Update on ICAO APAC Regional Sub-Office, APAC Flight Procedure Programme, and COSCAP Supports

COSCAP-NA 15th Steering Committee Meeting
June 2015
ICAO APAC Regional Sub-Office

- ICAO Council agreed to establish a Regional Sub-Office (RSO) of the Asia Pacific (APAC) Office on 14 November 2011.
- The RSO was inaugurated in Beijing, China on 27 June 2013.
RSO - Responsibilities

• To improve airspace organization and maximize ATM performance and capability in Asia and Pacific.

• Entrusted by ICAO Council to support States for implementation of efficient management of airspace and air traffic flow in the APAC Region through Airspace Organization and Management (AOM), Collaborative Decision Making (CDM), Air Traffic Flow Management (ATFM), Flexible Use of Airspace (FUA) and Performance-Based Navigation (PBN) aimed at meeting traffic growth.
Strategic Framework for the Regional Sub-Office (RSO)

A. Improve **Safety and Efficiency of Flight Operations** through Innovative Procedures.

B. Enhance **Airspace Capacity and Efficiency** to Accommodate Asian Aviation Growth

C. Optimize **ATM Operations** via Collaborative Management of Traffic Flow

D. Ensure **Continuous Improvement of Organizational Performances** by Proper Managements of Quality, Work Plans, Resources and Developments of Team-members’ Capacity

Consistent with ICAO culture and practices

In coordination with ANB and APAC Regional Office
Regional Planning

Implementations

State Implementation Planning

Path Finding and Imp. Support

Training & Sharing of Best Practices and Knowledge

Feedback Capturing & Performance Monitoring and Reporting

Note: Performance Monitoring and Reporting will be under the responsibility of the RO.

RO as Main Player
RSO as Supporting Player

RO as Supporting Player
RSO as Main Player
RSO Activities

Airspace Organization and Management (AOM) and Performance Based Navigation (PBN)

Terminal Area

- Assisted Bangladesh, Fiji, Malaysia, Myanmar and Sri Lanka in effective airspace design using PBN for terminal airspace
- Assisted Bangladesh, Cambodia, Fiji, Laos PDR, Malaysia, Maldives, Mongolia, Myanmar, Sri Lanka and Thailand in implementations and validations of PBN procedures in coordination with the APAC FPP

PBN Operational Approval

- In cooperation with IATA, conducted trainings in PBN Operational Approval for regulators, airlines and ANSPs in Myanmar and Fiji
- Provided assistances on PBN Operational Approval to Bhutan
RSO Activities

Airspace Organization and Management (AOM) and Performance Based Navigation (PBN)

Airspace Optimization and Management

- Facilitated the establishment and the conduct of APANPIRG PBN Implementation Coordination Group (PBNICG)
- Supported ICAO/IATA/CANSO PBN Global Go-Team visits and PBN Airspace Design Workshops in Thailand and China
- Conducted an Airspace Design Review for Fiji with participations from other Pacific Island States
- Conducted a workshop on Civil Military Coordination and Flexible Use of Airspace for APAC States in Beijing, China
- Entrusted by ICAO IFPP to develop PBN Procedure Construction Manual

Implementation Trainings
- Conducted ATC training supporting PBN deployment in Bangladesh, Mongolia and Myanmar
BANGLADESH
PBN Review
Implementation Support
ATC Training
Airspace Design

SRI LANKA
PBN OJT, Airspace Design,
Implementation Support
ATC Training

MONGOLIA
Review of Route Structure
Review of PBN TMA
Procedures
ATC Training

CHINA
PBN Go-Team
CMAC/FUA Workshop

LAO PDR
Procedure Review

CAMBODIA
Review of PBN
Implementation Plan

MYANMAR
Ops Approval Course,
Airspace Design,
Implementation Support
ATC Training

BHUTAN
PBN Ops Approval

PACIFIC ISLANDS:
Ops-Approval Course
Fiji: PBN OJT w/ FPP, Airspace
Design, Implementation
Support
[ATC Training]

