



International Civil Aviation Organization

MIDANPIRG/23 & RASG-MID/13 Meetings

(Cairo, Egypt, 14 – 18 May 2026)

Agenda Item 5.4: PBN

OUTCOMES OF THE PBN SG/10 MEETING

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes of the Tenth Meeting of the MIDANPIRG Performance-Based Navigation Sub-Group (PBN SG/10).

Action by the meeting is at paragraph 3

REFERENCE

- PBN SG/10 Report
- MIDANPIRG/22 Report
- MID Doc007

1. INTRODUCTION

1.1 The Tenth meeting of the Performance Based Navigation Sub-Group (PBN SG/10) was successfully held in Amman, Jordan, from 10 to 11 December 2025. The meeting was attended by a total of seventy-three (73) participants from eleven (11) States (Egypt, Iran, Iraq, Jordan, Libya, Oman, Qatar, Saudi Arabia, Sudan, UAE and Yemen) and five (5) Organizations/Industries (IATA, RISK, CGX AERO, UATS and PVS AERO).

1.2 The PBN SG/10 meeting reviewed progress on PBN implementation across the MID Region and addressed a wide range of operational, technical, and strategic subjects relevant to the advancement of Performance-Based Navigation in the MID Region.

2. DISCUSSION

GLOBAL AND REGIONAL DEVELOPMENTS

2.1 The meeting addressed global and regional PBN developments, including outcomes of the Seventeenth Meeting of the Instrument Flight Procedures Panel (IFPP/17), GNSS radio frequency interference (RFI) and ICAO's mitigation roadmap, updates from the True North Advisory Group (True-AG), and the eighth edition of the Global Air Navigation Plan (GANP).

2.2 The meeting was apprised of the main outcomes of the Seventeenth Meeting of the Instrument Flight Procedures Panel (IFPP/17), held in Montreal from 28 October to 6 November 2025. The meeting noted that while PBN is founded on defining required navigation performance and ensuring its appropriate protection, current instrument flight procedure design criteria remain largely sensor-based. The IFPP is actively working towards a more performance-driven approach, to modify

the current PBN procedure design criteria from sensor-based to performance-based, with the aim of achieving greater global harmonization of procedure design criteria.

2.3 The meeting was briefed on global developments related to GNSS radio frequency interference (RFI), including jamming and spoofing, and the associated safety risks across multiple aviation applications PBN, ADS-B/ADS-C, airborne safety net systems, and CNS/ATM time synchronization, including loss of control, CFIT, and risk of mid-air collision. The ICAO roadmap to address GNSS RFI was presented, outlining short-, medium-, and long-term actions encompassing the development of the GNSS RFI iPack, enhancement of NOTAM coding, implementation of Resilient Navigation Operational Networks (NAV RON), Complementary PNT (C-PNT), and the future introduction of Dual Frequency Multi-Constellation (DFMC) GNSS.

2.4 The meeting received an awareness briefing on the work of the True North Advisory Group (True-AG), a closed ICAO advisory group mandated to assist ICAO in developing a framework for a safe and efficient global transition from magnetic north to true north reference.

2.5 The meeting was presented with an overview of the Global Air Navigation Plan (GANP) 8th Edition (2025), with particular focus on updates to the Approach Procedures with Vertical Guidance (APTA) thread within the ASBU framework.

Regional PBN Implementation Status

2.6 The meeting reviewed the status of PBN implementation in the MID Region in relation to ICAO Assembly Resolution A37-11. Based on iSTARS data updated as of March 2025, the level of compliance with Resolution targets in the MID Region remains below the global average for the applicable milestone years.

2.7 The overall percentage of runway ends provided with PBN approaches in the MID Region stands at approximately 70 per cent (106 PBN runway ends out of 151 instrument runway ends), indicating that further efforts are required to reach full implementation.

