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**TECHNICAL COMMISSION**

**Agenda Item 28: Aviation Safety and Air Navigation Policy**

**CONSIDERATIONS FOR EFFECTIVE IMPLEMENTATION OF THE UPDATED  
GLOBAL AIR NAVIGATION PLAN (GANP) AND THE AVIATION SYSTEM BLOCK  
UPGRADES (ASBUS)**

(Presented by the Republic of Korea)

**EXECUTIVE SUMMARY**

Addressing new demands and challenges on the aviation system, and emerging technologies, the sixth edition of the *Global Air Navigation Plan* (GANP) will support the transformation of the global air navigation system into a high-performing and interoperable one in an evolutionary manner. ICAO's efforts to transform global air navigation are highly valued. This paper presents a range of consequential considerations for the effective implementation of the updated GANP and the Aviation System Block Upgrade (ASBU) in the global, regional and national level.

<i>Strategic Objectives:</i>	This information paper relates to the Safety and Air Navigation Capacity and Efficiency Strategic Objectives.
<i>Financial implications:</i>	The activities referred to in this paper will be undertaken subject to the resources available in the 2020-2022 Regular Programme Budget and/or from extra budgetary contributions.
<i>References:</i>	Doc 10115, <i>Report of the Thirteenth Air Navigation Conference(AN-Conf/13), Corrigenda Nos. 1 and 2, and Supplement No. 1</i> Doc 9750 – <i>Global Air Navigation Plan</i> A40-WP/24, <i>A Comprehensive Strategy for Air Navigation: Endorsement of the Updated Global Air Navigation Plan</i>

## 2. INTRODUCTION

2.1 The *Global Air Navigation Plan* (GANP, Doc 9750) has served as ICAO's overarching strategic document in modernizing the global air navigation system. Addressing new demands and challenges on the aviation system, and emerging technologies, the sixth edition of the GANP will support the transformation of the global air navigation system into a high-performing and interoperable one in an evolutionary manner.

2.2 The Thirteenth Air Navigation Conference (AN-Conf/13), which was held in Montréal, from 9 to 19 October 2018, discussed and approved a series of recommendations on the sixth edition of the GANP. The aviation community highlighted the importance of readability, transparency and stability of the web-based GANP and the Aviation System Block Upgrades (ASBUs), as outlined in AN-Conf/13-WP/235, presented by the Republic of Korea. This paper presents a range of consequential considerations for the effective implementation of the updated GANP and ASBU in the global, regional and national level.

## 3. DISCUSSION

### *Better Communication with the Aviation Community*

3.1 The multi-layer structure of the GANP, including two global levels (strategic and technical), a regional level and a national level, and the web-based platform will provide a firm foundation for better communication with different stakeholders and allow them to find the most relevant information in addressing their specific needs. As recommended in AN-Conf/13, the upgraded web-based printable GANP is available in the six ICAO languages and is expected to increase readability and common understanding on the new GANP and ASBU framework. The aviation community requested ICAO to develop online trainings and regional seminars for the familiarization of the sixth edition of the GANP and support the deployment and implementation of regional and national air navigation plans. In this regard, ICAO should consider the recommendation on inclusion of such trainings and seminars in the ICAO work programme with highest priority, and keep them at the forefront to enhance common understanding on the new GANP and ASBU framework among all of the relevant stakeholders and encourage the effective and agile implementation of the framework.

3.2 The GANP portal contains a variety of information about the updated ASBU threads and elements, including each concept of operation (CONOPS), new capabilities, dependencies and relations between ASBU elements. Such efforts are appreciated for allowing easy access to the comprehensive information on the new methodology to advance the desired air navigation performance and operational improvements. Be that as it may, the platform needs to provide additional information and guidance, supporting the effective implementation of each ASBU element, such as the relevant ICAO provisions, guidance materials, and the technology development status, etc.

### *Transparency, Consistency and Stability of the Change Management Process*

3.3 Another factor worthy of consideration is the transparency of the ASBU change management process which is required to reflect technical, operational and institutional environment. The updated change management process is designed to dynamically adopt the changes on-demand to keep the technical content of the ASBU framework up-to-date. The changes directly affect the consistency and stability of regional and national air navigation planning and implementation. Given the significance of the impact by the updates, the change management procedures should be clearly described on the GANP

portal to improve transparency and the users' understanding. Furthermore, the consultation and validation process with States, international organizations and industries should not be undermined.

