ACSICG/8 – **IP/06**
Agenda Item 5.2
21 – 23/06/21

International Civil Aviation Organization

Eighth Meeting of Aeronautical Communication Service Implementation Co-ordination Group of APANPIRG (ACSICG/8)

Video Tele-Conference, 21 – 23 June 2021

Agenda Item 7: Next meeting date and any other business

PRESENTATION OF PCCW NETWORK BASED IWXXM TRANSLATION AND EXCHANGE SERVICE

(Presented by PCCW Global Limited and Fiji Airports Limited)

SUMMARY

This information paper describes PCCW IWXXM Translation and Exchange Service. It can serve as an alternative solution for member States to fulfil the exchange of IWXXM messages as mandated in Amendment 80 to ICAO Annex 3.

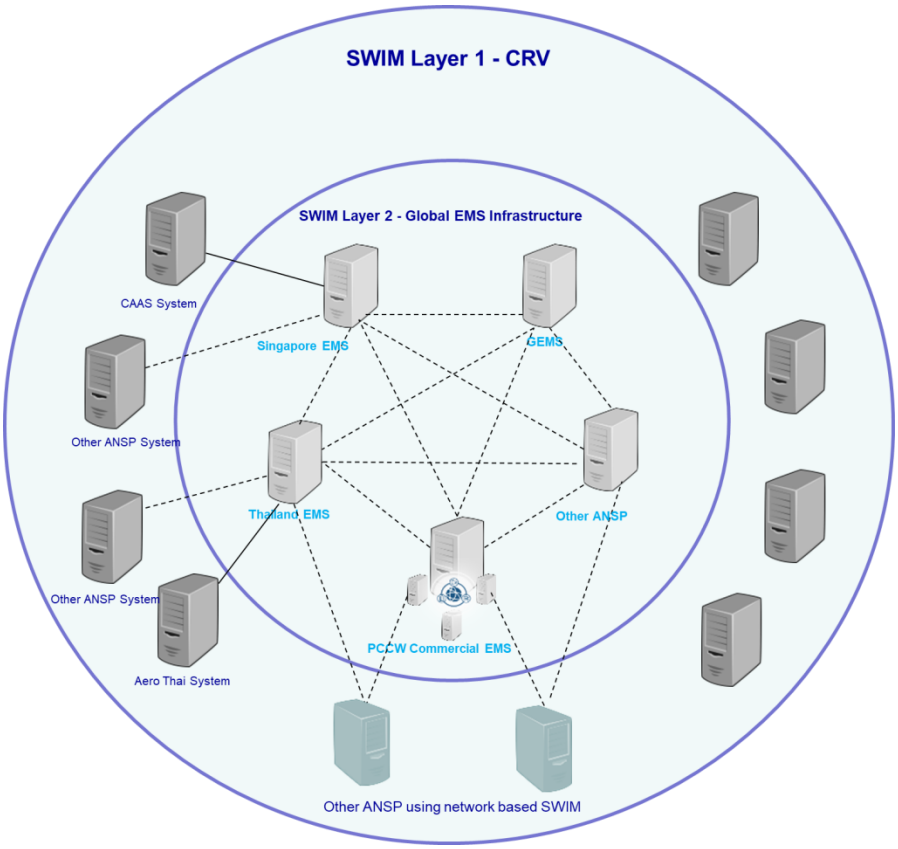
1. INTRODUCTION

1.1 ICAO APAC CRV has leveraged 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 services on top CRV to demonstrate our commitment to the Aviation industry.

1.2 PCCW Global in is offering SWIM as a Service on a private and scalable platform in partnering with one of leading aviation vendors - FREQUENTIS. PCCW Global owned the network infrastructure & is hosting the EMS and SWIM applications to provide an alternative solution to ANSPs and to facilitate the migration to SWIM.

1.3 PCCW EMS will participate in the global EMS infrastructure as a commercial EMS node to offer our service or qualified third party services. PCCW Global will manage the network bandwidth, system maintenance and development of the platform.

