



*International Civil Aviation Organization*

**THE THIRD MEETING OF PERFORMANCE BASED NAVIGATION  
IMPLEMENTATION COORDINATION GROUP (PBNICG/3)**

Bangkok, Thailand, 08 – 10 March 2016

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**Agenda Item 5: States' PBN Implementation Progress**

**b) Review and adoption of PBN Implementation Progress Report results**

**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 Hong Kong Implementation Plan submitted to ICAO during the PBN/TF/4 in 2009. It adopted a 3 phases approach: Short Term (2009-2012), Medium Term (2013-2016) and Long Term (beyond 2016) to meet the targets set out by the Resolution A36-23 of the 36th session of the ICAO Assembly.

1.2 Hong Kong has completed the Short and Medium Term of the Plan in time by the collaborative effort of 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.

**2. Implementation Status**

**2.1 Implementation of PBN Instrument Approach Procedures**

2.1.1 As of today, there are 2 RNP AR APCHs for each runway at HKIA.

2.1.2 Owing to the limited airspace available to the north of HKIA, all arriving aircraft are normally required to join the final from South-West of the airport only when RWY07 is in use. In case of weather built up in that vicinity, the access to HKIA could be severely affected.

2.1.3 The latest implemented RNP AR APCH for RWY07 provide an additional approach procedure via the North of the airport and can enhance the accessibility to Hong Kong International Airport in such situation.

2.1.4 A test flight conducted prior to the implementation demonstrated the great potential of the RNP AR APCH procedure in alleviating the impact resulted from the unfavorable condition mentioned in Para 2.1.3.

2.1.5 However, at the moment, the application of RNP AR APCH design criteria is required to enable the implementation of the new approach procedure for RWY07. Hence, only approved aircraft could enjoy the advantage of the RNP AR APCH procedures.

2.1.6 In the aim to increase the proportion of aircraft which can enjoy the various PBN approach procedures, Hong Kong would consider the application of Advanced RNP when there is sufficient number of capable aircraft.

## **2.2 Implementation of PBN in TMA Operations**

2.2.1 RNP1 SIDs and STARs procedures have been implemented in Hong Kong since January 2013. Considering a very large portion of (approximately 98%) fleet operating at HKIA is RNP 1 approved, conventional procedures have been removed from routine use since Nov 2015.

## **2.3 Implementation of PBN in En-Route Operations**

2.3.1 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.

2.3.2 Hong Kong is also reviewing the PBN Navigation Specifications for en-route operations. According to the Asia/Pacific Seamless ATM Plan, RNP2 is expected to be implemented by States in 2018. Hong Kong will consider the implementation of RNP 2 if the population of fleet capable to fly RNP2 routes reaches a suitable level.

## **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this papers; and
- b) discuss any relevant matters as appropriate.

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AIRSPACE	SHORT TERM (2008-2012) - completed	MEDIUM TERM (2013-2016)	Long Term (Beyond 2016)
Approach	<ul style="list-style-type: none"> <li>→ Implemented RNP AR APCH Procedure to North RWY in 2010</li> </ul>	<ul style="list-style-type: none"> <li>→ Implemented 8 RNP AR APCH Procedures, 2 for each RWY.</li> <li>→ Feasibility study and planning to conduct GBAS trial for capable aircraft/operators</li> <li>→ Consider use of appropriate Nav. Spec., e.g. RNP0.3, Advanced RNP, within approach airspace</li> </ul>	<ul style="list-style-type: none"> <li>→ Subject to satisfactory results of the trial, consider GBAS as backup to the ILS</li> <li>→ Consider use of other Nav. Spec. that suits the operation in HK.                             <ul style="list-style-type: none"> <li>○ Consider mandate the Nav. Spec. selected for aircraft operating within approach airspace by 2016+</li> <li>○ Achieve 100% implementation of the Nav. Spec. selected within approach airspace</li> </ul> </li> </ul>
Terminal (SID/STAR)	<ul style="list-style-type: none"> <li>→ issued mandate for RNP1 SIDs/ STARS capability in 2012</li> </ul>	<ul style="list-style-type: none"> <li>→ Implemented RNP1 procedures in terminal airspace in 2013</li> <li>→ Conventional procedures have been removed from routine use</li> </ul>	
Enroute	<ul style="list-style-type: none"> <li>→ Applied 50NM Longitudinal Separation on RNP10 Routes in 2008</li> <li>→ issued mandate for RNP4 capability on PBN routes within HK en-route airspace in 2014</li> </ul>	<ul style="list-style-type: none"> <li>→ Implemented RNP4 application within enroute airspace: PBN route L642/ M771 within HK FIR were designated as RNP4 routes in 2014</li> </ul>	<ul style="list-style-type: none"> <li>→ Consider mandate better navigation specification in accordance with the ICAO regional roadmap, e.g. RNP2</li> </ul>

Appendix 1