



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)

THE EIGHTH EDITION OF THE GLOBAL AIR NAVIGATION PLAN (GANP)

(Presented by the Secretariat)

EXECUTIVE SUMMARY	
This working paper presents proposals for a series of major updates to the strategic and technical levels of the seventh edition of the <i>Global Air Navigation Plan</i> (GANP, Doc 9750), which will subsequently be presented for endorsement by the 42nd Session of the ICAO Assembly (A42) as the eighth edition. Action: The Conference is invited to agree to: a) Recommendation 3.3/x — Update to the global strategic level of the seventh edition of the <i>Global Air Navigation Plan</i> (GANP, Doc 9750); and b) Recommendation 3.3/x — Update to the global technical level of the seventh edition of the (GANP), and its regional and national levels in paragraph 5.	
<i>Strategic Objectives:</i>	This working paper relates to all Strategic Objectives.
<i>Financial implications:</i>	<i>Impact for the aviation community:</i> The costs of improvement to the air navigation system can be significant in some economic, geographical and operational scenarios; however, the aviation community and the society at large will benefit from a safer and more efficient air navigation system. <i>Impact for ICAO (relative to the current Regular Programme Budget resource levels):</i> The resources necessary for implementation can be accommodated within the current regular budget.
<i>References:</i>	Doc 9750, <i>Global Air Navigation Plan</i> Doc 9883, <i>Manual on Global Performance of the Air Navigation System</i> Doc 10071, <i>Assembly 39th Session. Montréal, 27 September – 7 October 2016. Technical Commission Report</i> Doc 10115, <i>Thirteenth Air Navigation Conference. Montréal, 9 – 19 October 2018. Report</i> Doc 10137, <i>Assembly 40th Session. Montréal, 24 September – 4 October 2019. Technical Commission Report</i> Doc 10184, <i>Assembly Resolutions in Force (as of 7 October 2022)</i> Doc 10186, <i>Assembly 41st Session. Montréal, 27 September - 7 October 2022. Report of the Technical Commission</i>

1. INTRODUCTION

1.1 The Assembly, at its 39th Session (A39), agreed on an update lifecycle of the GANP through three-year minor and six-year major updates, as relevant, to provide for stability. The sixth edition of the GANP, endorsed by the Assembly during its 40th Session, constituted a major update and included a shift from a hardcopy to web-based format (<https://www4.icao.int/ganpportal/>). The seventh edition of the GANP, endorsed at the 41st Session of the Assembly (A41), consisted of a minor update to the global technical level, i.e. the performance framework as well as the basic building block and ASBU frameworks.

1.2 The eighth edition of the GANP, which aims for endorsement by A42, would be a major update to the GANP. This update will focus on aligning the strategy of the GANP with the global priorities set by A41 and reflecting these priorities on the global technical level. The proposals include: two additional challenges and opportunities to recognize the A41 priority areas; a new approach to new entrants and artificial intelligence; the mapping between the strategic and technical levels; the environment key performance area (KPA) and resilience focus area of the GANP performance framework; guidance on the application of a performance-based approach; a review of the conceptual roadmap; and updates to the Aviation System Block Upgrade (ASBU) framework. It will also continue to support the implementation of regional and national air navigation plans by providing an update on the development status of the regional plans management system and guidance on the development of national air navigation plans (NANPs).

2. GLOBAL STRATEGIC LEVEL OF THE GANP

2.1 *Recognition of A41 priority areas*

2.1.1 A41 underpinned the need to focus on priority areas including the recovery and sustainability of air transport, the reduction of CO₂ emissions¹ and the resilience of the aviation system, while maintaining safety. The GANP sets forth the global strategic direction for the evolution of the air navigation system and recognizes that a performance-driven, service-oriented and technologically advanced global air navigation system is critical to achieve sustainability. To put into effect the priority areas set by A41, it is important to reflect them in the evolution of the air navigation system by adding, to the upcoming major update to the GANP, two challenges and opportunities, i.e. “Supporting climate goals through innovation and efficiency” and “Maintaining operational performance through improved resilience”.

2.1.2 These additional challenges and opportunities will be included in the GANP strategy and drive the update of the global technical level as reflected in paragraph 3. The proposal for amendment to the GANP strategy on the proposed additional challenges and opportunities can be found in the references page of the AN-Conf/14 site at <https://www.icao.int/Meetings/anconf14/Pages/Reference-Documents.aspx> (see Reference No. 1).

