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COMMITTEE A

Agenda Item 1: Air navigation global strategy
1.1: Vision and overview of the sixth edition of the GANP
1.2: Air navigation performance improvement and measurement through the aviation system block upgrades (ASBUs) and basic building blocks (BBBs) framework

CONSIDERATIONS IN UPDATE OF THE GLOBAL AIR NAVIGATION PLAN (GANP) AND THE AVIATION SYSTEM BLOCK UPGRADES (ASBUs)

(Presented by the Republic of Korea)

EXECUTIVE SUMMARY

This paper presents a series of considerations to take into account when updating and reviewing the Global Air Navigation Plan (GANP) and the aviation system block upgrades (ASBUs) to better serve all stakeholders of the world aviation community from the audience's perspective.

Action: The Conference is invited to agree to the recommendation in paragraph 3.

1. INTRODUCTION

1.1 The *Global Air Navigation Plan* (GANP, Doc 9750) serves as the ICAO's overarching strategic document to modernize the global air navigation system in an evolutionary manner. The aviation system block upgrades (ASBUs) presents its technical methodology and roadmaps to achieve an interoperable global air navigation system, and to advance air navigation performance and operational improvements.

1.2 The Republic of Korea (ROK) strongly supports the continued evolution of the GANP as the high-level strategic plan and global framework to increase capacity and efficiency of the global air navigation system. This paper presents a range of considerations in updating the GANP and ASBU to better serve the community as a whole.

2. DISCUSSION

2.1 Common Understanding of the Global/Regional Air Navigation Planning Documentation

2.1.1 The GANP presents global strategies for future air navigation with three major companion publications: the *Global Air Traffic Management Operational Concept (GATMOC,* Doc 9854*),* the *Manual on Air Traffic Management System Requirements (*Doc 9882*),* and the *Manual on*

*Global Performance of the Air Navigation System (*Doc 9883*)*.These documentation has enabled the international air navigation community to define concepts and technologies that eventually made the GANP system engineering approach possible.

2.1.2 In addition to that, ICAO also provides the Standards and Recommended Practices (SARPs) to be applied uniformly across the world for the safety, regularity and efficiency of international air navigation. Complementary to the SARPs, the Procedures for Air Navigation Services (PANS) are comprised of operating practices and material, amplifying the basic principles for corresponding SARPs to assist in their application.

2.1.3 In the regional level, the regional Air Navigation Plans (ANPs) are provided as a platform for the planning and implementation of air navigation systems within specific regions in line with the agreed global and regional planning framework. The procedural parts of the ANPs are published as the regional Supplementary Procedures (SUPPs), which hold similar status to PANS in the applicable region.

2.1.4 Meanwhile, States are requested to develop their own national air navigation plan to address current needs and future demands reflecting GANP/ASBU, SARPs, PANS, RANP, SUPPs and associated guidance materials. However, the hierarchy or relationship between the GANP and its supporting documents is complicated to the audience, so much so that is difficult to fully understand what needs to be done, when, why, and how to effectively implement them" (Figure1 refers).

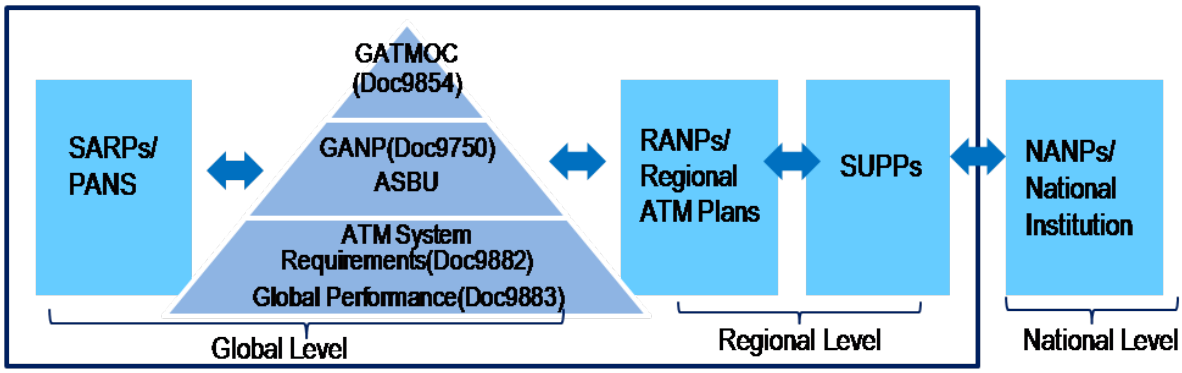


Figure1. Air Navigation Planning Documentation

2.1.5 In this regard, the aviation community will be greatly benefited from the facilitation of the common understanding of the GANP family documentation with clearer and more logical linkage. To this end, following considerations may be deemed desirable: development of further guidance on the relationship between this documentation as well as States' responsibility inter alia; and consolidation of GANP and directly associated documents such as Doc 9854, Doc 9882 and Doc 9883.

2.2 Improvement of GANP/ASBU update process

2.2.1 When ICAO updates the GANP/ASBU, a thorough investigation and analysis of the implementation status is of the essence to identify areas that need improvement and implementation barriers on the basis of accurate and realistic data. The challenges and issues identified must be properly addressed with appropriate solutions, and they should be presented to States and other stakeholders as well for their awareness.

