International Civil Aviation Organization

Twenty Fifth Meeting of the Communications/ Navigation and Surveillance Sub-group (CNS SG/25) of APANPIRG

Video Tele-Conference, 18 – 22 October 2021

Agenda Item 6: Surveillance

6.1 Review Report of Sixth Meeting of the Surveillance Implementation Coordination Group (SURICG/6) including:

- Outcomes of ADS-B Implementation Webinar;

OUTCOMES OF ICAO APAC IMPLEMENTATION OF ADS-B WEBINAR

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes of the ICAO Asia Pacific Implementation of ADS-B Webinar held on *1 September 2021* via Video Tele-Conference (VTC).

1. INTRODUCTION

1.1 The ICAO Asia Pacific Implementation of ADS-B Webinar was held on *1 September 2021*. The Webinar was organized via Video Tele-Conference (VTC) using Microsoft Teams.

1.2 The Webinar was attended by 298 attendees from 21 States/Administrations, 2 International Organizations and 11 Airlines/Aviation Industries including Australia, Bangladesh, Bhutan, China, Hong Kong China, Macao China, Fiji, India, Indonesia, Japan, Lao PDR, Malaysia, New Zealand, Nepal, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, USA, IATA, IFALPA, All Nippon Airways, China Southern Airlines, Hawaiian Airlines, Singapore Airlines, Lion Jet, Korean Air, Hong Kong Express, Tibet Airlines, Thales, Aireon, the Second Research Institute of CAAC (CASRI) and ICAO. The webinar report, presentations, and other resources can be accessed by following link:

https://www.icao.int/APAC/Meetings/Pages/2021-ADS-B-Webinar.aspx

1.3 This paper summarized the key outcomes of ICAO Asia Pacific Implementation of ADS-B Webinar.

2. DISCUSSION

2.1 The Webinar was moderated by the Regional Officer CNS from ICAO APAC Office, total **Four** (4) presentations were delivered by Experts from Singapore, Italy, and Australia. During the Webinar, Questions and Answers (Q & A) sessions were held at end of each presentation through the Pigeonhole tool. Throughout the Webinar, a total of **63 questions** were asked and *more than 65 feedbacks* for the Webinar were provided by Participants with **100% positive response**.

2.2 The summaries of all presentations are as follows:

SP101 - Introduction to Automatic Dependent Surveillance–Broadcast

2.3 Mr. Ho Wee Sin, Deputy Director (ANS Support and Master Planning), Civil Aviation Authority of Singapore, and Co-chair of DAPs Working Group shared the brief introduction, concepts, and benefits of ADS-B with participants. Firstly, he introduced the concept of the Automatic Dependent Surveillance – Broadcast and the benefits of implementation ADS-B, such as increasing track accuracy, higher update rate and cost effective. The three types of ADS-B technology were analyzed, involving Mode S 1090MHz extended squitter, Universal Access Transceiver (UAT) and VHF Datalink Mode 4 (VDL Mode 4). He elaborated the major differences between the three protocol definitions (DO 260, DO260A and DO260B) when applying Mode S 1090MHz extended squitter. Through sharing the four common certification standards, Mr. Ho Wee Sin encouraged the APAC States to adopt all the mentioned standards when implement ADS-B. Lastly, he explained the Eurocontrol ASTERIX CAT 21 which is the data format for transmission from ADS-B system to ATC system and highlighted that both system (ADS-B receiver and ATC system) must use the same edition in order to implement the ADS-B data.

SP102 - CNS – ADS-B Technologies of the future

2.4 Mr. Massimiliano Ferla, expert in Navigation aids systems and Non-Radar Surveillance equipment, product line manager for Navigation Aids & Non Radar Surveillance from Thales Italy. He shared the way to support efficient delivery and system resilience of ADS-B in APAC region, and introduced the innovative approaches to optimize the CNS with future ADS-B technology and capabilities. By analyzing the issues in cybersecurity, GNSS and transponder conformance, he informed the participants about the security protection methods to handle such issues. The new generation of ADS-B ground station equipment and solutions to cope with non-ADS-B equipped aircraft were shared. Furthermore, he provided a common framework for future sustainable investments to achieve and enhance ADS-B operations in APAC region.

SP201 - Sharing of Singapore's experience of ADS-B Implementation

2.5 Mr. Ho Wee Sin, Deputy Director (ANS Support and Master Planning), Civil Aviation Authority of Singapore, and Co-chair of DAPs Working Group shared the Singapore's experience on ADS-B implementation that included ADS-B mandate, ADS-B data sharing, implementation issues, and measures taken to support ADS-B operation. He introduced that data sharing agreements were signed between many States and Singapore had the agreements with Indonesia, Vietnam, Philippines and Brunei. He further explained the process in managing different inputs and outputs in ADS-B system implementation, shared the system implementation issues, and elaborated the measures to mitigate these issues. The ADSB operations experiences were shared by explaining the publication of ADS-B requirements, identification of ADS-B aircraft, automation system coupling, coordination across FIRs, and reduction of Separation. Furthermore, the safety cases and safety assessments experiences were summarized. Lastly, he introduced the implementation progress in space-based ADS-B and informed that space-based ADS-B has been integrated and used in ATM system on 15 Jul 2020 in Singapore.

SP202 - Space-based ADS-B

2.6 Mr. Adam Burford, Aireon Regional Director of APAC and Mr. Greg Dunstone, Sales Engineer of Aireon shared an introduction of space-based ADS-B. The presentation provided an overview of the key differentiators when provisioning ADS-B from space and the key benefits that can be derived for ANSP's in the APAC Region by this provision of service. They also provided an update on the deployment of space-based ADS-B in the region and globally, as well as specific use cases for air traffic surveillance, reduced oceanic separation standards, situational awareness, and air traffic flow management (ATFM). Lastly, the challenges and solutions in deployment of space-based ADS-B under Covid-19 were shared.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any matters as appropriate.

– – – – – – – – – – – – –