



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**TWENTY FIFTH MEETING OF THE
ASIA/PACIFIC AIR NAVIGATION PLANNING AND
IMPLEMENTATION REGIONAL GROUP (APANPIRG/25)**

Kuala Lumpur, Malaysia, 8 – 11 September 2014

**Agenda Item 3: Performance Framework for Regional Air Navigation Planning and
Implementation**
3.4: CNS
PBN IMPLEMENTATION PROGRESS AND ICAO SUPPORT

(Presented by the Secretariat)

SUMMARY

This Working Paper presents information on PBN implementation progress, both globally and regionally within the APAC Region. It also presents information on ICAO on-going implementation support activities, explains the need for an APAC forum to support, harmonize and prioritize PBN implementations, and proposes for the consideration of the APANPIRG the establishment of PBN Implementation Coordination Group (PBNICG).

This paper relates to –
Strategic Objectives:

A: Safety – Enhance global civil aviation safety

B: Air Navigation Capacity and Efficiency—Increase the capacity and improve the efficiency of the global aviation system

E: Environmental Protection — minimize the adverse environment effects of civil aviation activities.

1. INTRODUCTION

1.1 The APAC Region represent one of the fastest growing aviation markets. ICAO forecast predicts that the international Revenue Passenger Kilometers (RPKs) in the APAC Region will almost double that of North America within a decade. IATA estimates that the demand for commercial air travel in the APAC Region will continue to grow at a Combined Annual Growth Rate (CAGR) of 8.8% for international passenger market and 11.3% for freight market by 2014. ACI reports that the number of airport passengers in the APAC Region was up by 11.3% in 2010.

1.2 Challenges in aviation and needs for higher efficiency in aircraft fuel consumption call for new navigation technologies and operation procedures to be implemented. In respond to this call for actions, ICAO has adopted several conclusions and resolutions to promote the uses of Performance-based Navigation (PBN) and Global Navigation Satellite System (GNSS) as the navigation elements of CNS/ATM systems. These navigation technologies and specifications are considered necessary enablers that provide accurate, reliable and seamless position determination and navigation capabilities to airspace users. Implementations of PBN and GNSS facilitate more efficient use of airspace and more flexibility for designing of flight procedures. They cooperatively result in improved aviation safety, access, capacity, predictability, operational efficiency and environmental footprints.

1.3 The implementation of PBN is considered one of the highest air navigation priorities as detailed in the Global Air Navigation Plan. ICAO Assembly Resolution A37-11 reemphasizes the global PBN targets, especially regarding State PBN Implementation Plan and deployments of approach with vertical guidance. A joint industry declaration by all aviation stakeholders was also issued to support the global implementation of PBN and call upon all leaders of the civil aviation community to fully support the integration of PBN into the air navigation system according to the ICAO provisions and established timetable. During the 44th Conference of Directors General of Civil Aviation, Asia and Pacific Regions, IATA expressed that implementation of PBN would provide significant safety, efficiency and environmental benefits to operators and service providers.

1.4 In October 2007, the 44th Asia-Pacific DGCA Conference adopted Action Item 44/6 urging States to implement PBN as per ICAO guidance. In September 2009, APANPIRG through its Conclusion 20/41 adopted the first version of the Asia/Pacific Regional PBN Implementation Plan.

2. DISCUSSION

2.1 The implementation of PBN is being progressed globally. Currently, 102 ICAO Member States have established their State PBN Implementation Plans. 38% of all global air routes are now based on PBN and the number of published PBN approach and SID/STAR procedures are increasing.

2.2 Although 69% of all instrument runways globally have at least one PBN approach, only 30% of ICAO Member States are on track to meet the 2014 targets of Assembly Resolution A37-11.

2.3 In the APAC Region, while States with PBN implementation plans covers most of the APAC airspace, only 66% of the APAC States have a PBN Implementation Plan. Majority of the APAC States without a PBN Implementation Plan are Pacific Island States.

2.4 The number of published PBN SID/STAR procedures within the APAC Region continues to increase. For approach operations, currently 51% of all relevant runways within APAC Region have published PBN approach procedures.

2.5 Beyond developing relevant ICAO standards and guidance material, to assist its Member States, ICAO in cooperation with industry partners such as IATA has organized several PBN implementation focus activities. These activities include PBN symposia, workshops, Go-Team visits, training courses and learning packages. ICAO has also established implementation support offices to provide day-to-day PBN implementation assistances for in the form of the APAC Regional Sub-Office (RSO) and two Flight Procedure Programmes (FPPs); one for the APAC and the other for the Africa Region. Information regarding PBN implementation support activities being provided by the ICAO APAC RSO and the APAC FPP is provided in detailed in IP/13.

2.6 **Proposal for Establishment of APANPIRG PBNICG:** In addition to mentioned implementation support, for the APAC Region, the Secretariat is proposing to APANPIRG an establishment of the APANPIRG PBN Implementation Coordination Group (PBNICG). The PBNICG aims to serve as the primary APAC Regional forum to support, harmonize and prioritize PBN implementations within the APAC Region with a goal to enhance safety and efficiency of aircraft trajectories and operation.