2.2.2 Another factor worthy of consideration is change management which is required to reflect technical, operational and institutional environment change at the global and regional level.

Furthermore, the consultation process with States, International Organization and industry should be strengthened and a well-defined validation process should be applied to any modification of existing GANP/ASBU with transparent principles: a) the expected performance needs, b) cost and benefit, c) maturity of operational concept and supporting technologies, and d) analysis of relevant ICAO provisions or guidance materials.

2.2.3 ICAO proposed the GANP to migrate to a web-based platform for easier access to GANP information (AN-Conf/13-WP/18 refers). The GANP Portal will be useful for aviation stakeholders to access to the comprehensive information to address their specific needs. Yet further clarification is needed as to whether the Portal itself will be functioning as a web-based GANP document (Doc 9750) or additional electronic version will be provided on the Portal. If the sixth edition is provided in web-based only, not in a publication form, its readability and audience's understanding are likely to be undermined.

2.2.4 The national air navigation planning is a complicated process that requires a considerable time and efforts for policy-making on a long-term basis, research and development, resource allocation, required institutionalization and collaborative work within government bodies and other aviation stakeholders. Given the significance of impact by the GANP documentation and associated information, the stability of the GANP/ASBU cannot be stressed enough. As such, the update should be taken carefully considering the impact to national planning process.

2.3 Definite Global Technical Framework (ASBU framework and BBB)

2.3.1 ICAO is planning to introduce two global frameworks, the basic building blocks (BBB) and the aviation system block upgrades (ASBUs) (AN-Conf/13-WP/18 refers). The BBB framework facilitates the identification of the minimum air navigation services to support the safe operation of international civil aviation. Such efforts are appreciated for its balanced approach in line with the ICAO's "No Country Left Behind" initiative. Be that as it may, the BBB framework raises confusion with the SARPs and the basic requirements (or elements) of the ANPs. Given the BBB modules are deemed mandatory requirements related to SARPs, it could be considered that the framework be included in Appendix of *Procedures for Air Navigation Services – Air Traffic Management (*PANS-ATM) for better attention and global harmonization.

2.3.2 The ASBU is a global technical roadmap based on a systems engineering approach, addressing future air traffic growth and needs, and leading toward a fully harmonized air navigation system through modernization of the ATM system. In recent years, international civil aviation community has been calling for ICAO to provide guidance on how to prioritize the ASBU modules. The Twelfth Air Navigation Conference requested ICAO to "identify modules 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". Nevertheless, the updated ASBU framework, introduced on the ICAO's GANP Portal, does not appear to identify the priorities or minimum path of the ASBU modules. Implementation priority and minimum path are highly crucial to achieve global interoperability and harmonization, and encourage regions and States to implement the ASBU modules with a concrete timeline. In this regard, considering the importance of the ASBU as a key tool to realize modernization ATM system, the upcoming release of ASBU framework should set forth clear global priorities and minimum path with a clearly defined mandated implementation date in the sixth edition.

2.4 Implementation Support for States' Air Navigation Planning and Implementation

2.4.1 The multi-layer structure, including two global level (strategic and technical), a regional level and a national level, was suggested by ICAO in the sixth edition (AN-Conf/13-WP/18 refers). This

ICAO's multi-layer structure is expected to better communicate GANP and promote harmonization of global, regional and national planning.

2.4.2 The fourth level of the structure focusing on the State's responsibility on national planning deserves a special attention. The national planning will be a fundamental element to achieve the fully harmonized global and regional air navigation system in the future. However, it's not easy for States to understand their responsibilities, in particular, in regional planning process under the circumstance where differing air navigation issues, priorities and technical solutions at different timeframes exist. Hence, further guidance should be provided.

2.4.3 Capability of system engineering becomes very important prior to developing a national air navigation plan. A challenge frequently faced in the process of national planning is the lack of capabilities or expertise in analyzing and integrating national air navigation systems and in finding customized solutions to achieve intended performances. Thus, ICAO's implementation support should focus on addressing practical needs of the States.

2.4.4 Each region has established its own regional air navigation plan reflecting regional needs and priorities aligned with the global plan, and the priorities and roadmap of the ANP is directly related to the NANP framework. Be that as it may, it is important to note that national planning based on common understanding of priorities among neighbouring States, in order to maximize performance benefits, is of great significance. As such, ICAO should encourage collaboration between neighbouring States to prioritize operational improvements and develop their national plans.

3. CONCLUSION

3.1 The Conference is invited to agree on the following recommendation:

a) note the information contained in this paper from the audience point of view;

b) request ICAO to further develop guidance on relationship between GANP and its supporting documentation and to consider restructuring GANP family documentation for the benefit of all aviation stakeholders to ensure common understanding and harmonized implementation;

c) request ICAO to continue improving GANP/ASBU update process in terms of change management, readability, transparency and stability, considering its impact to national air navigation planning process;

d) request ICAO to soothe the concerns over possible confusion between ASBU framework, BBB and ANP elements and other ICAO provisions, and to clarify the concept of minimum path and the GANP web-based publications; and

e) request ICAO, taking account of the impact of GANP/ASBU and ANP to national air navigation planning process, to focus its support initiatives on practical needs of the States as explained in paragraph 2.4, and to encourage the collaboration among neighbouring States to prioritize operational improvements and develop their national plans.

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