1.4 Fiji Airports & PCCW Global has successfully conducted TAC to IWXXM translation test as a Proof of Concept on this service and the outcome of the testing is also presented in this paper.



PCCW EMS supports the following features:

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

1.5 PCCW IWXXM Translation and Exchange Service is one of the service available which is hosted in the high availability private platform and fully controlled environment which connects to CRV network infrastructure.

1.6 The service complies with ICAO and WMO standards and is designed to support the acquisition, management, processing and dissemination of meteorological data related to aviation.

2. DISCUSSION

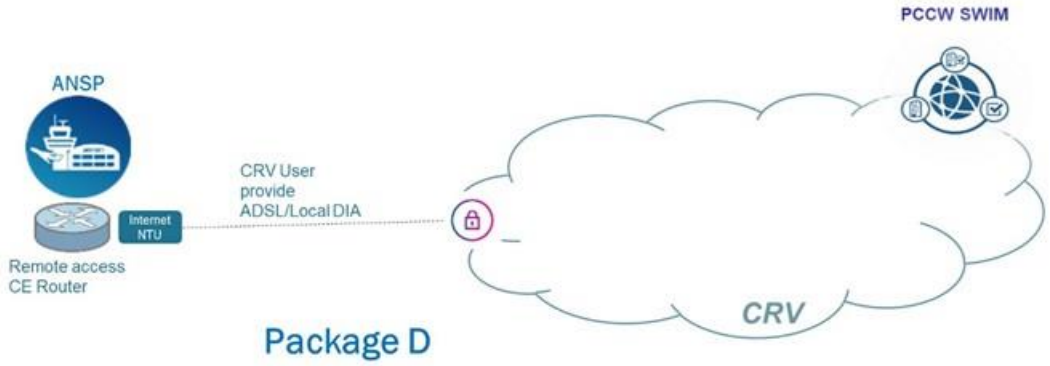
2.1 Service Components

i) CRV connection - support AMHS P1 or AMQP connections from users to the EMS via CRV.

ii) Translation and Aggregation Service – validates, aggregates and translates messages from TAC to IWXXM formats and generates bulletins.

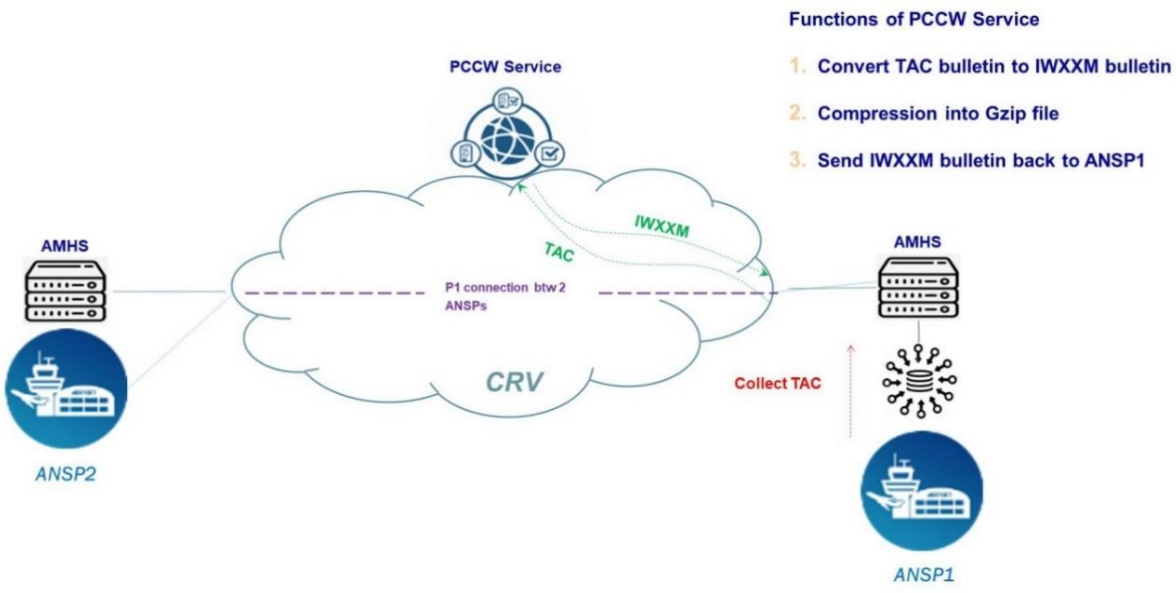
iii) Exchange Service - All translated data can be returned to the IWXXM user or redistributed to designated IWXXM users via CRV upon mutual agreement.

