



International Civil Aviation Organization

MIDANPIRG STEERING GROUP

Fifth Meeting (MSG/5)

(Cairo, Egypt, 18 – 20 April 2015)

Agenda Item 3: Global and Regional Developments

PROPOSED FIFTH EDITION OF GLOBAL AIR NAVIGATION PLAN (Doc 9750)

(Presented by the Secretariat)

SUMMARY

This paper presents a revised version of the *Global Air Navigation Plan* (GANP, Doc 9750), which will constitute its fifth edition and includes an updated Aviation System Block Upgrades (ASBUs) document.

The fifth edition reflects changes made pursuant to the recommendations of the Twelfth Air Navigation Conference (AN-Conf/12) and further necessary updates while maintaining the stability of the document.

Action by the meeting is at paragraph 3.

REFERENCES

- GANP Doc 9750

1. INTRODUCTION

1.1 The 38th assembly resolution A38-2 endorsed the first edition of the Global Aviation Safety Plan (GASP) and the fourth edition of the Global Air Navigation Plan (GANP). The Assembly also resolved that these global plans shall be implemented and kept current in close cooperation and coordination with all concerned stakeholders and that the plans shall provide the frameworks in which regional, sub-regional and national implementation plans should be developed and implemented. The objective of the resolution is ensuring harmonization and coordination of efforts aimed at improving international aviation safety, capacity and efficiency.

1.2 The global plans aim to assist ICAO regions and States with Air Navigation and Safety policy, planning and implementation of operational needs. Therefore, considering the dynamism of the civil aviation sector, the GASP and GANP should be reviewed periodically in order to align both plans with the prevailing ICAO strategic objectives.

1.3 Appendix 1 of the GANP states that, in line with the tenth ICAO Air Navigation Policy Principle and the update process, the plan and, if necessary, all relevant air navigation planning documents should be reviewed by ICAO every three years through established and transparent processes that includes consultation with States, international organizations and industry.

2. DISCUSSION

2.1 The Planning and Implementation Regional Groups (PIRGs), serving as regional focal points for Air Navigation, are the appropriate fora to collaboratively discuss with the relevant stakeholders the planning and effective implementation of the ICAO SARPs and air navigation operational improvements at a regional level. This discussion should be based on the analysis of relevant information provided by the participants to the meetings and feedback for making the necessary regional adjustments to the high-level strategy presented in the GANP may result.

2.2 The coordination between PIRGs and RASGs is essential to ensure harmonization of regional positions for future updates of the GANP and the GASP in order to improve the safety and efficiency of the civil aviation system in a seamless manner.

2.3 The meeting may recall that ICAO HQ prepared a questionnaire which addressed the key areas for possible amendment of the GANP. An initial consultation with States, through the ICAO regional offices, showed that considering the important effort to align all local and regional plans with the fourth edition, stability was the main requisite for updating the document. Thus the 2016 draft edition of GANP, available through the link provided in paragraph 2.7, focuses on improving the consistency of presentation, introducing already planned subjects and updating the Block 0 and Block 1 modules description in the ASBU document.

2.4 Nevertheless, one important change was made to the periodicity of the Blocks. It was necessary to map the three-year ICAO Assembly cycle with the timeframes of the Blocks, therefore a six-year cycle for the Blocks was proposed. Following this new timeframe the Blocks are now organised in a six years non-overlapping timeframe as follows: Block 0 is proposed to have 2013 as a deadline, Block 1 2019 and so on.

2.5 The meeting may wish to note some key recommendations by the Twelfth Air Navigation Conference (Doc 10007), which affected the current draft of the GANP, and their Status: Recommendation 1/1(f), Recommendation 1/3, Recommendation 1/4 (a), Recommendation 1/4 (b), Recommendation 1/5, Recommendation 1/11 (a) and Recommendation 6/12 (e). All these recommendations are reproduced in **Appendix A**, for easy reference.

2.6 Other amendment in the current GANP are:

- All presentations of the different modules in the GANP are now consistent with the order of the modules in the ASBUs document. The figures, roadmaps and module dependencies diagrams in the GANP have been updated with the modifications to the ASBUs document;
- A GANP webpage contains all the necessary links to additional documentation referenced in the GANP. In particular, the GANP, the ASBUs document, the full report from the Multidisciplinary Working Group on the Aviation System Block Upgrade (MDWG-ASBU) dealing with economic aspects of the ASBUs and the standardization roadmap are accessible from this unique webpage;
- Chapter 3 now describes the implementation monitoring and introduces a performance-based approach for implementing the ASBU modules. The goal of a performance-based approach is introduced and the measurement and analysis of performance as the basis for the implementation of air navigation improvements is promoted. Further work is proposed for the next triennium on this subject;
- The elements of the Air Navigation work programme related to the ASBU modules were identified and a table showing the availability of ICAO documentation to support the

ASBUs implementation is included in Appendix 3. Similarly, a standardization roadmap will be derived from the work programme and made accessible from the GANP webpage; and

- outdated or historical parts of the fourth edition of the GANP were removed to limit the size of the document. Modifications to existing wording of the current edition were kept to a minimum.

