited)

SUMMARY

This information paper describes PCCW IWXXM Translation and Exchange Services. It can serve as an alternative solution for member States to fulfil the exchange of IWXXM messages as promulgated in Amendment 78 to ICAO Annex 3.

1. INTRODUCTION

1.1 ICAO APAC CRV has been built leveraging PCCW Global’s high-speed international IP network, with mission-critical connections running across a diversified infrastructure supporting multiple aviation-specific applications. PCCW Global, the CRV provider, is keen to develop value-added service on CRV to demonstrate our commitment to the Aviation industry.

1.2 PCCW Global has been developing the SWIM service on a private and scalable platform in partnering with one of leading aviation vendors - FREQUENTIS. PCCW Global owned network infrastructure & hosting facilities combining with FREQUENTIS proven knowledge & experience in aviation industry will formulate an alternative solution for ANSPs to facilitate the SWIM initiatives.

1.3 PCCW Network Based IWXXM Translation and Exchange Services is one of the modules on PCCW SWIM (IWXXM, FIXM and AIXM) which is hosted in the high availability private platform and fully controlled environment which connects to CRV network infrastructure.

1.4 The services complied with ICAO and WMO standards and are designed to support the acquisition, management, processing and dissemination of meteorological data related to aviation.

2. DISCUSSION

General

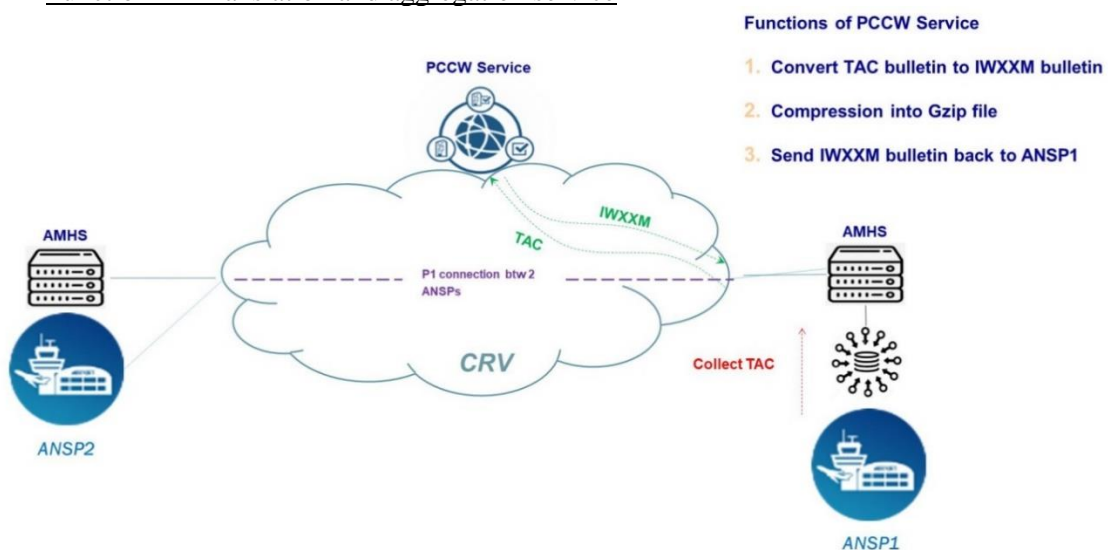
PCCW SWIM Platform supporting the following features

- a. Acts as an information backbone for connecting aviation stakeholders
- b. Supports globally available SWIM Technical Infrastructure Specifications as well as existing infrastructure AFTN, AMHS
- c. Supports globally available aviation information exchange models (AIXM, FIXM, IWXXM) as well as legacy data formats
- d. Comes with a Service Registry allowing publishers and subscribers of services to find each other.
- e. Comes with a SWIM/AMHS Gateway to support the transition from AMHS to SWIM

