INTERNATIONAL CIVIL AVIATION ORGANIZATION
Western and Central African Office

Establishment of the APIRG Information and Infrastructure Management
Sub-Group (IIM/SG)

Dakar, Senegal, 28 – 30 November 2016

Agenda Item 2:   **General and Regional Framework for Air Navigation Services**

2.1 *ICAO Global Air Navigation Plan (GANP Doc. 9750) and Aviation System Block Upgrades (ASBU) Framework*

Provision of the ICAO Global Air Navigation Plan (GANP Doc. 9750)

(Presented by the Secretariat)

SUMMARY
The ICAO Global Air Navigation Plan (GANP, Doc 9750), while providing the strategic direction for the technical work programme of ICAO in the field of efficiency of the global air navigation systems, serves as guidance for the planning and implementation regional groups (**PIRGs**), States, service providers airspace users and other stakeholders. This working paper presents the revised edition of the GANP, the fifth edition which is linked at **Appendix A** to this working paper.

The action by the Meeting is in paragraph 4.

Reference	Fifth Edition of the ICAO Global Air Navigation Plan (GANP, Doc 9750, 5th Ed.)
Strategic Objectives:	This working paper relates to Strategic Objectives A, B and C.
ASBU Modules	This Working Paper is related to all ASBU Modules applicable in the AFI Region

INTRODUCTION

1.1   An effective global ATM 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 GANP serves as the supporting strategic planning document. Based on comprehensive consultation by ICAO of State and industry stakeholders, the GANP has been restructured and revised and is being supported by dedicated tools designed to assist ICAO's Planning and Implementation Regional Groups (**PIRGs**), States, Service Providers, airspace users and other stakeholders during the phased implementation of the new Global Plan.

1.2   To support a globally harmonized air navigation system, the 39th Assembly of the ICAO has recently approved the fifth edition of the Global Air Navigation Plan (**GANP-Doc 9750 5th Edition**).

1.3   This updated document provides clear guidance on the operational targets and supporting technologies, avionics, procedures, standards and regulatory approvals needed to realize them. The GANP additionally establishes a framework for incremental implementations based on the specific operational profiles and traffic densities of each State. This is accomplished through the Aviation System Block Upgrades (ASBUs), a consensus-driven framework which forms the basis of the revised GANP.

2.   **Fifth Editions of the GANP**

2.1   The fifth edition of the ICAO Global Air Navigation Plan (GANP) is designed to guide complementary and sector-wide air transport progress over 2016–2030 and is approved triennially by the ICAO Council.
The GANP represents a rolling, 15-year strategic methodology which leverages existing technologies and anticipates future developments based on State/industry agreed operational objectives. The Block Upgrades are organized in non-overlapping six-year time increments starting in 2013 and continuing through 2031 and beyond. This structured approach provides a basis for sound investment strategies and will generate commitment from States, equipment manufacturers, operators and service providers.

2.2   Although the ICAO work programme is endorsed by the ICAO Assembly on a triennial basis, the Global Plan offers a long-term vision that will assist ICAO, States and industry to ensure continuity and harmonization among their modernization programmes.
To find a balance between consolidation and keeping pace with new developments, the GANP will have a more comprehensive update with the 2019 edition, aligned with the Block periods.

2.3   This edition of the GANP begins by outlining the executive-level context for the air navigation challenges ahead, as well as the need for a strategic, consensus-based and transparent approach to address these challenges. The GANP explores the need for more integrated aviation planning at both the regional and State level and addresses required solutions by introducing the consensus-driven Aviation System Block Upgrades (ASBU) systems engineering modernization strategy.
In addition, it identifies issues to be addressed in the near future alongside financial aspects of aviation system modernization. The increasing importance of collaboration and partnership as aviation recognizes and addresses its multidisciplinary challenges ahead is also stressed.

2.4   The GANP also outlines implementation issues involving the near-term performance-based navigation (PBN) and Block 0 Modules and the Planning and Implementation Regional Groups (PIRGs) that will be managing regional projects.

2.5   Descriptions of implementation programmes being pursued by ICAO complete Chapter 2, while Chapter 3 explores the role of the new ICAO Air Navigation Report in conjunction with the performance-based approach for the implementation of the ASBUs.

2.6   Eight appendices provide supplementary information relating to the evolution of the GANP, online support documentation, detailed description of ASBU Modules, and the Technology Roadmaps supporting the Block Upgrades, as well as financial guidance to implement the Modules.