iv) For ANSP without AMHS System should consider subscribing to the CRV Package D which also comes with the tools for the operators to compose and send TAC messages to PCCW EMS

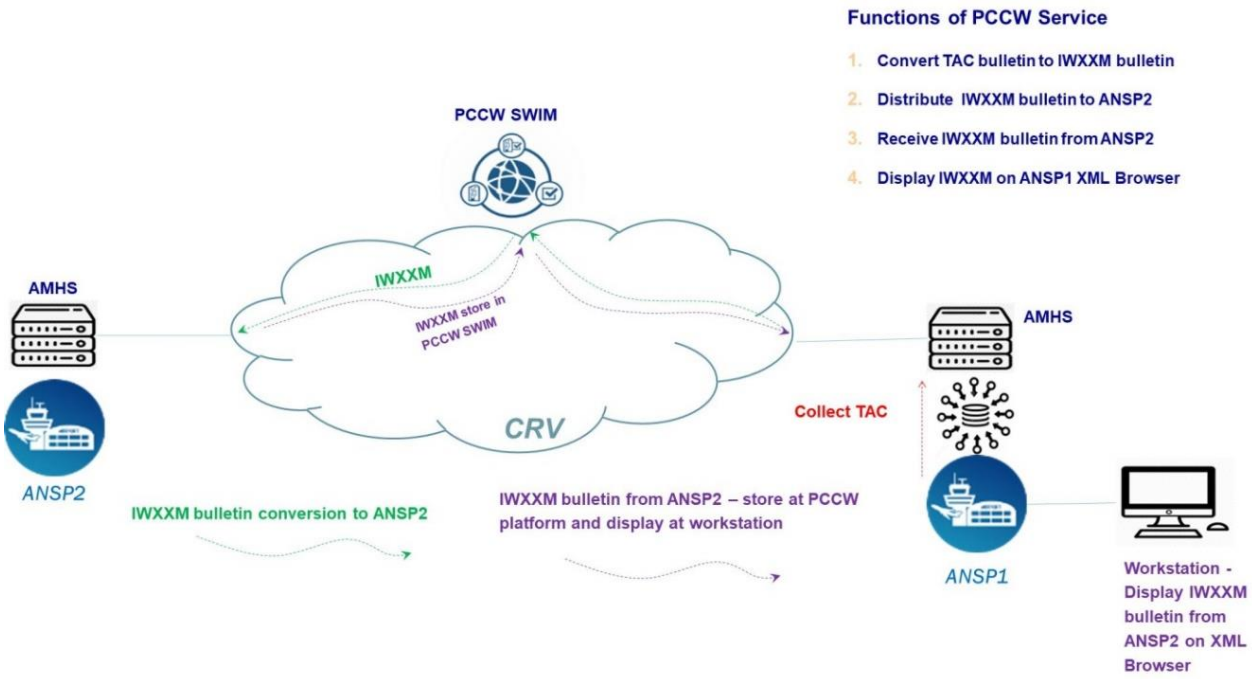


CRV Package D - This service allows customers to access our MPLS backbone via a lower cost broadband access and is an ideal option for smaller branch offices or as a backup option. PCCW Global will configure IPSec port at MPLS IPSec gateway and install a CE router (NID) for connecting customer owned Internet link on the site. User will connect to the CRV network via a point-to-point encrypted IPSec tunnel which supports 100% Bronze QoS only.