2.8 The average regional implementation across the relevant APTA Block 0 elements (B0/1, B0/2, B0/4, B0/5, and B0/7) stands at approximately at 69.6 per cent, with significant disparities among States. In particular, persistent challenges exist in the implementation of Continuous Descent Operations (CDO), Continuous Climb Operations (CCO), and Performance-Based Aerodrome Operating Minima (PBAOM).

2.9 Common challenges identified include institutional, technical, operational, and financial constraints, as well as issues related to procedure usability and training. The meeting agreed on the need for dedicated PBN capacity-building activities under the MID Regional Programme framework, including a workshop on PBAOM and CCO/CDO procedures.

2.10 In light of the above, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 10/1: PBN AND CCO/CDO WORKSHOP

That,

- a) a PBN and CCO/CDO Workshop be organized in 2026; and*
- b) MID States and stakeholders are encouraged to actively participate in the Workshop to exchange experiences, address challenges, and foster collaboration.*

Review of PBN Planning and Implementation Priorities

2.11 The meeting recalled that the MID Region PBN Implementation Plan (MID Doc 007, May 2023) provides the regional PBN roadmap aligned with the ICAO Global Air Navigation Plan (GANP) and the Aviation System Block Upgrades (ASBU) framework, and emphasized the need for its timely update to reflect recent global and regional developments.

2.12 Several key shortcomings were identified in the current regional PBN Plan, including outdated targets, limited guidance on the implementation of Continuous Climb and Descent Operations (CCO/CDO), the absence of a structured and phased rollout strategy, the lack of reference to Performance-Based Aerodrome Operating Minima (PBAOM), the absence of GNSS contingency and reversion procedures, and other emerging operational concepts.

2.13 The meeting tasked the Secretariat to update MID Doc 007, MID Region PBN Implementation Plan, taking into account the shortcomings identified and the proposed strategic enhancements, and to present the revised Plan to PBN SG/11 for review and MIDANPIRG/24 for endorsement.

IFP PROVISION AND SAFETY OVERSIGHT WORKSHOP — KEY TAKEAWAYS

2.14 The meeting may wish to note that the IFP Provision and Safety Oversight Workshop, was successfully conducted in Amman, Jordan during 7–9 December 2025.

2.15 Key takeaways include:

- States retain ultimate responsibility for the provision, approval, and safety oversight of all IFPs published within their territory and airspace, regardless of the delivery model adopted;
- States shall establish and maintain a documented regulatory and oversight framework covering IFP design, approval, validation, publication, documentation retention, and periodic review;
- Competency requirements for IFP designers and CAA inspectors must be clearly defined in national regulations, with structured training and recurrent competency maintenance (referencing Doc 9906 and Doc 10070);
- IFPDSPs shall establish and maintain a documented Quality Management System (QMS) covering the entire IFP lifecycle;
- Aerodrome Safeguarding & IFP Protection: While Aerodrome Operators manage the obstacle environment through Obstacle Limitation Surface (OLS) safeguarding, IFPs require a separate assessment, as obstacles that do not penetrate the OLS may still impact IFPs due to differences in lateral and vertical protection areas. States shall therefore establish a dedicated IFP safeguarding process to assess obstacle impacts on current and future IFPs and ensure appropriate mitigations are in place to ensure IFPs remain safe.

2.16 The meeting noted that MID FPP can serve as a regional support mechanism to assist States in IFP approval, ground validation, independent technical review, and capacity-building activities.

2.17 The meeting reviewed and updated the PBN SG Terms of Reference. The updated Terms of Reference include expanded provisions on GNSS contingency and resilience. The meeting agreed to the following draft Decision:

DRAFT DECISION 10/2: PBN SUB-GROUP TERMS OF REFERENCE

*That the Terms of Reference of the Performance-Based Navigation Sub-Group (PBN SG), as at **Appendix A**, be endorsed.*

2.18 The meeting expressed its appreciation to all participants and acknowledged the valuable contributions of speakers from States, namely Egypt, Jordan, Oman, Saudi Arabia, and the UAE, as well as representatives from organizations and industry partners, including DANS, DCAA, CGX, PVS Aero, R.I.S.K., and UATS, for sharing their experience and expertise.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the outcomes of the PBN SG/10 meeting; and
- b) endorse the Draft Conclusion and Decision.