2.7 The summary of all changes to the GANP is provided in **Appendix B** and the draft fifth edition of the GANP and the updated ASBUs document, are available on the website: <http://www.icao.int/airnavigation/Pages/GANP-Resources.aspx>

2.8 The Air Navigation Commission, at the fifth meeting of its 200th Session held on 6 October 2015, reviewed the proposed fifth edition of the GANP and authorized its transmission to States and appropriate international organizations for comments. Accordingly, ICAO HQ issued State Letter AN 13/54-15/77, dated 1 December 2015, requesting comments to reach ICAO HQ not later than 10 March 2016.

2.9 The comments provided by States and international organizations are being analyzed by the ICAO secretariat at headquarters for future consideration by the Air Navigation Commission.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the revision of the GANP and take action, as appropriate; and
- b) advise if the comments were sent on time to ICAO HQ and the nature of the comments.

Twelfth Air Navigation Conference affecting fifth version of the GANP

- Recommendation 1/1(f): that ICAO, taking a total systems and performance-based approach, create a Standards and Recommended Practices development plan for the aviation system block upgrades including the establishment of agreed global priorities between the different blocks and modules. Status: inclusion of section titled “Module Priorities” which explains that this work will be completed in the next triennium.

- Recommendation 1/3: that ICAO complete the development of guidance material on business case analysis, incorporating such appropriate guidance material that may be already available or under development. Status: the Multi-disciplinary Working Group on the Economic Challenges Linked to the Implementation of the Aviation System Block Upgrades (MDWG-ASBU) was established and has developed guidance material. The full report is available on the ICAO website and is referenced in Chapter 2 of the GANP, as well as in a new Appendix 8 which details financial and coordination aspects of implementation and provides a methodology to guide and support implementation of the ASBU modules.

- Recommendation 1/4 (a): that ICAO develop, for inclusion in the first update of the GANP after the 38th Session of the ICAO Assembly, a global ATM logical architecture representation in support of the GANP and planning work by States and regions. Status: this work could not be fully developed during this triennium. A new Appendix 7 “ATM Logical Architecture” has been included with a high-level diagram. The work in the next triennium will focus on detailing the functional components by ASBU module but also by actors to clearly delineate the different impacts on each of them.

- Recommendation 1/4 (b): that ICAO develop a breakdown of the logical architecture of the ground system to the level needed to best address global interoperability issues. Status: as per Recommendation 1/4 (a).

- Recommendation 1/5: that ICAO define the accuracy requirements for the future use of a time reference and to prepare the necessary amendments to Standards and Recommended Practices. Status: text explaining the need for an improved, common time reference was included in Appendix 5 – *Technology Roadmaps* in the Fourth edition. The text has been updated and the alternative positioning, navigation, and timing (APNT) introduced.

- Recommendation 1/11 (a): that ICAO a) develop a global roadmap for the evolution of ground air traffic management automation systems in line with aviation system block upgrade implementation. Status: this work could not be completed during this triennium and the last roadmap section of Appendix 5 titled “Automation” will be developed for the 2019 edition.

- Recommendation 6/12 (e): that ICAO c) identify modules in Block 1 considered to be essential for implementation at a global level in terms of the minimum path to global interoperability and safety with due regard to regional diversity for further consideration by States. Status: the notion of minimum path has been developed with examples. It is anticipated that the development of suitable high-level principles or guidelines to enable the objective identification of modules considered to be essential at a global level will be necessary. This work will be performed in the next triennium.

APPENDIX B

Summary of changes in GANP (2016)

Major changes

- All presentation of the different modules (figures, tables, text, etc.) are consistent with the order of the modules in the ASBU document
- Update of all roadmaps to match the changes of the ASBU document

Major additions

- Performance-based approach (AN-Conf/12 recommendation)
- Guidance on financial aspects (AN-Conf/12 recommendation)
- Minimum path(AN-Conf/12 recommendation)
- Standardization roadmap
- Global ATM logical architecture (AN-Conf/12 recommendation)
- NGAP

Executive summary

- Updated\

Chapter 2

- Condensed wording on priorities and introduction of ATFM
- New section on modules priorities and minimum path
- Introduction of the NGAP in the Training and human performance section
- Updated ATM logical architecture and link to new Appendix 7
- Link to appendix 8 on financial aspects

Chapter 3

- Introduction of Performance-Based Approach for Implementing the ASBUs

Appendix 1

- Streamlined text to avoid redundancies describing the GANP update process
- New paragraph on the changes of this edition

Appendix 2

- Updated
- Reordred all modules according to ASBU document

Appendix 3

- Online documentation is updated; creation of GANP webpage
- Introduction of Standardization Roadmap
- Introduction of the ICAO documentation for the ASBUs

Appendix 5

- Updated
- Navigation is put before surveillance (natural CNS order)
- Merged SWIM and Information Roadmap

Appendix 6

- Updated

Appendix 7: ATM logical architecture (NEW ONE)

- New figure and text added. Link from chapter 2 updated.

Appendix 8: Financial aspects of implementation (NEW ONE)

- The material on financial aspects deserved to be developed but was too large to be inserted in chapter 2. This new appendix contains a description linking to the MDWG report, a methodology and a figure.

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