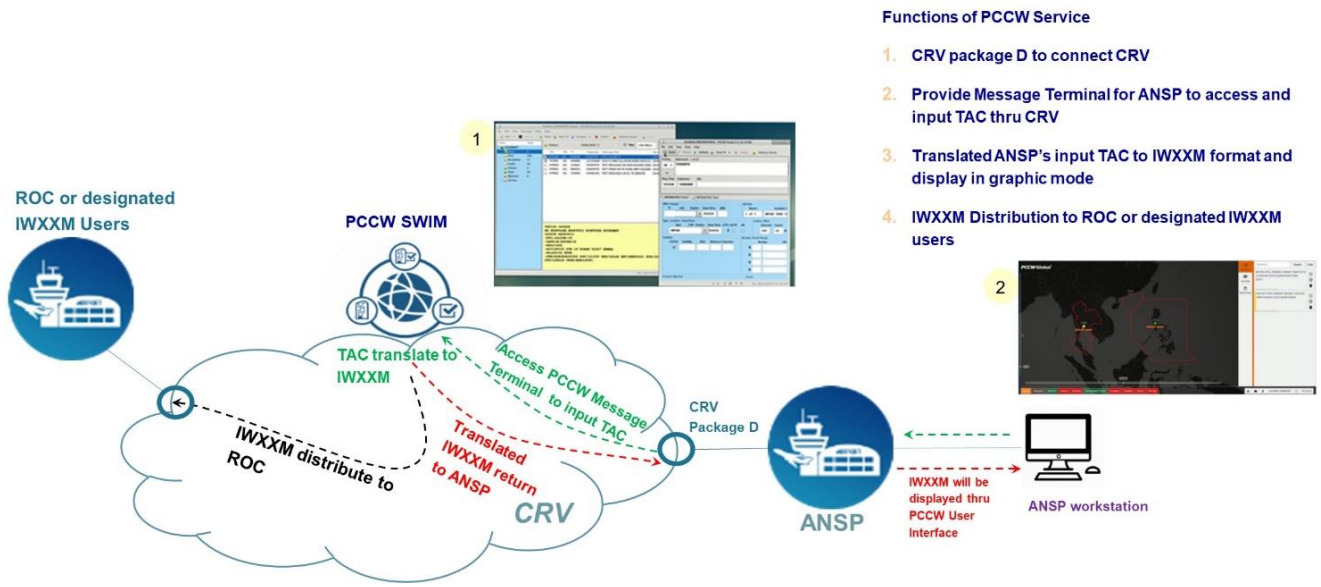
2.2 <u>Function 1 - Translation and aggregation service</u>

