International Civil Aviation Organization

MIDANPIRG/22 & RASG-MID/12 Meetings

(Doha, Qatar, 4 – 8 May 2025)

Agenda Item 5.3: ANS (AIM, PBN, AGA-AOP, ATM-SAR, CNS and MET)

OPTIMIZATION OF LONGITUDINAL SEPARATION ACROSS MID REGION

(Presented by Saudi Arabia)

SUMMARY

The 14th Air Navigation Conference (AN-Conf/14) held at ICAO HQ from 26 August to 6 September 2024 supported the initiative developed by ICAO Secretariat which proposes to apply uniform longitudinal separations of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less elsewhere, with the objective of enhanced operational efficiency of the global air navigation system. **This initiative is known as "Project 30/10"**.

This paper provides an overview of the challenges resulting from the application of different separation minima across MID flight information regions, which creates complexities and potential safety or efficiency issues at the boundaries.

Action by the meeting is at paragraph 3.

REFERENCE(S)

- Annex 11 – Air Traffic Services.
- AN-Conf/14 – Conference Report on Agenda Item 3.
- Doc 4444, Air Traffic Management, Chapter 5.
- Doc 9689, Manual on Airspace Planning Methodology for the Determination of Separation Minima.

1. INTRODUCTION

1.1 The separation standards are based on the provisions of ICAO Doc 4444 (Procedures for Air Traffic Management), especially Chapter 5. The vertical, horizontal, and longitudinal separation standards achieve the safe navigation of aircraft in controlled airspace. The Differences from these standards (if any) are published in national AIPs.

1.2 The application of these standards ensures safe separation between aircraft, and from protected and regulated airspace. The separation standards may sometimes serve to reduce exposure to Wake Vortex Turbulence.

1.3 The methods used to achieve separation are varied and complex, depending on the phase of flight and the relative trajectories of the aircraft involved. The selection of separation minima needs to be made in consultation between the appropriate ATS providers to ensure compatibility on both sides of the line of transfer of traffic (Annex 11, 3.4.1 b) refers). The Separation minima depends on the following factors:

- Surveillance systems capabilities;
- ATS Communication capabilities (Voice, Data Link);
- Airspace Classification;
- Navigation Performance (RNAV, RNP capabilities of the airspace users); and
- Phase of the flight(Oceanic, En-route, Terminal Area, and Approach).

1.4 The separation minima need to be applied with the highest practicable degree of uniformity, particularly across airspace boundaries, to facilitate and improve air navigation and prevent the unintended introduction of inefficiencies.

2. DISCUSSION

Separation Minima Across MID FIRs

2.1 The application of different separation minima across MID flight information regions creates complexities and potential safety or efficiency issues at the boundaries. Several challenges result from the difference in the separation minima, such as:

- systematic use of adjustments to flight paths or speeds as aircraft approach or cross FIR boundaries, potentially leading to less efficient routes and delays;
- reduction of the overall capacity of the airspace;
- increase inefficiencies and unpredictability in the air traffic system within the MID region;
- disparity in traffic flow between FIRs, which induces bottlenecks and hotspots between FIRs and a lack of harmonization;
- increase workload for ATCOs and pilots with a potential risk for errors, especially during busy hours.

2.2 The disparity between the separation minima implemented by MID States has many reasons that can be summarized as follows:

- Deployment of different levels of surveillance and ATS communication technologies and systems;
- Airspace structure, complexity, and traffic density;
- Size of the FIRs; and
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- Traffic flow and ATS network.

2.3 Under Agenda item 3.1, the 14th Air Navigation Conference (AN-Conf/14) held at ICAO HQ from 26 August to 6 September 2024 supported the initiative developed by ICAO Secretariat which proposes to apply uniform longitudinal separations of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less elsewhere, with the objective of enhanced operational efficiency of the global air navigation system. This initiative is known as "**Project 30/10**".

2.4 The conference noted that Air Traffic management (ATM) performance improvement was often hampered by the application of different separation minima across flight information region boundaries, or separation minima that are inconsistent with those typically applied across a region or sub-region.

2.5 The Conference adopted Recommendation 3.1/1, inviting:

- States within the processes of the planning and implementation regional groups, actively collaborate with neighboring States to implement longitudinal separations of 55.5 km (30 NM) or less in oceanic and remote airspace, and 19 km (10 NM) or less elsewhere;
- ICAO, through the planning and implementation regional groups, develop regional action plans for the 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.

2.6 Conclusion

2.6.1 The harmonization of separation minima between adjacent MID States, especially in areas with high traffic flow or critical transitions in-flight, can be achieved based on Recommendation 3.1/1 of the AN-Conf/14. The regional action plan may be structured considering the following factors:

- analysis of the current situation of all separations applied within MID FIRs and between adjacent FIRs;
- identify FIRs where longitudinal separations of 55.5 km (30 NM) or less, and 19 km (10 NM) or less can be applied;
- conduct of Safety Risk Assessments for the introduction of the longitudinal separations of 55.5 km (30 NM) or less, and 19 km (10 NM) or less. The SRAs should cover all safety requirements and mitigations;
- identify technical and operational enablers for the introduction of the new separation minima between adjacent MID States;
- identify changes to ATS network to support the introduction of the longitudinal separations of 55.5 km (30 NM) or less, and 19 km (10 NM) or less;
- develop transition procedures and enhanced coordination between adjacent ANSPs. This transition should include traffic transfer and handover procedures, amendments to the ATS agreements; and
- training for air traffic controllers and operational Staff on the applicable separation minima.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information provided in this WP; and

b) consider factors related to reduction of longitudinal separation as presented in para 2.6.

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