MALDIVES
Review of PBN Domestic
Routes

MALAYSIA
Airspace Design

Bay of Bengal
Enhancement of PBN routes

03 March 2014
RSO Activities

Airspace Organization and Management (AOM) and Performance Based Navigation (PBN)

Domestic and International En-route

— Through a PBN Design Session, assisted Bangladesh, India, Myanmar and Thailand to their on-going review of international route structure and aircraft separation over Bay-of-Bengal
— Through a PBN Design Session, supported Mongolia in the review and enhancement of international and domestic PBN route structure
— Entrusted by States in Mekong sub-regions, including Cambodia, Lao PDR, Myanmar, Thailand, Vietnam, to facilitate international and domestic route structure reviews within the sub-region
— Facilitated the first meeting of South China Sea Major Traffic Flow Review Group (SCS-MTFRG/1) in Malaysia
RSO Enroute Projects

- **Hong Kong / Philippines**
  - Upgrade of Nav Specs / Realignment

- **South China Sea**
  - Review of MTF & FLAS/FLOS

- **Mekong Delta**
  - PBN Routes

- **Fiji**
  - Realignment of Airways in conjunction with new PBN TMA design

- **Mongolia**
  - Restructure Upper Airway

- **DPR Korea**
  - Exploratory Mission - PBN

- **Bangladesh/India / Myanmar/ Thailand**
  - PBN Routes

- **India/Maldives / Sri Lanka**
  - PBN Unidirectional Routes

- **Mekong Delta**
  - PBN Routes

- **South China Sea**
  - Review of MTF & FLAS/FLOS
RSO Activities

Airspace Organization and Management (AOM) and Performance Based Navigation (PBN)

Global and Regional Harmonization and Prioritization

• In coordination with ICAO ANB and APAC RO, facilitated an establishment of the PBN Implementation Coordination Group under APANPIRG
• Entrusted by ICAO IFPP to develop PBN Procedure Construction Manual
• In coordination with ICAO ANB, assisted the establishment of Africa Flight Procedure Programme
RSO Activities

ATFM/CDM

Regional Harmonization

• Assisted China, Japan and ROK on the establishment of North-Asia Regional ATFM Harmonization Group (NARAHG).

• Coordinated with ASEAN and Bangladesh, India, Myanmar, Thailand (BIMT) States on their ongoing ATFM activities and initiatives
RSO Activities

ATFM/CDM

• Conducted a project assessment for ATFM/CDM implementation project in Shanghai in coordination with CAA China
• Conducted a briefing to China to gain better understanding of China’s plan for planning and implementation of ASBU, ATFM and CDM.
• Conducted a trial course on Introduction to ATFM/CDM to IATA and its airline members
• Conducted ATFM Workshop – Asia Pacific in October 2014 in Beijing, China
• Conducted a Seminar on Basic Capacity Enhancement Concepts and Developments of ATFM for APAC States in Myanmar
Outcomes & Accomplishments – COSCAP NA Members

Summary Session:
APAC Civil/Military Cooperation Lecture/Seminar

ICAO APAC Regional Sub-Office, Beijing, China
21 November 2014

Principal of Cooperation

North Asia Regional ATFM Harmonization Group (NAHARG)

March 2015
Contributions from States and International Organizations

Hosted by: **China**

Officers seconded from: **China, Japan, Malaysia, Republic of Korea, Singapore and IATA**

Financial/in-kind contributions received from: **China, DPRK, Fiji, Germany, India, Japan, Malaysia, Mongolia, Myanmar, Republic of Korea, Singapore, Thailand, the United States, ASEAN, IATA, CANSO, ACI and Eurocontrol**
## APAC FPP Training Schedule - 2015

