



ICAO

International Civil Aviation Organization

Fifth Meeting of the Bay of Bengal Traffic Flow Review Group (BOBTFRG/5)

Bangkok Thailand, 6 – 8 December 2023

Agenda Item 6: Any Other Business

RECENT ACTIVITIES OF FREE ROUTE AIRSPACE (FRA)

(Presented by Secretary)

SUMMARY

This paper presents ICAO provides the activities of FRA for member States/Administrations in the APAC Region, aimed at introducing the concept, sharing successful implementations, fostering dialogue.

1. INTRODUCTION

1.1 The Asia Pacific region is witnessing unprecedented growth in air traffic, necessitating the adaptation and evolution of air navigation systems. To address these challenges, ICAO acknowledges the significance of exploring modernized solutions like Free Route Airspace. FRA enables aircraft to depart from traditional fixed routes, providing greater flexibility and efficiency in route planning. The recent events related FRA aim to facilitate knowledge exchange, highlight successful case studies, and encourage collaboration among member States/Administrations. We can learn about FRA concept and trend from those events.

2. DISCUSSION

The Free Route Airspace Webinar for the member States in the APAC Region

2.1 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: [icao.int/APAC/Meetings/Pages/2023-FRA-webinar.aspx](https://www.icao.int/APAC/Meetings/Pages/2023-FRA-webinar.aspx).

2.2 The FRA Webinar on 29th August gathered 350 participants from member States, international organizations, and ANSPs to share successful FRA implementations and facilitate knowledge exchange among stakeholders like government regulators and operators. The webinar provided insights into the implementation, challenges, and future of Free Route Airspace (FRA), with expert contributions from various regions including Europe and North America.

- 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.
- IATA emphasized FRA's significant impact on increasing airspace capacity, reducing CO2 emissions, and enhancing safety, presenting various strategies and case studies demonstrating FRA's effectiveness in different airspace contexts.

Key outcomes of the ATMSG/11 meeting and trend of FRA

2.3 The ATMSG/11 meeting was held in Singapore on October 2nd – 6th, 2023, focusing on the advancements in FRTTO in the Asia-Pacific region. It provides a framework for member states to introduce and operate Free Route Airspace, contributing to modernizing aviation and enhancing environmental sustainability. Materials from the meeting are available in electronic format on the webinar webpage at: [icao.int/APAC/Meetings/Pages/2023-ATM-SG-11-New.aspx](https://www.icao.int/APAC/Meetings/Pages/2023-ATM-SG-11-New.aspx)

- Singapore has been pivotal in advancing Free Route Operations (FRTTO) in the Asia-Pacific region. During the low air traffic period from 2020 to 2022, Singapore conducted Direct Routing Operations (DRO) trials at Changi International Airport, achieving fuel savings of about 925,000kg. The DRO was fully operational by September 2022, and Singapore is now exploring cross-border DRO and User-Preferred Routes with nearby Air Navigation Service Providers (ANSPs).
- The Asia-Pacific region is gearing up for FF-ICE Release 1 services in 2024 and aims to implement a System Wide Information Management (SWIM) by 2030. FRTTO B0/1-4 is a Priority 1 element in the APAC Seamless ANS Plan, indicating its importance for future aviation management.
- Singapore advocates for cross-border FRTTO collaboration and shares its knowledge. The IATA also supports FRTTO initiatives, in line with the goal of net-zero carbon emissions by 2050.

Key outcomes of ICAO Event: Air Navigation World – ATM Procedures for Today

2.4 From October 23rd to 27th, 2023, the ICAO hosted "Air Navigation World – ATM Procedures for Today" in Singapore, focusing on innovative air traffic management (ATM) practices. The ICAO event provided a comprehensive look at emerging air navigation developments like FRA and FF-ICE, underscoring their role in modernizing global airspace management and the importance of these advancements for the Asia-Pacific region. Materials from the conference are available in electronic format on the webinar webpage at: <https://www.icao.int/Meetings/anw-atm2023/Documents/ICAO%20ANW2023-ATM%20Singapore%20-%20Preliminary%20Programme%20V1.pdf>

- The event highlighted the introduction of the Free Route Airspace (FRA) concept, a significant shift from traditional airways to a more dynamic and flexible approach. FRA enables more efficient trajectory planning within designated areas, optimizing airspace use, reducing fuel consumption, and cutting emissions.

- A primary topic was the transition from the current flight planning system (FPL2012) to Flight and Flow Information for a Collaborative Environment (FF-ICE), set for global adoption in November 2024. This change is tailored to meet the demands of a Trajectory-Based Operations (TBO) environment, overcoming existing system limitations.
- The session offered insights into the strategy for FF-ICE implementation and the future of global ATM, including connected aircraft and trajectory-based operations. The event provided essential guidance for Asia-Pacific member States on introducing and operating Free Route Airspace, with a focus on strategic planning and collaboration.

Key outcomes of the Asia-Pacific ANSP's Committee Second Meeting (AAC/2)

2.5 The AAC/2 meeting was held in Singapore on October 22-23, 2023, focusing on advancements in Trajectory-Based Operations (TBO) and Free Route Operations (FRT0) in the Asia-Pacific region. The AAC/2 meeting marks a critical milestone in the region's air traffic management, showcasing a strong commitment to advancing TBO and FRT0 for more flexible and sustainable aviation operations.

- Asia-Pacific TBO Pathfinder Project endorsed by ten signatories including major ANSPs from China, Japan, Singapore, the US, CANSO, and IATA, aims to redefine and demonstrate TBO in the region over the next four years. TBO optimizes entire flight trajectories, enhancing proactive air traffic management.
- These developments signify a significant step towards modern, efficient, and sustainable aviation operations in the Asia-Pacific region. They provide a framework for introducing and operating Free Route Airspace, marking the region's dedication to adopting advanced air traffic management technologies and methods.

Key outcomes of Free Route Airspace of International Forum

2.6 The "Free Route Airspace" International Forum was held over two days on November 9 and 10, 2023, in Mongolia. The event, attended by experts and officials from the aviation sector, focused on discussing the implementation and challenges of Free Route Airspace (FRA) in the Asia-Pacific region. The forum served as a comprehensive platform for sharing knowledge and experiences on the Free Route Airspace concept, emphasizing its significance in modernizing air traffic management and enhancing efficiency in the Asia-Pacific aviation sector. Materials from the forum are available in electronic format on the webinar webpage at: <https://www.mcaa.gov.mn/meetings/fra/more/14>

- Sessions covered a range of topics, including Mongolian aviation sector advancements, concepts of FRA, and its implementation. Notable presentations included insights into Mongolian Civil Aviation Industry, the introduction of FRA, and ATM System concepts by various international experts. Panel discussions provided a platform for in-depth discussion on FRA planning, operations, and airspace management. The forum concluded with discussions on ATM technologies for FRA, featuring international speakers.

3. CONCLUSION

3.1 The all events related FRA 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.

3.2 This meeting is invited to learn the knowledge and importance from the implementation of FRA, encourage active participation, contribution at the relevant events, and introduce Free Route Airspace Concept to its member States/Administrations in the APAC region.

4. ACTION REQUIRED BY THE MEETING

4.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) contribute potential meaningful innovation topics for exchange and discussion in the APAC region; and
- c) discuss any relevant matters as appropriate.
