International Civil Aviation Organization

Eleventh Meeting of the Air Traffic Management Sub-Group (ATM/SG/11) of APANPIRG

Singapore, 2 – 6 October 2023

Agenda Item 8: Any other business

OUTCOMES OF A SERIES OF ATM-RELATED WEBINARS FOR THE APAC REGION

(Presented by Secretariat)

SUMMARY

This paper collectively presents the key outcomes of the:

- Unmanned Aircraft Systems – Remotely Piloted Aircraft Systems Implementation/Regulation Webinar for the APAC Region (Video Teleconference, 9-10 May);
- the Enhanced Wake Turbulence Separation Webinar for the APAC Region (Video Teleconference, 27 June 2023); and
- the Free Route Airspace webinar for the APAC Region (Video Teleconference, 29 August 2023).

1. INTRODUCTION

1.1 In an effort to facilitate the implementation of new technologies that align with the ICAO Aviation System Block Upgrades (ASBU) strategies and the *Asia-Pacific Seamless ANS plan* expectations, the ICAO Regional Sub-office organized a series of webinars for the APAC region to promote the understanding and discussion on three innovative topics with the objective that no State should be left behind. The webinars not only facilitate communication among APAC stakeholders but also provide a global outlook for enhancing technological exchanges in relevant fields.

1.2 The Unmanned Aircraft Systems – Remotely Piloted Aircraft Systems Implementation/Regulation Webinar for the APAC Region was held via video teleconference, from 9 to 10 May 2023. The webinar was participated by 127 participants from 21 States/administrations. Webinar materials are available in electronic format on the webinar webpage at: https://www.icao.int/APAC/Meetings/Pages/2023-Unmanned-Aircraft-Systems-%E2%80%93-Remote-Piloted-Aircraft-Systems-Implementation-Regulation-Webinar-for-the-APAC-Region.aspx

1.3 The Enhanced Wake Turbulence Separation Webinar for the APAC Region was held via video teleconference on 27 June 2023. 105 participants from 21 States/administrations and 2 International Organisations participated in the webinar. Webinar materials are available in electronic format on the webinar webpage at: icao.int/APAC/Meetings/Pages/2023-RECAT-Webinar.aspx.

1.4 The Free Route Airspace webinar in the APAC region took place on 29th August, featuring presentations from EUROCONTROL, FAA, INDONESIA, IATA and IFATCA. The webinar was attended by over 350 participants from 36 Member States, administrations, and international organizations (IOs). Materials from the webinar are available in electronic format on the webinar webpage at: https://www.icao.int/APAC/Meetings/Pages/2023-FRA-webinar.aspx

2. DISCUSSION

The UAS/RPAS Implementation/Regulation Webinar for the APAC Region

2.1 The Unmanned Aircraft Systems – Remotely Piloted Aircraft Systems Implementation/Regulation Webinar for the APAC region aimed to provide an ICAO update on Unmanned Aircraft Systems regarding the latest developments in the aspects of the regulatory framework, tools and guidance, as well as training and implementation support. The webinar was supported by the ICAO RPAS Panel and UAS-Advisory Group.

2.2 The main outcomes from the ICAO side could be summarized from the following aspects:

- ICAO regulatory framework associated with the open, specific and certified categories of UAS operations;

  https://www.icao.int/safety/UA/Pages/ICAO-Model-UAS-Regulations.aspx

- The tools and guidance developed by ICAO on UAS. The toolkit includes general recommendations, guidance on regulatory development, recreational operations, examples of existing State UAS regulations, and a terminology section. Could be found at:

  https://www.icao.int/safety/UA/UASToolkit/Pages/default.aspx

- A framework and core capabilities of a "typical" UTM system, could be found at:

  https://www.icao.int/safety/UA/Documents/UTM%20Framework%20Edition%203%20Post%20Editorial.pdf

- Available training and implementation support developed by ICAO, could be found at:

  https://store.icao.int/en/catalogsearch/result/?q=Unmanned+Online+Training%20

- ICAO Asia/Pacific Activities and Regional Guidance on UAS, could be found at:

  https://www.icao.int/APAC/Documents/edocs/Asia%20Pacific%20Regional%20Guidance%20for%20the%20Regulation%20and%20Safe%20Operation%20of%20UAS%20in%20National%20Airspace.pdf

2.3 Besides, Key contributors from China, Hong Kong China, Japan, Republic of Korea, and Singapore shared their experiences in unmanned aviation. The speakers came from government regulators, air navigation service providers and operators in the unmanned aviation sector. Main outcomes could be summarized into the following aspects:

- Development of national regulatory framework. Including the relationship between the regulator and airspace user, as well as the regulation developing loop that takes into consideration the industrial chain.
- Approval of operation. Including remote pilot licensing, operations and operator certification and airworthiness.
- Airspace management. The transition from the accommodation of remotely piloted aircraft (RPA) in airspace to routine integration into the air traffic management system.

