International Civil Aviation Organization

The First Meeting of ICAO Asia/Pacific Performance Based Navigation Implementation Coordination Group (PBNICG/2)

Bangkok, Thailand, 11-12 June 2015

Agenda Item 10: Issues and challenges regarding PBN implementations

New Performance-based Navigation (PBN) Navigation Specifications (Nav Spec) Implementation issues

(Presented by Hong Kong, China)

SUMMARY

This discussion paper provides information on the issues related to the implementation of New Nav Specs, e.g. RNP 2, Advanced RNP (ARNP) and RNP 0.3.

1.   INTRODUCTION

1.1   Three new Nav Spec (RNP 2, ARNP and RNP 0.3) introduced by the latest edition (4th) of ICAO Doc 9613, PBN Manual with effective from 13 November 2014.

1.2   New Nav Spec utilize the advanced capability of aircraft to a further extend, allowing more flexibility for States to implement PBN procedures for either fixed wing or helicopter on various phases of flight.

2.   DISCUSSION

2.1   Basic Requirement on new Nav Spec implementation

2.1.1   Implementation of a PBN flight procedure requires guidance materials on Instrument flight procedure design; Airspace design, ATM; Validation; Safety management and Publication.

2.1.2   Besides, concise and precise guidance material on Operational approval (Doc 9997) is essential for a State to grant the appropriate approval.

2.2   Issues hindering New Nav Specs Implementation

2.2.1   The Doc 9613 contains Nav Spec and the means of supporting these applications, in terms of required performance, equipment functionality and enabling infrastructure. It provides practical guidance for the development of documents related to; standards, regulations, certification, advisories, guidance and operational approvals.

2.2.2   Although Doc 9613 provides comprehensive overview on PBN implementation, States are still not able to implement new procedures utilizing new Nav Spec if there is insufficient support from guidance materials mentioned in para 2.1.1 and 2.1.2.

2.2.3   Even after all relevant materials are made available, States would require substantial amount of time to implement procedures based on new Nav Spec. If the ICAO guidance materials cannot be provide in time, States will not be able to achieve the timeline recommended by ICAO as stated in the regional PBN implementation plan or Asia/ Pacific Seamless ATM Plan. For instance, Asia/ Pacific Seamless ATM Plan recommend States to implement RNP 2 in en-route airspace in Phase II with an expected implementation by 08 November 2018. However, essential guidance materials for RNP 2 implementation (see para. 2.3.2) are still not available from ICAO.

2.3   Examples

2.3.1   Advanced RNP

2.3.1.1   Procedure design criteria have been published, but other relevant guidance materials on Separation (Doc4444); Charting (Annex 4 and Doc 8697); and the relevant Job Aid (Doc 9997) are not available.

2.3.2   RNP 2

2.3.2.1   Similar to ARNP, although procedure design criteria have been published, supporting guidance materials for charting and Job Aid are still not available in Annex 4, Doc 8697 and 9997.

3.   Fleet population data

3.1   The population of fleet capability is also an important factor for States to determine appropriate Nav Spec and implementation timeline. However, it is very difficult for States to collect such data, especially for overflights.

3.2   The estimated population and the growth of the capable fleet is the foundation for a successful implementation of PBN procedures, especially for new Nav Spec. In order to support States in this region, ICAO shall acquire reliable estimate of the PBN capability population in APAC Region(e.g. obtain data from IATA) with forecast growth for every 5 years period.

4.   ACTION BY THE MEETING

4.1   The meeting is invited to:

a) discuss any relevant matters as appropriate

b) urge ICAO to publish relevant guidance material as mentioned in Para 2.3 as soon as possible to support implementation of new Nav Spec.

c) urge ICAO to source the estimated population and the forecast growth for every 5 years period of all new Nav Spec.

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