



**WORKING PAPER**

**ASSEMBLY — 39TH SESSION**

**TECHNICAL COMMISSION**

**Agenda Item 34: Aviation safety and air navigation policy**

**A COMPREHENSIVE STRATEGY FOR AIR NAVIGATION:  
ENDORSEMENT OF THE UPDATED GLOBAL AIR NAVIGATION PLAN**

(Presented by the Council of ICAO)

**EXECUTIVE SUMMARY**

The *Global Air Navigation Plan* (GANP, Doc 9750), while providing the strategic direction for the technical work programme of ICAO in the field of global air navigation, also serves as guidance for States, the planning and implementation regional groups (PIRGs), service providers, airspace users and industry stakeholders. The fifth edition of the GANP was approved by the Council (208/8) on 30 May 2016. Also, a revised Assembly Resolution A38-2 on global plans is presented in the appendix to this working paper.

**Action:** The Assembly is invited to:

- a) endorse the fifth edition of the *Global Air Navigation Plan* (Doc 9750) as the strategic direction for global air navigation;
- b) request States, planning and implementation regional groups (PIRGs), service providers and airspace users to establish priorities and targets consistent with the GANP objectives as well as the operational needs of each region;
- c) adopt the Resolution as presented in the appendix to this working paper, up to and including Appendix B of the proposed resolution, to supersede this part in Resolution A38-2; and
- d) urge States to continue to implement PBN as per the objectives of A37-11 and as a key enabler for implementation of the Aviation System Block Upgrades (ASBUs).

<i>Strategic Objectives:</i>	This working paper relates to the Air Navigation Capacity and Efficiency Strategic Objective.
<i>Financial implications:</i>	The activities referred to in this paper will be undertaken subject to the resources available in the 2017-2019 Regular Programme Budget and/or from extra budgetary contributions.
<i>References:</i>	Doc 10022, <i>Assembly Resolutions in Force</i> (as of 4 October 2013) Doc 10007, <i>Report of the Twelfth Air Navigation Conference</i> (2012) Doc 9750, <i>Global Air Navigation Plan</i> (Fifth edition) The Aviation System Block Upgrades — The Framework for Global Harmonization (2016)

## 1. INTRODUCTION

1.1 An effective global air navigation system achieves interoperability and seamlessness across all regions for all users during all phases of flight. It meets agreed levels of safety, provides for optimum economic operations, is environmentally sustainable and respects national security requirements. ICAO's guiding vision in this regard is established in the *Global Air Traffic Management Operational Concept* (Doc 9854), while the *Global Air Navigation Plan* (GANP, Doc 9750) serves as the supporting strategic planning document for States, ICAO's planning and implementation regional groups (PIRGs), service providers, airspace users and industry stakeholders.

1.2 To accomplish this, the GANP has been updated to provide further guidance material towards implementation and follow assembly cycles. The ASBU modules were also updated to take into account recent technological developments and standards' availability. But the global structure of the two documents was maintained to provide the necessary stability of such an overarching framework. The sixth edition (2019), at the beginning of Block 1, might undergo major changes.

1.3 The fifth edition of the GANP (Doc 9750) and the 2016 edition of the Aviation System Block Upgrades (ASBU) document are both available under the A39 Reference Documents website at <http://www.icao.int/Meetings/a39/Pages/documentation-reference-documents.aspx>.

## 2. DISCUSSION

2.1 An initial consultation with States, through ICAO Regional Offices, showed that after the important effort of aligning all local and regional plans with the fourth edition, stability was a main requisite for updating the document. Thus, the draft fifth edition of the GANP focuses on improving the consistency of presentation, introducing already planned additions and updating the Block 0 and Block 1 modules of the ASBU document.

2.2 Nevertheless, one important change was made to the periodicity of the ASBU modules. It was found necessary to map the three-year ICAO Assembly cycle and the two-year ICAO amendment cycle with a six-year cycle for the modules. Therefore Block 0 is proposed to cover the period 2013-2018, Block 1 to cover 2019-2024, Block 2 to cover 2025-2030 and Block 3 to start in the year 2031.