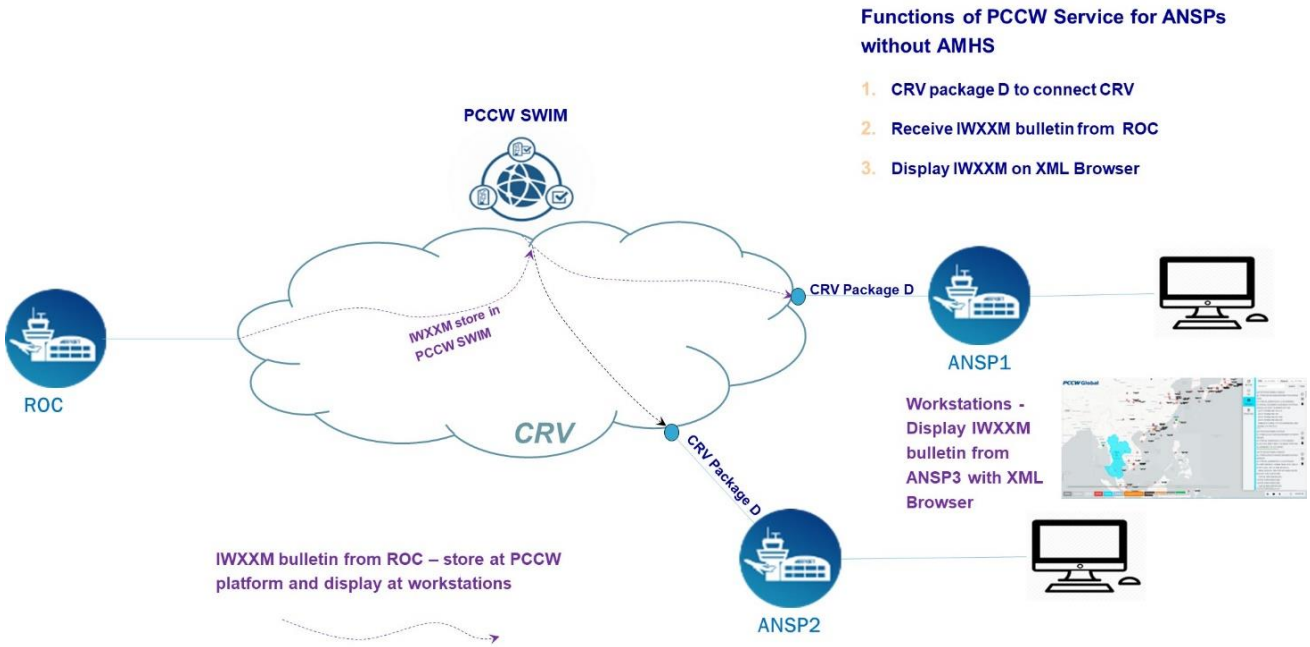


Function 2 - IWXXM Exchange Service



Function 3 - IWXXM Services for ANSPs without AMHS – Message Terminal & XML Browser

