INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF THE NINTH MEETING OF THE PERFORMANCE BASED NAVIGATION IMPLEMENTATION COORDINATION GROUP (PBNICG/9)

VTC
22-24 March 2022

The views expressed in this Report should be taken as those of the Meeting and not the Organization

Approved by the Meeting
and published by the ICAO Asia and Pacific Office, Bangkok

HISTORY OF THE MEETING

1. Introduction

1.1 The NINTH Meeting of the Performance Based Navigation Implementation Coordination Group (PBNICG/9) was held through Video Teleconference (VTC), from 22-24 March 2022.

2. Attendance

2.1 The meeting was attended by 173 participants from Australia, Bangladesh, Bhutan, China, Fiji, France, Hong Kong China, India, Indonesia, Japan, Lao, Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, United States of America, Vietnam, CANSO, IATA, IFALPA and ICAO.

2.2 The participants from States were multi-disciplinary experts in various fields related to PBN implementation including CAA Regulators, Inspectors, ANSPs, instrument flight procedure designers, engineers and airlines. The relevant presentations and documents are available at https://www.icao.int/APAC/Meetings/Pages/2022-PBNICG-9.aspx The list of participants is placed at **Attachment 1.**

3. Opening of the Meeting

3.1 Mr. Raphael Guillet, Chief of ICAO Asia/Pacific Regional Sub-Office (RSO), welcomed the participants of the PBNICG/9. He mentioned the fatal accident of China Eastern flight and tragic loss of lives a day before and expressed condolences on behalf of ICAO to the families of the passenger in that flight. He emphasized that sharing experiences and learning from others were the most important objectives of the meeting. He then invited all States to actively participate in the meeting discussion and provide ideas to sustain the PBN implementation in the APAC region.

3.2 The Chairman of the PBNICG, Mr. Ilaitia Tabakaucoro, Acting Executive Manager-ATS, NuiSky Pacific Limited, Papua New Guinea, welcomed participants to the meeting.

4 Officers and Secretariat

4.1 The meeting was chaired by Mr. Ilaitia Tabakaucoro. Mr. V. K. Mishra, ICAO Regional Officer ATM (AOM-PBN), acted as secretary and was supported by Ms. Yang Siqi, Program Assistant, ICAO APAC RSO.

5. Working Arrangements, Language and Documentation

5.1. The working language of the meeting was English inclusive of all documentation and this Report. 14 Working Papers (WP), 10 Information Papers (IP) were presented in the meeting. A list of Working and Information Papers is provided at **Attachment 2**.

– – – – – – – – – – – –

Agenda Item 1: Adoption of agenda

1.1 The Chairman introduced the provisional agenda (WP01) to the meeting.

1.2 The Secretary explained that the agenda items CDO/CCO and PBN OPS approval are based on the feedback received from States in the last PBNICG/8 meeting. The meeting reviewed and agreed to the proposed agenda without changes, as follows:

Agenda Item 1: Adoption of Agenda

Agenda Item 2: Global and Regional PBN Updates

Agenda Item 3: Implementation status of the Regional Transition Plan for RNP APCH Chart Identification from RNAV to RNP

Agenda Item 4: States' PBN Implementation Progress

Agenda Item 5: CDO/CCO Implementation

Agenda Item 6: PBN OPS Approval

Agenda Item 7: Any other business

Agenda item2: Global and Regional PBN updates

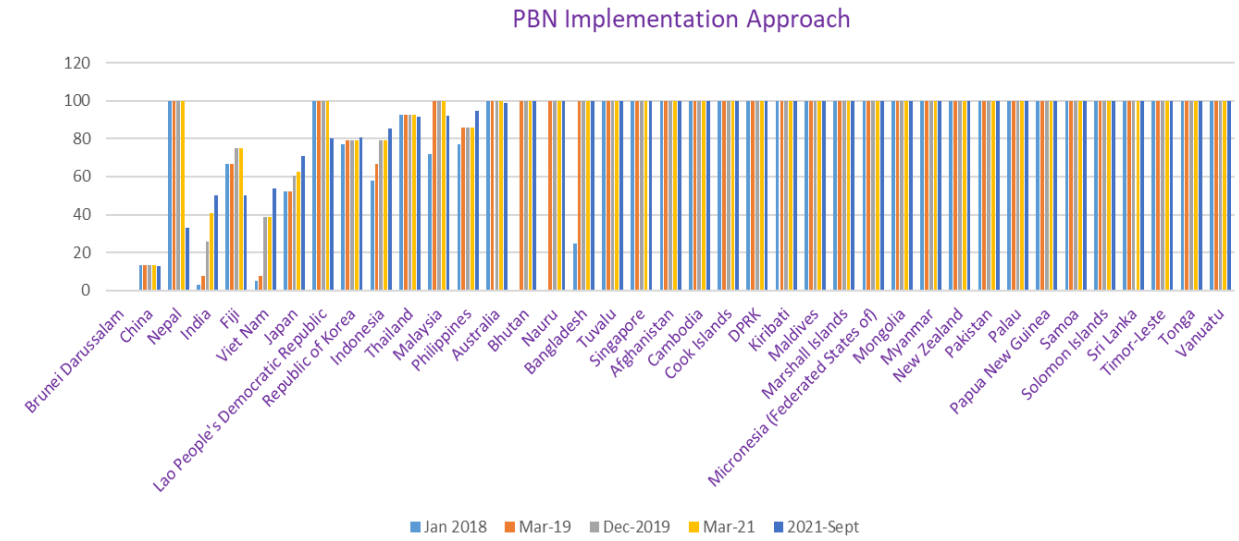
WP03– Global and Regional PBN Implementation Update (Secretariat)

