International Civil Aviation Organization

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Agenda Item 4: Discussion on PBN Routes Development and FLAS/FLOS Optimisation

Harmonization of Performance-Based Navigation (PBN) Routes in the South China Sea Region, Particularly Within and Surrounding the Ujung Pandang FIR

(Presented by Indonesia)

SUMMARY

This paper provides an overview of Indonesia's efforts to support the harmonization of Performance-Based Navigation (PBN) routes in the South China Sea region, focusing on the Ujung Pandang Flight Information Region (FIR) and adjacent airspaces.

1. INTRODUCTION

1.1 In response to the ICAO Asia/Pacific Seamless ATM Plan and the growing traffic demand across the South China Sea region, several States have begun restructuring their airspace and transitioning to PBN routes, particularly RNAV and RNP-based routes.

1.2 Within the Ujung Pandang FIR, Indonesia has identified the opportunity to contribute to regional harmonization by reviewing current route structures, identifying inefficiencies, and collaborating with neighboring FIRs to improve route connectivity and continuity.

1.3 Indonesia acknowledges the importance of collaborative regional efforts to enhance airspace efficiency, safety, and capacity by transitioning from conventional ATS route structures to seamless PBN-based route networks.

2. DISCUSSION

2.1 A domestic working group has been established to assess and redesign route segments within the Ujung Pandang FIR based on PBN principles. The assessment includes identifying underutilized conventional ATS routes such as A461, B472, B473, R590, B462, A339.

2.2 In the other side, route enhancements and the transition to Performance-Based Navigation (PBN) in Indonesia will continue to progress through the following initiatives:

- Ongoing development of cross-border User Preferred Route (UPR) alignment and realignment efforts, including close coordination with adjacent FIRs such as Manila and Kota Kinabalu.

- The implementation of enhancements on route M768 has been completed; however, updates to the Letter of Operational Coordination Agreement (LOCA) are still required to officially transition the route status from "trial" to "implemented".

Longitudinal Spacing Initiatives

2.3 Indonesia supports the phased implementation of surveillance-based longitudinal separation (30NM), in coordination with adjacent Flight Information Regions (FIRs), as part of regional airspace harmonization and efficiency improvements. Specific efforts include:

- Route A461, B472, B473 (Indonesia–Australia): Implementation remains conditional upon the availability and reliability of surveillance capabilities along these routes.

- Route M768 (Indonesia-Malaysia): Implementation is currently in progress, pending the finalization and signing of the updated Letter of Operational Coordination Agreement (LOCA).

2.4 Several conventional ATS routes have been identified for optimization and potential restructuring, aimed at improving airspace efficiency, reducing fuel consumption, and supporting PBN transition objectives.

Route	Current Status	Proposed Action		Remark
A461	Conventional	Implement 30 NM spacing (based on radar/surveillance)		Requires improved coordination with Manila FIR
R590	Conventional	Enhance longitudinal spacing through bilateral LOCA update		Confirm via LOCA with Philippines
B472	Conventional	Implement 30 NM spacing (based on radar/surveillance)		Requires improved coordination with Manila FIR
B473	Conventional	Enhance longitudinal spacing through bilateral LOCA update		Confirm via LOCA with Philippines
B462	Conventional	Enhance longitudinal spacing through bilateral LOCA update		Confirm via LOCA with Philippines
G578	Conventional	Implement 30 NM spacing (based on radar/surveillance)		Requires improved coordination with Manila FIR
A339	Conventional	Enhance longitudinal spacing through bilateral LOCA update		Confirm via LOCA with Philippines

Table 1: Conventional ATS Routes within Ujung Pandang FIR

2.5 To support these longitudinal spacing initiatives, Indonesia has deployed sufficient surveillance infrastructure, including radar and ADS-B coverage across major sectors of Indonesia's airspace. This infrastructure enables the application of reduced separation minima and enhances situational awareness for both controllers and aircraft operators.

2.6 Furthermore, timely updates to Letters of Operational Coordination (LOCA) with adjacent FIRs, particularly with Malaysia and the Philippines, are essential to harmonize separation

standards and ensure seamless procedural transitions across FIR boundaries, enabling effective implementation of surveillance-based spacing.

Conclusion

2.7 The optimisation of ATS conventional route within Ujung Pandang FIR was made possible through the shared commitment of the States involved to promote efficient and seamless operations collaboratively and support the long-term growth of regional air traffic.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Note Indonesia's initiative to apply PBN separation minima on conventional ATS routes as an interim performance enhancement strategy.

b) Support the proposal to implement 30 NM longitudinal spacing on Route A461, R590, B472, B473, B462, A339, G578 between Indonesia and the Philippines

c) Recognize the potential of upgrading Route A461, B472, B473, B462, A339 and G578 to a PBN route linked to Manila FIR as part of long-term planning

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