International Civil Aviation Organization

MIDANPIRG/22 & RASG-MID/12 Meetings

(Doha, Qatar, 4 – 8 May 2025)

Agenda Item 2.2 ICAO Global and Regional Aviation Safety and Air Navigation Developments

PROPOSAL FOR THE MID-ANS INNOVATION CHALLENGE

(Presented by United Arab Emirates)

SUMMARY

This working paper proposes the establishment of the MID ANS Innovation Challenge, a regional initiative under MIDANPIRG aimed at fostering technological advancements, sustainability, and digital transformation within the Air Navigation Services. The challenge will engage Air Navigation Service Providers (ANSPs), industry partners, academia, and technology firms to collaboratively develop and test solutions addressing key ANS challenges such as automation, artificial intelligence (AI) in air traffic management, environmental sustainability, and next-generation airspace management concepts.

The initiative aligns with ICAO's Global Air Navigation Plan (GANP) and the MID Region Air Navigation Strategy, supporting the adoption of cutting-edge technologies and fostering a culture of continuous innovation among MID ANSPs.
Action by MIDANPIRG:

REFERENCE

- *MIDANPIRG/21 Report*
- *Abu Dhabi declaration on continuous improvement of ANS provision in the MID Region*

1. INTRODUCTION

1.1 Background

Innovation in ANS is crucial for enhancing efficiency, safety, and sustainability in the aviation sector. With growing air traffic demand, evolving regulatory requirements, and environmental concerns, it is imperative for ANSPs to leverage modern technologies and operational best practices to improve air navigation efficiency.

1.2 Rationale for the MID ANS Innovation Challenge

The MID ANS Innovation Challenge is a new regional initiative designed to create a structured and competitive platform for identifying, testing, and implementing innovative ANS solutions. The challenge will promote collaboration between ANSPs, regulators, academic institutions, aviation technology firms, and research organizations, fostering advancements in automation, digitalization, and environmentally sustainable air navigation services.

The initiative also supports ICAO's No Country Left Behind strategy by ensuring that all MID States, regardless of their technological readiness, have access to innovative solutions and best practices in air navigation management.

2. OBJECTIVES

The MID ANS Innovation Challenge is designed to:

- Provide a competitive platform for the development of next-generation ANS solutions.
- Encourage industry-wide participation in addressing ANS challenges through innovation.
- Facilitate research and development in automation, AI-based traffic management, and

Sustainable airspace solutions.

- Promote digital transformation by supporting new technologies in air traffic management.
- Drive environmental sustainability through fuel-efficient navigation solutions and emission reduction initiatives.
- Enhance regional cooperation between ANSPs, ICAO, and industry stakeholders in advancing air navigation frameworks.

3. PROPOSED STRUCTURE & IMPLEMENTATION

3.1 Key Focus Areas

The challenge will invite participants to propose and develop solutions in the following areas:

- Digitalization & Automation: AI-powered air traffic management, cloud-based ANS data integration, blockchain for navigation data security.
- Sustainability & Green ANS: Fuel consumption optimization, carbon footprint reduction strategies, sustainable energy solutions for ANSP operations.
- Advanced Airspace Concepts: Future airspace management, urban air mobility (UAM) integration, space-based surveillance and navigation improvements.

3.2 Governance & Execution

The Challenge will be structured as follows:

- MIDANPIRG Task Force Formation: A working group within MIDANPIRG will be established to define the governance, evaluation criteria, and implementation framework.
- Call for Participation: ANSPs, industry players, and academia will be invited to submit proposals based on pre-determined themes.
- Project Selection & Development: A panel of industry experts, ICAO representatives, and MIDANPIRG stakeholders will evaluate and shortlist the most promising proposals.
- Prototype Testing & Evaluation: Selected proposals will undergo feasibility assessments and prototype testing within ANSP operational environments.
- Recognition & Incentives: Winning projects will receive regional recognition, potential

funding opportunities, and integration into ICAO MID strategic frameworks

3.3 Timeline & Milestones

- Q3 2025: MIDANPIRG approval and working group establishment.
- Q4 2025: Call for participation and announcement of challenge details.
- Q1 2026: Proposal evaluation and selection of top projects.
- Q2 2026: Prototype testing and further industry collaboration.
- Q4 2026: (or next MIDANPIRG) Awarding of winners and integration of successful innovations into operational ANS frameworks.

4. BENEFITS TO THE MID REGION

- Establishes the Middle East as a hub for ANS innovation by fostering an innovation-driven culture.
- Promotes cross-industry collaboration to accelerate the adoption of advanced ANS technologies.
- Encourages investment and research in next-generation air navigation services.
- Enhances capacity-building and skill development among regional ANSPs.
- Aligns with ICAO's digital transformation and sustainability goals, ensuring a future-ready ANS ecosystem.

5. ACTION BY THE MEETING

The meeting is invited to:

a) Approve the MID ANS Innovation Challenge Initiative as a MIDANPIRG-endorsed initiative.

b) Establish a working group to oversee governance and execution.

c) Encourage States, ANSPs, and aviation stakeholders to support and actively engage in the initiative.

d) invite ICAO MID Office to explore opportunities to sustain the initiative.

- END -