



- Agenda Item 1:** Follow-up to conclusions and decisions adopted by SAM/IG meetings and presentation of air navigation results at a global, interregional and intra-regional level

RESULTS OF THE THIRTEENTH AIR NAVIGATION CONFERENCE

(Presented by the Secretariat)

SUMMARY

This paper presents information on the discussions held at the Thirteenth Air Navigation Conference of ICAO, highlighting those issues that are relevant to SAM/IG planning tasks.

References:

Thirteenth Air Navigation Conference, Montreal, Canada, 9-19 October 2018

1. Introduction

1.1 The Thirteenth Air Navigation Conference (AN-Conf/13) was held in Montreal (Canada) on 9-19 October 2018. The theme of the Conference was *From development to implementation*.

1.2 The agenda of the Conference included a broad range of issues related to flight safety and air navigation capacity and efficiency of interest to the Directors General of Civil Aviation, as well as to air navigation service providers and all airspace users. The Air navigation committee (Committee A) reviewed items 1, 2, 3, 4 and 5 of the agenda, as follows:

- Agenda item 1: Air navigation global strategy
- Agenda item 2: Enabling the global air navigation system
- Agenda item 3: Enhancing the global air navigation system
- Agenda item 4: Implementing the global air navigation system and the role of planning and implementation regional groups (PIRGs)
- Agenda item 5: Emerging issues

1.3 The complete report of the Conference is shown in:

<https://www.icao.int/Meetings/anconf13/Pages/default.aspx>

1.4 This information paper highlights issues related to GNSS, remote control towers, operations above FL600, operations below 1000 ft, and remotely piloted aircraft systems (RPAS).

2. Discussion

Evolution of GNSS

2.1 The evolution of the global navigation satellite system (GNSS) towards the introduction of services with dual-frequency multiple constellations (DFMC) was analysed. The presentation described the standardisation process currently underway, the expected benefits, the long-term goal of achieving full global acceptance of the global navigation satellite system with dual-frequency multiple constellations (DFMC GNSS) and the difficulties to attain it, and a way of solving these difficulties was proposed to the States and ICAO.

2.2 Information was presented on the status of the ground-based augmentation system (GBAS) of the satellite constellation of the global navigation satellite system (GLONASS) in the States, and proposals were developed to modify ICAO provisions related to the use of GBAS in order to facilitate performance-based navigation (PBN) and the integration of GNSS signal monitoring systems in States with adjacent airspaces.

2.3 A review was made of the status of the GLONASS constellation in the Russian Federation and its future development and use, as progress is made towards a GNSS of multiple constellations and frequencies to provide safety and efficiency to international civil aviation flights. Mention was also made of the positive experience of Russian operators with the use of combined GLONASS/GPS receivers. ICAO was requested to continue dealing with international regulatory aspects and note was taken of the need to avoid prohibiting the use or the exclusion of any GNSS element or constellation, both in the States and in industry standards.

2.4 In this regard, the Committee A formulated a recommendation for States to define their strategic air navigation plans, take advantage of the greater robustness and efficiency offered by the global navigation satellite system with dual-frequency multiple constellations (DFMC GNSS) to double operational benefits and foster its development by the industry, and also:

- avoid, in principle, prohibiting the use of available GNSS elements if their operation is consistent with ICAO standards and recommended practices (SARPS) and meets all the regulatory and safety requirements for the functions in which they are foreseen to be used;
- avoid imposing equipment or the use of a main constellation or GNSS augmentation system in particular, unless clear operational benefits are derived from it and the relevant consultations have been conducted with the airspace users involved;
- ensure compliance with ICAO provisions concerning the publication of information on the use of GNSS elements in aeronautical information publications (AIP); and
- issue timely measures to meet the long-term goal of having all States accept the use of all GNSS elements that are aligned with the SARPs for lateral navigation, thus creating positive conditions for DFMC GNSS.

Remote control towers

2.5 CANSO and IFATCA underlined the growing use of digital and remote technologies in air traffic control tower operations. Committee A noted that the variety of operational requirements hindered a harmonised approach to all digital or remote technological applications in control towers. They also highlighted the importance of striking a fair balance between specification and functionality, so as not to suffocate innovation.

2.6 It was recalled that the ATS provider is largely responsible for making the required specific investments in each case. Accordingly, the Committee agreed that ICAO should stay abreast of the progress made by States in the installation of digital and remote towers, as part of its current work programme.

