



WORKING PAPER

ASSEMBLY — 41ST SESSION

TECHNICAL COMMISSION

Agenda Item 30: Aviation Safety and Air Navigation Policy

30.2 Latest developments related to the Global Air Navigation Plan (GANP)

UPDATING OF THE GLOBAL AIR NAVIGATION PLAN (GANP)

(Presented by Saudi Arabia on behalf of the Arab Civil Aviation Organization (ACAO) States¹)

EXECUTIVE SUMMARY

As defined under the GANP, the fourth level, under responsibility of the States, focuses on national planning. The development of the national air navigation plan, in coordination with relevant stakeholders, is a strategic part of the State aviation development plans and its alignment with regional and global plans is crucial to achieve the common vision being developed in the GANP. The national air navigation plan should serve as reference and master document for the planning and development of air navigation services, deployment of operational improvements, upgrading of infrastructure and facilities and setting of roadmaps for the evolution of air navigation system.

The paper highlights the importance of supporting States in the development and assessment of their national air navigation plan, as currently there is no specific ICAO guidance, although the GANP sixth edition is referring to a template that still under development. In fact, the transformation of air navigation system for a State may be optimized with adequate progress if it is supported by sharing of best practices, lessons learned and provision of guidance material with benchmark results and use cases. It also supports the structural improvements planned in the upcoming edition of the GANP including the development of evolution scenarios for air navigation system that may support States in the introduction of operational improvements in cost-effective manner by skipping unnecessary and intermediate steps.

Action: The Assembly is invited to:

- a) note the information provided in this paper; and
- b) review and adopt the proposed amendment of the Draft Resolution proposed in A41-WP/45 as shown in Appendix to this WP which is inviting ICAO to progress in the development of guidance material related to the national air navigation plan during the upcoming revisions of the GANP and to collect and share best practices, lessons learned, and benchmark results related to the implementation of air navigation operational improvements.

<i>Strategic Objectives:</i>	This working paper relates to the Safety and Air Navigation Capacity and Efficiency Strategic Objectives.
------------------------------	---

¹ Member States of the Arab Civil Aviation Organization (ACAO): Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, and Yemen.

<i>Financial implications:</i>	No additional resources are required.
<i>References:</i>	Doc 10140, <i>Assembly Resolutions in Force (as of 4 October 2019)</i> Doc 10118, <i>Global Aviation Security Plan (GASeP)</i> Doc 10004, <i>Global Aviation Safety Plan (GASP)</i> Doc 9750, <i>Global Air Navigation Plan, 6th Edition</i> A41-WP/45: <i>A comprehensive strategy for air navigation: endorsement of the updated Global Air Navigation Plan</i>

1. INTRODUCTION

1.1 The *Global Air Navigation Plan* (GANP, Doc 9750) is ICAO’s highest air navigation strategic planning framework addressing the transformation and digitalization of air traffic management (ATM) aiming to deliver high-performing air navigation services to all airspace users, and ensure continuous safety, and security improvements, environmental protection, interoperability and increasing cost-efficiency performance. The four-layer structure of the GANP is covering the Global strategic and global technical levels, and the regional and national levels.

1.2 As described in A41-WP/45, the new (seventh) edition of the GANP focuses on the global technical level which provides details on the performance framework, with a list of focus areas, performance objectives and key performance indicators (KPIs) within the Key Performance Areas (KPIAs) of capacity, efficiency, and predictability. The expansion of the performance framework of the GANP is aiming to contribute to the coherency and consistency related to performance management aspects shared by the GANP, the *Global Aviation Safety Plan* (GASP, Doc 10004) and the *Global Aviation Security Plan* (GASeP) (Doc 10118).

2. DISCUSSION

2.1 National Air Navigation Plans (NANPs)

2.1.1 As defined under the GANP, the fourth level, under responsibility of the States, focuses on national planning. The development of the national air navigation plan, in coordination with relevant stakeholders, is a strategic part of the State aviation development plans and its alignment with regional and global plans is crucial to achieve the common vision being developed in the GANP. The national air navigation plan should serve as reference and master document for the planning and development of air navigation services, deployment of operational improvements, upgrading of infrastructure and facilities and setting of roadmaps for the evolution of air navigation systems and services.

