



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

PBNICG/2-IP/04
11/06/2015 - 12/06/2015

Agenda Item 5: States' PBN Implementation Progress

Update on Hong Kong, China PBN Implementation

(Presented by Hong Kong, China)

SUMMARY

This paper provides information on the latest progress of PBN implementation in Hong Kong, China.

1. INTRODUCTION

- 1.1 As per the Resolution A36-23 of the 36th session of the ICAO Assembly, since the submission of Hong Kong, China (Hong Kong, to be used for the rest of the paper) PBN Implementation Plan (the Plan) to ICAO at the PBN/TF/4 in March 2009, Hong Kong has been implementing PBN procedures in a steady and progressive manner. The Plan adopts a 3-phase approach: Short Term (2009-2012), Medium Term (2013-2016) and Long Term (beyond 2016).
- 1.3 With full support of and close collaboration with the stakeholders in Hong Kong through the PBN Planning and Implementation Team (PBN PIT) which was established in 2007 with the participation of local airlines, ANSP, regulators and engineers, Hong Kong has completed all the Short Term and most of the Medium Term projects as planned.

2. Implementation Status

2.1 Implementation of PBN in En-Route Airspace

- 2.1.1 PBN Routes L642 and M771 within Hong Kong FIR have been designated as RNP 4 since 11 December 2014 with the requirement for all aircraft operating at or above FL290 on PBN Routes L642 and M771 within Hong Kong FIR to be approved for RNP 4.
- 2.1.2 Hong Kong is also reviewing the PBN Navigation Specifications for en-route operations. According to the ICAO Seamless ATM Plan, RNP2 is expected to be implemented by States in 2018. Hong Kong will consider RNP 2 if the population of fleet capable to fly RNP2 routes reaches a suitable level.

2.2 Implementation of PBN in TMA Airspace

- 2.2.1 RNP 1 SIDs and STARs procedures have been implemented in Hong Kong since January 2013. Currently, approximately 95% of aircraft movement is RNP 1 compliance (as of May 2015). Hong Kong is planning to phase out conventional procedure progressively from 2nd half of 2015.

2.3 Implementation of PBN in Approach Airspace

- 2.3.1 There are 2 RNP AR APCHs for each runway at HKIA.

2.4 Application of Advanced RNP (ARNP) in Hong Kong

- 2.4.1 ARNP navigation specification (Nav Spec) design criteria were published by Amendment 6 to the fifth edition of Doc 8168 Volume II, PANS-OPS on 13 November 2014. By applying RNP 0.3NM to intermediate and missed approach phases in accordance with ARNP design criteria, it should be possible to replace most of the RNP AR APCH implemented in Hong Kong so as to eliminate the stringent requirements on RNP AR APCH implementation. However, the current ARNP Nav Spec requires mandatory Radius to Fix (RF) functionality. Moreover, there is insufficient guidance material for implementation of ARNP procedures. Based on the latest statistic on Hong Kong RF procedure operations, approximately 25% of flights are RF capable (as of May 2015). Therefore it is estimated that similarly small proportion of flight would be ARNP capable.
- 2.4.2 Mixed Nav Spec operation in same airspace (e.g. in ILS plus RNP AR) is proven to have negative impact in congested, saturated airspace like Hong Kong. Therefore a harmonized implementation is preferable.
- 2.4.3 The issue on RF capability requirement has been raised and recognized by PBNICG/1 meeting which has formulated an Action item 1/23 accordingly to request PBN Study Group to consider RF as an optional functionality for ARNP Nav Spec during the proposed transition period in order to facilitate the implementation of ARNP significantly.
- 2.4.4 ICAO is requested to provide relevant guidance materials for the implementation of ARNP.

3. ACTION BY THE MEETING

- 3.1 The meeting is requested to note the information contained in this paper.
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