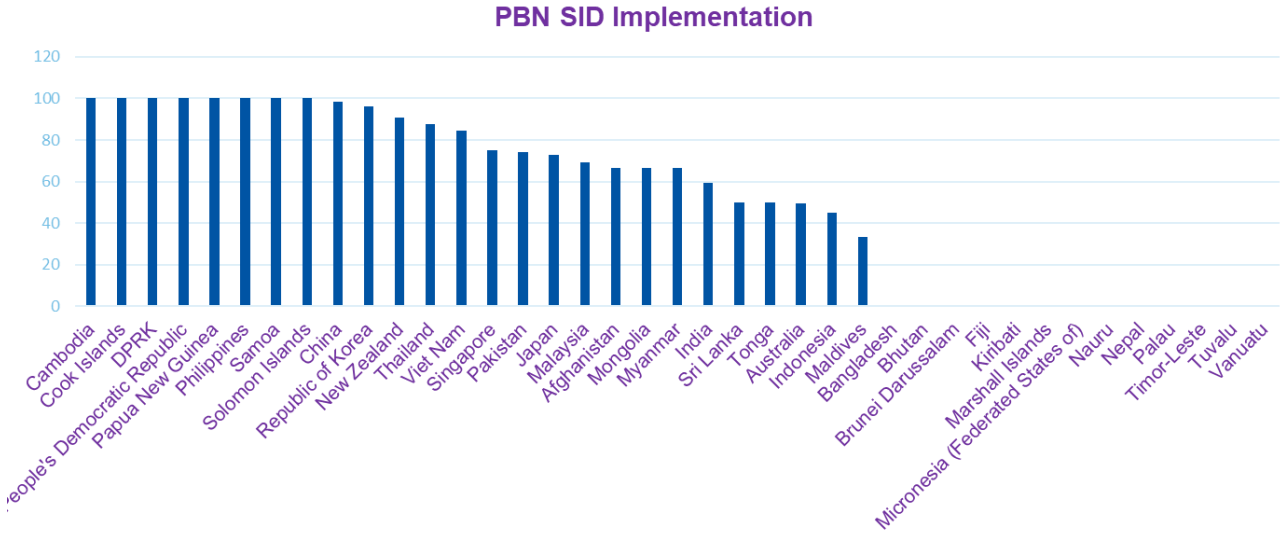
2.1 ICAO presented global PBN implementation status as available in ICAO iSTARS. ICAO informed that implementation of APV procedures for all instrument runway ends by 2016, key requirement of ICAO Assembly Resolution A37-11, was behind global achievement. However, implementation of PBN SID/STAR were above the global implementation status (see **Table 1 and Chart 1**).

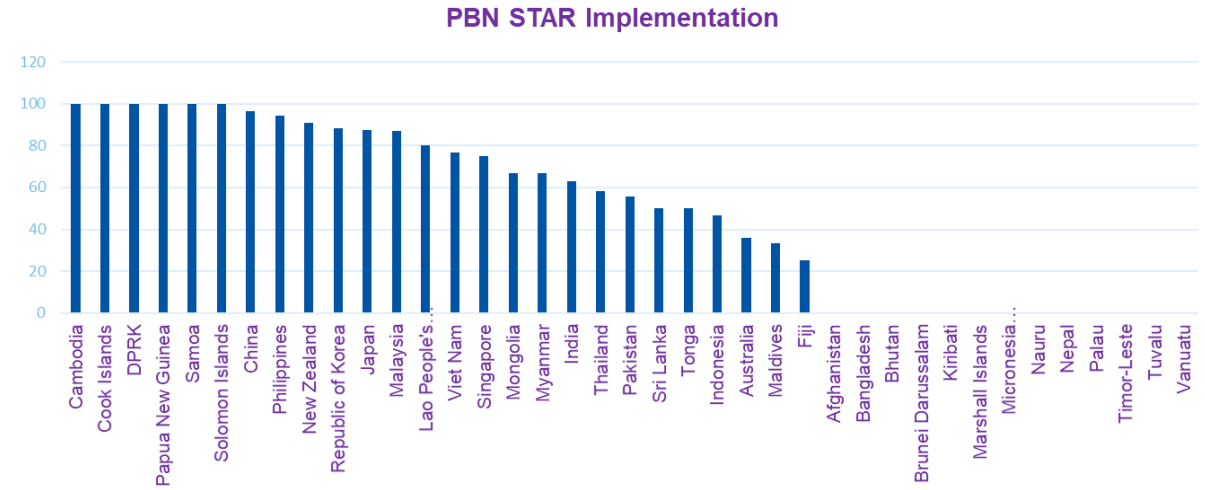
Table 1. ICAO Assembly Resolution A37-11 Implementation Status as on September 2021

Sept 2021	LNAV	APV		PBN SID	PBN STAR
		LNAV/VNAV	LPV		
Global (%)	69.3	57.3	26.2	57.7	50.5
Asia/Pacific (%)	64.5	52.7	0	70	67

Chart 1. PBN (Approach) Update, as of September 2021(as per iSTARS)







2.2 In response to a query from Nepal, ICAO clarified that percentage of implementation presented is based on the number of instrument Runway Ends having PBN Approach and that the data collated is for International Aerodromes only. ICAO assured Nepal that TIA airport STAR would be coordinated with iSTARS team.

2.3 ICAO reminded the States about low implementation of PBN SIDs/STARs in some States that had excellent PBN Approach implementation and clarified that SIDs/STARS could help achieve efficiency of operations at smaller airports as well. Few States indicated they would look into this anomaly.

