



WORKING PAPER

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

COMMITTEE A

Agenda Item 4: Implementing the global air navigation system and the role of planning and implementation regional groups (PIRGs)

4.2: Implementing BBBs and minimum service Standards

IMPLEMENTING MINIMUM AIR NAVIGATION SERVICES FOR INTERNATIONAL CIVIL AVIATION THROUGH THE BASIC BUILDING BLOCKS (BBB) FRAMEWORK

(Presented by the Secretariat)

EXECUTIVE SUMMARY

Civil aviation promotes socio-economic development provided that there is a safe, secure, efficient and environmentally sustainable air navigation system in place. The basic building blocks (BBB) framework outlines the foundation of any robust air navigation system. It emphasizes basic services to be provided for international civil aviation in accordance with ICAO Standards. This paper highlights the importance of providing the basic services outlined in the BBB framework and requests ICAO to establish an effective process, in cooperation with the planning and implementation regional groups (PIRGs), to verify the provision of these services at a regional and national level. Finally, it encourages the use of advanced technologies for the provision of these basic services.

Action: The Conference is invited to agree to Recommendation 4.2/x – Implementation of minimum air navigation services in paragraph 3.

<i>Strategic Objectives:</i>	This working paper relates to the Safety and Air Navigation Capacity and Efficiency Strategic Objectives.
<i>Financial implications:</i>	<i>Impact for the aviation community:</i> The costs of implementation and maintenance of basic air navigation services can be significant in some economic, geographical and operational scenarios; however, the aviation community at large will benefit from a safe and efficient air navigation system. <i>Impact for ICAO (relative to the current Regular Programme Budget resource levels):</i> Since ICAO's current Standards and Recommended Practices (SARPs) development and implementation roll-out will continue over the next triennia, additional resources are required, both financial and human, to support ICAO's efforts associated with the implementation of basic services to support interoperability of systems and harmonization of aviation operations.

<i>References:</i>	AN-Conf/13-WP/11 AN-Conf/13-WP/18 AN-Conf/13-WP/19 AN-Conf/13-WP/26 Doc 7300, <i>Convention on International Civil Aviation</i> Doc 9750, <i>Global Air Navigation Plan</i> Doc 9854, <i>Global Air Traffic Management Operational Concept</i>
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1. INTRODUCTION

1.1 Civil aviation, through complex interaction with other economic sectors, benefits from and contributes to the development of nations. In every region of the world, States depend on aviation to maintain or stimulate economic growth and to assist in the provision of essential services to local communities. In this regard, air transport is a significant contributor to the overall well-being and economic vitality of individual nations.

1.2 For air transport to continue to bring the benefits highlighted above, a robust air navigation system that provides basic services for safe and orderly international civil aviation must be in place.

1.3 To facilitate the identification of basic air navigation services, ICAO is developing the basic building blocks (BBB) framework as part of the sixth edition of the Global Air Navigation Plan (GANP). The BBB framework outlines the foundation of any robust air navigation system by emphasizing basic air navigation services to be provided for international civil aviation according to ICAO Standards. These services are critical to Member States and other stakeholders given that they provide the basis for global aviation safety and efficiency, the worldwide standardization of functional and performance requirements of air navigation facilities and services, and the orderly development of air transport. Once the foundation is in place, States, should, together with other stakeholders, consider the upgrade of their air navigation system based on their specific operational needs by making use of the ASBU framework (AN-Conf/13-WP/11 refers).

2. DISCUSSION

2.1.1 The BBB framework defines basic air navigation services in the areas of aerodromes, air traffic management, search and rescue, meteorology and information management. In addition to basic services, the BBB framework identifies the end users of these services as well as the assets (communications, navigation, and surveillance (CNS) infrastructure) necessary to provide them. Please refer to AN-Conf/13-WP/19 for details on the ongoing work related to the BBBs.

2.2 **Verifying the provision of the minimum air navigation services**

2.2.1 In 2014, the ICAO Council approved a new template for the Regional Air Navigation Plans (ANPs) to better align global and regional planning. This template consists of three volumes. Volumes I and II list the regional facilities as well as the general and specific regional service requirements, required for international civil aviation operations in accordance with regional air navigation agreements, in the areas of aerodrome operations, communications, navigation and

surveillance, air traffic management, meteorology, search and rescue and aeronautical information management.

