



International Civil Aviation Organization

**THE SIXTH MEETING OF PERFORMANCE BASED NAVIGATION
IMPLEMENTATION COORDINATION GROUP (PBNICG/7)**

(Video conference, 21 – 23 October 2020)

Agenda Item 4: States' PBN implementation progress

THAILAND PBN IMPLEMENTATION
(Presented by Thailand)

SUMMARY

This paper discusses the overall PBN development within Thailand. The paper summarizes the implementation status of PBN approach procedures and SIDs and STARs in terminal airspaces throughout Thailand. It also presents progress of RNP-AR, plan for GBAS/GLS implementation as well as updates on PBN route enhancement for en-route airspace.

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 in accordance with the ICAO PBN Manual (Doc 9613).

1.2 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 targeted in short, medium and long term.

2. DISCUSSION

PBN Implementation Plan

2.1 In January 2017, Thailand PBN Implementation Plan has been revised to ensure close alignment with the Regional Asia/Pacific Seamless ATM Plan. Still consistent with the latest regional 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).

2.2 Re-established in April 2018, the national PBN implementation working group comprising of regulator, ANSP including flight procedure design service, aerodrome operators, and airspace users, meet regularly on a yearly basis to ensure articulation and to drive efficient deployment of national implementation roadmaps as well as to discuss relevant issues regarding PBN.

PBN Implementation Status

Approach

2.3 The following table shows the list of eleven (11) international aerodromes as listed in the Asia-Pacific Regional Air Navigation Plan (APAC ANP). Where feasible, all instrument runways will be equipped with RNP APCH with Barometric Vertical Navigation (Baro-VNAV). At the airports where Approaches with Vertical Guidance are currently not available, Baro-VNAV will be introduced during periodic review cycle.

Airport Name	Runway End	LNAV	LNAV/VNAV	RNP AR	RNAV/RNP VA	GLS	Implementation Target
Chiang Mai	18	✓	□	□	□	□	
	36	✓	□	□	□	□	
Chiang Rai	03	✓	✓	□	□	□	
	21	✓	✓	□	□	□	
Don Mueang	03L	N/A	N/A	□	□	□	
	03R	N/A	N/A	□	□	□	
	21L	✓	✓	□	□	□	
	21R	✓	✓	□	□	□	
Hat Yai	08	✓	□	□	□	□	
	26	✓	□	□	□	□	
Hua Hin	16	✓	N/A	□	□	□	
	34	N/A	N/A	□	□	□	
Krabi	14	N/A	N/A	2021	□	□	
	32	✓	□	□	□	□	
Phuket	09	✓	✓	✓	□	2024	
	27	✓	✓	✓	□	2024	
Surat Thani	04	✓	✓	□	□	□	
	22	✓	✓	□	□	□	
Samui	17	✓	N/A	□	□	□	
	35	✓	✓	□	□	□	
Suvarnabhumi	01L	✓	✓	□	□	TBC	
	01R	✓	✓	□	□	TBC	
	19L	✓	✓	□	□	TBC	
	19R	✓	✓	□	□	TBC	
U-Tapao/ Rayong Pattaya	18	✓	✓	□	□	□	
	36	✓	✓	□	□	□	

2.4 For the GLS implementation, the site evaluation for optimal location for GBAS ground facility at space-constrained Phuket International has taken longer than expected. Pending an acceptable solution for such siting, the installation of GBAS should be completed and approved for use by the end of 2022. The implementation at Suvarnabhumi International Airport has also been postponed from the previous target date. While implementation is expected to follow Phuket shortly, no specific target date can be confirmed at this time.

2.5 RNP AR approaches are being considered for a few additional aerodromes with airspace and/or terrain limitation with the next implementation at Krabi planned for 2021.

Terminal Airspace

2.6 In 2020, RNAV 1 SIDs/STARs have been established at Chiang Rai International Airport. Also by the end of this year, SIDs/STARs revision at Chiang Mai is expected to be completed. For Hat Yai International Airport, the designing of the SIDs/STARs is underway and is expected to be completed in 2021. The following table shows the list of the aerodromes at which PBN SID/STARs have been implemented or expected to be in operation by next.

Airport Name	Runway End	SID	STAR	Implementation Target
Chiang Mai	18	☐	☐	2020
	36	✓	✓	2020
Chiang Rai	03	✓	☐	
	21	✓	☐	
Don Mueang	03L	✓	✓	
	03R	✓	✓	
	21L	✓	✓	
	21R	✓	✓	
Hat Yai	08	☐	☐	2021
	26	☐	☐	2021
Hua Hin	16	☐	☐	
	34	N/A	N/A	
Krabi	14	✓	N/A	
	32	✓	✓	
Phuket	09	✓	✓	
	27	✓	✓	
Surat Thani	04	✓	✓	
	22	✓	✓	
Samui	17	✓	☐	
	35	✓	☐	
Suvarnabhumi	01L	✓	✓	
	01R	✓	✓	
	19L	✓	✓	
	19R	✓	✓	
U-Tapao/ Rayong Pattaya	18	✓	☐	
	36	✓	☐	

En-route

2.7 For en-route operations, new RNAV2 routes (L880, M633, N506, P629) between Bangkok and Phnom Penh FIR have been developed and became operational in October. Adopting uni-directional parallel concept, the new routes are aimed at enhancing capacity and flow of air traffic between Cambodia and destinations beyond.

2.8 In line with the Asia Pacific Seamless ANS Plan, RNAV2 specification is planned for all new ATS Routes, international and domestic. Coordination and planning with neighboring countries will be carried out as appropriated.

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to

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