2.4 On a query from Pakistan, ICAO clarified the requirement of Altimeter Setting and PBN Procedures and that LNAV-VNAV procedure cannot be implemented if the Airport does not have a local altimeter setting.

2.5 ICAO clarified to Philippines that an AIP Supplement is part of AIP and therefore procedures published in the supplement is included in the accounting percentage for PBN implementation.

2.6 ICAO informed the meeting that Report of PBNICG/8 was reviewed in CNS SG/25 held from 18–22 Oct 2021 and APANPIRG/32 held from 1-3 December 2021.

2.7 ICAO further informed the meeting that discrepancy about the list of International Airports in iSTARS and ANP had been resolved after extensive coordination with iSTARS team. This data is reflected in PBN Implementation of the States and all APAC States should update their list of Airports in ANP Vol-I & Vol-II as urged by APANPIRG/31 in order to display a more accurate data of implementation.

2.8 ICAO provided information that a meeting to exchange information on PBN Implementation in all ICAO Regions was initiated by APAC Region, in which the following initiatives of APAC region was shared:

- Safety Assessment of PBN Procedure Implementation
- PBN Go-Teams visit to assist States in PBN Implementation
- PBN-in-a-Page
- GBAS-SBAS ITF
- GBAS-SBAS Implementation Status
- GBAS-SBAS Information Sharing Platform

This meeting would be held every quarter to exchange information to promote PBN Implementation.

2.9 ICAO informed the meeting that to promote GBAS-SBAS Implementation in the Region, two Expert Sub-groups with the following tasks have been constituted based on the nominations received from States as per decision of the GBAS-SBAS ITF/3 meeting as given below:

I) Expert Sub-group 3-1 - Review and revise the GBAS and SBAS safety assessment guidance document related to anomalous ionospheric conditions.

II) Expert Sub-group 3-2- Draft a Guidance Document on Implementation Process for GBAS/SBAS.

The sub-groups are expected to present an initial draft of the documents by the next GBAS-SBAS ITF/4 meeting. These documents will help the States in GBAS-SBAS implementation.

WP05 - PBN Implementation Partnership Program Concept

2.10 ICAO presented a concept paper on the line of ACT-CORSIA to promote PBN Implementation in the region by adopting a partnership program amongst the APAC States. States willing to participate in the program as a mentor or mentees may write to APAC-RSO@icao.int and after getting the responses, ICAO may consider developing a plan.

2.10.1 Pakistan sought clarification on the link between CORSIA with the PBN procedure design and how it can be further coordinated with ICAO and if this program will be within ACT-CORSIA. ICAO explained that this would be a different program similar to ACT-CORSIA. Nepal supported the concept of this program.

WP06 - Radio Frequency Interference of GNSS Signal

2.11 ICAO presented a paper on Radio Frequency Interference (RFI) on Satellite Navigation based on Euro control study on the subject and concluded the following points on the subject:

- Aviation can operate safely when GNSS is unavailable for short duration, but increasing RFI reduces the efficiency and cost-effectiveness of the system by requiring complementary CNS services to be maintained to higher standards.
- Jamming undermines confidence and trust in a significant global investment and increases the cost of anti-jamming mechanisms.
- States should identify the RFI zones through reporting by pilots & ATC.
- Awareness and actions need to be taken at State level in line with international treaties.
- States need to be aware of the problem and increase internal cooperation between their civil and military aviation bodies.

2.11.1 IFALPA supported the paper and indicated that commercial operators depended a lot on GNSS navigation, therefore awareness about RFI will significantly assist in the safety and efficiency of their operations.

2.11.2 Pakistan sought clarification on the significant occurrence of incidents due to RFI. ICAO explained that due to RFI occurrences aircraft would require ATC assistance in those areas thus increasing the workload of pilot as well as ATC.

2.11.3 India sought clarification on how data on jamming of GNSS signals due to RFI was obtained. ICAO explained that data on RFI jamming are normally reported by aircraft and could be determined by flight inspection aircraft as well if such facility is available with the State.

Agenda Item 3: Implementation status of the Regional Transition Plan for RNP APCH Chart Identification from RNAV to RNP

WP04 – Implementation Status of Regional Transition Plan for RNP Chart Identification (Secretariat)

3.1 The Secretariat presented the Implementation status of the regional transition plan for RNP APCH chart identification from RNAV to RNP, Asia/Pacific Regional Transition Plan for RNP APCH Chart Identification from RNAV to RNP as adopted by APANPIRG/30 vide Conclusion

APANPIRG/30/14 (CNS SG/23/8-PBNICG/6/1). The Secretariat reminded the States about target date as November 2022 for RNP transition. The plan is available at the following link on ICAO APAC webpage:
https://www.icao.int/APAC/Documents/edocs/APX.%20B%20-%20Regional%20Transition%20Plan%20for%20RNP%20Chart%20Identification.pdf

3.2 The Secretariat invited the participants to review if there was any change to their APAC Regional Transition Plan and to report the same to APAC-RSO@icao.int.

3.3 ICAO assured Indonesia, Japan, Nepal, Pakistan, Republic of Korea and Philippines that update to their focal points for RNP APCH chart transition will be based on information received from States. Thailand informed the meeting that their RNP chart transition plan had been completed in 2021.

IP05 - Malaysia Regional Transition Plan Progress

3.4 Malaysia presented information on the latest progress of Regional Transition Plan for RNP APCH Chart Identification from RNAV to RNP. Malaysia informed the meeting that the transition would be completed in two phases by the end of 2022. Australia sought clarification on how Malaysia determined which Airport would be taken up in which phase. Malaysia informed the meeting their criteria was based on if the airport is either an international or domestic and on the number of charts for that airport.