2.1.2 While the GANP and regional air navigation plans have been developed with digital capabilities allowing ICAO to support implementation planning at global and regional levels and assist in the management and prioritization of ICAO technical work program, the national air navigation plan is not yet covered by ICAO guidance or template that will support States either in the development of their plans or to assess the adequacy and relevance of the existing ones.

2.1.3 A State national air navigation plan should reflect the State’s objectives and priorities with respect to all different areas of air navigation in response to a national vision that includes well-identified national needs and considering the GANP and regional air navigation plan. A well-established

and reasoned national air navigation plan is of immense value to a State in the allocation of its resources. It relates the scope and timetable of air navigation projects and operational improvements across various areas to the resources available and the benefits, which will generate. It should enable realistic and achievable decision-making.

2.1.4 In general, the national air navigation plan is consolidated into civil aviation or air transport master plan, which may feed into the State's National Development Plan to facilitate access to funding and provides the basis for donors and investors to make informed decisions. Therefore, supporting States in the development of national air navigation plan will attract new opportunities and business leading to economic growth and contribution to sustainable growth.

2.1.5 The main objective of the GANP is achieving the globally interoperable in the evolution of air navigation system, and follow a proactive, integrated, and common approach in updating its contents considering the emerging technological development, challenges, opportunities, and trends faced by the aviation industry. This evolution is reflected in the GANP's conceptual roadmap, targeting a high-performing global air navigation system, to meet the ever-growing expectations and reduce global and regional disparities. Although, the conceptual roadmap is aiming to transform the air navigation system based on strengths, and opportunities, the focus is on global and regional levels rather than on national level considered as the basis and foundation to achieve the global objectives.

2.1.6 The evolution of air navigation system requires strong commitment and investment from States and the aviation community. The global air navigation system is becoming more complex with new challenges to embrace emerging technologies and accommodate new entrants. The transformation of air navigation system is not only based on GANP' performance ambitions but also is induced by the increased use of emerging technologies by many States and regions. Therefore, there is an urgent need to support States in the development and assessment of their national air navigation plan to ensure harmonization within each region, and interoperability of air navigation systems between regions.

2.1.7 The delivery of high-performing air navigation services requires a performance-based, data-driven and risk-based approach, built on GANP vision of air navigation and the critical path to achieve it. The planning/development and implementation of operational improvements, new technologies and operating models should be supported by use cases and guidance material allowing regions and States to identify the best fit evolution and modernization that should be implemented to meet the specific needs and considering the constraints and specificities. This may lead to the revision of regional and national air navigation plans. Therefore, it is crucial that GANP updates are supported by the development of supporting material and use cases allowing adequate planning and implementation at regional and national levels.

2.1.8 The baseline for the ASBU framework is provided through the Basic Building Blocks (BBB) framework. The BBBs define the basic and essential services that must be provided to support international civil aviation according to ICAO SARPs and therefore assist ICAO regions and States with the preparation of their regional, sub-regional and national air navigation plans. This framework is considered the baseline for the evolution of the air navigation system as defined under the GANP where regions and States can move to the next levels in the deployment of air navigation system elements and operational improvements jointly and efficiently. The proposed mapping of the essential services outlined in the BBBs framework to the Protocol Questions (PQs) of the Universal Safety Oversight Audit Programme (USOAP) (A41-WP/45 Refers) shows the need for an integrated approach in updating the GANP and linking ICAO material and activities to the relevant GANP level. This approach will support regions and States to have a better planning and advance the implementation as required.

2.1.9 The progress in the transformation of air navigation system should be based on the implementation of the relevant and appropriate operational improvements in the GANP considering constraints and specificities of each State and region. The sharing of best practices, lessons learned and provision of guidance material with benchmark results may support implementation of operational performance enhancements in cost-effective manner and even optimize the evolution of air navigation system allowing States to skip intermediate steps. The development of evolution scenarios to provide opportunities for so-called leapfrogging, modernizing rapidly through the adoption of modern systems without going through intermediary steps (A41-WP/45 Refers) should be supported by States and the aviation industry as it may accelerate the transformation of air navigation system and meet the expectations and needs.

