

*International Civil Aviation Organization*



ICAO

**Twenty Fourth Meeting of the Communications/  
Navigation and Surveillance Sub-group (CNS SG/24) of  
APANPIRG**

Web-conference, 30 November – 4 December 2020

---

**Agenda Item 5:** Navigation

- 5.1 Review report of the Seventh Meeting of Performance based Navigation Implementation Coordination Group (PBNICG/7);

**REVIEW OF REPORT OF THE SEVENTH MEETING OF PERFORMANCE BASED  
NAVIGATION IMPLEMENTATION COORDINATION GROUP (PBNICG/7)**

(Presented by the Secretariat)

**SUMMARY**

This paper provides information on the outcomes of the PBNICG/7 held through VTC from 21-23 October 2020 for the review by the meeting.

**1. INTRODUCTION**

1.1 The seventh Meeting of the Performance Based Navigation Implementation Coordination Group (PBNICG/7) was held through vtc, from 21-23 Oct 2020. The meeting was attended by 98 participants from States, IATA, IFALPA, IFATCA and ICAO. The relevant presentations and documents are available at following link:

<https://www.icao.int/APAC/Meetings/Pages/2020-PBNICG7.aspx>

1.2 The Secretariat presented global PBN implementation status at international airports. The secretariat also presented Asia/Pacific Regional Transition Plan for RNP APCH Chart Identification from RNAV to RNP as accepted by states in PBNICG/6 and endorsed by ATMSG/7 and CNSSG/23 and adopted by the thirtieth meeting of the Asia/Pacific Air navigation planning and implementation regional group (APANPIRG/30) Bangkok, Thailand, 4 to 6 November 2019. Proposed contingency measure for the Regional Transition Plan for RNP APCH Chart identification as discussed in APANPIRG/30 was also presented. The Secretariat also presented the list of action items agreed by the previous meetings.

**2 DISCUSSION**

PBN IMPLEMENTATION UPDATE

**Agenda Item 5.1**

30/11/20 – 04/12/20

2.1 The Secretariat presented global PBN implementation status at international airports. The Secretariat informed that regarding key requirement of ICAO Assembly Resolution A37-11, which is the implementation of approach procedures with vertical guidance (APV) for all instrument runway ends by 2016, implementation of APV procedures were behind global achievement. However, implementation of PBN SID/STAR were above the global implementation status (see **Table 1**).

**Table 1.** ICAO Assembly Resolution A37-11 Implementation Status

| Dec 2019         | PBN Approach | APV       |      | PBN SID | PBN STAR |
|------------------|--------------|-----------|------|---------|----------|
|                  |              | LNAV/VNAV | LPV  |         |          |
| Global (%)       | 74.8         | 56.5      | 34.1 | 47.8    | 43.9     |
| Asia/Pacific (%) | 62.6         | 43.5      | 0    | 70      | 67.8     |

REGIONAL TRANSITION PLAN FOR RNP CHART IDENTIFICATION

2.2 The Secretariat informed the meeting that Asia/Pacific Regional Transition Plan for RNP APCH Chart Identification from RNAV to RNP as accepted by states in PBNICG/6 and endorsed by ATMSG/7 and CNSSG/23 was adopted by the thirtieth meeting of the Asia/Pacific Air navigation planning and implementation regional group (APANPIRG/30) Bangkok, Thailand, 4 to 6 November 2019. Proposed contingency measure for the Regional Transition Plan for RNP APCH Chart identification as discussed in APANPIRG/30 was also presented.

2.3 The secretariat informed the meeting that new Version of ASIA/PACIFICSEAMLESS ANS PLAN V3.0(Nov 2019) is approved by APANPIRG/30 and is available on following link:  
<https://www.icao.int/APAC/Documents/edocs/Asia%20Pacific%20Seamless%20ATM%20Plan%20V%203.0.pdf>

2.4 The Secretariat invited the States to see if there is any change in the APAC Regional Transition Plan and to report the completion of the plan to [APAC-RSO@icao.int](mailto:APAC-RSO@icao.int). The secretariat also presented a simplified transition plan to capture only key elements of plan.

STATES' PBN IMPLEMENTATION PROGRESS

2.5 China provided updated information on PBN implementation. China informed the meeting that 500 out of 532 instrument runway ends of 246 airports have PBN approach procedures. The meeting was also informed that China implemented 753 PBN routes. By now, Beijing/Capital, Beijing/Daxing, Shanghai/Pudong, Shanghai/Hongqiao and other major airports have implemented RNP APCH procedures. China has also implemented 33 RNP AR procedures including 11 at International airports and 22 at Domestic airports.