<table>
<thead>
<tr>
<th>Date</th>
<th>Activities</th>
<th>Location</th>
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<tbody>
<tr>
<td>9 Mar-3 April</td>
<td>Pans-Ops PD Initial Course</td>
<td>Beijing</td>
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<tr>
<td>11-29 May</td>
<td>PBN PD Course</td>
<td>Beijing</td>
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<tr>
<td>1-5 June (TBC)</td>
<td>PD Refresher Course 2015 (including all new amendments in Doc8168)</td>
<td>Beijing</td>
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<tr>
<td>6-10 July (TBC)</td>
<td>PD Quality Assurance Course</td>
<td>Beijing</td>
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<tr>
<td>13-17 July (TBC)</td>
<td>RNP AR Course</td>
<td>Beijing</td>
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<tr>
<td>3-21 August</td>
<td>PBN PD Course</td>
<td>Beijing</td>
</tr>
<tr>
<td>11-13 November</td>
<td>FPP SC 7</td>
<td>Macau</td>
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Details and confirmations on all trainings may be found on APAC FPP web site [www.fpp-icao.org](http://www.fpp-icao.org).
RSO Cooperation with COSCAPs

PBN Implementation

- Implementation Workshops
  - 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
  - Conducted 15 times in Indonesia, Brunei, Sri Lanka, Nepal, Mongolia, Myanmar, Laos PDR, Vietnam, Bangladesh, the Philippines, Republic of Korea, Pakistan, Maldives, Cambodia and Malaysia

- Safety Assessment and Stakeholder Consultation
  - Mongolia – Safety Assessment and Stakeholder Consultation for enhanced enroute and terminal area structure, including RNP APCH and PBN Routes
PBN Implementation Progress – COSCAP NA Member States
Global Air Navigation Plan (GANP)

Objectives and Priorities

Performance Improvement Areas
- Airport Operations
- Globally Interoperable Systems and Data
- Optimum Capacity and Flexible Flights
- Efficient Flight Path

Blocks:
- Block 0 (2013)
- Block 1 (2018)
- Block 2 (2023)
- Block 3 (2028 onward)

Priorities:
- Performance Based Navigation (PBN)
- Continuous Descent and Climb Operations (CDO/CCO)
- Collaborative Decision-Making (CDM & A-CDM) & ATFM
Global Aviation Safety Plan (GASP)

Objectives and Priorities

**Near-term**

- **2017**
  - All States establish **effective safety oversight systems**
  - States with effective safety oversight (over 60% EI) **fully implement SSP**
  - States / Stakeholders support RASGs with the **sharing of safety information**

**Mid-term**

- **2022**
  - All Member States **fully implement the ICAO SSP Framework**
  - RASGs incorporate **regional monitoring and safety management programmes**

**Long-term**

- **2027**
  - Member States implement **safety capabilities** as necessary to support future Air Navigation Systems

**Priorities**

- **Runway Safety**
- **Controlled Flight Into Terrain (CFIT)**
- **Loss of Control In-Flight (LOC-I)**
ICAO Assembly Resolution: A37-11

The Assembly:

1. Urges all States to implement RNAV and RNP air traffic services (ATS) routes and approach procedures in accordance with the ICAO PBN concept laid down in the Performance-based Navigation (PBN) Manual (Doc 9613);
2. Resolves that:

a) States complete a PBN implementation plan as a matter of urgency to achieve:

1) implementation of RNAV and RNP operations (where required) for en route and terminal areas according to established timelines and intermediate milestones;

2) implementation of approach procedures with vertical guidance (APV) (Baro-VNAV and/or augmented GNSS), including LNAV only minima, for all instrument runway ends, either as the primary approach or as a back-up for precision approaches by 2016 with intermediate milestones as follows: 30 percent by 2010, 70 per cent by 2014; and

3) implementation of straight-in LNAV only procedures, as an exception to 2) above, for instrument runways at aerodromes where there is no local altimeter setting available and where there are no aircraft suitably equipped for APV operations with a maximum certificated take-off mass of 5 700 kg or more;
b) ICAO develop a coordinated action plan to assist States in the implementation of PBN and to ensure development and/or maintenance of globally harmonized SARPs, Procedures for Air Navigation Services (PANS) and guidance material including a global harmonized safety assessment methodology to keep pace with operational demands;