2.3 ICAO expert groups were tasked to update the ASBU document and all technical roadmaps in the GANP. Each was assigned responsibility for a set of modules. One of this group, the Air Traffic Management Requirements and Performance Panel (ATMRPP), played the role of global architect and reviewed the document last to ensure consistency.

2.4 The additions, i.e. introduction of a performance-based approach for the ASBUs, financial and coordination aspects of implementation, notion of minimum path, documentation for the ASBUs and standardization roadmap, global ATM logical architecture, are answers to AN-Conf/12 recommendations or requests from States. They do not change the ASBU philosophy and should assist in the understanding, planning and implementation of the Modules.

2.5 ASBU implementation is to be realized through tailored regional work programmes based on specific operational needs. ICAO's PIRGs design these work programmes first by identifying the operational characteristics of their homogeneous air traffic management (ATM) areas, major traffic flows and major international aerodromes. Analysis of this operational data identifies performance improvement opportunities and ASBU modules are then evaluated to identify which of them best delivers the needed operational improvements. More information on this subject is presented in a separate paper

(A39-WP/38), which describes how the PIRGs, on the basis of the GANP, are currently progressing in this regard.

2.6 Once operational analyses and resulting implementations have been completed, the next step calls for air navigation performance monitoring through an established measurement and reporting strategy. During an initial phase, at the regional level, the implementation status will be depicted using dynamic maps and charts on the ICAO website. Analysis of reporting data will be carried out collaboratively between States, PIRGs and ICAO. Results will then be published in the proposed Regional Performance Dashboards (web-based) and in an annual global air navigation report.

2.7 The Council of ICAO has approved the fifth edition of the GANP and its supporting documentation, which can be accessed through the link provided in paragraph 1.3 above.

2.8 The fifth edition of the Global Air Navigation Plan identifies PBN as the highest implementation priority because it is a key enabler to enhance safety, increase airspace capacity, improve operational efficiency, and reduce environmental impact from aviation. With a few months to go and as the statistics indicate, only thirty-six per cent of States will most probably meet the A37-11 goals set to be completed by the end of calendar year 2016. This is a concern, as PBN is becoming the mainstream for both flight operations and pilot training.

### **3. FUTURES UPDATES TO THE GANP**

3.1 The ICAO Air Navigation Commission will review the GANP as part of the triennial work programme, reporting to the Council one year in advance of each ICAO Assembly. The ANC report will provide a review of global progress made in achieving the GANP objectives and will consider lessons learned by States, industry and PIRGs. Moreover, the ANC report will consider possible changes in future aviation needs, the air navigation context and other influencing factors, proposing suitable adjustments to the GANP to accommodate these eventualities.

3.2 The sixth edition in 2019, at the beginning of Block 1, will undergo deeper updates to provide more up to date planning timelines, technology adjustments and guidance for easier implementation. The comments provided by States during the final review of the fifth edition will be considered. The work on the next triennium on the minimum path, the performance-based approach for implementation, the ATM logical architecture and the standardization roadmap will reinforce the GANP as a one-stop, comprehensive planning tool for all States.

3.3 During the State consultation for the fifth edition of the GANP, a number of issues were identified to be further developed in the sixth edition (2019):

- a) definition of agreed global performance objectives of the GANP will assist States to align their respective plans on these objectives. This will be supported by the development of underlying concepts of operation;
- b) development of the Minimum Path concept, as well as its concretization in regional and national implementation plans, will contribute to a minimum level of interoperability worldwide;
- c) recognition of the importance of technology roadmaps to provide certainty with the Global Plan, their further structuration with better defined targets and convergence path should strongly support realistic and harmonious implementation; and

- d) reinforcement of the link between the GASP and the GANP to enhance in the GANP the need for safety assessment and human performance impact assessment during implementation and in the GASP to emphasize the notion of operational safety and to identify the GANP modules which support identified GASP safety priorities.