2.6 India provided information on ATS routes, SIDs/STARs and RNP APCH implementation in accordance with its PBN implementation plan. India has implemented RNP APCH procedures for 52 Runway ends so far. Out of these 23 RNP APCH are for international airports and 29 RNP APCH for domestic airports. As per the regional transition plan for chart identification from RNAV to RNP, India has completed and changed all the chart identification and all new charts are having Chart title RNP.

2.7 India informed the meeting on the progress & update on the development of SBAS (GAGAN) LPV procedures and that it is exploring the possibility of implementing LPV procedures.

The secretariat asked about the clarification about GAGAN Mandate, to which India stated that it is for new aircraft to be registered in India after the cut-off date. The secretariat requested India to share the mandate on GAGAN and India agreed to share the same with meeting. The secretariat also requested India to share safety assessment of LPV procedure in the next GBAS/SBAS, to which India agreed.

2.8 The Republic of Korea (ROK) presented its PBN implementation status in approach, SID/STAR and ATS routes. The meeting was informed that the entire RNAV5 routes operated within the Incheon FIR were converted to the RNAV2. The meeting was informed that of 18 airports (civil / joint civil and military) in ROK, LVAV / VNAV approach procedures have been established at 29 out of 56 runway ends, while LNAV procedure has been established at 34 runway ends. The ROK has completed converting naming of 32 charts from RNAV (GNSS) RWY XX to RNP RWY XX as of 15 August 2019.

2.9 Maldives has published 22 RNP APCH procedures, 16 LNAV and 6 LANV/VNAV. Eight more procedures will be published for the newly developed domestic airports. The meeting was informed that the process to change the identification of PBN instrument flight procedure approach charts from RNAV to RNP was completed in May 2019. Maldives has published 10 domestic routes based on the RNP 1 navigation specification, to connect the airports in the South. The secretariat raised the rationale for selecting RNP 1, which is designed for terminal airspace, Nav Specs for these routes and Maldives should consider replacing RNP 1, with RNAV 2 or RNP 2 routes. Maldives stated that due to lateral spacing requirement, they have implemented this.

2.10 Myanmar provided information on the PBN implementation progress in Terminal, Approach and En-route in accordance with their PBN implementation plan. However, the implementation process has been delayed due to some constraints involving military airspaces. Vietnam enquired about frequency of validation flight of Baro-VNAV procedures, Myanmar responded that it is done before publication of the procedure. The secretariat clarified that the validation process as defined in ICAO Doc 9906 should be followed.

2.11 Nepal provided information on the latest progress of PBN implementation in Terminal, Approach and En-route in accordance with their PBN implementation plan. The meeting was informed that Feasibility study for RNP APCH (SBAS) will be done and regional cooperation will be sought for the planned implementation if such procedures are desirable. RNP AR Departures will be designed and implemented at TIA Kathmandu. The meeting was informed that the process to change the identification of PBN instrument flight procedure approach charts from RNAV to RNP was completed in March 2020.

2.12 Pakistan enquired about RNP AR departure criteria, to which Nepal responded that its being designed using criteria used by industry and some States. The secretariat clarified that presently there is no published criteria of RNP AR departure in ICAO documents.

2.13 Thailand provided PBN implementation status in approach, SIDs and STARs, and ATS route implementation. In addition, the meeting was informed the progress of RNP AR APCH procedure, the plan for GBAS installation at Phuket International Airport as 2024 and for Suvarnabhumi International Airport postponed. 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. In line with the Asia Pacific Seamless ANS Plan, RNAV2 specification is planned for all new ATS Routes, international and domestic.

2.14 Viet Nam provided the status information on RNP APCH, SIDs and STARs and ATS route development in accordance with their PBN implementation plan. The meeting was informed about the lesson learnt, such as Airlines not being approved for RNP APCH and coordination required with Military. The secretariat suggested that Flexible use of Airspace(FUA) could provide a solution to some

**Agenda Item 5.1**

30/11/20 – 04/12/20

of the issues related to Military coordination. In this regard ICAO Circular on Civil Military Cooperation in ATM, ICAO Circular 330 could be looked into.

