



ICAO

International Civil Aviation Organization**Eleventh Meeting of the Common Aeronautical Virtual Private Network Operations Group (CRV OG/11)**

Bangkok, Thailand, 01-03 February 2023

Agenda Item 10: MPLS/IP based inter-regional connection

**INTER-REGIONAL CONNECTION BETWEEN RUSSIAN AND APAC AMHS CENTRES**

(Presented by the Russian Federation)

**SUMMARY**

*This working paper presents a proposal to consider possible solutions to ensure connection between COM centers of the Russian Federation and ICAO Asia and Pacific region when transiting to AMHS.*

**1. INTRODUCTION**

1.1 Currently, AMHS procedures are widely used in many ICAO regions. However, the transition to AMHS at the interregional level has not been completed yet. It is noteworthy that as of November 2020, the meteorological information exchange in IWXXM format between ROC and IROC is carried out by using AMHS. The ICAO Technical Policy recommends that AFS interregional gateways implement AMHS inter-regional connection. To this end, the ICAO EUR/NAT Regional Office in its State letter EUR/NAT 22-003.TEC (NIA/HOI) dated 10 January 2022, encouraged States to expedite this work.

1.2 In the Russian Federation, the COM centers of Moscow and Khabarovsk perform the function of Interregional AFS Gateways between ICAO EUR/NAT and APAC regions providing aeronautical information exchange not only for Russia, but also for European countries.

1.3 The message exchange between Russia and ICAO APAC region via the interregional gateway is performed using AFTN protocol. This prevents the use of advanced methods of aeronautical information exchange such as IWXXM, AIXM, FIXM and others.

**2. DISCUSSIONS**

2.1 In January 2020, the CRV OG/7 meeting expressed its support for Russian COM centers to join ICAO CRV network. Based on this decision, the CRV provider PCCW Global Limited began exploring technical and commercial possibilities to ensure the connection. The technical feasibility study of the “last mile” for Russian COM centers conducted by the Company's partners in Russia was complicated and delayed by the COVID-19 pandemic.

2.2 In 2021, PCCW Global Limited prepared technical solutions for connecting Moscow and Khabarovsk COM centers to CRV to ensure transition to AMHS technology with COM centers of the APAC region (Japan and China) and in December 2021, technical and commercial proposals were

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sent to the State ATM Corporation (Russian ANSP). However, the contractual arrangements have not been finalized due to restrictions on the use of Cisco equipment at Moscow and Khabarovsk COM centres.

2.3 Considering the current situation, the Russian Federation proposes to study possible solutions to ensure the connection:

- Possibility for CRV provider to use equipment from other (not Cisco) manufacturers as CE routers in the COM centers of Moscow and Khabarovsk.
- Implementation of dedicated L2 VPN links between Moscow and Khabarovsk COM centers and corresponding COM centers of the APAC region (Japan and China);
- Implementation of interregional connection between the CRV and aeronautical virtual IP network of the Russian Federation based on MPLS Network-to-Network Interface (NNI) (CRV OG/9 - WP/12).

2.4 With due consideration to the time needed to study the available solutions, it is proposed to implement interim connection between COM centers via dedicated L2 VPN link to expedite transition to AMHS. Recognizing the fact that adequate financial resources may not be available this year, the Russian Federation is ready to take on the lease responsibilities for the said links. *Rostelecom*, the major Russian telecommunications provider, will be able to provide the links within six months from the date of the decision taken.

2.5 The current status of transition to AMHS:

Japan: the Russian telecommunications provider *Rostelecom* is able to provide a L2 VPN link between Moscow and Fukuoka. It is agreed to conduct AMHS trials in October 2023.

China: a land-based L2 VPN link between Khabarovsk and Beijing has been implemented. Phase 1 trials have been completed; the next phase of trials is agreed to be conducted in early 2023.

2.6 The Russian Federation supports the initiative to explore potential MPLS/IP based inter-regional connection between CRV and REDDIG II networks (CRV OG/9 – WP/12). To this end, the Russian Federation is committed to studying the options of connecting the Russian aeronautical communication services provider to the CRV network to ensure inter regional network connectivity. Technical proposals for connection of Russian aeronautical IP VPN network to APAC CRV can be developed at a later stage. The establishment of such connection will eventually provide for the transition to AMHS via the CRV and ensure exchange of other types of information as one of the prerequisites for system-wide information management (SWIM) implementation. In this area, we rely upon support and assistance of the ICAO Asia and Pacific Regional Office.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- discuss and comment on the information provided in this working paper;
- endorse the proposals presented in paragraphs 2.4 and 2.6.

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