Agenda Item 4: States' PBN Implementation Progress

WP07 – RNP to XLS Approaches Facilitating Autopilot Coupling/Smooth Interception of Final Approach Track (LLZ)

4.1 India presented that RNP/RNP-XLS approaches designed with conventional T-bar/Y-bar initial approach segments, limits their operational benefit in high traffic density environment. These designs do not support the autopilot approaches in non-surveillance environment, as autopilot requires maximum interception angle of 30^0. In order to improve the efficiency of these approaches, initial approach segment facilitating 30^0 interception to FAT/LLZ were designed and successfully implemented at various airports in India.

4.2 IATA welcomed the paper and acknowledged that these improved profiles will reduce cockpit workload, assist improving aircraft energy management complementing stabilized approaches.

4.3 IFALPA also lauded the effort of India and expressed that these types of procedures will be quite helpful in stabilized approaches.

IP01 – PBN Implementation in India

4.4 India presented progress of its PBN Implementation. India has implemented RNP APCH procedures for 70 Runway ends so far. Out of these 38 RNP APCH are for international airports and 32 RNP APCH for domestic airports. India also informed the meeting that 21 LPV procedures had been validated on Flight Simulators. The procedures in the information paper are being flight validated and will be published after regulatory approvals.

4.4.1 ICAO requested India to clarify their plans to publish LPV procedures. India informed the meeting that based on flight trials, some amendments have been made into the design of the procedure and another flight trial may be conducted before approval is granted for publication.

4.4.2 IATA acknowledged collaborative efforts of AAI engaging airlines while progressing on the PBN developments.

- RNP APCH: Schedules integrity and Network connectivity is at core of airline operations. RNP APCHs from regional connectivity airports are enabling predictable operations due to lowered weather minima.
- Enroute: Airspace is an important resource needed for Civil as well as Military purposes. Several RNP routes promulgated by AAI are ensuring optimum usage of this important resource under the Flexible Use of Airspace (FUA). These routes are enabling hundreds of flights every day to fly shorter routes.

4.4.3 IFALPA also praised the effort of India in PBN Implementation.

IP03 – Indonesia International PBN Routes Plan City Pair
IP10 - PBN Implementation Progress in Indonesia

4.5 Indonesia presented a plan for the implementation of international PBN routes. These routes will connect to Singapore and Australia and are expected to give shorter and efficient international routes.

4.5.1 IATA welcomed the paper and acknowledged the cluster based route network planning. Indonesia clarified to IATA that the cluster of domestic routes would be undertaken in phases.

4.5.2 Indonesia clarified to India their lateral spacing of RNP 2 routes was 23 NM. India further shared that they have successfully implemented RNP 2 routes with 15 NM lateral spacing and 20 NM longitudinal spacing. Nepal further clarified that for RNP 2 routes, 15 NM spacing is adequate as per provisions of PANS-ATM (Doc 4444) with a maximum SLOP of 0.5 NM allowed.

4.5.3 Indonesia informed the meeting about the progress of PBN implementation consisting of PBN Approach, SID, and STAR procedures at international and domestic airports and PBN domestic routes. The transition for RNP APCH Chart identification is expected to be completed by November 2022.

IP07 - PBN Implementation Progress (Pakistan)

4.6 Pakistan provided its progress on PBN implementation and informed the meeting that RNP APCH have been implemented at all functional Airports. RNP 1 SIDs & STARs have also been implemented at all major airports and arrival & departures use CCO & CDO. The studies on the implementation of SBAS & RNP AR APCH procedures along with possibility of development of RNP 2 ATS routes is in the process and declared as a priority task**.**

IP08 - Thailand's PBN Implementation Progress

4.7 Thailand provided the information about the overall PBN development within Thailand. The meeting was informed the implementation status of PBN approach procedures and

SIDs and STARs in terminal airspaces throughout Thailand. Thailand also presented progress of RNP-AR, updates on PBN route enhancement for en-route airspace as well as status on transition plan for RNP APCH Chart Identification.

IP09-Progress of PBN Implementation in Myanmar

4.8 Myanmar provided information on the PBN implementation progress in terminal control area (TMA) and approach in accordance with their PBN implementation plan. However, the implementation process of some procedures had been delayed, as flight validation could not be undertaken due to COVID-19 pandemic.

4.9 ICAO clarified the validation process listed below from ICAO Doc 9906 Vol-5, Validation of Instrument Flight Procedure (IFP):-

If the State can verify, through ground validation, the accuracy and completeness of all obstacle and navigation data considered in the procedure design, and any other factors normally considered in the flight validation, then the flight validation requirement may be dispensed with.

Flight validation is required under the following conditions:

a) the flyability of a procedure cannot be determined by other means;
b) the procedure requires mitigation for deviations from design criteria;
c) the accuracy and/or integrity of obstacle and terrain data cannot be determined by other means;
d) new procedures differ significantly from existing procedures; and
e) for helicopter PinS procedures.

4.10 Bangladesh sought clarification on the determinants of flight validation. ICAO explained that it should be decided in view of the provisions of ICAO document quoted in ICAO Doc 9906 Vol-5. On Bangladesh's query on whether these provisions should be part of national regulation; ICAO supported Bangladesh in that there should be national regulation about the design and validation of flight procedures.

4. 11 ICAO requested for States requiring further clarification on the provisions in Doc 9906, Vol-5 to send their queries through email to the RSO.