2.2 **Other considerations for the upcoming edition of the GANP**

2.2.1 The transformation of air navigation system will be enabled through digital information management, exchange, and full connectivity between the stakeholders through all phases of a flight. Therefore, there is a need to focus the upcoming revision of GANP on operational improvements, ASBU elements and areas of focus of particular interest such as:

- a) aeronautical information management and Exchange service covering new entrants;
- b) aerodrome mapping information exchange service to deliver Aerodrome digital maps to operational stakeholders;
- c) meteorological information exchange service between the systems of the operational stakeholders in order to improve the accuracy and timely delivery of certain Meteorological information. This service should incorporate the new entrants;
- d) airport collaborative environmental management to minimize noise and emissions including fuel burn;
- e) extension of remote ATS concept;
- f) ATC separations based on Performance based Communications and Surveillance (PBCS);
- g) flight and ATS messages transfer protocols including new entrants; and
- h) optimized use of runway configuration for multiple runway airports and runway throughput based on local runway occupancy time characterization.

3. **CONCLUSION**

3.1 The updating of the GANP is based on regular cycles with minor and major amendments as agreed during the ICAO Assembly, at its 39th Session. The updates may affect any level of the GANP, and the current revision is focusing on global technical with a mapping between BBB and USOAP CMA PQs, which will support States in the implementation of the essential air navigation services and progress on other operational improvements.

3.2 The use of an integrated approach for the revision of GANP and its association with other ICAO material and activities will support States in the planning, implementation, and consolidation of plans. Since its development, the GANP revisions are focusing on global level with limited guidance on the national level i.e., national air navigation plan while GANP sixth edition is referring to a template that still under development.

3.3 The transformation of air navigation system may be optimized with adequate progress when it is supported by sharing of best practices, lessons learned and provision of guidance material with benchmark results and use cases. The development of evolution scenarios may support States in the introduction of operational improvements in cost-effective manner by skipping unnecessary and intermediate steps. The Assembly may consider the proposal for amendment of the Draft Resolution proposed in A41-WP/45 provided in Appendix to this WP which is inviting ICAO to progress in the development of guidance material related to the national air navigation plan during the upcoming revisions of the GANP and to collect and share best practices, lessons learned, and benchmark results related to the deployment of operational improvements.

APPENDIX

PROPOSED OF AMENDMENTS TO THE DRAFT RESOLUTION FOR ADOPTION BY THE 41ST SESSION OF THE ASSEMBLY

A41-xx: ICAO global planning for safety and air navigation

Whereas ICAO strives to achieve the goal of a safe and orderly development of civil aviation through cooperation among Member States and other stakeholders;

Whereas to realize this goal, the Organization has established Strategic Objectives, including objectives for safety and for air navigation capacity and efficiency;

Recognizing the importance of global frameworks and regional and national plans to support the Strategic Objectives of ICAO;

Recognizing the importance of effective implementation of regional and national plans and initiatives based on the global frameworks;

Recognizing that further progress in improving the global safety, capacity and efficiency of civil aviation is best achieved through a cooperative, collaborative and coordinated approach in partnership with all stakeholders under the leadership of ICAO; and

Noting the approval by the Council of the ~~third~~ 2023-2025 edition of the Global Aviation Safety Plan (GASP) and of the ~~sixth~~ seventh edition of the Global Air Navigation Plan (GANP);

The Assembly:

