International Civil Aviation Organization

Thirteenth Meeting of The Performance Based Navigation Implementation Coordination Group (PBNICG/13)

(Bangkok, Thailand, 14-16 October 2026)

Agenda Item 3: States' PBN Implementation Progress and challenges/lessons learnt

PBN IMPLEMENTATION PROGRESS IN JAPAN

(Presented by Japan)

SUMMARY

This paper presents the update on the progress of Japan's PBN implementation and the updated PBN implementation plan, challenges and lessons learnt.

1. INTRODUCTION

1.1 Japan initiated RNAV trials in 1992 and established its first RNAV Roadmap in 2005. After undergoing two revisions, the roadmap was succeeded by the broader framework known as CARATS, which was introduced in 2010.

2. DISCUSSION

CARATS

2.1 In Japan, the Collaborative Actions for Renovation of Air Traffic Systems (CARATS) program was established in 2010, with 2025 set as its initial target implementation year, to define the future direction of the country's air traffic management system.

2.2 Since its establishment, efforts have been made to restructure domestic controlled airspace, introduce data communications, and communications, navigation, surveillance (CNS) technologies and information systems to improve air traffic operations. Since the initial establishment of CARATS, the environment surrounding Japan's air traffic system has undergone significant changes.

2.3 Additionally, ICAO revised the Global Air Navigation Plan (GANP) with a target year of 2040 to drive the transformation of aviation transportation systems. In Japan, we recognize safety should be the top priority the need to respond appropriately to these changes and to realize an efficient and sustainable air transportation system.

2.4 Therefore, in 2025, Japan formulated the next phase of CARATS, setting a target implementation year of 2040. In promoting future initiatives, it is important for industry, scholars and academic experts, and the government to partner and collaborate.

PBN implementation status

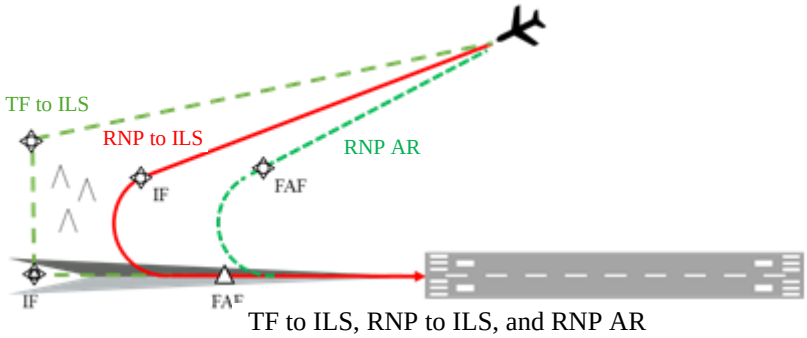
Approach

2.5 Japan Civil Aviation Bureau (JCAB) controls 32 international airports and 52 domestic airports in Japan. A total of 117 RNP APCH procedures have been implemented throughout Japan. Of these, 48 RNP APCH procedures were deployed at the international airports, and 69 RNP APCH procedures were deployed at the domestic airports.

2.6 SBAS APV I was introduced in 2022. There are 52 serving airports, 16 at international airports and 36 at the domestic airports. Two of them are RNP to SLS.

2..7 RNP AR was first implemented in 2012, and currently, 90 RNP AR have been implemented in Japan. Airlines have expressed strong interest in accelerating the implementation of RNP AR, as they enable more flexible flight paths and reduce track miles.

2.8 The deployment of RNP to ILS approach procedure started in 2023, and nine RNP to ILS procedures have been implemented in Japan. Airlines are also highly interested in this flight procedure because it results in a shorter flight path.



TF to ILS, RNP to ILS, and RNP AR

2.9 We plan to introduce SBAS CAT1 in 2027. To further improve flight completion rates and on-time performance, we will also continue to implement RNP, RNP-AR, and RNP to ILS. It is crucial to consult with airlines regarding the implementation of these flight procedures.

2.10 Going forward, JCAB will focus efforts on continuing to replace conventional approach procedures with PBN procedures.

En-route

2.11 For en-route applications, there are one RNP 10 route, seven RNP 2 routes (including trial operation), one RNP 4 route, and 298 RNAV 5 routes. RNAV 5 is used typically for En-route, and the nationwide transition to RNAV 5 is almost complete. As we move towards TBO, RNP 2 is expected to gradually replace RNAV 5 in the long run.

Challenges and lessons learnt

2.12 Challenges include aircraft equipage requirements, airline and ANSP readiness, stakeholder coordination, and environmental considerations for local communities.

2.13 Lessons learnt include the importance of early and close coordination with airlines, as well as phased implementation based on operational needs.

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in these papers; and
b) discuss any relevant matters as appropriate.