Agenda Item 5: CDO/CCO Implementation

WP08 - CDO and CCO Implementation (Secretariat)

5.1 ICAO presented the requirement of CDO/CCO Implementation as per APAC Seamless ANS Plan and ASBU Modules. Implementation, design, application and benefits of CCO/CDO was explained to help States in CDO/CCO Implementation.

5.2 Pakistan and Philippines sought clarification on whether CDO/CCO needs to be published and where it should be published, on SID/STAR charts or in AIP. ICAO clarified the purpose of publication is uniform implementation by ATC and Pilots and therefore it should either be published on charts or in the flight procedure section of the AIP. Maldives indicated that as their design of SID/STAR incorporated CDO/CCO, whether there is a need to publish these on charts. ICAO reminded the meeting on their explanation of uniform application by both ATC and Pilots.

WP09 - CDO and CCO Implementation (Australia)

5.3 Australia presented a summary of existing practices and activities underway to implement a program of improvements to CDO in Australia. A trial will be conducted later in 2022 as the initial stage and involves several airline partners operating at one airport. Data from this trial will inform future stages to expand and refine CDO procedures. Australia acknowledged the lead taken by China and India in PBNICG/8 papers assisted their CDO/CCO planning.

5.4 ICAO observed that the presentation was comprehensive and gives insight into the subject and that a letter of agreement with airspace users and ATC for implementation of CDO/CCO is one of the way for uniform application of the procedures during trials and thereafter will be published in AIP.

WP10 - CDO and CCO Implementation (China)

5.5 China presented a paper on preparation, implementation steps and implementation results of its CDO/CCO at various Airport. The meeting was informed that in the first three quarter of 2021, 2329 flights operated on CDO/CCO in mainland China.

IP02- CDO/CCO Implementation - Indonesia

5.6 Indonesia presented a paper on the implementation of CDO/CCO in Indonesia. The meeting was informed the improvement in fuel reduction in Soekarno Hatta airport, contributed from CDO/CCO operation.

IP06 - CDO Performance Monitoring at Incheon International Airport (ROK)

5.7 ROK presented a paper on the performance monitoring of CDO at Incheon International Airport during 2018 and 2019 before COVID19. The meeting was informed that 9.3% of total arrivals took advantage of CDO and achieved 2million kg fuel reduction in 2018, and 8.3% of total arrivals took advantage of CDO and achieved 2million kg fuel reduction in 2019 respectively.

Agenda Item 6: PBN OPS Approval

WP11- United States PBN Operations Approval Process Overview (USA)

6.1 USA presented a paper on PBN OPS Approval procedure, which provides a brief overview of the PBN approval process in place within the United States. It also provides publically available resources for use by States and Operators seeking to develop PBN approval or operations.

6.2 India sought clarification on whether the bundling of PBN OPS approval is a requirement from FAA or the operators. FAA informed the meeting that operators are given a choice to apply for PBN OPS approval by bundling several Nav-specs.

6.3 Pakistan sought clarification on the procedure of PBN OPS approval for State aircraft. FAA informed the meeting that FAA does not give OPS approval to State aircraft however; close coordination with State authorities ensures State aircraft meet civil criteria.

6.4 Bangladesh sought clarification on whether simulator observation is required before granting PBN OPS approval. FAA informed the meeting that for simple operation like RNP 2, aircraft

documentation may be sufficient but for more complex operations, such as RNP AR, simulator validation may be necessary. Bangladesh clarified that the simulators may not replicate aircraft capability and whether simulator results could be determined as adequate. FAA clarified that if simulator accurately represented the aircraft capability only then it is accepted.

6.5 Philippines sought clarification on navigation specification for newly delivered aircraft as mentioned FAA order 8400. FAA clarified that aircraft documentation about nav-specs need not be re-approved and it can be accepted after assessment.

6.6 Philippines sought further clarification on whether FOSA was required; FAA informed the meeting that all published public RNP-AR meet design criteria that generally eliminates specific FOSA for individual operators or locations, but some special procedures would require it.

6.7 ICAO raised a query that in view of large number of aircraft within the airlines in USA, do they need PBN OPS approval for each aircraft or type of aircraft. FAA informed that this is normally done with each type of aircraft for simpler operations, but for each aircraft for more complex operations.

WP12- PBN OPS Approval (Australia)

6.8 Australia presented its regulation and procedure for PBN OPS approval. The meeting was informed that approvals are only required for RNP-AR APCH, RNP-AR DP, and all other PBN specifications are deemed to be approved if certain requirements are met.

6.9 Bangladesh sought clarification on whether PBN is part of training for IFR rating of pilots. Australia informed the meeting that as GNSS is mandated in Australian Airspace, pilots are trained on PBN during their IFR ratings.

6.10 Pakistan sought clarification on the Australian PBN OPS approval for State aircraft. Australia informed the meeting that it does not give OPS approval to State aircraft however; close coordination with State authorities ensures State aircraft meet civil criteria.

6.11 Australia clarified that continuous airworthiness is part of AOC in response to Philippines query on the reasons for not mentioning continuous airworthiness required.

WP13- PBN OPS Approval (India)

6.12 India presented a paper on PBN OPS approval regulation and procedure in the State and explained the process followed in the State.

6.13 India clarified that OPS specs are not mentioned on the OM (Operations Manual) except for RNP AR and separate letter of authorization is issued for other ops specs in response to Bangladesh query on OPS specs in the OM.

WP14- RNP AR Departure Operational Approval in Nepal

6.14 Nepal presented a detailed OPS Approval Guidance that they developed for the operational approval of RNP AR Departure. They also shared their experiences of granting the RNP AR DP OPS approval and the flight planning arrangement they made. Nepal further called the

meeting to note the concept and requested to provide necessary feedbacks or suggestions to improve the guidance.