- Operational experience and benefits.

2.4 The meeting is invited to note that a series of RPAS-relevant amendments in the Standards and Recommended Practices (SARPS) in Annexes (i.e., Annex 1, Annex 6, Annex 8, and Annex 19), which RPAS of the certified category should operate in accordance with, were already or soon to be effective, and the whole package was planned to be applicable on 26 November 2026.

2.5 The webinar noted that APAC Regional Guidance, *the Asia/Pacific Regional Guidance for the Regulation and Safe Operation of UAS within National Airspace* (Version 1.0 August 2019), was developed when global guidance was still not available or under development, which had made a great contribution to the APAC region. At the time being, with the rapid development and iteration of the ICAO USA/RPAS guidance and regulation framework (from the global level), there were some differences between the pre-established Regional Guidance and the under-developing Global Guidance. ATM Sub-Group of APANPIRG may consider standardization.

2.6 In conclusion, the UAS RPAS webinar provided a platform for experts from ICAO and APAC to shape future UAS and RPAS regulation and operations. As technology advances, such forums will guide the aviation community's response, ensuring the safe implementation of these systems.

The Enhanced Wake Turbulence Separation Webinar for the APAC Region

2.7 This event was succeeded by the first RECAT Implementation Webinar which was conducted in 2022, and was also one of the follow-up actions of ATM/SG/10 (ATMSG Task List, Action Item 9/6). The event was supported by the ICAO Wake Turbulence Specific Working Group (WTSWG) and IFATCA.

2.8 The objective of the webinar was to share experiences and lessons learnt in implementing the latest[1] ICAO Wake Turbulence Groups (WTG), and provide an ICAO introduction on the development of regulations and procedures as well as operational benefits and challenges from the following aspects:

- ICAO regulatory framework associated with wake turbulence separation minima based on Wake Turbulence Groups (WTG);
- The development background and history of the Wake Turbulence Groups (WTG), with a comparison to the legacy Wake Turbulence Categories;
- Wake turbulence encounter reporting (WTER); and
- Documents and Manuals developed by ICAO.

2.9 The meeting is invited to note the new *Manual on the Implementation of Wake Turbulence Separation Minima* (Doc 10122), which will include the required guidance for implementation, will be available soon.

2.10 With respect to the Wake Turbulence Encounter Reporting (WTER), the new WTER PORTAL was developed to facilitate data collection, storage, and analysis of wake turbulence occurrences. States are encouraged to integrate the WTER submission as part of their existing reporting procedure and benefit from the analytical tools. States will be invited to nominate focal points to access and provide data to the WTER portal.

[1] ICAO Doc 4444 Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM) Amendment 9 to the Sixteenth Edition, published.

2.11 The webinar also invited key stakeholders from government regulators, air navigation service providers and operators with experience in the implementation of Wake Turbulence Groups (WTG) to exchange best practices, lessons learned and respective challenges:

- Implementation and Assessment of RECAT-CN in China;
- eWTS Implementation in Japan;
- RECAT implementation in Republic of Korea;
- Experience sharing on the implementation of eWTS for arrival at HKIA; and
- RECAT in London and Dubai.