PERFORMANCE BASED NAVIGATION SUB-GROUP (PBN SG)

1. Terms of Reference

1.1 The terms of reference of the PBN Sub-Group are:

- a) ensure that the implementation of PBN in the MID Region is coherent and compatible with developments in adjacent regions, and is in line with the Global Air Navigation Plan (GANP), the Aviation System Block Upgrades (ASBU) framework and the MID Region Air Navigation Strategy;
- b) monitor the status of implementation of the MID Region PBN-related ASBU threads/elements included in the MID Region Air Navigation Strategy as well as other required PBN supporting infrastructure, identify the associated difficulties and deficiencies and provide progress reports, as required;
- c) keep under review the MID Region PBN performance objectives/priorities, develop action plans to achieve the agreed performance targets and propose changes to the MID Region PBN plans/priorities, as appropriate;
- d) seek to achieve common understanding and support from all stakeholders involved in or affected by the PBN and GNSS developments/activities in the MID Region;
- e) provide a platform for harmonization of developments and deployments of PBN concentrating on PBN for approach and terminal areas;
- f) monitor and review the latest developments in the area of PBN and procedure design, provide expert inputs for PBN-related issues; and propose solutions for meeting ATM operational requirements;
- g) monitor and review the latest GNSS developments and activities;
- h) provide regular progress reports to MIDANPIRG concerning its work programme; and
- i) review periodically its Terms of Reference and propose amendments, as necessary.

1.2 In order to meet the Terms of Reference, the PBN Sub-Group shall:

- a) provide necessary assistance and guidance to States to ensure harmonization and interoperability in line with the GANP, the MID ANP and ASBU framework;
- b) provide necessary inputs to the MID Region Air Navigation Strategy through the monitoring of the agreed Key Performance Indicators related to PBN;
- c) identify and review those specific deficiencies and problems that constitute major obstacles to the provision of efficient PBN implementations, and recommend necessary remedial actions;
- d) Address PBN implementation aspects of States in the MID Region, including States National PBN Implementation Plans, Share and exchange best PBN Implementation practices between States

within the Region

- e) review and support the MID Flight Procedure Programme activities, as required, including coordination of capacity building activities related to training and qualification of the procedure design personnel and all other personnel involved in PBN implementation;
- f) monitor the progress of studies, projects, trials and demonstrations by the MID Region States, and other ICAO Regions in PBN and GNSS;
- g) in coordination with MIDANPIRG CNS SG :
 - develop and maintain strategies for navigation infrastructure to support contingency operations and ensure service continuity during GNSS disruptions;
 - identify and propose solutions to operational challenges arising from GNSS Radio Frequency Interference (RFI)
- h) Review and update MID PBN Regional Plan (MID Doc 007), as needed
- i) Address and promote operational improvements and benefits accrued from PBN implementation, through review of the existing global and regional guidance materials; and provide further guidance, as needed; and
- j) Coordinate with relevant MIDANPIRG and RASG-MID Subsidiary bodies issues with common interests.

2. Composition

2.1 The Sub-Group is composed of:

- a) MIDANPIRG Member States;
- b) concerned International and Regional Organizations as observers; and
- c) other representatives from provider States and Industry may be invited on ad hoc basis, as observers, when required.

3. WORKING ARRANGEMENTS

3.1 The Chairperson, in close co-operation with the Secretary, shall make all necessary arrangements for the most efficient working of the Subgroup. The Subgroup shall at all times conduct its activities in the most efficient manner possible with a minimum of formality and paper work (paperless meetings). Permanent contact shall be maintained between the Chairperson, Secretary and Members of the Subgroup to advance the work. Best advantage should be taken of modern communications facilities, particularly video-conferencing (Virtual Meetings) and e-mails. Face-to-face meetings will be conducted when it is necessary to do so.