6.15 Pakistan sought clarification on whether safety assessment was conducted and if FOI/AWI were associated in the process. Nepal informed the meeting that FOSA was mandatory for all the operators to get authorization for RNP AR DP as for RNP AR APCH. All the stakeholders including FOI and AWI were involved in the entire authorization process.

6.16 The Chairperson sought clarification on whether the 100 number of trial operations was determined on aircrew competencies. Nepal clarified that the figure was based on earlier assessments, but will be reviewed over the trial period.

6.17 Nepal clarified that presently only Nepali Airlines were involved in the trials, in response to IFALPA's query on Foreign Airlines involvement.

6.18 Hong Kong China raised a query that how obstacle clearance was ensured. Nepal informed that for obstacle clearance provisions of ICAO Doc 9905 for RNP AR APCH was applied.

Next meeting

7.1 The Chairperson proposed that PBNICG/10 would tentatively be held in March/April 2023 and invited the States to host the meeting in person or in hybrid mode. States willing to host may contact APAC-RSO@icao.int.

Closing of the meeting

7.2 The Chairperson thanked the participants for their contributions and expressed appreciation to the ICAO Asia/Pacific Regional Sub-Office for their support. The Secretary appreciated the participation of the States' delegates in large number and sharing information on CDO/CCO Implementation and PBN OPS Approval.

7.3 The Chief of ICAO APAC RSO, Mr. Raphael Guillet thanked all the participants and ICAO secretariat personnel for making this meeting meaningful.

International Civil Aviation Organization

The 9th Meeting of PBN Implementation Coordination Group (PBNICG/9)

(Video Conference, 22 – 24 March 2022)

List of Participants

No	Name	Title/Organization	Email
	Australia (2)		
1.	Mr. Steven Kreusser	Emerging Aviation Technology Specialist/RPAS Civil Aviation Safety Authority - Australia	steven.kreusser@casa.gov.au
2.	Mr. Colleen Kitson	Senior ATS Specialist Airservices Australia	colleen.kitson@airservicesaustralia.com
	Bangladesh (6)		
3.	Mr. Baharui Hayat Bipul	Assistant Director Civil Aviation Authority of Bangladesh (CAAB)	bhbipul@yahoo.com
4.	Mr. Mahmud Akhter Hossain	Assistant Director(ATM) Civil Aviation Authority of Bangladesh (CAAB)	makhtercaab@gmail.com
5.	Mr. Mohammed Fariduz Zaman	FOI Civil Aviation Authority of Bangladesh (CAAB)	captainzaman@yahoo.com
6.	Mr. Monirul Haque Joarder	FOI Civil Aviation Authority of Bangladesh (CAAB)	monirulh.joarder@gmail.com
7.	Mr. Reazul Islam Masoud	Assistant Director(ATM)-Supervisor	reazulcaab@gmail.com

		Civil Aviation Authority of Bangladesh (CAAB)	
8.	Ms. Sabera Rahman	Assistant Director(ATS) Civil Aviation Authority of Bangladesh (CAAB)	mitasr@gmail.com
	Bhutan (1)		
9.	Mr. Karma Yonten	ATCO/AIS National Air Navigation Services company (NANSC)	kyonten@doat.gov.bt
	China (11)		
10.	Mr. Bihe Wang	Flight Standard Officer Civil Aviation Administration of China (CAAC)	361685150@qq.com
11.	Ms. Huijun Wang	Assistant Air Traffic Management Bureau of CAAC	626723598@qq.com
12.	Mr. Long Meng	Engineer Airspace Management Centre, ATMB CAAC	menglong@atmb.net.cn
13.	Mr. Xiawei Zuo	Administration Staff Northwest Regional Administration of CAAC	32068847@qq.com
14.	Mr. Yu Lei	Engineer Air Traffic Management Bureau of CAAC	yulei@atmb.net.cn
15.	Mr. Weiye Huang	Technical Support Airbus Helicopters China	luckaichong@126.com
16.	Mr. Huang Jin	Professor Civil Aviation Flight University of China	271217582@qq.com

17.	Mr. Jie Ren	Deputy Dean Civil Aviation Flight University of China	myalive@qq.com
18.	Mr. Tianxing Lan	V-GM BEIJING TRANSAFE TECHNOLOGY AND TRADE CO.,LTD.	qsf_lantianxing@126.com
	Fiji (4)		
19.	Ms. Alisi Namoro	ANSI-ATM/SAR Civil Aviation Authority of Fiji	alisi.namoro@caaf.org.fj
20.	Ms. Sereima Bolanavatu	ANS Inspector(CNS) Civil Aviation Authority of Fiji	eima.bolanavatu@caaf.org.fj
21.	Mr. Jeremaia Lewaravu	Controller AIS AIRPORTS FIJI LIMITED	JeremaiaL@fijiairports.com.fj
22.	Ms. Kalesi Cagi	AIS-Coordinator Information Support Fiji Airports	SamanunuC@fijiairports.com.fj
	France (2)		
23.	Mr. Thierry Liabastres	1st Representation of France on ICAO Council	thierry.liabastres@diplomatie.gouv.fr
24.	Mr. Charles Thornberry	HO Airspace & Airport Sales Navblue Ltd	charles.thornberry@navblue.aero
	Hong Kong China(5)		
25.	Mr. Gabriel Cheng	Chief Air Traffic Control Officer (Procedure and Evaluation), Civil Aviation Department, Hong Kong, China	gpkcheng@cad.gov.hk