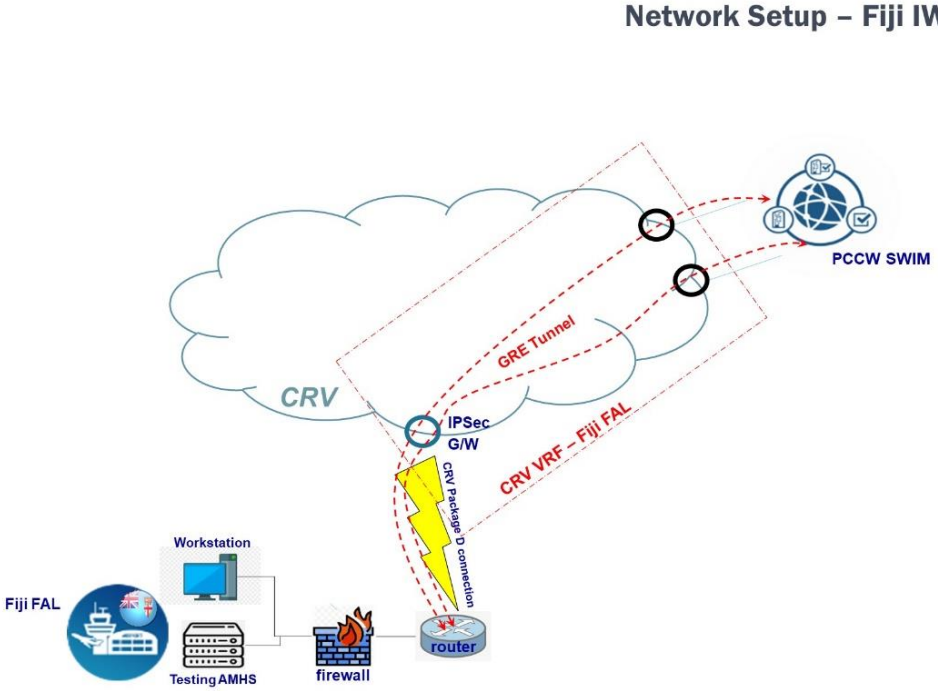




2.2 Benefits of PCCW Network based IWXXM Service

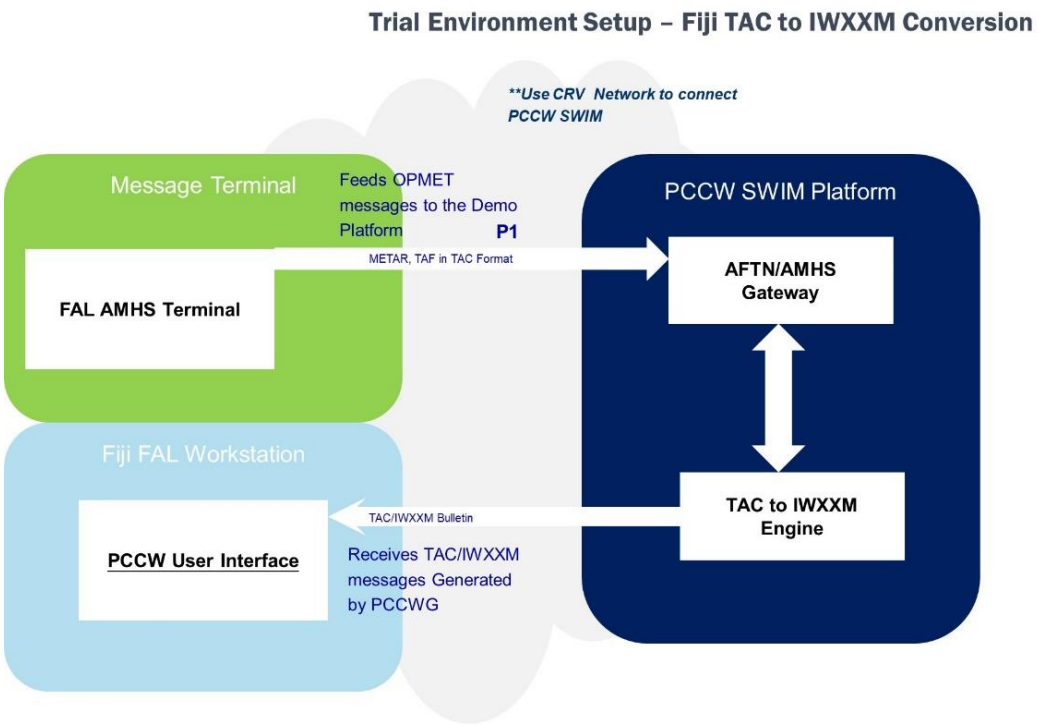
One-time Cost (System setup)	Low
System Operation &Maintenance	Nil
Recurrent Cost – Service Subscription	OPEX
CRV Connection	No need to upgrade if distribution thru PCCW platform
Alternative IWXXM delivery paths for AMHS connection	YES
Development Efforts	Nil
Delivery Lead Time	Short
Flexibility	High

2.3 Fiji Trial of PCCW IWXXM service



Network setup:

1. Using existing CRV package D connection
2. FAL Testing AMHS and workstation (for IWXXM display) are connected to PCCW SWIM



Trial System Setup:

