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Agenda Item 7: Any Other Business

INDONESIA’S PROGRESS ON USER PREFERRED ROUTES (UPR) AND CROSS-FIR BOUNDARY OPERATIONS TOWARD REGIONAL FRA READINESS
(Presented by Indonesia)

SUMMARY

This paper presents Indonesia’s progress in the implementation of User Preferred Routes (UPR) from 2020 to 2025, including operational outcomes, environmental benefits, challenges identified through system monitoring, and regional developments such as cross-FIR UPR operations with Australia, Singapore, Port Moresby, and Oakland. The paper also highlights Indonesia’s readiness and contributions toward future regional Free Route Airspace (FRA) and Free Route Trajectory Operations (FRTO) implementation within the APAC region.

1. INTRODUCTION

1.1 Since 2020, Indonesia has undertaken phased trials and gradual implementation of User Preferred Routes (UPR) within the Jakarta and Ujung Pandang FIRs as part of its transition toward trajectory-based operations and regional Free Route Airspace (FRA). This structured, step-by-step approach—aligned with ICAO GANP, the APAC Seamless ANS Plan, and relevant ASBU modules—has enabled Indonesia to safely introduce and expand flexible, wind-optimized routing while maintaining safety, predictability, and controller workload stability.

1.2 Indonesia fully incorporated UPR procedures into the AIP on 5 October 2023, marking a significant milestone in the APAC region. Subsequently, cross-border UPR operations were expanded to multiple adjacent FIRs, including Port Moresby, Oakland Oceanic, Singapore (via Direct Routing), Brisbane, and Melbourne.

1.3 In parallel with the implementation of UPR, Indonesia is upgrading its ATM capability through the replacement of the Jakarta Air Traffic Management Automation System (new ATMAS), which will significantly enhance trajectory processing, interoperability, and the management of flexible routing in high-density airspace. These enhancements position Indonesia to further expand UPR and support future FRA development. In this context, Indonesia encourages BOB States to explore similar UPR development pathways and collaborate on regional harmonisation to improve long-haul traffic flows across the Bay of Bengal and adjoining FIRs.

2. DISCUSSION

Implementation Phases (2020–2025)

2.1 Indonesia implemented UPR through a structured and risk-managed approach, beginning with limited trials in June 2020 and expanding through several phases, including waypoint-based UPR, lat/long flexibility, international arrivals/departures, publication in AIP, and multi-FIR interoperability.

2.2 In 2023, Indonesia entered the “Confidence Phase,” during which UPR operations were further stabilised and validated through large-scale usage, including the successful handling of 349 Hajj UPR flights across both FIRs. A comprehensive evaluation conducted in June 2023 recommended refinement of the eligible flight level band, resulting in the adjustment from FL310–FL600 to FL330–FL600 to ensure appropriate level utilisation and maintain controller workload predictability. Subsequently, on 5 October 2023, Indonesia formally published UPR procedures in the AIP, marking the transition of UPR from trial-based operations to a fully established procedure applicable to international flights within the Jakarta and Ujung Pandang FIRs.

2.3 By 2024, Indonesia recorded approximately 4,200 UPR movements across both FIRs, reflecting steady growth in user uptake and increasing operational confidence among ATCOs. This upward trend continued into 2025 with the expansion of the Australia–Indonesia Cross-FIR Boundary UPR Trial, enabling up to 70 eligible daily flights across participating airlines. Furthermore, following the signing of the dedicated MoU on 27 November 2025, an additional 15 Jetstar city-pair flights were incorporated into cross-FIR UPR operations, further strengthening regional participation and demonstrating sustained airline interest in flexible routing options.

Performance Benefits

2.4 Across the January–October 2025 reporting period, UPR implementation continued to deliver substantial operational and environmental benefits. A total of 4,152 UPR flights were recorded during this period, generating significant efficiency gains through an average fuel saving of 300 kilograms per flight. Using the ICAO CO₂ emission factor of 3.15 kilograms of CO₂ per kilogram of fuel, the cumulative fuel savings resulted in an estimated 174,398 tons of CO₂ reduction. These outcomes further demonstrate the effectiveness of UPR in reducing track miles, lowering fuel burn, and supporting national and ICAO environmental objectives. Overall, the findings confirm that UPR consistently provides reliable and repeatable efficiency gains, contributing both to enhanced flight optimisation and to Indonesia’s broader commitment to sustainable aviation.

2.5 Safety monitoring throughout all UPR phases confirmed that the introduction of flexible routing did not generate any significant increase in sector complexity or controller workload within either the Jakarta or Ujung Pandang ACC. The combination of phased implementation, improved trajectory-processing capability, enhanced conformance monitoring, and strengthened AIDC coordination enabled UPR flights to be integrated seamlessly with conventional traffic flows. No increase in conflict rates or separation-related occurrences attributable to UPR operations was observed, demonstrating that UPR can be safely accommodated within routine operations without imposing additional burden on controllers.

Challenges Identified

2.6 System monitoring and operational evaluations identified several challenges requiring further refinement. A significant proportion of UPR flight plans—ranging from 40–52%—were rejected by ATC systems due to formatting inconsistencies, incorrect waypoint structures, missing or misplaced UPRINA remarks, and routing that inadvertently intersected prohibited, restricted, or danger areas. These issues were further compounded by varying levels of operator understanding, including cases where domestic flights or functional check flights incorrectly filed UPR indicators. Additionally, industry feedback highlighted usability concerns related to the current AIP requirement for submitting individual or three-month bulk UPR notifications, particularly for airlines operating dynamic long-haul schedules, indicating the need for more practical and harmonized processes.

Ongoing and Planned Enhancements

2.7 In response to industry feedback regarding the practicality of current UPR notification and flight-plan submission requirements, Indonesia is undertaking a comprehensive review to explore options for simplifying and streamlining the process. Airlines have highlighted that existing procedures—such as individual email submissions or three-month bulk notifications—are difficult to maintain for dynamic long-haul operations and high-frequency dispatch environments. Accordingly, the review focuses on developing more flexible, system-based mechanisms that reduce administrative burden, improve filing consistency, and support higher UPR uptake, while ensuring that operational monitoring and safety oversight remain uncompromised.

2.8 Complementing these procedural improvements, Indonesia is also enhancing its technical and operational readiness for regional interoperability and future cross-boundary UPR expansion through the commissioning of the new ATM Automation System (ATMAS) at the Jakarta Air Traffic Service Center. The system introduces enhanced ADS-C and CPDLC capabilities, comprehensive AIDC Version 3 messaging, improved trajectory-processing functions, and integrated AMAN/DMAN tools, significantly strengthening coordination efficiency and automation across FIR boundaries. Together with upgraded AMHS and AIM systems, these enhancements further reinforce Jakarta’s readiness to support cross-border UPR operations—including within the Bay of Bengal region—by enabling more reliable trajectory negotiation, reducing manual workload, and improving harmonized coordination with neighbouring FIRs.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
- a) note the information contained in this paper;
 - b) discuss opportunities to harmonize UPR implementation across the BOB region and adjacent FIRs;
 - c) consider Indonesia’s experience as a reference for regional FRA planning; and
 - d) encourage States to share similar UPR/FRTO progress at future BOBTFRG meetings.

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