26.	Mr. Johnny Zhang	Senior Operations Inspector Civil Aviation Department, Hong Kong, China	jyxzhang@cad.gov.hk
27.	Mr. Kai Man Chan	Operations Officer Civil Aviation Department, Hong Kong, China	kkmchan@cad.gov.hk
28.	Ms. Yan Yin Lee	Acting Senior Operations Officer (Procedures Design) Civil Aviation Department, Hong Kong, China	jyylee@cad.gov.hk
29.	Mr. Arthur Chan	Project officer Civil Aviation Department, Hong Kong, China	
	India (8)		
30.	Mr. Ravinder Jamwal	Deputy Director of operations (ANSS) DGCA India	jamwal.dgca@nic.in
31.	Mr. Shweta Singh	Dy CFOI DGCA India	shwetasingh.dgca@gov.in
32.	Mr. Debotosh Moitra	Joint General Manager Airports Authority of India (AAI)	dmoitra@aai.aero
33.	Mr. Gaurav Raghuvanshi	AGM(ATM-FPD) Airports Authority of India (AAI)	gauravr@aai.aero
34.	Mr. Lambodar Mohanty	Flight Procedure Designer Airports Authority of India (AAI)	ldmohanty@aai.aero
35.	Mr. Sambath Kumar Govindan	Joint General Manager ATM Airports Authority of India (AAI)	sambathkumar@aai.aero
36.	Mr. Soumen Podder	AGM(ATM) Airports Authority of India (AAI)	soumen72@aai.aero

37.	Mr. Manu Bhasin	Associate Director Flight Operations	manubhasin@live.com
	Indonesia (16)		
38.	Mr. Andreas Pallo	Airworthiness Inspector (FTE) DGCA INDONESIA	andreas_pallo@dephub.go.id
39.	Mr. Didik Setiawan	Flight Operation Inspector DGCA INDONESIA, Directorate of Air Transport	didiksetiawan.1969@gmail.com
40.	Mr. Fajar Adikusuma	Flight Operation Inspector DGCA INDONESIA, Directorate of Airworthiness and Aircraft Operation	adikusuma.f@gmail.com
41.	Mr. Fajar Sunarjanto	Inspector of Air Navigation DGCA INDONESIA, Directorate of Air Navigation	fajar.ssnp1@gmail.com
42.	Mr. Ferry Sumadi	Flight Operation Inspector DGCA INDONESIA	ferry_haristya@dephub.go.id
43.	Mr. Hendra Ahmad Firdaus	Chief for Air Navigation Procedure DGCA INDONESIA	hendra_ahmad@dephub.go.id
44.	Ms. Meidiana Eka Wardani	Flight Operation Inspector DGCA INDONESIA, Directorate of Airworthiness and Aircraft Operation	meidianaaffandi@gmail.com
45.	Mr. Okta Putra	Deputy Director of Air Navigation Standard and Flight Procedure DGCA INDONESIA, Directorate of Air Navigation	okta.k.putra@gmail.com
46.	Mr. Reynold Widodo	Flight Operation Inspector	64reynold@gmail.com

		DGCA INDONESIA	
47.	Ms. Sri Rahyuni	Flight Operation Inspector DGCA INDONESIA, Directorate of Airworthiness and Aircraft Operation	rahyu64@gmail.com
48.	Ms. Waya Fadini	Air Navigation Inspector DGCA INDONESIA	waya_fadini@dephub.go.id
49.	Mr. Yuli Asnanto	Air Navigation Inspector DGCA INDONESIA, Directorate of Air Navigation	to_yuli_abu@yahoo.com
50.	Mr. Iwan Ardiansyah	FPD MANAGER AirNav Indonesia	wanardi_syah@yahoo.com
51.	Mr. Obor Rudiansyah Mandala	Flight Procedure Designer AirNav Indonesia	obor.rudiansyah@airnavindonesia.co.id
52.	Mr. Rino Laharto	Jr. Manager of Upper airspace Dev AirNav Indonesia	rinolaharto.atc@gmail.com
53.	Mr. Mohamad Iqbal Firdaus	Flight Procedure Designer AirNav Indonesia	iqbal.airnavtkg@gmail.com
	Japan (15)		
54.	Mr. Atsushi Sano	Special assistant to the director of ATC division Japan Civil Aviation Bureau (JCAB)	sano-a03ju@mlit.go.jp
55.	Mr. Daisuke Omura	Operations Inspector Japan Civil Aviation Bureau (JCAB)	ohmura-d97jq@mlit.go.jp
56.	Mr. Kadutaka Sakurai	Consideration of flight standards Ministry of Land, Infrastructure, Transport and Tourism Japan Civil Aviation Bureau (JCAB)	sakurai-k2p5@mlit.go.jp