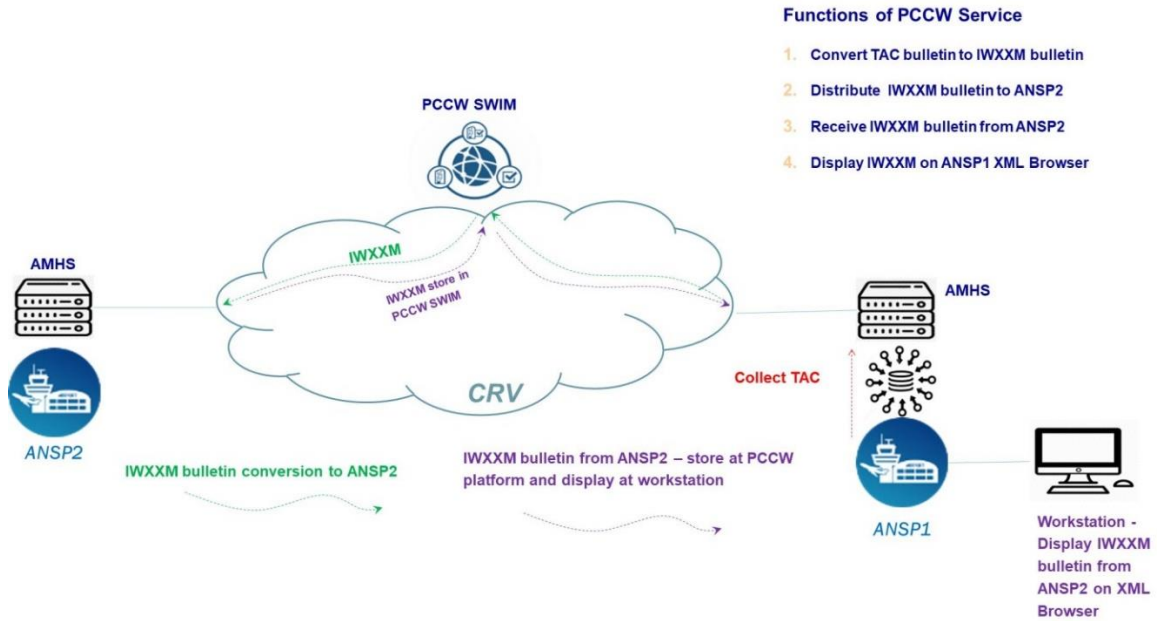
2.1 Service Components

- i) CRV connection - support AMHS P1 or AMQP connections from users to the service platform via CRV.
- ii) Translation and Aggregation Service – validates, aggregates and translates messages from TAC to IWXXM formats and generates bulletins.
- iii) Exchange Service - All translated data can be returned to the IWXXM user or redistributed to designated IWXXM users via CRV upon mutual agreement.
- iv) For ANSP without AMHS System to operate AMHS services (ATS, AIS & OPMET messages). This is provided using PCCWG System AMHS compose window for sending and receiving AMHS messages in TAC format.

2.2 Function 1 - Translation and aggregation service



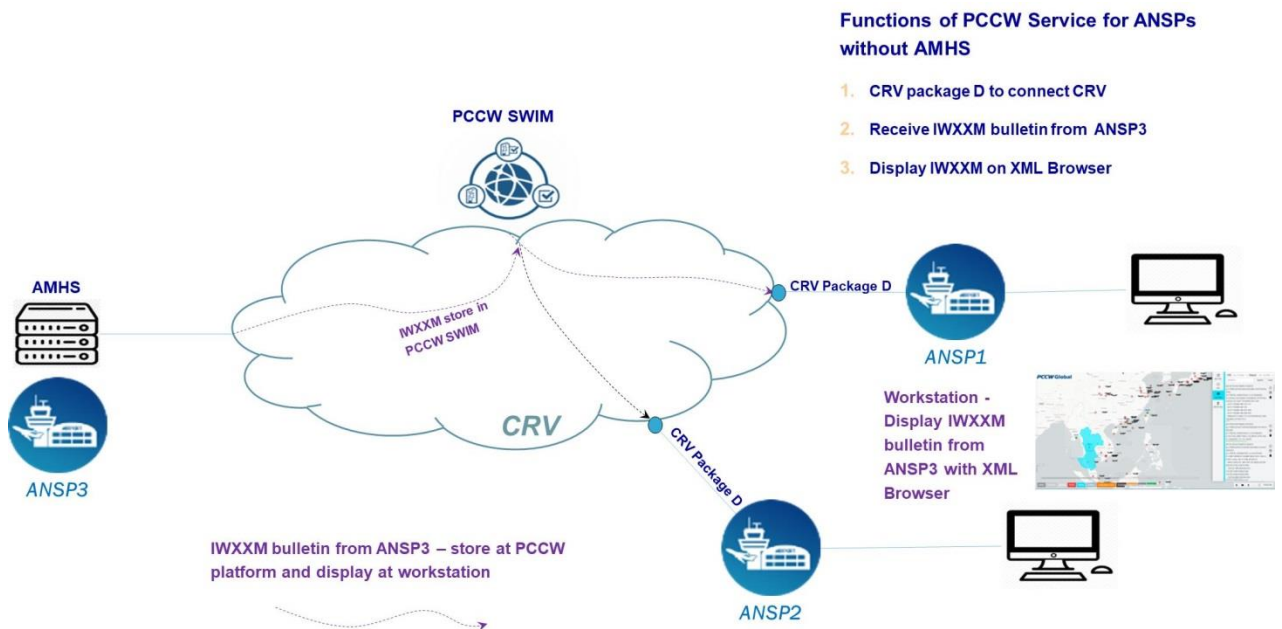
Function 2 - IWXXM Exchange Service



Functions of PCCW Service

1. Convert TAC bulletin to IWXXM bulletin
2. Distribute IWXXM bulletin to ANSP2
3. Receive IWXXM bulletin from ANSP2
4. Display IWXXM on ANSP1 XML Browser