1. *Endorses* the ~~third~~ 2023-2025 edition of the Global Aviation Safety Plan (GASP) and the sixth seventh edition of the Global Air Navigation Plan (GANP) as the global strategic directions for safety and the evolution of the air navigation system, respectively;
2. *Resolves* that ICAO shall implement and keep current the GASP and the GANP to support the relevant Strategic Objectives of the Organization, while ensuring necessary stability;
3. *Resolves* that these global plans shall be implemented and kept current in close cooperation, collaboration, and coordination with all concerned stakeholders;
4. *Resolves* that these global plans shall provide the frameworks in which regional, subregional and national plans will be developed and implemented, thus ensuring consistency, harmonization and coordination of efforts aimed at improving international civil aviation safety, capacity and efficiency;
5. *Urges* Member States to develop sustainable solutions to fully exercise their safety oversight and air navigation responsibilities which can be achieved by sharing resources, utilizing internal and/or external resources, such as regional and subregional organizations and the expertise of other States;

6. *Urges* Member States to demonstrate the political will necessary for taking remedial actions to address safety and air navigation deficiencies, including those identified by Universal Safety Oversight Audit Programme (USOAP), through the GASP, the GANP and the ICAO regional planning process;
7. *Urges* Member States, the industry and financing institutions to provide the needed support for the coordinated implementation of the GASP and GANP, **as well as regional and national plans**, avoiding duplication of efforts;
8. *Calls* upon States and invites other stakeholders to cooperate in the development and implementation of regional, subregional and national plans based on the frameworks of the GASP and GANP;
9. Instructs the Secretary General to promote, make available and effectively communicate the GASP and the GANP; and
10. Declares that this resolution supersedes Resolution ~~A39-12~~ **A40-1** on ICAO global planning for safety and air navigation.

APPENDIX A

Global Aviation Safety Plan (GASP)

...

APPENDIX B

Global Air Navigation Plan (GANP)

Whereas the enhancement of the safety, capacity and efficiency of aviation operations is a key element of the ICAO Strategic Objectives;

Having adopted Resolution ~~A40-4~~ A41-xx, a consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation;

Recognizing the importance of GANP as an operational strategy and part of the basket of measures to achieve ICAO's global aspirational goals on CO2 emissions **and environment protection**; and

Recognizing that many States and regions are developing new air navigation plans for their own air navigation modernization **and transformation**;

Recognizing that sharing of best practices, lessons learned, and provision of guidance material can support States in the introduction of operational improvements in **cost-effective manner through the adoption of advanced systems without going through intermediate steps**;

The Assembly:

1. *Instructs* the Council to use the guidance in the Global Air Navigation Plan (GANP) to develop and prioritize the technical work programme of ICAO in the field of air navigation;

2. *Urges* the Council to provide States with a standardization and evolution roadmap, as announced in the GANP, as a basis for the work programme of ICAO;
3. *Calls upon* States, planning and implementation regional groups (PIRGs), and the aviation industry to utilize the guidance provided in the GANP for planning and implementation activities, which establish priorities, targets and indicators consistent with globally-harmonized objectives, taking into account operational needs;
4. *Calls upon* States to take into consideration the GANP guidelines, and ICAO guidance for the implementation of operational improvements as part of their national strategy to reduce the environmental impact, including noise and CO₂ emissions, from international aviation;
5. *Calls upon* States, PIRGs, and the aviation industry to provide timely information to ICAO, and to each other, regarding the implementation status of the GANP, including the lessons learned from the implementation of its provisions of the operational improvements outlined in the ASBU framework;
6. *Invites* PIRGs to use ICAO standardized tools or adequate regional tools to monitor and, in collaboration with ICAO, analyse the implementation status of air navigation systems;
7. *Instructs* the Council to publish the results of the analysis on the regional performance dashboards and in an annual global air navigation report including, as a minimum, the key implementation priorities and accrued environmental benefits associated with the implementation of the operational improvements outlined in the ASBU framework;
8. *Urges* States that are developing new air navigation plans, for their own air navigation modernization, to coordinate with ICAO and align their plans so as to ensure regional harmonization, and global compatibility and harmonization interoperability; and
9. *Instructs* the Council to continue developing the GANP, keeping it current with evolving, and emerging technologies and operational requirements; and
10. *Invites* ICAO to progress in the development of guidance material related to the national air navigation plan during the upcoming revisions of the GANP and collect and share best practices, lessons learned, and benchmark results related to the implementation of operational improvements.