### ***Basic Building Block (BBB) Framework***

3.4 The Basic Building Blocks (BBB) framework is introduced as part of the global technical level, independent yet interactive with the ASBU framework. The BBB framework facilitates the identification of essential air navigation services in accordance with the Standards and Recommended Practices (SARPs), and relations with the basic requirements/elements of the Regional Air Navigation Plans (RANPs). Being the baseline for effective ASBU implementation, the BBB framework will be a prerequisite in supporting safe operation of international civil aviation. However, there is a need for ICAO to clarify the BBB verification process and the air navigation deficiency management.

3.5 In the GANP portal, the BBB verification process is stated as, "...the process should focus on verifying the implementation of these essential services outlined in the BBB framework as the capability of the States to oversight these services is covered by the ICAO Universal Safety Oversight Audit Programme (USOAP). ...should be embedded within the methodology for the identification of deficiencies against the regional air navigation plans". The verification, monitoring and reporting of the RANP implementation are currently made by the ICAO planning and implementation regional groups (PIRGs). Yet further clarification is needed on to whom and how to verify the BBB implementation, in order to avoid unnecessary duplications.

3.6 In accordance with the Uniform Methodology for the Identification, Assessment and Reporting of Air Navigation Deficiencies, approved by the Council in 2001, an air navigation deficiency is described as, "a situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation". Any serious deficiencies in the implementation of the Regional Plans should be eliminated as quickly as practicable in accordance with Assembly Resolution A38-12, Appendix E.

3.7 The RANPs consist of 1) basic requirements/elements, the essential air navigation services and facilities based on the ICAO SARPs, related to the BBB framework, and 2) performance improvement plans based on the ASBU framework. Does an air navigation deficiency mean a situation that does not comply with the basic requirements of the RANP based on the SARPs and BBB elements, or include a non-compliance with performance improvement plans in line with the ASBU framework? Further clarification will help all aviation stakeholders to have a better understanding.

### ***Inter-regional Harmonization of the ASBU Implementation***

3.8 The ASBU is a global technical roadmap based on a systems engineering approach, addressing future air traffic growth and needs, and leading toward a high-performing and interoperable air navigation system. While the priorities or minimum path of the ASBU modules were identified in the fifth edition of the GANP, the new GANP indicates that each region addresses regional and sub-regional needs and priorities through the RANP in line with the global objectives, not clearly identifying global priorities and/or minimum path. The concept of a regionally tailored approach could accelerate implementation of specific ASBU elements addressing each region's needs and challenges. However, it could cause inter-regional imbalance in the ASBU implementation and air traffic management (ATM) modernization, and slow down the achievement of a globally interoperable harmonized air navigation system. In this regard, ICAO should develop an inter-regional harmonization mechanism for balanced

development and transformation of global air navigation in line with the ICAO's No Country Left Behind initiative.

### ***Development of Guidance on Performance Data Collection and Analysis***

3.9 For the next edition of the GANP, the new performance ambitions are introduced as a high-level statement expressed in a qualitative way, in the global strategic level. In the global technical level, ICAO is also developing an upgraded performance framework which includes nineteen key performance indicators (KPIs), a performance objective catalogue and a performance dashboard. These performance ambitions and the performance framework are well connected with eleven expectations and key performance areas (KPAs) defined in the *Global Air Traffic Management Operational Concept* (Doc 9854) and the *Manual on the Global Performance of the Air Navigation System* (Doc 9883). ICAO's efforts to advance a performance-based approach are highly valued.

3.10 Meanwhile, many States has limited capabilities in managing ATM performance data including performance data collection, storage and analysis, which are the basic features to performance monitoring. The performance data management is essential in the implementation of a performance-based approach, e.g., how to collect or store data, along with a detailed algorithm to compute performance indicators. One of the fundamental parts of the performance management is systematic data collection, where data are produced and managed by each stakeholder individually, in a collaborative manner. Provision of a detailed guidance on performance data collection and analysis, along with best practices and examples, will help States improve efficiency in implementation and conduct performance monitoring with more ease, which will ultimately lead to a successful performance-based approach.

## **4. CONCLUSION**

4.1 The Assembly is invited to:

- a) instruct ICAO to better communicate with all relevant stakeholders for the familiarization of the updated GANP and the ASBU, and continue to support the deployment and implementation of regional and national air navigation plans;
- b) instruct ICAO to improve transparency, consistency and stability of the change management process given the significance of its impact on regional and national air navigation planning and implementation;
- c) request ICAO to clarify the Basic Building Blocks (BBB) verification process and the air navigation deficiency management ;
- d) request ICAO to develop an inter-regional harmonization mechanism for balanced development of global air navigation in line with the ICAO's No Country Left Behind initiative; and
- e) instruct ICAO to update guidance materials in detail, on performance data collection and analysis for effective performance management, with best practices and exemplary cases.