



ICAO

*International Civil Aviation Organization*

**Ninth Meeting of the Common aeRonautical Virtual Private Network Operations Group (CRV OG/9)**

Video Teleconference, 25 – 27 January 2022

**Agenda Item 8:** Review the requirement of CRV for SWIM

- Subscriber
- GEMS
- ANSP

## **SYSTEM WIDE INFORMATION MANAGEMENT (SWIM) USER NETWORK REQUIREMENTS ANALYSIS**

(Presented by name of Federal Aviation Administration/USA)

### **SUMMARY**

This paper presents an analysis of the network requirements for SWIM users.

## **1. INTRODUCTION**

- 1.1 The Common aeRonautical Virtual Private Network (CRV) has been considered as an underlying Internet Protocol (IP) network for SWIM services.
- 1.2 CRV is currently used to provide the Aeronautical Telecommunication Network (ATN) service that is required for time-sensitive information distribution, as mandated by ICAO Annex X.
- 1.3 Even though CRV is able to inter-connect any of its users, connections are only made between members with bi-lateral agreements and implemented using Generic Routing (GRE) tunnels.

## **2. DISCUSSION**

- 2.1 From the network point of view, SWIM users can be categorized into three different groups:
  - a) SWIM subscribers (can be ANSPs or any entities)
  - b) Global Enterprise Messaging Service (GEMS) providers
  - c) ANSP based SWIM providers (and subscribers)
- 2.2 A SWIM subscriber is defined as an entity that only receives information/messaging (consumer) from either or both GEMS or ANSP based SWIM provider(s). SWIM

subscribers can either use CRV or other networks such as the Public Internet. The use of the Internet is allowed when messages are non-time-sensitive.

- 2.3 GEMS is defined as an entity that provides SWIM services for a fee. GEMS can provide services either through CRV or the Public Internet. Distribution over CRV is required for ATN service or time-sensitive messages and the Internet is allowed for non-time-sensitive ones.
- 2.4 ANSP based SWIM providers are defined as ANSPs that provide (and consume) information/messaging that includes both ATN time sensitive messages and non-time sensitive advisory messages. ANSP based SWIM providers should use CRV as their primary network and only use other networks to reach services not provided over CRV.
- 2.5 The use of CRV to support SWIM may result in additional bandwidth demands due to the nature of XML based messages. However, CRV can provide a reliable and better secured network compared with the Public Internet.
- 2.6 The Public Internet cost will be considerably cheaper than CRV but require additional security measures. However, it might be considered as a backup to CRV service.
- 2.6 It is recommended that the meeting consider this approach and coordinate with the SWIM Task Force for network connection planning.

**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

-----