International Civil Aviation Organization

The Fourth Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/4)

Bangkok, Thailand, 18 – 21 March 2025

Agenda Item 4: Implementation of CNS-ATM Systems

UPDATE ON THE AMENDMENT CONCERNING SEPARATION MINIMA BASED ON AN ATS SURVEILLANCE SYSTEM TO THE PANS-ATM (DOC 4444)

(Presented by Secretariat)

SUMMARY

This paper updates on the amendment concerning separation minima based on an ATS surveillance system to the PANS-ATM (Doc 4444).

1. INTRODUCTION

1.1 The ICAO Air Navigation Commission, acting under delegated authority, on 14 February 2024, approved Amendment 12 to the sixteenth edition of the Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM, Doc 4444), for applicability on 28 November 2024.

1.2 Amendment 12 to PANS-ATM (Doc 4444) is intended to:

a) clarify the difference between the existing time-based wake turbulence separation minima and the new time-based separation (TBS) minima provisions;

b) update provisions related to separation minima based on an ATS surveillance system;

c) amend Notes related to the remote air traffic services and figures concerning special procedures for in-flight weather contingencies; and

d) update definitions and provisions to enable the initial implementation of the flight and flow — information for a collaborative environment (FF-ICE) services.

1.3 This Paper is focus on the the amendment concerning separation minima based on an ATS surveillance system to the PANS-ATM (doc 4444).

2. DISCUSSION

Amendment concerning separation minima based on an ATS surveillance system

2.1 Safety impact: Positive. Current oceanic and remote continental separation standards are based on specified tracks or ATS routes. This can result in forcing aircraft at the vertical minimum into closer proximity horizontally (i.e. requiring them to fly on the same track). Implementation of the new separation minimum offers a potential mitigation to this

situation. The new separation allows some aircraft to travel off the fixed route system, therefore reducing traffic following each other on same-identical tracks and consequently reducing the overall risk of aircraft being closely spaced following each other. Additionally, it is anticipated that it will be far simpler, and therefore safer, (and more efficient) for controllers to manage weather diversions using surveillance instead of procedural separation. More flexibility to allow aircraft to operate in accordance with their flight planned or requested routes offers a benefit as frequently, lateral deviation errors are associated with "followed the flight plan instead of the clearance".

2.2 Financial impact: Negligible for States and negative for industry. For States, while the new minimum will necessitate potential amendments to national regulations and oversight activities, it is considered that most of the oversight issues (certification/operational approvals) are already extant and, therefore, there will be little additional imposition to a State. However, for industry, air navigation services providers may experience some costs associated with upgrades to the surveillance data processing system, purchasing space-based ADS-B data, personnel training and documentation updates. However, the decision to implement the associated separation remains elective. Operators may have associated cost increases (in air traffic service charges); however, the commensurate gain from increased availability of clearances to achieve optimal flight levels decreases fuel costs. Therefore, the operators will experience a decrease in overall costs. **Standardized Routes:** Designating specific routes that aircraft can use during weather-related events, with pre-defined waypoints and flight level blocks to minimize the risk of conflict.

Quoting the Affected Paragraphs of the PANS-ATM

2.3 The affected paragraphs of the PANS-ATM are quoting below:

8.7.3.3 Where the communications system used satisfies RCP 240, a horizontal separation minimum based on an ATS surveillance system of 28 km (15 NM) may be applied. Notification-Based Mechanism:

Note 1.— The application of the horizontal minimum in 8.7.3.3 does not require aircraft to operate on specified tracks, and is therefore readily applicable to free-route airspace. The application of the minima provided under 8.7.4, however, is predicated upon aircraft operating on separated tracks, and is therefore suitable where a route network or organized track structure is, or is intended to be established.

Note 2.— Guidance material for the implementation of the horizontal minimum in 8.7.3.3 is contained in the Guidelines for the Implementation of Separation Minima Using ATS Surveillance Systems Where Very High Frequency (VHF) Voice Communications Are Not Available (Doc 10116)

8.7.3.3.1 An alternate means of communication shall be available to allow the controller to intervene and resolve a conflict within a total time of nine minutes, should the normal means of communication fail.

8.7.3.4 The separation minimum or minima based on radar and/or ADS-B and/or MLAT systems to be applied shall be prescribed by the appropriate ATS authority according to the capability of the particular ATS surveillance system or sensor to accurately identify the aircraft position in relation to the centre of a position symbol, PSR blip, SSR response and

taking into account factors which may affect the accuracy of the ATS surveillance system-derived information, such as aircraft range from the radar site and the range scale of the situation display in use.

Supporting Documentation

2.4 The *Guidelines for the Implementation of Separation Minima Using ATS Surveillance Systems Where Very High Frequency (VHF) Voice Communications Are Not Available (Doc 10116)* is in the approval process. It will be published by Q2 2025.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) discuss any relevant matters as appropriate.

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