



International Civil Aviation Organization

**THE ELEVENTH MEETING OF PERFORMANCE BASED NAVIGATION
IMPLEMENTATION COORDINATION GROUP (PBNICG/11)**

(Bangkok , 27-29 March 2024)

Agenda Item 4: States' PBN Implementation Progress

PBN IMPLEMENTATION PROGRESS IN NEPAL

(Presented by Civil Aviation Authority of Nepal)

SUMMARY

This paper presents the information on the progress of PBN implementation in Nepal.

1. INTRODUCTION

1.1. This report consists of progress on PBN implementation status in Nepal based on the plan developed in line with ICAO Assembly Resolution A36/23 adopted with a 3-phased approach for the PBN implementation:

- Short Term (2010-2012)
- Medium Term (2013-2016)
- Long Term (2017-2025)

2. DISCUSSION

2.1. The Status of PBN implementation Plan

2.1.1 Nepal PBN Implementation Plan was developed and submitted to ICAO in 2011. The plan was first amended in 2016 , further updated in 2022 and submitted to ICAO.

2.1.2 Short Term Plan (2010-2012):
One PBN route (RNP 10), one RNP AR APCH, one RNP APCH and seven RNP 1 STARs were implemented in this phase.

2.1.3 Medium Term Plan (2013-2016)
Conceptual designs of RNAV 5 routes for domestic sectors were developed in this phase. However, the plan for RNAV 5 route has been dropped and replaced by RNP 2 route plan to align with regional policy. For terminal and approach operations, procedures SIDs, STARs and approaches were drafted in this phase but could be implemented only in the next phase.

2.1.4 Long Term Plan (2017-2025)
The plan started taking place in the third phase. PBN procedures for international airports and several domestic airports, including ATS routes are planned and/or developed in this phase. Details given as

2.2. Details of Implementation of Long Term Plan

2.2.1. En-route

RNP 2 domestic routes connecting
SIMARA-NARAN-BHAIRAHAWA (Q402),
BHAIRAHAWA-THARA-SUKET (Q526) ,
BHAIRAHAWA-TULVI-SUKET (Q650),
SIMARA-NARAN-POKHARA (T144),
KATHMANDU-POKHARA-NEPALGUNJ (Q319),
KATHMANDU- PUBOB- DHANGADHI (Y752) were implemented.

2.2.2. Terminal

- RNP AR SIDs/RNP1 STARs for both runway ends are designed and implemented at Tribhuvan International Airport, Kathmandu.
- RNP 1 STARs/SIDs are designed and implemented in the major domestic airports
 - ✓ Chandragadhi
 - ✓ Dhangadhi
 - ✓ Janakpur
 - ✓ Rajbiraj
- RNP1 STAR and SIDs are designed and implemented in Gautam Buddha International Airport, Bhairahawa.
- Additional RNP 1 STAR and SIDs are on implementation phase at Biratnagar Airport.
- RNP 1 STAR and SIDs are on design and approval phase at Bharatpur, Simara, Nepalgunj and Surkhet Airport.
- RNP 1 SIDs and additional RNP1 STAR are on design and approval phase at Tribhuvan International Airport.

2.2.3. Approach

- New RNP AR APCHs are designed and implemented for both runway ends of TIA
- RNP APCH with Baro-VNAV has been implemented at Gautam Buddha International Airport, Bhairahawa.
- RNP APCHs are designed and implemented in following domestic airports
 - ✓ Chandragadhi
 - ✓ Dhangadhi
 - ✓ Janakpur
 - ✓ Rajbiraj
- RNP APCHs are on design and approval phase at Bharatpur, Simara , Nepalgunj, Surkhet and Tribhuvan International Airport.

2.2.4. As far as the PBN implementation from part of the airline operators is concerned, the journey started since 2012 with a single operator doing RNP AR at Kathmandu. Currently, 28 international operators (almost 75%) are doing RNP AR operations at Kathmandu and four major domestic operators are doing RNP operations at the different airports in the country.

2.3. Overall status of PBN implementation

2.3.1 En-route

Planned			Published	In Progress	Implementation Target for not published procedures
RNP 10 Route	RNP 2 Route	Total			
1	14	15	6	9	2024/25

2.3.2 Terminal

Airport	Planned				Published	In progress	Implementation Target for not published procedures
	RNP 1 SID	RNP AR SID	RNP 1 STAR	Total			
VNKT	7	6	7	20	13	7	2024/25
VNBW	6	-	6	12	12	-	-
VNVT	2	-	2	4	1	3	2024/25
VNJP	3	-	2	5	5	-	-
VNCG	2	-	2	4	4	-	-
VNDH	3	-	2	5	5	-	-
VNRB	2	-	1	3	3	-	-
VNNG	7	-	2	9	-	9	2024/25
VNBP	1	-	1	2	-	2	2024/25
VNSI	4	-	4	6	-	6	2024/25

2.3.3 Approach

Airport	Runway End	Planned				Published	In Progress	Implementation Target for not published procedures
		LNAV	LNAV/ VNAV	RNP AR	Total			
VNKT	RWY 02/20	3	-	6	6	6	3	2024/25
VNBW	RWY 10/28	2	2	-	4	4	-	-
VNVT	RWY 09/27	2	-	-	2	1	1	2024/25
VNJP	RWY 09/27	2	-	-	2	2	-	-
VNCG	RWY 10	1	-	-	1	1	-	-
VNDH	RWY 27	1	-	-	1	1	-	-
VNRB	RWY 11	1	-	-	1	1	-	-
VNNG	RWY 08/26	2	2	-	4	-	4	2024/25
VNBP	RWY 15	1	-	-	1	-	1	2024/25

VNSI	RWY01	1	-	-	1	-	1	2024/25
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2.4. Transition from RNAV to RNP Chart Naming

2.4.1 The transition from RNAV to RNP Chart naming was already completed with publication of AIP AIRAC supplement with the effective date 26 March 2020 where the 4 approach charts were re-named as per ICAO Cir 353.

2.4.2 All new PBN approach charts published with the effective date after 26 March 2020 are being named as per the chart naming convention given in the Cir 353.

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.
