



International Civil Aviation Organization

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

Bangkok, Thailand, 8-10 June 2016

Agenda Item 5: States' PBN Implementation Progress

b) Review and adoption of PBN Implementation Progress Report results

THAILAND PBN IMPLEMENTATION PROGRESS

(Presented by Thailand)

SUMMARY

This paper discusses the progress of PBN implementation within Thailand. The paper notes the latest Thailand PBN Implementation plan, the operations of PBN procedures at terminal airspaces, and the operations of PBN routes in Thailand. The paper also summarizes the progress made for PBN implementations at other terminal areas around Thailand.

1. INTRODUCTION

1.1 Resolution A37-11 of the 37th Session of the ICAO General Assembly requested Member States to develop national Performance Based Navigation (PBN) implementation and to implement RNAV and RNP air traffic services (ATS) routes and approach procedures as specified in the ICAO PBN Manual (Doc 9613). To provide appropriate guidance for air navigation service providers in the APAC Region, airspace operators and users, regulating agencies, and international organizations on the evolution of navigation capabilities as one of the key systems supporting air traffic management, Asia and Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) adopted Regional PBN Implementation Plan consisting of short, medium and long term strategies.

2. DISCUSSION

Thailand PBN Implementation Plan

2.1 In June 2009, Thailand's National Working Group for PBN and GNSS Implementation had approved Thailand PBN Implementation Plan. This PBN Implementation Plan aims to provide aviation stakeholders with appropriate implementation guidance and timelines to allow proper preparation for PBN implementation within the Bangkok Flight Information Region (FIR). The Plan is well aligned with the Asia/Pacific Regional PBN Implementation Plan developed by ICAO Asia/Pacific PBN Task Force and 2007 and 2010 ICAO Assembly Resolutions.

Airport Name	Runway End	LNAV	LNAV/VNAV	SID	STAR
Khon Kaen	03	✓	□	✓	□
	21	✓	□	✓	□
Krabi	14	□	□	✓	□
	32	✓	□	✓	✓
Phitsanulok	14	2016	□	✓	□
	32	2016	□	✓	□
Phuket	09	✓	□	✓	✓
	27	✓	□	✓	✓
Surat Thani	04	✓	□	□	□
	22	✓	□	□	□
Suvarnabhumi	01L	□	2016	✓	✓
	01R	□	2016	✓	✓
	19L	□	2016	✓	✓
	19R	□	2016	✓	✓
U-Tapao	18	□	✓	✓	✓
	36	□	✓	✓	✓
Ubon Ratchathani	05	□	✓	✓	□
	23	□	✓	✓	□

2.5 RNP-AR procedures are currently being designed for four airports namely Hat Yai, Phuket, Krabi and Don Mueang. The implementation of RNP-AR procedures at these airports are subject to further regulatory approval process to be determined by the National Working Group for PBN and GNSS Implementation.

2.6 A GBAS system is planned to be installed at Suvarnabhumi Airport serving as the backups for ILS at four runway ends. The target date for GLS implementation at Suvarnabhumi Airport is 2019.

Progress of PBN Implementation in En-route Airspace

2.7 For en-route airspace, in 2013 Thailand has established unidirectional RNAV-5 routes connecting from Phuket to Bangkok (Y5 Route) and between Bangkok and Chiang Mai (Y6 and Y7 Routes). The unidirectional routes are designed to increase airspace efficiency based on the PBN concept and the flexible use of airspace (FUA) concept. Moreover these routes are created to reduce aircraft fuel consumption and green gas emission and to enhance safety and improve flow capacity of air traffic operations.

2.8 For en-route airspace, in June 2014, Thailand has established five additional unidirectional RNAV-5 routes connecting Bangkok with southern destinations, as depicted in the following figure and table:

Route Designator	Direction	Main City Pairs Served
Y8	Southbound	Bangkok to Phuket/Surat Thani/Krabi/Trang
Y9 / M769	Northbound	Hat Yai/Samui/Kuala Lumpur/Penang to Bangkok
Y10 / M757	Southbound	Bangkok to Hat Yai/Samui/Kuala Lumpur/Penang
Y11	Southbound	Bangkok to Singapore/Jakarta
Y12	Northbound	Singapore/Jakarta to Bangkok

These routes are designed based on the PBN concept and the flexible use of airspace (FUA) concept to enhance safety and improve flow capacity of air traffic operations between Bangkok and major cities in the southern part of Thailand, as well as other international destinations south of Thailand.

2.9 In 2015, the Y9 and Y10 routes have been upgraded from domestic to international routes, M769 and M757 respectively, connecting between Bangkok FIR and Kuala Lumpur. The upgrade is aimed at improving flow capacity between Bangkok and Malaysia. Similar new RNAV5 unidirectional routes between Bangkok FIR/Yangon FIR and Bangkok FIR/Phnom Penh FIR are being coordinated and planned for implementation within 2016.

3. ACTION REQUIRED 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.