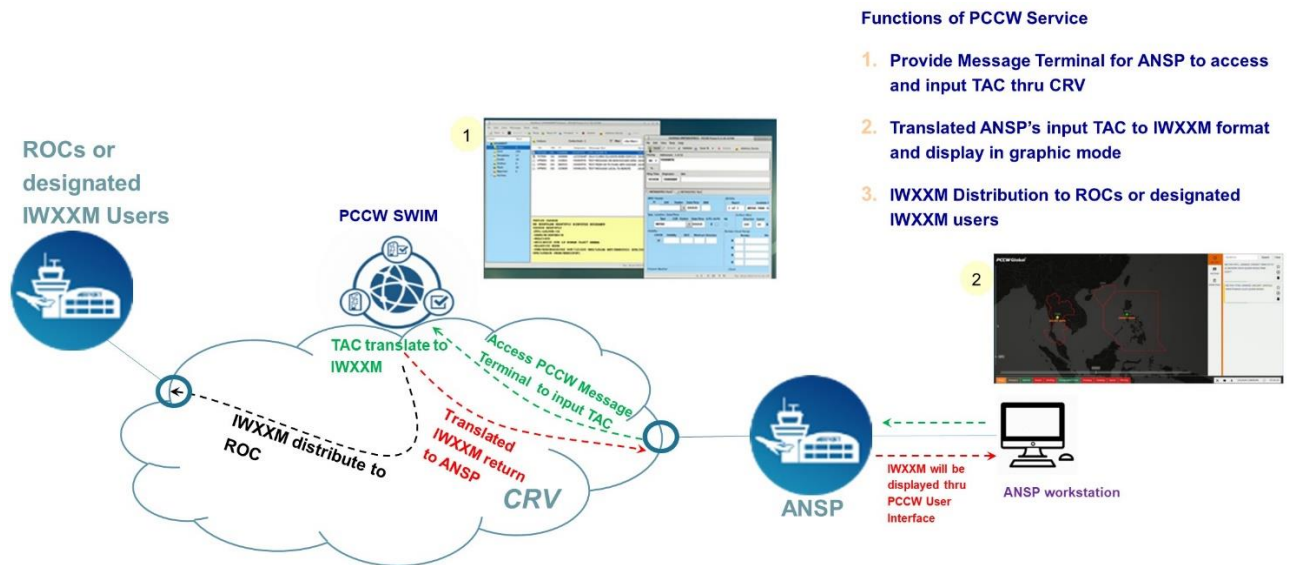
Function 3 - IWXXM Services for ANSPs without AMHS



Functions of PCCW Service for ANSPs without AMHS

1. CRV package D to connect CRV
2. Receive IWXXM bulletin from ANSP3
3. Display IWXXM on XML Browser

Function 4 - ANSPs without AMHS input TAC on message terminal



Functions of PCCW Service

1. Provide Message Terminal for ANSP to access and input TAC thru CRV
2. Translated ANSP's input TAC to IWXXM format and display in graphic mode
3. IWXXM Distribution to ROCs or designated IWXXM users

2.2 Comparison of the different approaches

States can build the platform in-house or procure it from manufacturer and setup in the State's premises. Or alternatively states can subscribe the network based services and PCCW Global will handle the IWXXM exchange.

	On-premise platform	PCCW Network based IWXXM Services
One-time Cost (System setup)	High	Low
System Operation & Maintenance	High	Nil
Recurrent Cost – Service Subscription	Nil	OPEX
CRV Connection	Need to upgrade	No need to upgrade if distribution thru PCCW platform
Alternative IWXXM delivery paths for AMHS connection	NIL	YES
Development Efforts	High	Nil
Delivery Lead Time	Long	Short
Flexibility	Nil	High

2.4 Summary – PCCW IWXXM Translation and Exchange services provide the flexibility and reliability to collect most of the current MET data from multiple designated sources and the processing functionality to validate, store and redistribute the data, along with the ability to display it on XML Browser via CRV private connection.

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
- c) Enquiry for the trial of PCCW IWXXM Translation and Exchange Services – please contact Bono Ng - bcng@pccwglobal.com