2.7   The 2016–2030 ICAO Global Air Navigation Plan presents all States with a comprehensive planning tool supporting a harmonized global Air Navigation system. It identifies all potential performance improvements available today, details the next generation of ground and avionics technologies that will be deployed worldwide, and provides the investment certainty needed for States and Industry to make strategic decisions for their individual planning purposes and:

  - Obliges States to map their national or regional programmes against the harmonized GANP, but provides them with far greater certainty of investment.
  - Requires active collaboration among States through the PIRGs in order to coordinate initiatives within applicable regional Air Navigation Plans.
  - Provides required tools for States and regions to develop comprehensive business case analyses as they seek to realize their specific operational improvements.
  - Provides a vision of the evolution of the Global ATM system and the potential requirements to industry, for better anticipation in its products.

3.   **UPDATES TO 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 and industry.

3.2   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. Prior to being presented to the Council, proposed updates will be circulated to Member States for consultation. Following approval by the Council, any amendments to the GANP and its specified supporting documents will then be submitted for endorsement by ICAO Member States at the following ICAO Assembly.

4.   **ACTION BY THE MEETING**

The Meeting is invited to:

a)   note the information provide on the Fifth Edition of The Global Air Navigation Plan (Doc 9750) as presented and

b)   request APIRG, States, Service providers and airspace users to update their priorities and targets consistent with the GANP objectives as well as the needs of the AFI region.

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APPENDIX A

Link to the 5th Edition of the ICAO 2016-2030 Global Air Navigation Plan (GANP Doc.9750 5th Edition)

http://www.icao.int/Meetings/a39/Documents/GANP_en.pdf

APPENDIX B
ICAO's 10 Key Air Navigation Policy Principles

01: Commitment to the implementation of ICAO's Strategic Objectives and Key Performance Areas
ICAO Regional and State Air Navigation Planning will cover each of ICAO's Strategic Objectives and all 11 ICAO Key Performance Areas.

02: Aviation safety is the highest priority
In Air Navigation planning and in establishing and updating their individual Air Navigation Plans, ICAO Regions and States will give due consideration to the safety priorities set out in the Global Aviation Safety Plan (GASP).

03: Tiered approach to air navigation planning
ICAO's Global Aviation Safety Plan and Global Air Navigation Plan will guide and harmonize the development of ICAO Regional and individual State Air Navigation Plans.
ICAO Regional Air Navigation Plans, developed by the Regional Planning and Implementation Groups (**PIRGs**), will also guide and harmonize the development of individual State Air Navigation Plans.
When developing their Regional Air Navigation Plans, PIRGs should address their intra- and inter-regional issues.

04: Global Air Traffic Management Operational Concept (GATMOC)
The ICAO-endorsed *Global Air Traffic Management Operational Concept* (Doc 9854) and companion manuals, which include inter alia, the *Manual on Air Traffic Management System Requirements* (Doc 9882) and the *Manual on Global Performance of the Air Navigation System* (Doc 9883), will continue through their evolution, to provide a sound global conceptual basis for global air navigation and air traffic management systems.

05: Global air navigation priorities
ICAO should develop provisions and supporting material and provide training in line with the global air navigation priorities described in this plan.

06: Regional and State air navigation priorities
ICAO Regions, sub regions and individual States through the PIRGs should establish their own Air Navigation priorities to meet their individual needs and circumstances in line with the Global Air Navigation Priorities.
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07: Aviation System Block Upgrades (ASBUs), Modules and Roadmaps
The ASBUs, Modules and Roadmaps form a key attachment to the GANP, noting that they will continue to evolve as more work is done on refining and updating their content and in subsequent development of related provisions, supporting material and training.

08: Use of ASBU Blocks and Modules
Although the GANP has a global perspective, it is not intended that all ASBU Modules are to be applied around the globe.
When the ASBU Blocks and Modules are adopted by regions, sub regions or States they should be followed in close accordance with the specific ASBU requirements to ensure global interoperability and harmonization of air traffic management.
It is expected that some ASBU Modules will be essential at the global level and therefore may eventually be the subject of ICAO mandated implementation dates (minimum path).

09: Cost-benefit and financial issues
The implementation of air navigation measures, including those identified in the ASBUs, can require significant investment of finite resources by ICAO Regions, sub regions, States and the aviation community.
When considering the adoption of different Blocks and Modules, ICAO Regions, sub regions and States should undertake cost-benefit analyses to determine the business case for implementation in their particular region or State.
The new guidance material on cost benefit analysis will assist States in implementing the GANP.

10: Review and evaluation of air navigation planning
ICAO should review the GANP every three years and, if necessary, all relevant Air Navigation Planning documents through the established and transparent process.
The appendices to the GANP should be analyzed annually by the Air Navigation Commission to ensure they remain accurate and up to date.
The progress and effectiveness of ICAO Regions and States against the priorities set out in their respective regional and State air navigation plans should be annually reported, using a consistent reporting format, to ICAO. This will assist regions and States in adjusting their priorities to reflect actual performance and address any emerging air navigation issues.