2.7 While the ICAO APAC RSO and the APAC FPP will continue providing day-to-day implementation PBN assistants to APAC States, it is considered necessary for Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) as the ICAO regional planning and implementation body to establish a mechanism to obtain reports on actual implementation status and challenges, and then for the APANPIRG to provide proper advises and decisions regarding harmonization and prioritization of PBN implementations within the APAC

Region. The proposed PBNICG will serve as a regional forum to report recommendations on harmonizing and prioritizing on-going PBN implementation activities, including important regional topics such as the enhancement of regional ATS route network to the APANPIRG. With the support from the RSO, the PBNICG will also analyze and report operational benefits of PBN implementations and provide regular PBN implementation updates to ICAO APAC for inclusion in the regional performance dashboard. Additionally, the PBNICG will serve as the regional forum to identify issues/action items which are related to the implementation of PBN and related ASBU elements, and where appropriate, communicate with relevant ICAO panels or working/study groups.

2.8 The PBNICG will compose of multi-disciplinary experts with knowledge and/or responsibility for PBN implementation nominated by ICAO Member States/Administrations in the Asia and Pacific Regions and International Organizations. The PBNICG will take a multi-disciplinary approach to promote more efficient flight operations and trajectories using PBN and, as necessary, will address related ATM topics. Secretariat support for the PBN ICG will be provided by the ICAO APAC RSO with assistance from the APAC RO.

2.9 The PBNICG will report relevant PBN implementation status directly to the APANPIRG and will be tasked to review regional priorities/targets and relevant regional plans as related to PBN implementation and report recommendations to APANPIRG through the CNS/SG. As necessary, the PBNICG will also provide briefing to CNS and ATM Subgroups.

2.10 APANPIRG CNS Subgroup during its eighteenth meeting has adopted its decision to support the establishment of the PBNICG. Following the CNS/SG meeting, the draft Terms of Reference of the PBNICG is enhanced in coordination with the ICAO Air Navigation Bureau and APAC RO and is provided in **Appendix A** of this Working Paper for a consideration by the APANPIRG.

2.11 If the proposal on the establishment of PBNICG is approved by the APANPIRG, starting in 2015, the PBNICG is planned to conduct its meetings twice a year. Detailed work plan and expected deliverables for the PBNICG will be coordinated at its first meeting. The necessity and functionality of the PBNICG may be reviewed by the end of 2016 in consistent with the PBN implementation timeline targeted by ICAO Assembly Resolution A37-11 and the schedule for the review of APANPIRG structure.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information on the progress of global and regional implementation of PBN;
- b) consider the necessity to form a regional coordination body to support, harmonize and prioritize PBN implementations; and
- c) review the draft Terms of Reference of the PBNICG as shown in Appendix A and recommend to APANPIRG/25 the adoption of the following Draft Decision

Draft APANPIRG Decision 25/xx – APANPIRG Performance-based Navigation Implementation Coordination Group

That, APANPIRG Performance-based Navigation Implementation Coordination Group (PBNICG) be established and its Terms of Reference be adopted.

Appendix A: Draft Terms of Reference (TOR)
APANPIRG PBN Implementation Coordination Group (PBNICG)

- 1) Serve as the primary APAC Regional Forum to support PBN implementation with a goal to enhance safety and efficiency of aircraft trajectories and operations. The forum also takes into account activities related to the implementation of relevant ASBU elements, with initial focus on B0-CDO, B0-FRTO, B0-CCO, and B0-APTA. The following are the main topics to be addressed:
 - Monitor PBN implementation of APAC States/Administrations and make recommendations as necessary in areas where ICAO APAC RSO can provide assistance.
 - Through ICAO APAC RSO, provide assistance and guidance to States to update their PBN implementation plans. Identify challenges within State PBN Implementation Plans and PBN implementation activities and assist States in addressing these challenges in a harmonized manner.
 - Taking a multi-disciplinary approach, promote more efficient flight operations and trajectories and, as necessary, addressing related topics including air traffic services (ATS) route network.
 - Analyze and report operational benefits of PBN implementations and provide regular PBN implementation updates to ICAO APAC for inclusion in the regional performance dashboard.
- 2) Identify issues/action items which are related to the implementation of PBN and related ASBU elements, and where appropriate, communicate with relevant ICAO panels or working/study groups.
- 3) Coordinate and consult with COSCAPs, FPPs, international organizations, industry partners and volunteering administrations that provide support to PBN implementation.
- 4) Review regional priorities/targets and relevant regional plans as related to PBN implementation and report recommendations to APANPIRG through the CNS/SG.

Composition

The PBNICG will compose of multi-disciplinary experts with knowledge and/or responsibility for PBN implementation nominated by ICAO member States/Administrations in the Asia and Pacific Regions and International Organizations. Secretariat support for the PBN ICG will be provided by the ICAO APAC RSO with assistance from the APAC RO.

Reporting

The PBNICG will report to the APANPIRG and will also provide a briefing to the CNS and ATM Sub-groups as necessary.

Note: The PBNICG, while undertaking the tasks, should take into account of the work being undertaken by relevant ICAO Panels and other study/working groups.

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