

**61<sup>ST</sup> CONFERENCE OF  
DIRECTORS GENERAL OF CIVIL AVIATION  
ASIA AND PACIFIC REGION**

*Kuala Lumpur, Malaysia  
7 – 11 September 2026*

**AGENDA ITEM 4:      AIR NAVIGATION**

**REDUCTION OF LONGITUDINAL SEPARATION MINIMUM  
IN KUALA LUMPUR FIR AND KOTA KINABALU FIR**

(Presented by Malaysia)

**INFORMATION PAPER**

**SUMMARY**

This paper describes Malaysia's progressive transition from time-based separation mechanisms to enhanced distance-based longitudinal separation minima within Kuala Lumpur and Kota Kinabalu Flight Information Regions (FIRs) and at the Transfer of Control (TOC) points with neighbouring FIRs.

## **REDUCTION OF LONGITUDINAL SEPARATION MINIMUM IN KUALA LUMPUR FIR AND KOTA KINABALU FIR**

### **1. INTRODUCTION**

1.1 Malaysia, in close coordination with regional stakeholders, including through the South China Sea Traffic Flow Review Group (SCSTFRG) and the Bay of Bengal Traffic Flow Review Group (BOBTFRG), has progressively enhanced longitudinal separation standards through the increased application of Performance-based Navigation (PBN) and utilisation of surveillance technology. This transition aligns with global campaign, discussed and endorsed at the Fourteenth Air Navigation Conference (AN-Conf/14), through *AN-Conf/14 Recommendation 3.1/1*, which called for the optimized implementation of longitudinal separations of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less elsewhere.

1.2 Through the strategic deployment of PBN, Automatic Dependent Surveillance-Contract (ADS-C), and Controller-Pilot Data Link Communications (CPDLC), Malaysia has implemented reduced longitudinal separation minima with neighbouring States across the Bay of Bengal and the South China Sea regions, supporting regional airspace efficiency and harmonisation objectives.

### **2. DISCUSSION**

2.1 Malaysia's airspace modernisation programme continues to support the objectives of ICAO's Project 30/10 through a series of operational enhancements implemented within the Kuala Lumpur FIR (KL FIR) and Kota Kinabalu FIR (KK FIR). This roadmap encompasses harmonisation and modernisation within the KL FIR and Kota Kinabalu FIR KK FIR.

#### South Asia (Bay of Bengal area)

2.2 Initial progress was achieved through the introduction of RNP 10 ATS routes to support a 50 NM longitudinal separation standard on ATS routes (L510, P628, N571, and P574), within the KL FIR.

2.3 To further optimise the high-density traffic flows on ATS route N571 connecting the KL FIR and the Chennai FIR, Malaysia initiated a 30 NM Performance-Based Communication and Surveillance (PBCS) longitudinal separation trial between waypoints GUNIP and IGOGU in 2025. Following safety and operational assessment, the trial concluded in August 2026 and supported the implementation of 30 NM longitudinal separation operations within the designated sector. As a result, operational efficiency increased to 40%.

#### Southeast Sea (South China Sea area)

2.4 Within the surveillance environment of Southeast Asia, Malaysia has implemented a longitudinal separation minimum of 20 NM with adjacent States via bilateral ATS agreements. This framework was established with Singapore in 2001, Viet Nam in 2017, Indonesia in 2023, and Thailand in 2025. This development demonstrates the growing level of regional interoperability and strengthened ATC coordination arrangements.

2.5 In 2024, Malaysia and Indonesia agreed to the reduction of longitudinal separation on ATS route P648, connecting the Kota Kinabalu FIR and Jakarta FIR, from a 10-minute longitudinal separation to a distance-based 50 NM separation standard for overflight traffic. 20 NM longitudinal separation minimum was also introduced for aircraft pairs where one or both aircraft are destined for aerodromes within the Kota Kinabalu FIR.

2.6 Malaysia and the Philippines has implemented 50 NM longitudinal separation on ATS routes M646 and A341. Malaysia and the Philippines continue to examine opportunities for further reductions in separation on selected ATS routes (M754 and M522), subject to operational, safety, and technical assessments.

2.7 Therefore, the transition from time-based to distance-based separation within surveillance coverage across KL FIR and KK FIR has increased operational efficiency to 87%.

2.8 Current Longitudinal Separation Arrangements between Malaysian FIRs and Adjacent FIRs

| Adjacent State / FIR                      | Airspace Category        | Current Status                        | Project 30/10 |
|-------------------------------------------|--------------------------|---------------------------------------|---------------|
| Singapore (Singapore FIR)                 | S ↔ S                    | 10 NM                                 | 10 NM         |
| Indonesia (Jakarta and Ujung Pandang FIR) | S ↔ S                    | 20 NM                                 | 10 NM         |
|                                           | S ↔ R (L645, P574, P627) | 50 NM                                 | 30 NM         |
| Thailand (Bangkok FIR)                    | S ↔ S                    | 20 NM                                 | 10 NM         |
|                                           | S ↔ R (L645, P627)       | 10 minutes                            | 30 NM         |
| Viet Nam (Ho Chi Minh FIR)*               | S ↔ S                    | 20 NM                                 | 10 NM         |
| Philippines (Manila FIR)                  | S ↔ S                    | 50 NM/ 30NM trial                     | 10 NM         |
|                                           | S ↔ R (M522, M754)       | 10 minutes                            | 30 NM         |
| India (Chennai FIR)                       | R ↔ R                    | 50 NM / 30 NM<br>RNP2/RNP4 PBCS trial | 30 NM         |

\*ATS is provided by Malaysia within a portion of the routes in the Singapore FIR

### 3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to note the information contained in this Paper.

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