



WORKING PAPER

FOURTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 26 August to 6 September 2024

- Agenda Item 3: Air navigation system performance improvement**
3.3: Eighth Edition of the Global Air Navigation Plan (GANP)

**PROPOSAL FOR ENHANCING THE EFFECTIVENESS OF GANP:
TOWARD SEAMLESS AND HARMONIZED GLOBAL IMPLEMENTATION**

(Presented by the Republic of Korea)

EXECUTIVE SUMMARY

This paper presents the Republic of Korea's proposal for enhancing the effectiveness of ICAO *Global Air Navigation Plan* (GANP, Doc 9750), which suggests strategic and technical directions for the further development of global air navigation. While the GANP aids in achieving ICAO's goals and aligns with the United Nations' 2030 Agenda, there are still opportunities for improvement in the communication scheme between the GANP and its users. Furthermore, the eighth GANP and updated Aviation System Block Upgrade (ASBU) framework reflects industry trends such as environmental concerns, artificial intelligence (AI) and new entrants. Additional considerations are needed to present clarity on strategic and technical level integration. Tailored strategies are needed to motivate implementing ASBU and performance enhancement in navigation systems, along with the continuous development of key performance indicators (KPIs) for evaluating effectiveness and guiding future improvements.

Action: The Conference is invited to:

- a) recommend that ICAO develop efficient communication strategies with Member States to facilitate the understanding of the structure, context and traceable changes by each edition of the GANP, ASBU and basic building block (BBB). This include the development of integrated documents in both soft-copy and web-based format for easier reference and decision-making by policymakers;
- b) recommend that ICAO provide, in line with the global strategic level of GANP, various and specific guidance on utilizing and integrating the latest industry technologies such as new entrants, AI and machine learning (ML) into the existing performance framework in the future GANP; and
- c) clearly identify the limitations of current systems and develop tailored strategies, including continuous KPI development, to address motivational gaps for GANP implementation at national and regional levels.

1. INTRODUCTION

1.1 The GANP serves as a crucial strategic document that provides a unified vision for global air navigation improvement. It plays a key role in achieving ICAO's Strategic Objectives and supports the United Nations' 2030 Agenda for Sustainable Development. By outlining a comprehensive roadmap, the GANP provides a series of transformational changes to achieve the ambitions of eleven key performance areas (KPAAs).

1.2 According to the Resolution A39-12: *ICAO global planning for safety and air navigation*, instructed the Secretary General to promote, make available and effectively communicate the GANP. This paper explores potential enhancements to the GANP to further improve the achievement of above mentioned Assembly Resolution. It emphasizes the need for effective communication strategies and change management scheme. Additionally, it highlights the importance of harmonizing strategic and technical levels as well as regional and national implementation levels and developing tailored strategies to address motivational gaps at the regional and national level. Through these improvements, the GANP can continue to guide the global aviation industry towards a safer, more efficient and sustainable future.

2. DISCUSSION

2.1 Enhancing GANP Functionality and Communication Strategies

2.1.1 The web-based format has enhanced accessibility to the GANP and other technical documents for the general public. From the perspective of policy decision-makers in both State and industry, who serve as the primary users of the GANP, there are some challenges in utilizing it effectively as a top-level strategic document which may be referred for resources management purpose. The impact of GANP presented in a consolidated document format can be different from information distributed via the web. A reassessment of the GANP presentation method is requested to be considered by ICAO to ensure its role as an authoritative reference document for the development of national plans or national air navigation plans in each State.

2.1.2 The ASBU is a crucial technical component of the GANP and has a significant impact on the navigation systems' development of each Contracting State. Revisions to the ASBU require review and approval by the Air Navigation Commission if they pertain to Standards and Recommended Practices; otherwise, the revisions are solely reviewed by the Secretariat and the ASBU Panel Project Team. Additionally, the BBB undergoes revision every two years; however, there exists a gap in communication ensuring that Contracting States receive timely notification of these revisions. There is a need to establish more effective communication strategies to facilitate enhanced interaction with Member States regarding the GANP and its technical components, such as the ASBU and the BBB.

2.1.3 To effectively address these issues and fulfil its pivotal role as a technical documentation of the availability, utility, and strategy of the GANP, the following improvements are suggested. New methods for distributing these documents and managing changes can ensure that all stakeholders are well-informed and able to participate in the aviation system improvement process. In particular, it is highly recommended that these documents are presented as a consolidated set that decision-makers can easily refer to. In addition, clear notifications of version upgrades and more effective communication strategies will enhance interaction with Member States, enabling a comprehensive understanding of the ASBU and the BBBs. These approaches will improve document sharing and discussion, thereby ensuring that the GANP and its associated components continuously align with the evolving needs of global aviation.