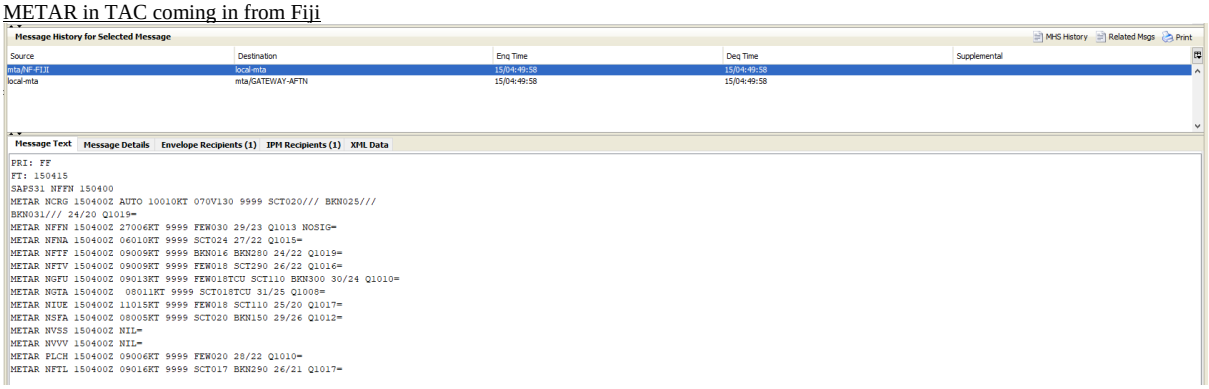
1. Connectivity between Fiji Test AMHS and PCCW SWIM. Both systems can ping each other.
2. MTA connection configuration created on both ends based on the AMHS Configuration document
3. MTA Routing rules to pass messages.
   a. Fiji to route PCCWYFYY to PCCW MTA
   b. PCCW to route NFFNYFYY to Fiji MTA
4. MTA Connections are open on both ends

Process:

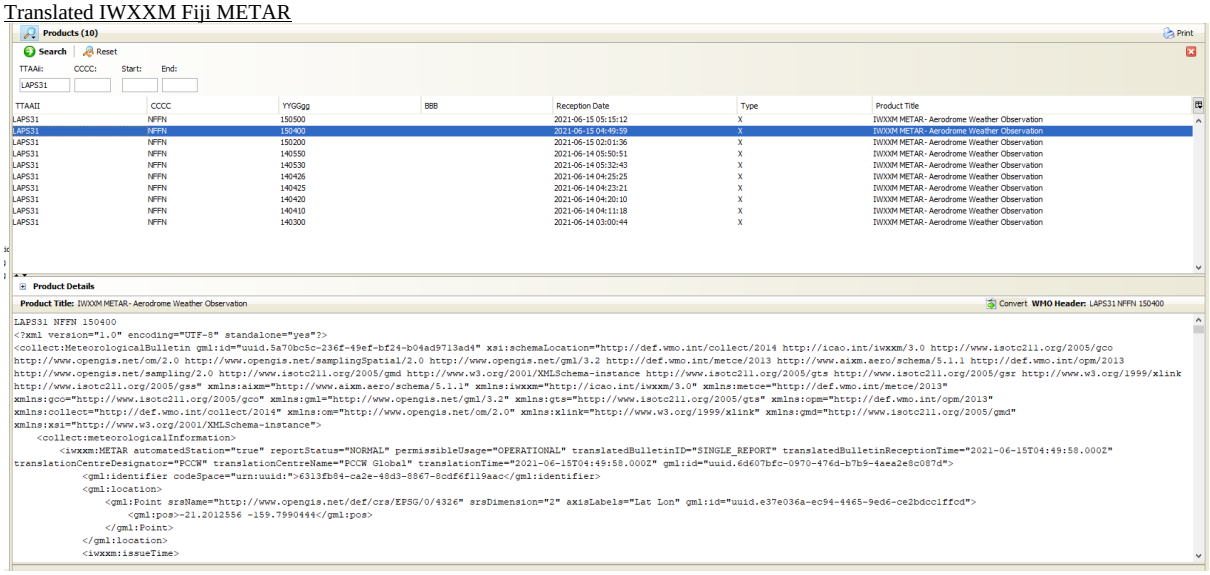
TAC to IWXXM

1. NFFN sends TAC Message over P1 link with PCCW to the AMHS Address. Every time NFFN sends a TAC, the PCCW SWX system will convert the TAC message to IWXXM and for the purpose of testing, redistribute the IWXXM to PCCWNFFN for viewing. At the same time, the message is fed to the SWIM graphical user interface.