CDO/CCO IMPLEMENTATION

2.15 China shared with the meeting implementation process for CDO/CCO, its benefits, and implementation status so far and planned implementation of CDO/CCO in China. It explained in detail about the technical research, Implementation Steps and Implementation results. It further elaborated that the guidance was derived from GANP, APAC Seamless Air Traffic Plan, CDO, CCO and PBN Manual to design the implementation strategy. It also described the benefits from CDO/CCO such as Safety Improvement, Green Environment, reduction in Cockpit workload, improvement in comfort for the passengers. So far CDO/CCO have been implemented at six international airports including Guangzhou Baiyun Intl. airport and Kunming Changshui Intl. airport and etc. CDO/CCO will be implemented in more airports in China in phases.

2.16 India discussed with the meeting implementation process for CDO/CCO implementation at Delhi, its benefits, and challenges in terms of Traffic Pattern, Airspace Constraint, Pilot sensitization, ATC training etc. It shared some of the pictures from the actual CDO/CCO conducted at Delhi Airports and explained in detail how it is being done at one of the busiest airport with several airspace constraints.

2.17 The Secretariat presented the list of action items agreed by the previous meetings. There were 07 actions left for discussion at the meeting. The meeting was informed of the progress of each action item and agreed to close 06 items after deliberations. Pakistan pointed out that there is inconsistency between the number of instrument runways available in Asia/Pac e-ANP Volume II and data used by i-STARs for some States. After deliberations it was decided to add a new action item that “number of International Instrument Runway Ends to be included in iSTARs should be based on the latest information”. The updated list of Action Item is attached as **Annexure A**.

2.18 After deliberations it was decided that the PBNICG/8 will tentatively be held in June/July 2021 preferably face to face. Detailed venue will be notified to the States by State letter.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to

- a) Note the information contained in this paper;
- b) Consider the endorsement of the draft List of Action Item as presented in paragraph 2.17; and
- c) Discuss any relevant matters as appropriate.

-----

| Action Item | Action   | Owner                         | Contributors  | Target date                    | Status |
|-------------|--|-------------------------------|---|--------------------------------|--------|
| 2/3         | ICAO RSO to assess the feasibility of an engine for assisting desirous States with computing their metrics as per option B.  | APAC RSO                      | ICAO HQ & iSTARS                                    | Before PBNICG/5                | Closed |
| 4/7         | States and ICAO to develop a regional transition plan on the RNP approach chart depiction once ICAO guidance material is available   | All States;<br>Frederic Lecat | APAC RSO  | Guidance material is available | Closed |
| 6/1         | ICAO APAC RSO to consult ICAO HQ and related Panel/Study Group to better understand the rationale supporting the designation of PBN routes, conventional routes, PBN airspace, and the reason for not allowing vertical division of ATS routes.  | APAC RSO                      | ICAO HQ, IFPP and related Panel/Study Group         | Before PBNICG8                 | Open   |
| 6/2         | ICAO APAC RSO to consult ICAO HQ and related ICAO Panel/Study Group to request the removal of the PBN requirement box need from the RNP APCH chart and priority of changes.  | APAC RSO                      | ICAO HQ, PBN SG, IFPP and related Panel/Study Group | 30-Jun-19                      | Closed |
| 6/3         | ICAO APAC RSO to coordinate contingency plan during the RNP APCH chart transition period with ICAO PBN Programme Office.   | APAC RSO                      | ICAO PBN Programme Office                           | 30-Jun-19                      | Closed |
| 6/4         | APAC RSO to hold a three day PBN Safety Assessment Workshop in October 2019.   | APAC RSO                      |   | 31-Oct-19                      | Closed |
| 6/5         | The Secretary to coordinate the proposed indicator changes for Seamless ATM monitoring with the APAC Regional Office   | APAC RSO                      | APAC Regional Office                                | 31-Aug-19                      | Closed |
| 7/1         | ICAO APAC RSO to coordinate with ICAO HQ that number of International Instrument Runway Ends to be included in iSTARS should be based on the latest information.   | APAC RSO                      | ICAO HQ, iSTARs Group                               | 31-Mar-21                      | Open   |
| C7/1        | <p><b>Draft Conclusion PBNICG/7/1 - PBN Implementation Reporting in iSTARS</b></p> <p>What: Considering ICAO iSTARS does not reflect the updated status of PBN Implementation at International Runways</p> <p>a) ICAO APAC RSO to coordinate with ICAO HQ that number of International Runway Ends to be included in iSTARS should be based on the latest information.</p> | PBNICG                        |   | 31-Mar-21                      |        |