



WORKING PAPER

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

COMMITTEE A

Agenda Item 5: Emerging issues

5.2: Operations below 1000 feet

**INTEGRATING WORK OF THE UNMANNED AIRCRAFT SYSTEMS ADVISORY
GROUP INTO THE GLOBAL AIR NAVIGATION PLAN**

(Presented by the United States)

EXECUTIVE SUMMARY

Since 2017, the unmanned aircraft systems (UAS) Advisory Group (UAS-AG) has created a framework to assist States as they contemplate developing UAS traffic management (UTM) capabilities. This paper proposes to integrate the work of the UAS-AG into the Global Air Navigation Plan (GANP) as part of the GANP's guidance supporting a harmonized and interoperable global air navigation system.

Action: The Conference is invited to agree to the recommendation presented in paragraph 3.1.
a)

1. INTRODUCTION

1.1 At the 39th Session of the ICAO Assembly in September 2016, many States encouraged ICAO to address the rapidly developing unmanned aircraft systems (UAS) sector as a priority due to safety concerns associated with the integration of UAS into national airspaces. Additionally, ICAO was asked to adopt an innovative and more flexible approach to addressing UAS issues and accommodating these new, non-traditional entrants into the aviation sector.

1.2 The Assembly endorsed these recommendations and ICAO subsequently re_convened the UAS Advisory Group (UAS-AG). According to its terms of reference, during Phase II of its work the UAS-AG was directed to "...support the Secretariat in guiding ICAO Member States with establishing a common global framework for, and core boundaries of UAS traffic management (UTM) in order to allow further UTM developments to focus on better defined issues, whether technical, operational or legal."

1.3 Since 2017, the UAS-AG has created a framework to support States as they contemplate developing UTM capabilities. The framework offers high-level recommendations to assist States in providing services for UAS operations and identifies core boundaries of UTM systems to facilitate global harmonization and interoperability.

1.4 The ICAO *Global Air Navigation Plan* (GANP, Doc 9750) supports a harmonized global air navigation system, presenting a comprehensive planning tool that identifies all potential performance improvements available today and details the next generation of ground and avionics technologies that will be deployed worldwide. The aviation system block upgrades (ASBU) methodology and its Modules documented in the GANP define a programmatic and flexible approach allowing all States to advance their air navigation capacities based on their specific operational requirements.¹ The GANP also facilitates alignment among national and regional air navigation planning.

2. DISCUSSION

2.1 Integration of UAS operations into the global air navigation system presents a variety of challenges for States, including the development of capabilities to manage the projected volume of UAS operations across both controlled and uncontrolled airspace as well as the interaction between existing air traffic management (ATM) systems and emerging UTM. During the last year, the UAS-AG has made significant progress in accomplishing the defined work program by defining a common framework for UTM, identifying core principles, assumptions, and potential services. Through the development of the framework, the UAS-AG has matured understanding of the UTM concept and established a foundation for future incorporation of a UTM framework into the global managerial level within the GANP's multi-layer structure.

2.2 The GANP is designed to guide air transport progress through a strategic methodology that leverages existing technologies and anticipates future developments. The GANP offers a solid foundation for future development of UTM concepts characterized by a flexible and scalable approach to air navigation planning, where assumptions and architecture will be consistent through the years.

2.3 Transferring the UAS-AG's activities to the GANP structure would promote harmonization of deployment principles and timelines among States pursuing UTM capabilities and services. Emerging UTM concepts correspond with the GANP performance improvement areas, particularly those addressing interoperable systems and data and optimum capacity and flexible flights, and with related operational concepts for managing information and complexity.

2.4 States and regions must further progress the deployment of UTM concepts and services such that these activities could inform the GANP. Until sufficient regional experience with UTM deployment is available, the UAS-AG should assume the function of monitoring UTM developments among States and regions in support of future work to incorporate applicable elements of the UTM framework produced by the UAS-AG into the GANP.

2.5 This paper proposes to a) incorporate concepts from the completed UTM framework developed by the UAS-AG into the GANP, and b) accomplish any future UTM activities undertaken by ICAO within this structure. This approach is appropriate for the following reasons:

2.6 It ensures that the GANP includes this topic in its guidance to States and regions, offering increased accessibility and visibility for States seeking support as they approach UAS integration challenges, including interaction with legacy ATM systems and procedures;

2.7 It allows States and regions to approach modernization guidance in a common way as the GANP matures through 2019 and beyond, and as States continue to work on assimilating UAS operations into their respective national airspace systems; and

¹ ICAO 2016–2030 Global Air Navigation Plan

2.8 It utilizes the GANP cross-panel coordination processes to ensure the UAS-AG concepts are both considered by and consistent with Panel recommendations and work products for constituent communications, navigation, and surveillance (CNS)/ATM Standards and Recommended Practices, Procedures (SARPs) for air navigation, and guidance material.

3. CONCLUSION

3.1 In light of the above, the Conference is invited to agree to the following recommendation:

Recommendation 5.2/xx – Integration of the Unmanned Aircraft Systems Advisory Group (UAS-AG) into the Global Air Navigation Plan (GANP, Doc 9750)

That the Conference:

- a) acknowledge the significant work accomplished by the UAS-AG;
- b) transition the unmanned aircraft systems traffic management (UTM) framework developed by the UAS-AG to the GANP for future consideration;
- c) redirect the UAS-AG to assume the function of monitoring UTM developments among States and Regions until experience with UTM deployment is sufficient to progress global guidance material; and
- d) accomplish future UTM work within the GANP structure.

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