Operations above flight level 600

2.7 The Committee reviewed the operations normally conducted above flight level 600, and relevant information was provided on their safe and orderly expansion. It highlighted the need to develop preliminary guidelines to address the regulatory aspects and that, in the longer run, the international community should review to what extent the technical and operational issues were to be resolved in order to allow for significantly higher traffic density levels under safe conditions.

2.8 The Committee took note of the suggestion to use the term “high-altitude airspace operations”, but argued that the expression “high altitude” could generate confusion and agreed on the need to review the terminology in the six official languages of the Organization.

2.9 CANSO described the problems faced by its members in relation to high-altitude airspace operations, highlighting the need to address some of these issues in order to sustain the growth foreseen in the sector. The Committee recognised the need to further study the consequences of travelling through controlled airspace for operations in high-altitude airspace, as proposed.

2.10 The Committee agreed that the technical work done in favour of this sector should be consistent with the Global air navigation plan (GANP). It also agreed that it was too early for ICAO to develop standards and recommended practices and that ICAO should study the issues raised during the discussion. In this regard, the Committee underlined the need for clarity in the scope of the work to be undertaken by ICAO on this subject and agreed that a multi-disciplinary approach should be taken.

2.11 The Committee recognised that the sector was still in its early stages and developing rapidly, and that a significant amount of the technical experience and knowledge was held by the industry. To that end, the Committee encouraged States and ICAO to work closely with those States directly involved in higher airspace operations and with industry to ensure the validity of any guidance material.

Operations below 1000 feet

2.12 The Committee reviewed the difficulties and opportunities related to the emergence of a range of aviation activities in very low altitude airspace, typically at 1000 feet above ground level (AGL) and below, in particular in urban or suburban environments. These activities include the operation of small, unmanned aircraft (UA), commonly referred to as “drones”, as well as new developments referred to as “flying taxis”.

2.13 The Committee expressed broad support for ICAO's activities regarding the formulation and implementation of technical and regulatory solutions for unmanned aircraft systems (UAS) operations that remain outside of the international instrument flight rules (IFR) framework. The Committee urged ICAO to continue its efforts towards the safe and coordinated development of aviation activities at very low altitudes, including in the vicinity of, and into, aerodromes.

2.14 The Committee in particular outlined ICAO's key role as a forum and facilitator for the definition and development of the UAS traffic management (UTM) system, bringing together States and industry stakeholders, at both the global and regional levels. The Committee agreed on the need for States, academia, regional organisations and industry stakeholders to proactively cooperate for the deployment of necessary UTM infrastructure.

2.15 Working papers by the States highlighted the need for ICAO to continue facilitating the exchange of knowledge and best practices between States, with the active participation of UAS industry stakeholders. The Committee acknowledged that sufficient time should be given to States and regions to test and validate UTM concepts and solutions before developing SARPs.

2.16 The Committee also expressed wide support for ICAO's awareness and education activities, as well as for the continuous enhancement of its tools for information exchange, in particular on States' UAS regulations. The Committee urged States to make sure that the approved UTM systems are interoperable with the existing ATM infrastructure.

Remotely piloted aircraft systems (RPAS)

2.17 The Committee analysed the opportunities and difficulties related to the operation of remotely piloted aircraft systems (RPAS) and ICAO activities in the development of the regulatory framework to support the integration of remotely piloted aircraft (RPA) into non-segregated airspace and aerodromes. The Committee expressed broad support for these activities.

2.18 To support the development of RPAS-related provisions, the Committee agreed on the need for collection of technical and operational data, in particular on detect and avoid (DAA) and C2 Link, and encouraged States to invite industry stakeholders to provide such data to ICAO.

2.19 The Committee noted that although the current focus of work underway is on SARPs, PANS and guidance material related to airworthiness, C2 Link, flight operations, DAA and ATM, it is expected that RPAS-related provisions will ultimately be required in all ICAO Annexes.

2.20 Within this context, the Committee agreed on the need for States to support the cross-disciplinary development of RPAS-related SARPs and guidelines across all relevant ICAO technical panels. There was also support for the development by ICAO of additional training activities and guidance material to assist States in implementing RPAS-related SARPs.

3. Suggested action

3.1 The States participating at the Meeting are invited to:

- a) take note of the information provided in this paper; and
- b) review the air navigation issues being developed at a global level and that will require, in the short run, planning activities in our Region for ATM and CNS.
