



ICAO

*International Civil Aviation Organization***Seventh Meeting of the Common Aeronautical Virtual Private Network Operations Group (CRV OG/7)**

Bangkok, Thailand, 20 – 22 January 2020

Agenda Item 7: Share best practices on cybersecurity and develop agenda items for joint session of ACSICG/CRV/SWIMTF on cyber safety/security and resilience

COMMON AERONAUTICAL VIRTUAL PRIVATE NETWORK (CRV) SAFETY AND PROTECTION PLANNING

(Presented by Federal Aviation Administration/USA)

SUMMARY

This paper presents a proposed plan to address safety and protection of the Aeronautical Fixed Service (AFS) that is implemented over Internet Protocol (IP) networks.

1. INTRODUCTION

1.1 CRV operation was initiated in January 2019 in the Asia/Pacific and North American regions.

1.2 ICAO has been developing Cyber Security and safety assessments to address the rising risks of using IP networks. However, only a draft version of the security standard is available.

1.3 The need to have a plan/procedure in place to protect AFS over IP networks is recommended.

1.4 At CNS SG/23 held in September 2019, it was concluded that members of ACSICG and CRV OG need to determine a plan/procedure to address the safety and protection of AFS over IP networks.

1.5 The FAA has agreed to host a joint meeting in the United States, scheduled for 21-23 April, 2020.

2. DISCUSSION

2.1 IP networking has expanded communications to locations with otherwise limited infrastructure providing significant bandwidth and dynamic routing. However, IP also brings along the risk of malicious attacks that can cripple the service.

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2.2 In order to effectively address the protection of AFS, the following subjects should be addressed:

- a) Protections required at the application-level and the network-level.
- b) Definition of ‘End-to-End security’
- c) Implementation: a) and b) need to be agreed before plans/procedures can be implemented

2.3 There are many security options that can be utilized. However, it is recommended that selection criteria should be established taking into consideration:

- a) Cost
- b) ANSPs’ security policies
- c) Centralization versus bilateral or combination
- d) Use of PKI

2.4 For Safety, it is recommended that the assessment is based on service regardless of underlining network. This is due to the service criticality determined by air traffic control operation. An example: an ANSP may have both AMHS and Voice service over CRV, if AIDC fails, Air Traffic Controller would use their voice service over CRV. If voice over CRV also fails, then Air Traffic Controller would utilize IDD over PSTN.

2.5 As mentioned earlier, the FAA will invite safety and security subject matter experts to present their options/solutions for members to consider.

2.6 Please refer to Attachment A for proposed Agenda of the AFS Safety and Protection Planning Working Group. The meeting is invited to review and update as required.

2.7 Please refer to Attachment B for meeting venue, hotel reservation information and point of contact. It is recommended that members to apply for US entry Visa early as possible as the process time might be long.

2.8 Recommend conclusion to support AFS Safety and Protection Planning Working Group:

Conclusion/Decision CRV OG/7 - Support the Joint meeting CRV OG and ACSICG	
What: Develop a plan for AFS Safety and Protection	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input type="checkbox"/> Ops/Technical
Why: AFS has been implemented over IP networks with minimal protection and safety assessments	Follow-up: <input type="checkbox"/> Required from States
When: 20-Jan-20	Status: Draft to be adopted by PIRG
Who: <input type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> CAO APAC RO <input type="checkbox"/> CAO HQ <input type="checkbox"/> Other: XXXX	

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 in your organization and plan to attend the meeting

PROPOSED AFS SAFETY AND PROTECTION PLANNING WORKING GROUP AGENDA

1. AERONAUTICAL FIXED SERVICE DEFINITION
 - a. AMHS/AIDC/AFTN
 - b. VOICE SERVICE
 - c. SERVICE PROVIDERS (AFTN/AIR-TO-GROUND/ADS)
2. END-TO-END SECURITY REQUIREMENT DEFINITION
 - a. APPLICATION TO APPLICATION VERSUS NETWORK DEMARC POINTS
 - b. CENTRALIZATION VERSUS BILATERAL
 - c. NEW SERVICE IMPACT (SWIM/XML BASED MESSAGES)
 - d. COST IMPACT
 - e. DOCUMENT AFS PROTECTION CONCEPT/ARCHITECTURE
3. SAFETY ANALYSIS
 - a. SERVICE BASED ANALYSIS
 - b. NETWORK BASED ANALYSIS
 - c. DOCUMENT SAFETY ANALYSIS
4. DETERMINE OPERATIONAL IMPACT/SUPPORT RELATED TO ASIA/PACIFIC SWIM PLANNING
5. PROJECT STATUS OF NEW TRAFFICS: FIXM/AIXM/IWXXM
6. AMHS TRAFFIC TRANSITION TO SWIM?
7. CRV INTER-CONNECTION WITH OTHER IP REGIONAL NETWORK (REDDIG/MEVA/PENS)
8. INTERNET PROTOCOL SUITE (IPS) PLANNING
9. OTHER BUSINESS