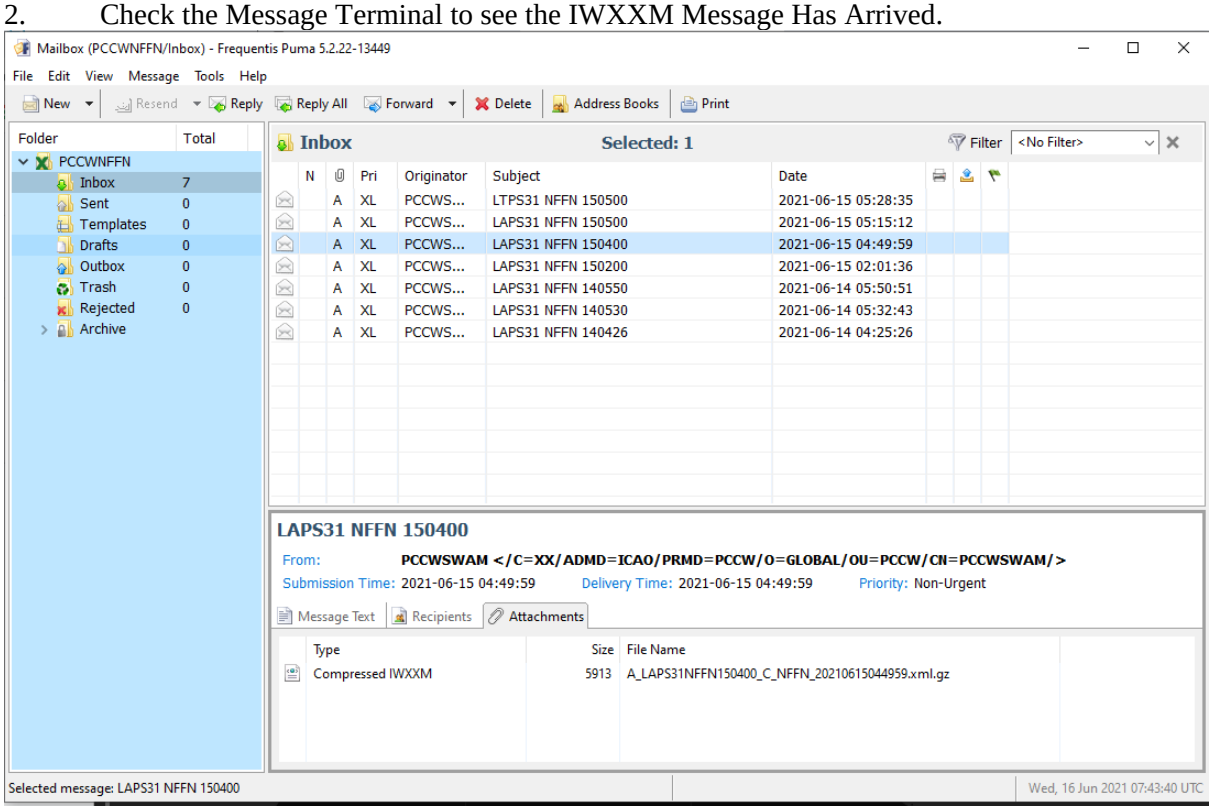
METAR in TAC coming in from Fiji



Translated IWXXM Fiji METAR



2. Check the Message Terminal to see the IWXXM Message Has Arrived.



3. Every time a TAC comes in from NFFN, the SWIM graphical user interface parses it:

2.4 Summary – PCCW IWXXM Translation and Exchange service provides the flexibility and reliability to acquire MET data in TAC and IWXXM formats from multiple designated sources and the processing functionality to validate, store and redistribute the data, along with the ability to display it on web interface via the CRV private network.

Please visit below link to learn more about PCCW CRV & SWIM Services: -

https://youtu.be/iPd941AV0pQ

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

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