*International Civil Aviation Organization*

**First Meeting of the Surveillance Study Group (SURSG/1)**

(Video Teleconference, 20– 22 April 2021)

**Agenda Item 4:** Issues in surveillance data sharing

# SURVEILLANCE DATA SHARING PLATFORM

(Presented by PCCW Global Limited)

**SUMMARY**

This information paper describes the system architecture of PCCW SWIM service and its progresses to build its Surveillance data sharing platform with EMS and Service Registry.

## 1. INTRODUCTION

1.1 Since developing the ICAO CRV network for the Asia Pacific, PCCW Global has aimed at expanding the network by offering value-added services on top of the advanced aeronautical network. These services cover the provision of critical information through the globally interoperable System Wide Information Management (SWIM) infrastructure, interfaces and exchange models.

1.2 By combining PCCW Global's network infrastructure and hosting facilities with Frequentis' proven knowledge and experience in application development for the aviation industry, state Air Navigation Service Providers (ANSPs) will now be able to benefit from SWIM initiatives without the high investment costs and development expenses of traditional systems.

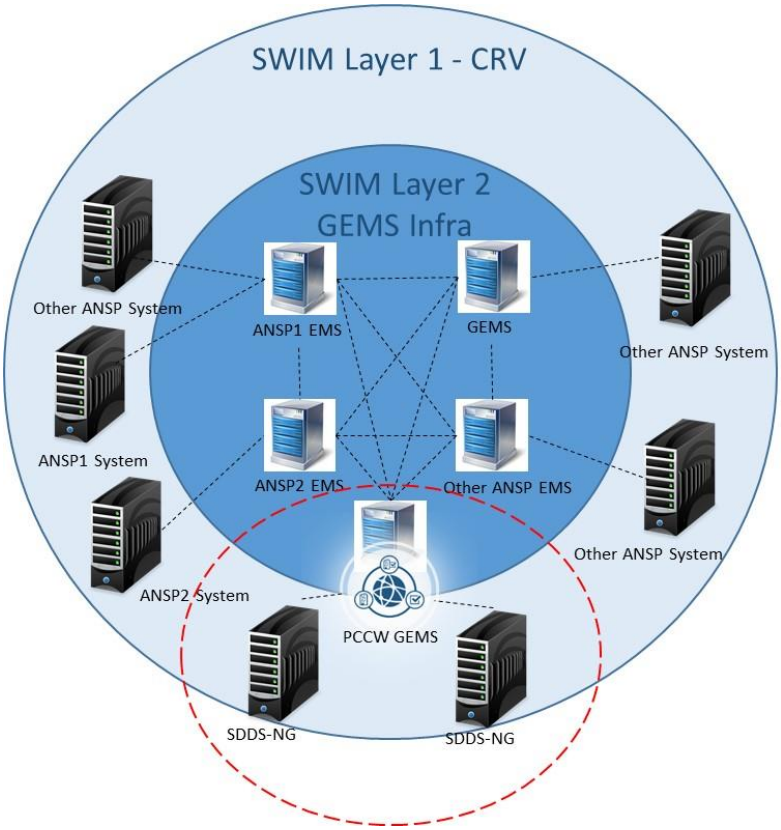
1.3 PCCW Global has launched its IWXXM Translation and Exchange services as the first in a series of modules. The services are hosted on a high-availability private platform in a fully managed and controlled environment which connects to CRV network infrastructure with the approval of the ICAO and CRV Operation Group (CRV-OG).

1.4 PCCW Global see the benefits of using its SWIM services, Service Registry and EMS for the sharing of surveillance data which will enables ANSPs to see traffic further ahead, facilitating the planning and implementation of ATFM. *(Align with HKCAD & CAAS WP/13 on SWIM TF4)*

## 2. DISCUSSION

2.1 From the EMS Infrastructure layer, PCCWG EMS can be part of the GEMS and will be inter-connected with other ANSPs' and providers' EMS.

2.2 PCCW Global is working with Frequentis Comsoft to host their SDDS-NG (Surveillance Data Distribution System – Next Generation) in PCCW SWIM for qualified States/Administrations/Stakeholders to publish or subscribe surveillance data by following the guidelines of ICAO CRV OG & SWIM TF.




2.3 PCCW Global's Surveillance data sharing platform has the following ADS-B ASTERIX data processing functions – Data reception, validation, modifications e.g. filtering, distribution and forwarding.

Validation, Filtering and Conversion

2.4 During reception of the surveillance data SDDS-NG verifies the incoming data integrity, validates the data syntactically and semantically. Invalid data are discarded and therefore user's data processing systems are protected.

2.5 SDDS-NG supports extensive data filtering, data modification and data format conversion. The data filtering can be combined with the data modification/conversion function. In the first processing step the source data is filtered, next the data passing the filter are converted.

2.6 Following configurable filtering capabilities are available: geographical area filter, altitude (flight levels) filter, filtering out selected targets per aircraft identification ("blacklisting"), data type filter.

2.7 SDDS-NG has integrated ASTERIX engine processing various data format conversions and modifications, including conversions between different editions of particular ASTERIX Category (e.g. CAT021 Ed. 2.1 to Ed. 0.23). Customized formats conversions can also be supported.

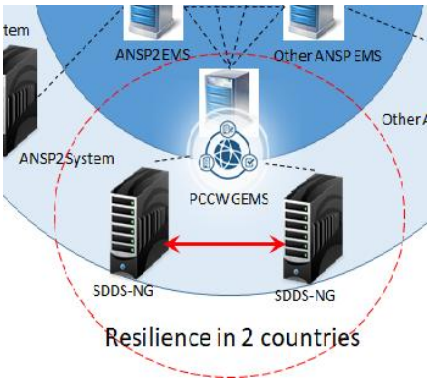
User-selectable data streams

2.8 SDDS-NG offers individual configuration of distribution criteria on single data stream level. SDDS-NG supports several data processing functions that can be applied to the received surveillance data prior to their distribution.

SDDS-NG Network Mode (Resilience in different locations)

2.9 In the context of the surveillance data processing the availability of the different surveillance data sources is a major concern as the quality of the air situation picture depends on it. Therefore, the surveillance sources are typically connected with redundant links. Under normal conditions one of these links is marked as the primary link and only data of this link is processed (in order to avoid duplicate data). Only if this link fails the fall back link is to be used.

For SDDS-NG, it can be deployed in redundant mode, so that resilience in two countries, together with the network diversity of CRV network to provide a high availability service to ANSPs.




## 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

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