2.2 *New entrants and artificial intelligence*

2.2.1 Major updates of the GANP imply a review of its strategy to ensure it remains relevant. Since the endorsement of the sixth edition of the GANP at A39 in 2016, the aviation industry has developed new types of aircraft that need to be integrated in the air navigation system in a holistic way. Based on this need, a new approach, focused on the air navigation services required to integrate the new entrants, is proposed. The provision of air navigation services will be, at least initially, linked to different airspaces (as shown in Reference No. 2) although it is envisioned that, with time, the provision of services will evolve to integrate all airspace users in a homogenous airspace.

2.2.2 In addition, there is an increasing expectation that certain types of artificial intelligence will be used in advanced decision-support tools in the aviation industry. There is a need to embrace a common understanding of artificial intelligence as well as to understand its impact in operations and the human in the system.

¹ Note.— The 41st Session of the ICAO Assembly (A41) adopted a long-term global aspirational goal (LTAG) for international aviation of net-zero carbon emissions by 2050 (Resolution A41-21 refers).

2.2.3 The proposal for amendment to the GANP strategy on the approach to new entrants as well as artificial intelligence can be found in the references page of the AN-Conf/14 site (see Reference No. 2).

2.3 ***Performance ambitions***

2.3.1 The main principle of the GANP is that the need for performance should drive the evolution of the air navigation system to support new demands and optimize the allocation of resources. The need for performance is reflected in the strategy through a series of performance ambitions within the eleven key performance areas (KPAs)² matching the global performance expectations of the aviation community outlined in the *Global Air Traffic Management Operational Concept* (Doc 9854).

2.3.2 Given the priorities set by A41, an update to the environment KPA and the resilience focus area is proposed, for inclusion in the eighth edition of the GANP to: ensure an integrated approach to performance management; provide a link between the GANP and other initiatives under the ICAO Strategic Objective – Environmental Protection in line with Recommendation 1.2/x (AN-Conf/14-WP/4); and offer a coordinated approach to environment and resilience. The proposed update to the environment KPA and the resilience focus area includes a revision of the performance ambitions in these areas, as well as in the rest of performance elements in the global technical level as highlighted in paragraph 3.1.1.

2.3.3 The proposal for amendment to the GANP strategy on the environment and resilience performance ambitions can be found in the references page of the AN-Conf/14 site (see Reference No. 4).

2.4 ***Conceptual roadmap and mapping to the technical level***

2.4.1 After the review of the strategy, some updates are also proposed to the conceptual roadmap to improve its readability and reflect the proposed approach to new entrants and artificial intelligence.

2.4.2 Also, during the 13th Air Navigation Conference (AN-Conf/13) and A40, States requested that ICAO enhance the visibility of the link between the strategic and technical levels of the GANP. In order to achieve this, a mapping between the ASBU framework and the conceptual roadmap is proposed. This mapping would show the progression of the ASBU framework (technical level) within the conceptual roadmap (strategic level).

2.4.3 The proposal for amendment to the GANP strategy on the conceptual roadmap and the mapping to the technical level can be found in the references page of the AN-Conf/14 site (Reference No. 3).

3. **GLOBAL TECHNICAL LEVEL OF THE GANP**

3.1 ***Update of the GANP performance framework — Environment and resilience***

3.1.1 The seventh edition of the GANP contains a performance framework that details, at the global technical level, focus areas, performance objectives and key performance indicators (KPIs) for the KPAs of capacity, efficiency, predictability and safety. The proposed update to the environment KPA and the resilience focus area of the GANP performance framework, at a technical level, can be found in the references page of the AN-Conf/14 site (Reference No. 4).

3.1.2 The ICAO Council, through the Committee on Aviation Environmental Protection (CAEP), is leading the work on the development of a methodology to monitor progress towards achieving the long-term global aspirational goal for international aviation (LTAG) of net-zero carbon emissions by 2050. This includes the development of metrics to monitor emissions reductions across all aspects of operations, technology, and fuel streams, with a targeted completion of recommendations to the Council at the thirteenth meeting of the CAEP in February 2025. This may result in further updates to the environment KPA in the GANP.

² The eleven ICAO KPAs: safety, security, environment, cost effectiveness, capacity, efficiency, flexibility, predictability, access and equity, participation by the ATM community and global interoperability.

3.2 ***Guidance on the application of a performance-based approach***

3.2.1 A40 agreed that ICAO should develop guidance material to facilitate the implementation, mainly by air navigation service providers, of the KPIs included in the GANP, as well as to encourage engagement by all stakeholders. After a review of the *Manual on Global Performance of the Air Navigation System* (Doc 9883), the recommendation is to update the manual and address part of the content in the GANP Portal to ensure more accessibility and consistency between the performance process, and the current and future developments of the GANP.