2.12 Key topics included the rule-making process for implementing WTG, criteria for selecting trial airports, modification of suitable airports and means of compliance, safety assessment, post-implementation evaluation, controller training, and stakeholder engagement. Some noteworthy takeaways from the webinar could be summarised as follows:

- Recognize the necessity to implement the WTG by conducting benefits and safety analysis between the enhanced wake turbulence groups and legacy wake turbulence categories.
- Identify the necessary rule-making process to transpose the amendment concerning the WTG into the national requirements.
- Identify the criteria for selecting the aerodromes for the WTG trial operation based on factors such as traffic volume, fleet mix, aerodrome design, runway operation, data availability and development possibility.
- Draft the modification to the suitable airports and means of compliance, identifying and publishing significant differences, if any, in the State's Aeronautical Information Publication (AIP).
- Draft the trail operation plan, taking safety risk assessment and corresponding mitigation measures into account, especially considering possible Wake Turbulence Encounter situations.
- Post-implementation evaluation and analysis are important, such as reviewing safety cases, pilot feedback, and identifying improvement areas.
- Controller training and ATM adaptation are the prerequisites for the WTG implementation.
- Stakeholders' engagement, including flight operator education and notification, is also essential. The benefits of WTG can easily be negated if the pilots do not cooperate.
- A WTG Memory card for the controllers is a good idea.

The Free Route Airspace (FRA) Webinar for the APAC Region

2.13 The FRA Webinar was designed with a clear purpose: to acquaint member States and administrations with the concept and a lot of benefits of Free Route Airspace. This platform facilitated the sharing of successful implementations and real-world case studies from across the world. Moreover, it fostered dialogue and knowledge exchange among key stakeholders, including government regulators, ANSPs, operators, and more. The presented topics were shared as follows;

- ICAO introduced the definition and concept of FRA, along with the advantages of its implementation.

- IFATCA Europe & FAA, USA presented the case study of successful adoption and implementation of FRA.
- Eurocontrol discussed the technology and infrastructure for FRA.
- Indonesia delivered airspace management and training & development of ATC personnel obtained through UPR implementation.
- IATA shared the operator perspectives on FRA implementation.
- All participants were able to participate Q&A session using the Pigeonhole tool after each presentation.

2.14 This FRA webinar provided a comprehensive understanding of the implementation, challenges, benefits, and future possibilities of Free Route Airspace. The insights shared by experts from different regions (Europe and North America) and perspectives contributed to a holistic view of FRA's impact on modernizing aviation operations.

- IFATCA in Europe shared Maastricht Upper Area Control Center's (MUAC's) successful implementation of FRA, a significant step in modernizing aviation operations. The shared key points were various perspectives such as FRA at MUAC aligns with EU regulation, MUAC's concept of operations, challenges and rewards.
- The FAA presented on the topic of User Preferred Routes (UPR) in the Pacific Area. That highlighted the evolution of User Preferred Routes (UPRs) and their significance in improving efficiency and reducing emissions. The introduction of flexible PACOTS routes and technological advancements by Oakland ATOP played pivotal roles in achieving these benefits.
- Eurocontrol introduced integration of FRA within European ATM. That discussed the integration of FRA within the European ATM system, emphasizing the role of ATM functionalities in supporting FRA implementation. Flexible airspace management and aligning airspace users' systems with FRA are crucial for optimizing flight planning and efficiency.
- Indonesia addressed two important subjects: 'Airspace Management in FRA' and 'Training and Development of ATC Personnel for FRA'. Firstly, they explained the concept of User Preferred Routes (UPRs) and how they contribute to FRA and discussed the organization of airspace in FRA, the establishment of vertical and horizontal limits, and the gradual implementation phases. FRA requires compatibility with Flexible Use of Airspace (FUA) procedures for efficient airspace utilization.
- Secondly, Indonesia touched on 'Benefits and Training Considerations', highlighting the benefits of FRA, including optimized routes and transformed airspace utilization. They emphasized the importance of training programs for ATC personnel to smoothly adopt UPRs and FRA concepts.
- IATA underscored the transformative impact of FRA on airspace capacity, CO2 emissions reduction, and safety. They discussed various FRA strategies for different airspace contexts and presented case studies to showcase FRA's potential.

2.15 The FRA webinar concluded by highlighting the transformative potential of FRA to revolutionize air traffic management. The shift from traditional route planning to more flexible airspace utilization holds immense promise for efficiency and sustainability in aviation.

2.16 The meeting is invited to note that from the experience of the series of webinars, compared with an online discussion, the on-site workshops with in-person interaction might be better to promote the knowledge exchange in a profound and enhancive manner.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) provide comments and suggestions to improve the quality of the webinar;

c) contribute potential meaningful innovation topics for exchange and discussion in the APAC region; and

d) discuss any relevant matters as appropriate.

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