



*International Civil Aviation Organization*

**THE EIGHTH MEETING OF PERFORMANCE BASED NAVIGATION  
IMPLEMENTATION COORDINATION GROUP (PBNICG/8)**

Video Conference, 6 - 8 July 2021

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Agenda Item 4: States' PBN Implementation Progress

**INFORMATION PAPER (IP)**

**PBN IMPLEMENTATION CHALLENGES IN NON-INSTRUMENT RWY**  
(Presented by India)

**SUMMARY**

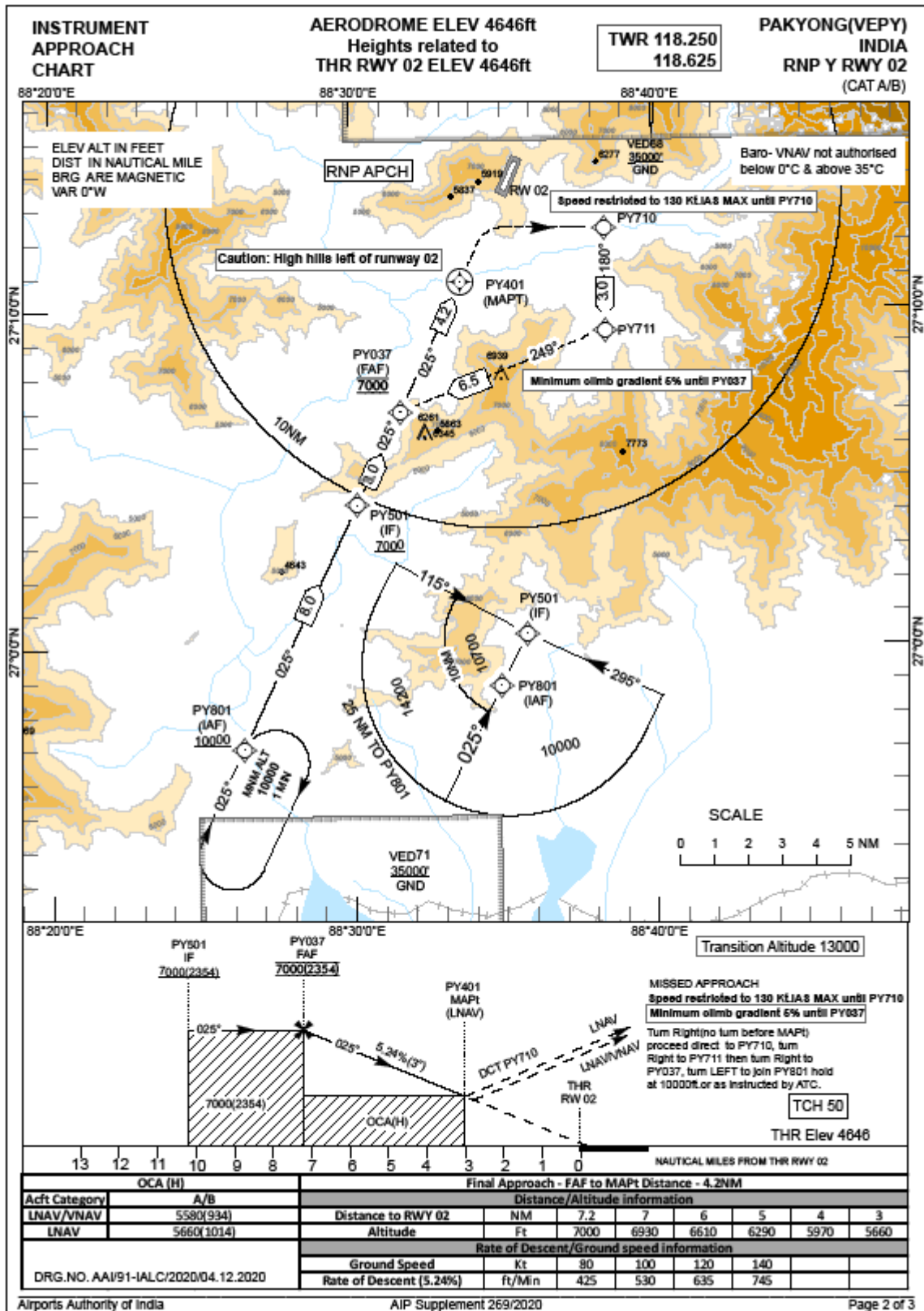
Implementation of PBN approach procedures at aerodromes with Non-Instrument runways and limited ground and navigation infrastructure.

**1. INTRODUCTION**

1.1 Under UDAN-"Regional Connectivity Scheme" (RCS) a lot of regional airports are being developed by Government of India, with the objective of making air travel affordable and to provide widespread connectivity, also to boost inclusive national economic development. Normally these airports are served by non-instrument runways with limited ground and navigation infrastructure. In order to improve the safety and regularity of flight operations at these airports in a cost-effective manner, a decision was taken to develop PBN approaches for such airports. Under this project, PBN approaches had been implemented at Pakyong Airport in Sikkim (VEPY) and Darbhanga Airport in Bihar (VEDH).

**2. DISCUSSION**

2.1 Pakyong (VEPY) is located in Sikkim (North Eastern, Himalayan state of India). It is a terrain challenged airport with non-instrument runway and limited navigation infrastructure. Sitting of navigation aids supporting development of IFP was not feasible due to surrounding terrain environment. At Pakyong Airport commercial flight operations started on 4<sup>th</sup> October 2018, in VFR conditions, but, operations were suspended from June 2019 onwards because of unpredictable weather, poor visibility and lack of proper landing facility. To resolve this issue a decision was taken in the meeting of stakeholders to explore the feasibility of RNP approach to non-instrument Rwy. After successful conduct of Simulator trials, flight trials, safety assessment and training of ATCOs, RNP Approach was implemented w.e.f. 23.01.2021. Post implementation of RNP Approach the regularity of flight operations has significantly improved (above 90%). Now airline operator is operating at Pakyong with AOM of 2400m instead of 5000m.





2.2 Darbhanga (VEDH) is civil use military airport, with non-instrument runway and no-navigation aid to support development of IFP. After successful conduct of Simulator trials, flight trials safety assessment and training of ATCOs, RNP Approach was implemented w.e.f. 05.11.2020. Now regular flight operations are going on at the Darbhanga airport.

### **Challenges and actions taken**

2.3 PBN implementation to non-instrument runways is a challenging task, as it necessitates the involvement of various stakeholders, at various stages of IFP implementation. Pakyong is a table top runway, with high terrain adjoining the runway strip (towards east) and it is surrounded by high hills all around. Due to this sitting of conventional nav-aid, supporting IFP was not feasible, RNP 0.3 was not resulting in any operational benefit and fleet was not capable for RNP 0.1. To avoid the hills in transition and in the missed approach surfaces for reduction in OCH value, MAPt was shifted before the beginning of threshold. The involvement of regulator and other stakeholders from conceptual design stage has immensely helped in the successful implementation of IFP to non-instrument runways.

### **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.

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