ASIA/PAC AFS SAFETY AND PROTECTION PLANNING WORKING GROUP

Name of Event: 2020 AFS/CRV Safety and Protection Working Group

The meeting will be held at the Westin Lake Las Vegas Resort & Spa from Tuesday, April 21 to Thursday, April 23, 2020. Registration will start at 8:00 AM on Tuesday, April 21. The meeting will start at 8:30 AM and end at 5:00 PM each day. Please see the [meeting schedule](#) for more details.

Meeting Date:

Registration: Tuesday, April 21, 2020 8:00 AM – 8:30 AM

Meeting: Tuesday, April 21, 2020 – Thursday, April 23, 2020 8:30 AM – 5:00 PM

Meeting Location:

Conference room: Casablanca E, South
The Westin Lake Las Vegas Resort & Spa
101 Montelago Boulevard Henderson, Nevada 89011
+1 702-567-6000

Hotel Reservations:

Participants are expected to make their own hotel reservations. The Westin Lake Las Vegas Resort & Spa reserved a room block for the Federal Aviation Administration group at a special group rate \$102/night.

Please book your group rate for Federal Aviation Administration room block:

<https://www.marriott.com/event-reservations/reservation-link.mi?id=1574462928450&key=GRP&app=resvlink>

Rate Details:

- INDIVIDUAL PAYS OWN CHARGES
- Special Group Rate - \$102/night
- Resort Fee WAIVED (the fee \$29/night will be waived at check out)
- Taxes: \$17.03/night
- Last day to book rooms - 3/27/20

Federal Aviation Administration Room Block:

Start Date: Saturday, April 19, 2020

End Date: Friday, April 24, 2020

Maps and Transportation:

[Click Here](#)

Parking:

Complimentary on-site parking


POC:

Valentina Hines
+1 609-485-9415
Valentina.ctr.hines@faa.gov

- To cancel or edit your hotel reservation please contact the hotel at +1-800-627-7468, or contact Valentina Hines at valentina.ctr.hines@faa.gov for assistance.

Airport Information:

McCarran International Airport (LAS)
LAS

Airport Phone: +1 702-261-5411 
Hotel direction: 13.9 miles E
This hotel does not provide shuttle service.

- Alternate transportation: Uber; fee: 35 USD (one way) ; on request
- Estimated taxi fare: 45 USD (one way)

[Visit LAS airport website](#)

Driving directions:

Exit airport following signs for Henderson 215 East and follow until the highway turns into Lake Mead Parkway. Follow approx 4 miles and turn left into Lake Las Vegas.

AFS/CRV Working Group Meeting Daily Schedule

April 21-23, 2020 Henderson, NV.

Date	Day	Start Time	End Time	Function Type
4/21/2020	Tuesday	8:00am	8:30am	Registration
4/21/2020	Tuesday	8:30am	10:00am	Meeting
4/21/2020	Tuesday	10:00am	10:15am	Coffee Break
4/21/2020	Tuesday	10:15am	1:00pm	Meeting
4/21/2020	Tuesday	1:00pm	2:00pm	Lunch
4/21/2020	Tuesday	2:00pm	3:00pm	Meeting
4/21/2020	Tuesday	3:00pm	3:15pm	Refreshment Break
4/21/2020	Tuesday	3:15pm	5:00pm	Meeting
4/22/2020	Wednesday	8:30am	10:00am	Meeting

4/22/2020	Wednesday	10:00am	10:15am	Coffee Break
4/22/2020	Wednesday	10:15am	1:00pm	Meeting
4/22/2020	Wednesday	1:00pm	2:00pm	Lunch
4/22/2020	Wednesday	2:00pm	3:00pm	Meeting
4/22/2020	Wednesday	3:00pm	3:15pm	Refreshment Break
4/22/2020	Wednesday	3:15pm	5:00pm	Meeting
4/23/2020	Thursday	8:30am	10:00am	Meeting
4/23/2020	Thursday	10:00am	10:15am	Coffee Break
4/23/2020	Thursday	10:15am	1:00pm	Meeting
4/23/2020	Thursday	1:00pm	2:00pm	Lunch
4/23/2020	Thursday	2:00pm	5:00pm	Meeting