3. Urges that States include in their PBN implementation plan provisions for implementation of approach procedures with vertical guidance (APV) to all runway end serving aircraft with a maximum certificated take-off mass of 5 700 kg or more, according to established timelines and intermediate milestones;

4. Instructs the Council to provide a progress report on PBN implementation to the next ordinary session of the Assembly, as necessary;
5. *Requests* the **Planning and Implementation Regional Groups (PIRGs)** to include in their work programme the review of status of implementation of **PBN by States** according to the defined implementation plans and report annually to ICAO any deficiencies that may occur; and

6. *Declares* that this resolution supersedes Resolution A36-23.
PBN Implementation Progress – COSCAP NA

**PBN Trends**
% of PBN Runways by type for COSCAP-NA

**SID/STAR Trends**
% of SID/STAR Runways for COSCAP-NA
PBN Implementation Progress – COSCAP NA

- States in COSCAP-NA: 4
- PBN Runway Ends: 33
- Intr. Runway Ends: 133
- PBN Runway Ends (%): 24.8%

Percentage of States in COSCAP-NA meeting the Resolution Targets for Applicable Years:
- 50% in 2010
- 50% in 2014
- 25% in 2016

Updated information may be found on ICAO SPACE and ICAO PBN web site.
Democratic People's Republic of Korea

- Have 100% PBN approach implementation as of January 2015
- Published PBN SID/STAR for Sunan
- DPRK has requested a technical example on how to design RNP-ILS connection.
  - An example using international best practice was provided in early 2015
  - ICAO material will be available in November 2015
  - DPRK is invited to request a Procedure Design OJT for RNP-ILS connection design.
- DPRK is encouraged to enhance PBN ops approval capability.
- “Marginal” PBN State Plan
  - may seek support from APAC RSO for enhancing State PBN Plan
Mongolia

• “Robust” PBN State Plan
  • Finished the re-design of PBN en-route implementation (First Phase)
    – the re-design is endorsed by a stakeholder consultation meeting in early 2015 and draft AIP publication is being submitted for ministerial approval.
  • Completed flight validation for RNP APCH procedures for Ulaanbataar (international) and Muren (domestic) and in progress of publication.
    – Completed PBN training for ATC instructor in April 2015
    – Schedule PBN trainings for ATC in June 2015 prior to the effective date of RNP APCH procedures
• Mongolia should continue moving forward with their PBN activities in accordance to the established plan
• As a matter of urgency, Mongolia is encouraged to enhance PBN ops approval capability.
Republic of Korea

- “Robust” PBN State Plan
- 77.3% Implementation of PBN approaches as of January 2015
  - In line with global and regional targets
- Good progress on implementation of PBN SID/STAR and PBN routes
- Appreciated for continuing provision of supports to RSO PBN activities
The People’s Republic of China

- “Robust” PBN State Plan
- Notable progress on deployments of PBN SID/STAR at international and domestic airports
- Notable deployments of RNP AR at domestic airports
- No implementation of PBN APV Approaches on the record for international airports on mainland China (as of January 2015).
  - China may consider this as a matter of urgency.
- China is encouraged to further utilize the potential of PBN in enhancing domestic and international en-route airspace
The Meeting is invited to:

a) note the information in this paper as States/Administrations implement PBN; and

b) note that States/Administrations are encouraged to seek the support of ICAO APAC RSO, APAC FPP and Asia COSCAPs as required to support the development, amendment, or implementation of their PBN Plans, and

I. request the RSO in cooperation with COSCAP-NA to conduct an PBN Ops Approval Workshop within 2015

II. invite COSCAP-NA member States to consider forming a sub-regional group to review en-route structure with support from the RSO and APANPIRG PBNICG.
Thank You