2.2.2 To set a baseline for the system envisioned in the GANP (AN-Conf/13-WP/18 refers) and to ensure a robust foundation for the global air navigation system, an effective process should be established to verify, pursuant to Article 37 of the Chicago Convention, that the basic air navigation services identified in the BBB framework are provided. It is important to highlight that this process should focus on verifying the implementation of the basic air navigation services outlined in the BBB framework as the capability of the States to oversight these services is covered by the ICAO USOAP. To avoid duplications and to align global and regional planning, the process for verifying the implementation of these basic services should be embedded within the methodology for the identification of deficiencies against the regional air navigation plans. If these basic services are not being delivered, ICAO should, upon request of a State, provide the necessary technical assistance to address the needs as identified within the process.

2.2.3 To ensure the provision of seamless air navigation services based on the deployment of interoperable systems and harmonized procedures, States need to leverage the implementation of the BBBs through their national air navigation plans as a strategic part of their national development plans (AN-Conf/13-WP/xx (IMPL-Strategy) refers). This will also pave the way for the future implementation of air navigation improvements to increase the quality of the services and meet the performance expectations of the aviation community (AN-Conf/13-WP/11 refers).

2.3 **Leading through innovation**

2.3.1 New opportunities in technological innovation have become available for emerging economies to accelerate and even become leaders in the modernization of air navigation systems so that no State or stakeholder is left behind.

2.3.2 Technological advances have, in the past few decades, created new possibilities for providing air navigation services. While these new possibilities may represent a costly solution for developed States due to the investment already made in their current air navigation infrastructure, they have the potential to transform the delivery of air navigation services in developing States. The adoption of advanced concepts of operations enabled by modern technology tailored to specific needs may, therefore, represent a cost-effective solution for providing basic air navigation services in developing States.

2.3.3 Bypassing less efficient or more expensive technologies and moving directly to more advanced technologies for the provision of basic air navigation services is aligned with the concept of a total performance management framework outlined in the *Global Air Traffic Management Operational Concept* (Doc 9854) and with the last evolutionary step of the conceptual roadmap proposed for the sixth edition of the GANP ((Strategic level – GANP) refers). This concept relies on two main principles: the global interoperability of air navigation systems; and compliance of air navigation systems with agreed performance specifications (AN-Conf/13-WP/26 refers).

2.3.4 Although the use of advanced technologies represents an opportunity for delivering services in a more cost-effective way, it can also be problematic if the implementation of these technologies is not accomplished in a coordinated manner that ensures the interoperability of systems and harmonization of procedures. Therefore, planning and implementation regional groups (PIRGs) should ensure a coordinated implementation of air navigation systems that allows the maximum use of current capabilities and the enhanced capabilities of advanced technologies.

3. CONCLUSION

3.1 Civil aviation promotes socio-economic development, provided that there is a safe, secure, efficient and environmentally sustainable air navigation system in place. To achieve this, a robust foundation for the global air navigation system should be in place. To facilitate the identification and to verify the implementation of basic air navigation services for safe and orderly civil aviation at a global level, ICAO is developing the BBB framework for the sixth edition of the GANP. To verify the provision of the basic services in the BBB framework at a regional and national level, the PIRGs should establish an effective process. If these basic services are not being delivered, ICAO should, upon request of a State, provide the necessary technical assistance to address the needs as identified by the relevant PIRGs.

3.2 Technological advances have created new possibilities for providing air navigation services. Advanced concepts of operations enabled by modern technology tailored to specific needs may, therefore, represent a cost-effective solution for providing basic air navigation services in developing States. However, coordinated air navigation implementation at the global, regional and national levels, that allows the maximum use of current capabilities and the enhanced capabilities of advanced technologies, is necessary to ensure global interoperability, harmonization of procedures, and an organized evolution of the aviation system. The conference is invited to agree to the following recommendation:

Recommendation 4.2/x – Implementation of minimum air navigation services

That the Conference:

- a) request ICAO, in coordination with the planning and implementation regional groups (PIRGs), to verify the provision of the minimum air navigation services for international civil aviation outlined in the basic building blocks (BBB) framework, through the methodology for the identification of air navigation deficiencies against the regional air navigation plans;
- b) encourage States, international organizations and industry stakeholders to consider the use of more advanced technologies to provide these minimum air navigation services taking into account the principles of global interoperability and performance specification compliance;
- c) request ICAO to task the PIRGs with coordinating the interoperability of systems and harmonization of procedures at a regional level in relation to the use of advanced technologies and concepts of operations, taking into account global requirements;
- d) urge States to include the planning for implementation of the basic services outlined in the BBB framework within their national air navigation plans; and
- e) request ICAO to, in line with the No Country Left Behind (NCLB) initiative, provide the necessary technical assistance to States for the provision of basic air navigation services as identified by the PIRGs and as reflected in State national air navigation plans.

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