2.2 Harmonizing Strategic and Technical Levels of the 8th Edition of the GANP

2.2.1 The proposed 8th edition of the GANP shared in AN-Conf/14-WP/12, at the strategic level, appropriately reflects recent developments and trends in the industry, such as environmental considerations, new entrants, and the integration of AI. It includes updates related to the environment KPA, the introduction of new types of entrants, and innovations in air traffic management systems utilizing AI. These elements are crucial for advancing global aviation system and ensuring that the aviation community remains aligned with contemporary technological and environmental trends. By addressing these areas, the GANP demonstrates its commitment to fostering innovation and sustainability in aviation, ensuring that the industry can meet the demands of the future.

2.2.2 For harmonious development at regional and national levels, it is essential to specify how these elements will be integrated into the aviation system at the technical level. For instance, while the basic principles for the use of AI are presented in the ASBU campaign report, further development is needed for its application to each ASBU element. Additionally, the environment KPA could benefit from a comprehensive description of each performance improvement, considering the fact that most navigation performance improvement elements have either a direct or indirect impact on the environment. The current declarative concepts at the strategic and technical levels could be enhanced with more concrete steps and measurable targets. To effectively guide national and regional efforts, the GANP should offer clear technical elements that detail how new technologies and updated GANP performance framework (environment and resilience) should be integrated into existing systems.

2.2.3 Additionally, while the development of web-based management methods and templates for regional air navigation plans is expected to play a positive role in maintaining continuity with the GANP, it is crucial to ensure the timeliness and transparency of the revision procedures. Since the air navigation plan (ANP) contains sensitive information for providing navigation services and plans for enhancing navigation performance in the region, transparency and historical tracking of the revision process should be ensured. Web-based platforms offer the advantage of easier access to information, which can facilitate better coordination and implementation. At the same time relying exclusively on online resources, as is currently the case with the GANP, Member States may encounter difficulties in using them as reliable reference documents for establishing rules and policies. As the ANP significantly influences each Contracting State's navigation service provision policies, transitioning to a web-based system requires careful consideration of establishing clear revision procedures and presentation methods while preserving the original function of the ANP.

2.3 Addressing Motivational Gaps and Promoting Performance Improvement

2.3.1 Currently, there is a motivational gap in improving navigation systems at the national and regional levels. Various States and regions demonstrate differing levels of commitment and resources towards enhancing their air navigation infrastructure. This divergence may lead to variations in implementation of navigation performance enhancement, which could affect the overall efficiency and safety of international aviation. Closing this gap necessitates customized strategies and incentives that consider the distinct challenges and capabilities of each country or region. Encouraging consistent progress through international cooperation and self-determined commitment by Contracting States and regions, driven by strong motivation, will be pivotal in achieving harmonized advancements in global air navigation systems.

2.3.2 It is essential to clearly articulate the limitations and potential issues associated with the continued use of existing navigation systems. Furthermore, although the GANP and ASBU outline the anticipated benefits of enhanced navigational performance, these advantages may not be universally applicable to all regions or Contracting States. Many current navigation infrastructures are aging and may not adequately support the requirements of contemporary aviation, such as increased traffic volumes and advanced aircraft technologies. Emphasizing these constraints can assist authorities and stakeholders in comprehending the urgency of upgrading and implementing new systems. By presenting a persuasive argument that highlights the inefficiencies, safety risks, and economic disadvantages of maintaining outdated systems, it becomes more feasible to establish consensus and propel the necessary investments in modernization endeavours.

2.3.3 Furthermore, the continuous development of KPIs for navigation system elements presented in the GANP is crucial. These KPIs should offer measurable and objective metrics that can assess the effectiveness of implemented changes and guide future improvements. It is essential to provide all stakeholders with a clear and measurable blueprint of future systems, ensuring transparency and alignment in goals. This blueprint should outline targets and milestones for technological integration and system

enhancements, enabling stakeholders to monitor progress and adjust strategies as necessary. By emphasizing measurable outcomes and clear objectives, the aviation community can collaboratively strive towards a more efficient, safe, and advanced global air navigation system.

3. CONCLUSION

3.1 The Republic of Korea supports the ICAO's endeavours to enhance the GANP. To enable Member States to effectively implement the GANP, it is essential to consider the following aspects: improving the methods of GANP, ASBU and BBB distribution and change management, enhancing the future GANP considering its strategic and technical harmonization, and formulating customized strategies and incentives to establish harmonized navigation systems at national and regional levels.

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