



International Civil Aviation Organization

The First Meeting of ICAO Asia/Pacific Performance based Navigation Implementation Coordination Group (PBNICG/1)

Beijing, China, 10-12 March 2015

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10/03/2015 - 12/03/2015

Agenda Item 3: Global and Regional PBN Updates and States' PBN Implementation Progress

PBN IMPLEMENTATION IN CHINA

(Presented by China)

SUMMARY

This paper provides information on the progress of PBN implementation following the PBN Implementation Roadmap of China, and proposes to share the useful suggestions for the PBN implementation.

1. INTRODUCTION

1.1 The ICAO 36th Assembly urged its Member States to develop national Performance Based Navigation (PBN) implementation plan by 2009 and to implement RNAV and RNP air traffic services (ATS) routes and terminal/approach procedures in accordance with the ICAO PBN concept laid down in the Performance Based Navigation Manual(Doc 9613).

1.2 In recent years, the total turnover of air transport in China maintains a double-digit annual growth, however, the available airspace resources of civil aviation is largely constrained, which poses huge pressure to the safety and efficiency of the entire system. Thus PBN technology becomes the common awareness, urgent request, and essential approach for China's civil aviation to explore the potentials of existing airspace resources, and improve flight operation safety and efficiency. Bearing this in mind, CAAC issued the "*PBN Implementation Roadmap*", which pinpointed the mid-term goal of fully adopting PBN operation by the end of 2016, the long-term goal of system integration between PBN and CNS/ATM by 2025, and their specific courses of action.

1.3 For the medium term of the PBN implementation plan, the CAAC plans to selectively apply RNP-10 and RNP-4 navigation specifications to certain oceanic operations and continental operations in western China. For certain busy routes, RNAV-2 or RNAV-5 navigation specifications are selectively applied, based on coverage of communication and surveillance signals, for reduced route spacing and higher utilization of airspace. The CAAC plans to implement RNAV 1 and RNP 1 for all airport terminal area operations within China by 2016 and, depending on operational requirements, to mandate the application of RNAV 1 or RNP 1 at certain airports. The CAAC plans to expand implementation of RNP APCH with Baro-VNAV in approach operations. By 2016, RNP approach capability will be available to all instrument runway ends. RNP AR approach procedures will be implemented at airports with operational requirements.

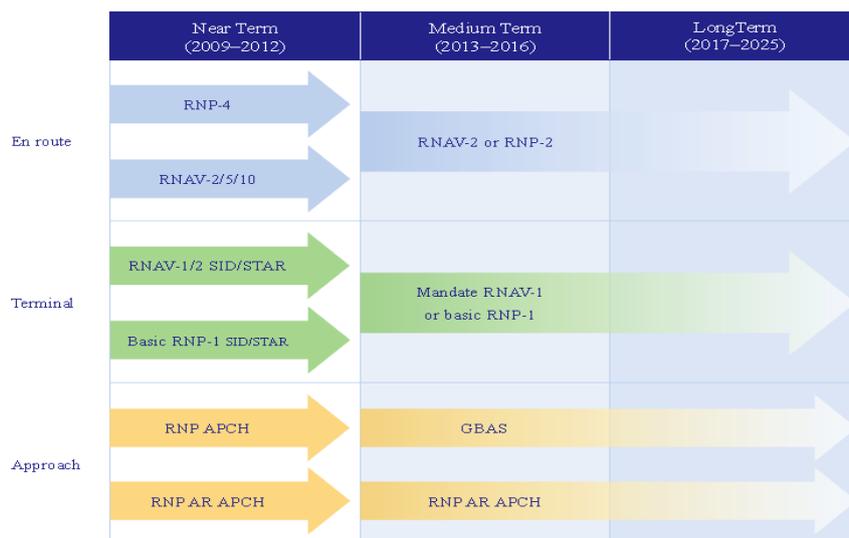


Figure: China PBN implementation phase

2. DISCUSSION

Implementation Status of PBN

2.1 Overall progress in terminal area. During past years, China has made a steady progress in the terminal area. By far, among 202 airports 116 airports have been finished PBN procedure design (included RNP APCH/RNP AR procedures accounts for over 70% of the total number of airports), and 83 airports that have already implemented PBN procedures by the end of 2014. The application of PBN technology in terminal area has basically achieved the medium term goal of the roadmap regarding terminal and approach application.

2.2 Overall progress for en-route area. For en-route application, there are 20 RNAV routes with the mileage of almost 20500km, accounting for 21% of the total mileage of air route in China *by the end of 2014*. According to statistics, the current PBN routes contain 3 RNAV 2、3 RNAV 5、1 RNP 1、10 RNP 4 and 3 RNP 10 routes, which is approaching the medium term target of PBN en-route implementation.

2.3 In June 2013, CAAC commenced PBN operation on 6 main truck routes, for the purpose of stimulating the national commercial operators to get airworthiness and operational approval from CAAC. These routes are of mixed navigation with PBN and conventional navigation and the route designators have not been changed. For the first year of operation, 90% of national flights has acquired the qualifications, and both flight crews and ATC are getting familiar with the en-route application of PBN.

2.4 With the experience of the PBN operation on the 6 truck routes, on February 5th 2015, ATMB CAAC has launched PBN operation on 40 routes within Xinjiang Province, including 11 RNAV 2 routes and 29 RNP 4 routes, with the mileage of 17578km. This is the first time of China to implement PBN within such a large area.

3. ACTION 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.