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Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

REDUCED LONGITUDINAL SEPARATION OVER HIGH SEAS AIRSPACE

(Presented by Oman)

EXECUTIVE SUMMARY

This working paper presents the initiatives undertaken to sustain the long-term application of the 20 NM surveillance-based reduced longitudinal separation minimum (RLS) across the high seas airspace over the Arabian Sea and the Indian Ocean. It reflects joint coordination and operational collaboration between Oman and India. The successful application of the 20 NM RLS at the significant waypoint RASKI on air traffic services (ATS) Routes L301, N881 and L639 constitutes a key milestone in enhancing regional airspace capacity and safety, in alignment with the objectives set forth in ICAO's Global Air Navigation Plan (GANP).

<i>Strategic Goals:</i>	This working paper relates to the Strategic Goal <i>Aviation Delivers Seamless, Accessible and Reliable Mobility for All</i> .
<i>Financial implications:</i>	Not applicable.
<i>References:</i>	Doc 4444, <i>Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM)</i> Doc 9854, <i>Global Air Traffic Management Operational Concept</i> Doc 9750, <i>Global Air Navigation Plan (GANP)</i> ICAO MIDANPIRG/22 and APANPIRG meeting outcomes ICAO MID ATM SG/10-IP/3

1. INTRODUCTION

1.1 The high seas airspace over the Arabian Sea and the Indian Ocean constitutes critical air corridors connecting the continents of Asia, Africa and Europe. Given the high volume of overflight traffic and the strategic importance of this region, Oman and India have undertaken collaborative efforts to enhance capacity and efficiency through the implementation of advanced surveillance-based separation minima.

1.2 In this context, the introduction of a 20 NM surveillance-based reduced longitudinal separation minimum, supported by space-based automatic dependent surveillance — broadcast (ADS-B) surveillance, represents a major milestone in inter-regional airspace modernization. This working paper

outlines the current implementation status and highlights the institutional mechanisms established to ensure the continuity and sustainability of this initiative, in accordance with ICAO's performance-based approach.

2. DISCUSSION

2.1 Regional initiative and strategic context

2.1.1 Following the successful trial, the full-scale implementation of the 20 NM surveillance-based reduced longitudinal separation minimum became effective on 21 May 2025, coordinated through established inter-regional channels, with all operational challenges duly noted and addressed.

2.1.2 The implementation of the 20 NM separation minimum aligns with the ICAO Aviation System Block Upgrades (ASBUs), particularly Modules B1-ASEP and B1-SURF, which promote increased use of surveillance data for separation and situational awareness.

2.1.3 The initiative is anchored in collaborative inter-regional planning processes under the auspices of ICAO Asia and Pacific Office, Bangkok (APAC) and Middle East (MID) Regional Offices has benefited from the work of dedicated task forces composed of air navigation service providers (ANSPs), regulatory authorities and industry stakeholders.

2.2 Operational progress

2.2.1 Phased implementation: The 20 NM RLS was introduced incrementally, beginning with trials in selected area navigation (RNAV) routes L301, L639, N881 and expanding based on performance data and safety assurance results.

2.2.2 Surveillance Infrastructure: The deployment of space-based ADS-B systems has enabled consistent and wide-ranging surveillance coverage over oceanic areas, thereby supporting the safe application of reduced separation Standards.

2.2.3 Cross-border coordination: Effective inter-regional coordination protocols and Letters of Agreement (LoAs) were established to ensure seamless application of separation minima across flight information region (FIR) boundaries, including real-time coordination, longitudinal transfer point harmonization and conflict resolution procedures.

2.3 Safety assurance and monitoring

2.3.1 Safety assessments were carried out in accordance with ICAO safety management system (SMS) principles. The national coordination bodies endorsed the findings, confirming that implementation is compliant with globally accepted target levels of safety.

2.3.2 Continuous post-implementation monitoring is being conducted to capture operational data, track anomalies and adapt further refinements to procedures.

2.4 **Benefits and sustainability considerations**

2.4.1 Key benefits observed:

- a) enhanced enroute airspace capacity, route and optimal flight levels availability;
- b) reduction in controller workload;
- c) improved strategic and tactical management of oceanic traffic; and
- d) reduction in aircraft fuel consumption and associated CO₂ emissions.

2.5 **Sustainability measures**

2.5.1 To ensure the sustainability of 20 NM RLS initiative, the following actions have been prioritized:

- a) harmonized coordination procedures and controller training across FIRs;
- b) consistent application of longitudinal separation;
- c) establishment of data exchange and performance review mechanisms;
- d) strengthening of regional institutional frameworks to support long-term oversight.

2.6 **Future plan**

2.6.1 The inter-regional 20 NM RLS task force will continue to support technical coordination, promote data sharing and ensure alignment with ICAO's Global air traffic management (ATM) vision.

2.6.2 Expansion of 20 NM RLS to additional ATS routes and traffic flows, particularly in high-density corridors and underserved oceanic sectors.

2.6.3 Enhancement of operational data exchange and performance review frameworks to support evidence-based decision-making and post-implementation monitoring.

3. **CONCLUSION**

3.1 The implementation of 20 NM RLS over high seas airspace over the Arabian Sea and Indian Ocean marks a significant advancement in regional ATM capability. The collaborative spirit among regional partners, together with robust safety management and institutional support, provides a strong foundation for further enhancements in airspace efficiency and sustainability.

3.2 These initiatives will further support the region's transition toward performance-based airspace management, in line with ICAO's vision for a globally interoperable and efficient air traffic management system.