



**Cooperative Development of Operational Safety and  
Continuing Airworthiness Programme  
COSCAP-SOUTH ASIA  
International Civil Aviation Organization**



**22<sup>nd</sup> STEERING COMMITTEE MEETING COSCAP-SA**

**Performance Based Navigation (PBN)  
Update on Flight Procedures Programme Office  
and COSCAP Support**

The purpose of this Information Paper is to provide an update on the activities and progress of the ICAO Flight Procedure Programme (FPP) and COSCAPs in the support being provided to Member Administrations related to PBN Implementation.

**1 APAC FPP Background**

1.1 ICAO Asia-Pacific Flight Procedure Programme (FPP) was established in October 2009. Recognizing the need for a regional center of excellence in the field of flight procedure design and to support ICAO Assembly Resolutions on Performance Based Navigation (PBN) implementation, ICAO Asia-Pacific PBN Task Force recommended ICAO APANPIRG to establish the FPP. In September 2009, APANPIRG during its twentieth meeting endorsed the concept. With kind supports from the Civil Aviation Administration of China (CAAC), the FPP office was established in Beijing, China being hosted by the China Academy of Civil Aviation Science and Technology (CAST).

1.2 Civil Aviation Administrations in the Asia-Pacific region from ICAO Member States/Administrations are invited to join the FPP Membership by signing on to a Programme Document and making appropriate contribution.

1.3 The FPP is established with a goal of developing States' capabilities in the instrument flight procedure domain, especially in the areas of procedure design and regulatory oversight of the procedure design service provider. The FPP will employ best practices in training, automation and quality assurance with the best experts in the field to address the procedure design needs and enhance the capabilities of the States/Administrations.

1.4 The Programme objective is to assist States to develop sustainable capability in the instrument flight procedure (IFP) domain so as to meet their commitments under Assembly Resolutions relating to PBN implementation and their obligations for the quality of their flight procedures. This will be accomplished through training, assistance with quality assurance and procedure design process and access to IFP-related automation solutions.

1.5 The FPP will foster implementation of flight procedures, which are developed with the appropriate quality systems, especially PBN and vertically guided instrument approach procedures by:

- a) Assisting those States with sufficient density of procedures to establish a sustainable internal procedure design capability capable of meeting the requirements of ICAO PANS-OPS and States' responsibility for the quality of their procedures;
- b) Providing the appropriate level of technical expertise necessary to enable States that do not have the density of procedures necessary to sustain an internal procedure design capability; and
- c) Providing a vehicle to improve quality in the States' procedure design process through access to procedure design automation solutions and associated data storage.

1.5 *FPP Phase 2.* Following a Steering Committee decision endorsing Phase 2 of the FPP which will cover the period of 2013 – 2017, the FPP is now developing a set of organizational strategies to continue its institutional excellence and move the organization forward. The set of strategies include three important areas which are:

- Enhance Internal Process
- Expand Value Creation
- Increase Public Visibility

## 2 FPP Update for 2012

2.1 *ICAO PANS-OPS Initial Course* – The course was conducted at the FPP Office, Beijing on 2-27 July 2012. Twenty-two (22) students from nine (9) States/Administrations successfully attended the course. The course was based on ICAO PANS-OPS and conducted to support States in developing their procedure design capacity by providing fundamental knowledge regarding procedure design to the students. The instruction consists of lecturing, progress tests, examinations, and group exercises. At the end of the course, each student was individually assessed and the outcome of the assessment was then reported to each student and his/her agency.

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2.3 *PBN Procedure Design Course* - The course was conducted at the FPP Office, Beijing on 8-24 May 2012. Seventeen (17) students from six (6) States/Administrations successfully attended the three-week course. The course was the follow-on of the ICAO PANS-OPS Initial Course and was also based on ICAO PANS-OPS criteria. The course aimed to support States/Administrations in developing their PBN procedure design capacity and to support ICAO's global PBN implementation goal as indicated on the ICAO 2010 Assembly Resolution.

2.4 *Procedure Design On-the-Job Trainings (OJT)* – On 16-27 April 2012, three (3) procedure designers from Bangladesh attended an OJT on designing instrument

flight procedures under a supervision of the FPP in Beijing, China. The OJT session was targeted to assist the trainees in getting started with PBN procedure design, as they have no procedure design instructors in their State. The trainees mainly focused on development of RNP APCH Procedures with Baro-VNAV for Hazrat Shahjalal International Airport, Dhaka (VGHS) RWY14/32 and Jessore Airport (VGJR) RWY16/34 in accordance with ICAO PANS-OPS criteria and some departure segments for Dhaka and Jessore.

**2.5 PBN Flight Validation for Pilot Course** - From 18 June to 6 July 2012, the FPP with assistances from CAA Philippines, Philippines Airline and Cebu Pacific Air conducted the first FPP Flight Validation for Pilot Course at Civil Aviation Training Center, Manila, Philippines. The course was attended by twelve (12) pilots and five (5) observers from seven (7) States/Administrations. The course was developed based on the ICAO flight validation requirements as detailed in the recently published Quality Assurance Manual, ICAO Doc 9906 Vol. V-VI. The course materials and trainings included lectures in instrument flight procedure design and flight validation process, progress tests, an examination and a flight simulation session. Upon a successful completion of this course, the student pilots should be able to conduct flight validation for all types of instrument flight procedures in accordance with ICAO Doc 9906 Volume V.