3.2.2 To demonstrate the importance of performance management, the GANP portal will contain an independent tab on *Performance Management and Data Analytics* in the global technical level. This tab will address elements in Doc 9883 that were difficult to follow or outdated in terms of data management and performance management. A key objective is to make the guidance easier for States and regions to get started, and subsequently mature their performance management capabilities. As such, this update of the portal contains sections on the performance process, information on getting started, data management, data analytics and examples of application of the performance process. The six-step performance process contained in Doc 9883 has also been simplified to a four-step “Plan-Do-Check-Act” process, which is widely referenced in the formalized performance-based approach.

3.2.3 The recommended update to the GANP Portal is available at <https://www4.icao.int/ganpportal/document/RecommendedGANPUpdates>.

3.3 ***Update of the ASBU framework***

3.3.1 During its 40th Session, the Assembly approved the ASBU framework maintenance process available in the GANP Portal: <https://www4.icao.int/ganpportal/ASBU>. According to this process, the framework is to be updated on a three-year cycle, with the update proposed in this working paper being considered major.

3.3.2 Following the maintenance process, the ASBU framework has been updated through a campaign whose scope was to update the content of the ASBU framework considering the proposed updates to the strategy, the definition of new elements for Block 3 and 4, process delays, change descriptions, review consistency, completeness and understanding. A summary of the outcomes of the campaign is available at <https://www4.icao.int/ganpportal/ASBU/Repository/SummaryCampaignFourteenConference>. Further information is available in the GANP Portal: <https://www4.icao.int/ganpportal/ASBU/Repository/FourteenANConference>.

4. **REGIONAL AND NATIONAL LEVELS OF THE GANP**

4.1 The regional and national levels of the GANP ensure consistency, harmonization and coordination of efforts from the development of operational improvements to their implementation to improve the air navigation system at a global level. Such levels provide the global aviation community with a common basis for short- and medium-term implementation planning.

4.2 The regional level addresses regional and subregional performance and operational needs, constraints and opportunities through the ICAO regional air navigation plans (ANPs) and other initiatives aligned with the global strategic and technical levels. The ICAO Council instructed the Secretariat to develop a web-based platform for the ANPs to provide a central access to the ANPs, as well as to allow States to develop and submit proposals for amendment. The web-based platform is available at: <https://t-apps.icao.int/eanp>.

4.3 The development of NANPs, in coordination with relevant stakeholders and in alignment with regional and global plans, is a strategic part of a State’s national aviation planning framework and is crucial to achieve the common vision being developed in the GANP. ICAO is working on the development of a template and associated guidance material for the NANPs, which should be available by A42.

5. CONCLUSION

5.1 According to the GANP update lifecycle agreed by A39, the eighth edition of the GANP, which aims for endorsement by A42, should contain major updates focused on aligning the strategy of the GANP with the global priorities set by A41 and reflecting these priorities in the global technical level. It should also continue to support the implementation of regional ANPs and NANPs.

5.2 In light of the above, the Conference is invited to agree to the following recommendations:

Recommendation 3.3/x — Update to the global strategic level of the seventh edition of the *Global Air Navigation Plan* (GANP, Doc 9750)

That States:

- a) agree in principle with the addition of two challenges and opportunities to recognize the A41 priority areas, the approach to the new entrants and artificial intelligence, and the approach to map the strategic and technical levels in the draft eighth edition of the GANP to be presented for endorsement by A42;
- b) agree in principle with the proposed update to the performance ambitions and conceptual roadmap; and

that ICAO:

- c) take into consideration input from the Conference and other inputs arising from States, international organizations and other stakeholders in order to finalize the development of the eighth edition of the GANP for subsequent endorsement at the 42nd Session of the Assembly.

Recommendation 3.3/x — Update to the global technical level of the seventh edition of the GANP and its regional and national levels

That States:

- a) agree in principle with the update of the environment KPA, and the mapping it provides between the GANP and other ICAO initiatives on environment, noting the ongoing work of CAEP on monitoring and reporting metrics for the LTAG 2050 covering all in-sector CO₂ emissions reductions;
- b) agree in principle with the resilience focus area;
- c) use, in collaboration with the regional offices, the electronic system for the management of regional air navigation plans, when available; and
- d) use the national air navigation plan template, when available;

that ICAO:

- e) update the performance assessment of the ASBU framework with the new objectives on the environment KPA and resilience focus area;
- f) continue the update of the ASBU framework, and reflect the two additional challenges and opportunities proposed to recognize the A41 priority areas, for the eighth edition of the GANP to be presented for endorsement by A42;
- g) provide a roll-out plan for the electronic system for the management of the Regional Air Navigation Plans and of the national air navigation plan template; and
- h) take into consideration input from the Conference and continue to work with States, international organizations and other stakeholders on the development of the eighth edition of the GANP for subsequent endorsement at the 42nd Session of the Assembly.