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# AIC

# MALAYSIA

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## PERFORMANCE BASED NAVIGATION (PBN) IMPLEMENTATION IN MALAYSIA

### 1 INTRODUCTION

- 1.1 In accordance to the ICAO Assembly resolution, Malaysia has established the PBN Implementation Plan for Kuala Lumpur FIR and Kota Kinabalu FIR.
- 1.2 The PBN implementation plan presents the schedule of implementation and the transition from the current ground nav aids-based instrument flight procedure to the PBN flight procedure. Aircraft that operate in PBN airspace should satisfy the requirements of ICAO PBN Manual Doc 9613 and should obtain the appropriate operational approval.
- 1.3 The objective of this circular is to provide aircraft operators the guidelines for PBN transition for efficient operations under the new PBN environment.

### 2 PBN OPERATIONS

- 2.1 Performance Based Navigation (PBN) is a concept that encompasses both area navigation (RNAV) and required navigation performance (RNP).
- 2.2 As the ICAO Assembly has resolved that all Contracting States to implement PBN procedures by 2016, Malaysia is obliged to comply with the regional PBN implementation plan. Malaysia has submitted its PBN implementation Plan to ICAO in 2010 and has updated it recently to meet the global demand i.e. to enhance airspace capacity by capitalizing on the advanced aircraft navigational equipment.

### 3 BENEFITS OF PBN

- 3.1 Allow more efficient use of airspace, reducing flight times through the implementation of optimum flight trajectory, independent of ground-based navigation, reducing the aircraft noise and fuel consumption and consequently reducing carbon emissions into the environment;
- 3.2 Increase airspace safety through the implementation of continuous and stabilized descent procedures with vertical guidance, significantly reducing the event of controlled flight into terrain (CFIT);
- 3.3 Utilization of the RNAV and/or RNP capability that has already been installed in a significant portion of fleet that operates in Malaysian airspace;
- 3.4 Implementation of more precise flight paths, approaches, landings and take-offs, will reduce air traffic conflict reducing ATC/Pilot workload.

**4 PBN IMPLEMENTATION PLAN**

4.1 General

4.1.1 RNAV 5 will be applied to the enroute phase, RNAV 1 and/or RNP 1 will be applied to STARs and SIDs in the terminal, RNP approaches and RNP AR approaches will be progressively implemented in Kuala Lumpur FIR and Kota Kinabalu FIR.

4.2 The Implementation Plan

	<b>2012</b>	<b>2016</b>	<b>2020</b>
<b>En Route</b>	RNAV5	RNP2	RNP2 or ADV RNP
	RNP10 or RNP4	RNP4	RNP2 or ADV RNP
<b>Terminal</b>	RNP1	RNP1	ADV RNP
<b>Approach</b>	RNP APCH LNAV/VNAV		ADV RNP
	RNP AR APCH if beneficial		
	RNP0.3 for helicopter		

4.3 As the PBN implementation mature, selected ground nav aids will be decommissioned gradually after 2020.

5. This circular is issued for guidance and compliance.

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