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WORKING PAPER

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

COMMITTEE A

Agenda Item 3: Enhancing the global air navigation system
3.5: Other ATM issues

THE FUTURE OF LOCATION INDICATORS

(Presented by Germany)

EXECUTIVE SUMMARY

This paper identifies certain limitations of the existing ICAO location indicator system, which are brought about by increases in air traffic in particular at smaller aerodromes and heliports as well as flight procedure encoding requirements. Different States have been finding different solutions for these challenges and this paper calls on ICAO to ensure that globally harmonized solutions to these challenges are developed and deployed.

Action: The Conference is invited to:
a) note the information provided;
b) request ICAO to develop provisions allowing for an extension of the current location indicator scheme while maintaining continuity with the existing scheme necessary to support global interoperability and consistency; and
c) study a longer-term solution addressing in particular the limitations of the current scheme while appropriately addressing the challenges of automation and digitalisation across different aeronautical stakeholder groups.

1. INTRODUCTION

1.1 Aerodromes and other geographical locations throughout the world, such as area control centers (ACC) in charge of flight information region (FIRs) and upper flight information regions (UIRs), are assigned a four-letter location indicator. These codes are defined by the International Civil Aviation Organization (ICAO) and published in the manual on *Location Indicators* (Doc 7910).

1.2 The development of a system of location indicators, including principles for the formulation and assignment of such codes, arose mainly from Recommendations of the ICAO Communications Division Meetings, in particular the Sixth Session, in 1957.

1.3 These codes are made by a combination of four letters. The first letter corresponds to the aeronautical fixed services (AFS) routing area and represents a country or group of countries within a

region. With some exceptions, the second letter generally represents a country within that region, and the remaining third and fourth letter are used to identify an aerodrome or another geographic location. There is no duplication allowed in the aerodrome location indicator scheme.

2. DISCUSSION

2.1 Although the current location indicator scheme offers many benefits, it also has its limitations.

2.2 For those States where the two first letters are predefined, the existing ICAO location indicator scheme provides for a maximum of 676 indicators. This is considered not sufficient to support all aerodromes (e.g. heliports, general aviation aerodromes) or geographic locations which may require such an indicator in the future.

2.3 To overcome shortcomings associated with the current system, some States have already established individual national systems. National implementations vary and do not follow the same principles, which render it difficult to obtain the full benefit from automation and digitalisation across different stakeholder groups at national, regional or global levels.

2.4 To support a widespread performance-based navigation (PBN) implementation, in particular for approaches with vertical guidance and precision approaches, the existing ICAO location indicator scheme requires extension to provide all aerodromes with location indicators.

2.5 NOTAMs are an important source of information. For a location that has not been assigned a location indicator, the name must be given in a NOTAM in plain language, spelled in conformity with local usage and transliterated when necessary into the Latin alphabet. Automated NOTAM and flight briefing systems have severe difficulties parsing/processing information provided in such a “free text” format.

2.6 Since location indicators affect the operation of aircraft, air traffic control, airline operations, aeronautical information management and many others, the development and implementation of appropriate alternative concepts is considered very time-consuming. Hence, developing solutions should be initiated at the earliest possibility.

3. WAY FORWARD

Medium term

3.1 Initial studies on medium-term solutions have already been carried out in the ICAO Aeronautical Information Service – Aeronautical Information Management Study Group (AIS-AIM SG) and the Instrument Flight Procedures Panel (IFPP). That work has, however, not yet resulted in revised ICAO provisions.

3.2 It is therefore proposed to develop new ICAO provisions, which allow an extension of the current location indicator scheme while maintaining compatibility with the existing scheme. This is required to support global interoperability and consistency. In these activities, the findings of prior studies within ICAO need to be duly considered.

Longer-term solution

3.3 In the future, the natural key shortage of location indicators can be ameliorated by the introduction of computer generated unique identifiers, such as universally unique identifiers (UUIDs), without depending for their uniqueness on a central registration authority or coordination between the parties generating them. However, the need to maintain pronounceable location indicators will remain as humans will continue to interact with the system.

3.4 The development of new, globally harmonized provisions must ensure that the challenges of ever-increasing automation and digitalisation are fully taken into consideration. For example, airspace users, airports and air traffic services should be consulted early to ensure that their information systems are compatible with any new provisions.

4. CONCLUSION

4.1 The conference is invited to agree to the action contained in the executive summary.

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