3.4 Comments from States on search and rescue as well as recent development of the Global Aeronautical Distress and Safety System (GADSS) concept could also lead to some additions to the current identified threads of the GANP.

3.5 Prior to being presented to the Council, proposed updates will be circulated to Member States for consultation. Following approval by the Council, the updated GANP will then be submitted for endorsement by ICAO Member States at the next ICAO Assembly.

#### 4. ASSEMBLY RESOLUTION

4.1 As the GASP and the GANP form the global strategic directions in the safety and air navigation fields, respectively, a single updated Assembly Resolution 34/xx: *ICAO Global planning for safety and air navigation* is proposed to cover both plans. The resolution comprises consolidated updates to, and supersedes, the current resolution A38-2. The full text of the proposed resolution is presented in the appendix hereto.

4.2 In accordance with Assembly Resolution A38-2, the fifth edition of the GANP establishes a framework that accommodates the impact of States' air navigation modernization plans on the global system and facilitates action to ensure global harmonization, including the establishment of priorities that drive the technical work programme of the organization over each triennium.

4.3 The relevant GANP-specific information is presented in Appendix B of the proposed consolidated resolution 34/xx: *ICAO global planning for safety and air navigation*. Therefore, when reviewing the proposal, and for the purposes of this paper, please refer only to Appendix B of the resolution dealing specifically with the GANP. The preamble to the resolution and Appendix A dealing specifically with the GASP are discussed in A39-WP/29 under agenda item 34.

#### 5. CONCLUSION

5.1 The updated GANP offers a long-term vision that keeps providing confidence to ICAO, PIRGs, States, service providers, airspace users and industry stakeholders in developing and implementing air navigation infrastructure and avionics advances leading to full global harmonization of the ATM system

5.2 States are urged as a priority to continue to implement PBN as per the objectives of A37-11 and as a key enabler for implementation of the ASBUs.

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## APPENDIX

### DRAFT RESOLUTION FOR ADOPTION BY THE 39TH SESSION OF THE ASSEMBLY

#### **34/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 capacity and efficiency;

*Recognizing* the importance of global frameworks 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 ~~on 30 July 2013~~ by the Council of the ~~first~~ updated edition of the Global Aviation Safety Plan (GASP) and ~~on 29 May 2013~~ of the ~~fourth~~ updated edition of the Global Air Navigation Plan (GANP);

*The Assembly:*

1. *Endorses* ~~the first edition of the Global Aviation Safety Plan (GASP) and the fourth edition of the Global Air Navigation Plan (GANP)~~ as the global strategic directions for safety and air navigation, respectively;
2. *Resolves* that ICAO shall implement and keep current the GASP and the GANP to support the relevant Strategic Objectives of the Organization;
3. *Resolves* that these global plans shall be implemented and kept current in close cooperation and coordination with all concerned stakeholders;
4. *Resolves* that these global plans shall provide the frameworks in which regional, subregional and national implementation plans will be developed and implemented, thus ensuring 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 sub-regional 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 application of GASP and GANP objectives 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, 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 Council to provide a report on the implementation and evolution of the GASP and GANP to future regular sessions of the Assembly;~~
109. *Instructs* the Secretary General to promote, make available and effectively communicate the GASP and the GANP; and
140. *Declares* that this resolution supersedes Resolution A37-4/A38-2 on ICAO global planning for safety and air navigation. ~~Resolution A37-12 on ICAO global planning for sustainability.~~

## APPENDIX A

### Global Aviation Safety Plan (GASP)

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## 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 A37-15/A38-12, 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 for environmental protection; and

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

*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 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 as an efficient operational measure for environmental protection;
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;
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 estimated using CAEP-recognized methods; and
8. *Urges* States that are developing new generation plans for their own air navigation modernization to coordinate with ICAO and align their plans so as to ensure global compatibility and harmonization.

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