**2.6 PBN Airspace Design Workshops** - Three (3) FPP/IATA PBN Airspace Design Workshops are tentatively scheduled for the second half of 2012 to be conducted in the Philippines, Myanmar and India. This workshop is a joint activity made possible by the co-operation between the FPP and IATA. The workshop is designed to support the design process of SID/STAR for a terminal airspace and exposes its students to more advanced concept such as Airspace Concept, Continuous Descend Operation (CDO) and Continuous Climb Operation (CCO). The workshop will be led by two instructors from FPP and IATA and will include relevant aviation stakeholders such as pilots, air traffic controllers, procedure designers, airspace planners and regulators. During this hands-on workshop, students will be working on designing arrival/departure tracks and airspace sectorization based on appropriate PBN concept.

### **3 APAC COSCAP Background**

**3.1** The COSCAPs are dedicated forums for cooperation and coordination in matters related to flight safety, bringing together well-developed and smaller participating civil aviation administrations. Each COSCAP operates independently under the direction of a steering committee comprised of the Directors General of participating Civil Aviation Authorities, ICAO and other organizations and companies interested in supporting aviation safety.

**3.2** There are three COSCAPs in the Asia-Pacific Region. COSCAP South Asia, with members India, Bangladesh, Pakistan, Bhutan, Nepal, Maldives and Sri Lanka, is the senior member of the Asia-Pacific COSCAPs, currently operating under its third five-year phase. COSCAP South East Asia is comprised of Cambodia, Hong Kong (China), Macao (China), Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam, Brunei Darussalam and Timor-Leste was established in 2001 and, finally, COSCAP North Asia serving China, the Republic of Korea, the People's Democratic Republic of Korea and Mongolia was established in 2003 and is in its second five-year phase.

#### **4. COSCAP PBN Update**

4.1 The APAC COSCAP programmes have been very active with respect to providing support to Member Administrations related to PBN Operational Approval. A PBN Model Regulation and PBN Operational Approval Handbook have been developed by the COSCAP programmes and complements/supplements the material contained in the ICAO PBN Manual (DOC 9613). These Model documents were forwarded to States in August 2010 and can be readily adapted (if required) to enable States and air operators to move forward with PBN Operational Approvals.

#### **5. FPP/COSCAP PBN Implementation Workshops**

5.1 At the 37th Assembly, in resolution A37-11, ICAO urged all States to develop and implement a PBN Implementation Plan with certain milestones established for implementation. While many States have developed PBN Implementation Plans, difficulties have been encountered related to the execution of these plans.

5.2 The FPP/COSCAP programmes have already provided considerable training and the focus now is on supporting States' implementation of PBN through the provision of in-State PBN Implementation Workshops. While the first day of the Workshop includes presentations as a review of PBN Requirements and Implementation, the remainder of the Workshop focuses on exchange of information and discussions to support implementation of PBN in that particular State. All stakeholders (CAAs, ANSPs, air operators, etc.) are invited to participate.

5.3 The goal of the PBN Implementation Workshop is to facilitate development of procedures and approval of operations; provide technical advice to stakeholders in order that they can meet their obligations and, develop an action plan and timelines for initial implementation. Outcomes from the many Workshops will be tracked by the ICAO FPP programme and additional support provided by FPP/COSCAP as required.

5.4 From January to July 2012, three (3) PBN Implementation Workshops were conducted in Pakistan, Maldives and Cambodia. These FPP / COSCAP facilitated workshops were intended to assist States/Administrations in enhancing their PBN Implementation Plans and move forward with actual PBN implementations. Participants of these workshops are representatives for all aviation stakeholders with an interest in PBN implementation. During the workshops, the participants with assistances from FPP/COSCAP facilitators developed a list of short-term action items aiming to enhance their existing PBN Implementation Plans and advance their on-going PBN implementations and deployments. The list of action items along with relevant recommendations would then be submitted by the FPP to appropriated CAA/DCA for their considerations and actions.

5.5 On 9-12 January 2012, fifty-five (55) participants attended a PBN Implementation Workshop in Karachi, Pakistan hosted by CAA Pakistan. The Karachi Workshop collectively developed fifteen (15) action items and agreed on a prioritized list of airports requiring implementations of PBN.

5.6 On 16-18 April 2012, Maldives CAA hosted a PBN implementation Workshop in Male', Maldives. The Male' Workshop was attended by thirty-two (32) participants from various aviation stakeholders in Maldives, including regulators, airline operators, airports and air navigation service providers. The Workshop collectively identified

twenty-two (22) action items in eight (8) areas that need to be accomplished to meet the goals of implementing PBN in Maldives.

5.7 On 5-7 June 2012, State Secretariat of Civil Aviation (SSCA) hosted a PBN implementation Workshop in Phnom Penh, Cambodia. The Phnom Penh Workshop was attended by sixty (60) participants from various aviation stakeholders in Cambodia, including regulators, airline operators, airports and air navigation service providers. The Workshop was also attended by international air operators. The Workshop collectively identified eighteen (18) action items in nine (9) areas that need to be accomplished to meet the goals of implementing PBN in Cambodia.

5.8 In September 2012, another PBN Implementation Workshop is scheduled for Malaysia in Kuala Lumpur. The Kuala Lumpur Workshop will be conducted in continuation with COSCAP PBN Operational Approval Course and APEC PBN Regulatory Review Visit.

5.9 Contact information for the Manager of the Flight Procedure Programme:

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## **6 Action by the Meeting**

6.1 The meeting is invited to:

- 1) Note the information provided in this IP as States develop PBN implementation plans; and
- 2) Note that States are encouraged to continue to seek the support of the FPP and COSCAP-SA (Operational Approval) as required to support the development, amendment, or implementation of their PBN Plan.

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