57.	Ms. Kyoko Sato	Special Assistant of the Director Ministry of Land, Infrastructure, Transport and Tourism Japan Civil Aviation Bureau (JCAB)	satoh-k05zb@mlit.go.jp
58.	Mr. Kyotaro Harano	Director. Office of ATS International Affairs Japan Civil Aviation Bureau (JCAB)	harano-k2pc@mlit.go.jp
59.	Mr. Makito Ohashi	Special Assistant to the Director Ministry of Land, Infrastructure, Transport and Tourism / Japan Japan Civil Aviation Bureau (JCAB)	oohashi-m07ys@mlit.go.jp
60.	Ms. Mariko Kinoshita	Aviation Safety and Security Department chief Japan Civil Aviation Bureau (JCAB)	kinoshita-m466i@mlit.go.jp
61.	Mr. Mitsuru Shinohara	Chief Japan Civil Aviation Bureau (JCAB)	shinohara-m02sp@mlit.go.jp
62.	Mr. Setsuya Nagahata	Special Assistant to the Director Ministry of Land, Infrastructure, Transport and Tourism / Japan Japan Civil Aviation Bureau (JCAB)	se2ya.7ga8ta@gmail.com
63.	Mr. Yasuhiro Marutsuka	Special Assistant to the Director Japan Civil Aviation Bureau (JCAB)	marutsuka-y0799@mlit.go.jp
64.	Mr. Shimamura	Inspector Japan Civil Aviation Bureau (JCAB)	shimamura-k97dj@mlit.go.jp
65.	Mr. Hidetsugu Takahashi	Assistant Manager Nippon Cargo Airlines (NCA)	hidetsugu.takahashi@nca.aero
66.	Mr. Kazuhiro Mizuno	Assistant Manager Nippon Cargo Airlines (NCA)	kazuhiro.mizuno@nca.aero

67.	Mr. Makiko Tokumoto	Nippon Cargo Airlines (NCA)	Makiko.tokumoto@nca.aero
68.	Mr. Toru Namba	Manager Japan Airlines	namba.qe4q@jal.com
	Lao(4)		
69.	Ms. Inseelee Bouapao	Flight Procedure Designer Lao Air Navigation Services (LANS)	insee_lee@yahoo.com
70.	Mr. Sompasong Tannavong	AIS OFFICER Lao Air Navigation Services (LANS)	s_tannavong@hotmail.com
71.	Ms. Somsanith Bounyavong	Flight Procedure Designer Lao Air Navigation Services (LANS)	somsanith93@gmail.com somsanith93@yahoo.com
72.	Ms. Soukanya Vayaphath	Officer Lao Air Navigation Services (LANS)	soukanya_n@yahoo.com
	Malaysia (2)		
73.	Mr. Hamizun Bin Jenal	Principal Assistant Director Civil Aviation Authority of Malaysia	hamizun@caam.gov.my
74.	Mr. Mohd Syahril Azmir Bin Remli	Principal Assistant Director Civil Aviation Authority of Malaysia	syahril_azmir@caam.gov.my
	Maldives (1)		
75.	Mr. Ibrahim Hameed	General Manager, ATS Maldives Airports Company Ltd	i.hameed@macl.aero
	Mongolia (7)		

76.	Mr. Zorig Bat	Flight Procedure Design Engineer Civil Aviation Authority of Mongolia	b.zorig@mcaa.gov.mn
77.	Ms. Battungalag Jugdernamjil	Specialist Civil Aviation Authority of Mongolia	battungalag@mcaa.gov.mn
78.	Ms. Otgonjargal Galsan	Specialist of ANS Department Civil Aviation Authority of Mongolia	otgonjargal.g@mcaa.gov.mn
79.	Mr. Odkhuu	Senior officer of technological operation section Civil Aviation Authority of Mongolia	odkhuu..r@mcaa.gov.mn
80.	Mr. Bayarsaikhan	Head of technological operation section Civil Aviation Authority of Mongolia	bayarsaikhan.l@mcaa.gov.mn
81.	Ms. Mandukhai	Safety Management Section director Civil Aviation Authority of Mongolia	mandukhai.b@mcaa.gov.mn
82.	Mr. Odgerel Davaadorj	Senior Controller Civil Aviation Authority of Mongolia	odgerel@mcaa.gov.mn
	Myanmar (6)		
83.	Ms. Ei Moh Moh Maung	Flight Procedure Designer Department of Civil Aviation, Myanmar	eimohmohmaung@gmail.com
84.	Mr. Kyaw Aye Maung	Assistant General Manager (ATM), Chief of FPDO Department of Civil Aviation, Myanmar	kyawayemaung@gmail.com
85.	Ms. May Zin Chit	Flight Procedure Designer Department of Civil Aviation, Myanmar	izinchit@gmail.com
86.	Mr. Thet Aung	Deputy Director Flight Standard Division, DCA-Myanmar	majthetaung42@gmail.com

87.	Mr. Nyi Nyi Aung,	Assistant Director Flight Standard Division, DCA-Myanmar	peace3126@gmail.com
88.	Mr. Aung Shwe Oo	Flight Operation Inspector Flight Standard Division, DCA-Myanmar	capt.aungshweoo@gmail.com
	Nepal (8)		
89.	Mr. Bijendra Shrestha	Air Traffic Controller Civil Aviation Authority of Nepal, TIACAO	bizendra@gmail.com
90.	Mr. Devendra Prasad Shrestha	Manager Civil Aviation Authority of Nepal (CAAN)	atcdeven@gmail.com
91.	Mr. Dinesh Raj Ghimire	Deputy Director Civil Aviation Authority of Nepal (CAAN)	dnghimire@gmail.com
92.	Mr. Dipak Kumar Bajracharya	Deputy Director Civil Aviation Authority of Nepal (CAAN)	dipakbajra@gmail.com
93.	Mr. Mukesh Raj Dahal	Manager Government of Nepal	nepalifirst@gmail.com
94.	Mr. Rajendra Singh Nayak	Manager Civil Aviation Authority of Nepal (CAAN)	nayakrajendra123@gmail.com
95.	Mr. Santusta Kumar Basnet	Deputy Director Civil Aviation Authority of Nepal (CAAN)	santustabasnet@gmail.com
96.	Mr. Suwarn Raj Upadhyay	Officiating Director Civil Aviation Authority of Nepal (CAAN)	suwarnraj@yahoo.com
	New Zealand (1)		
97.	Mr. Gregory Perris	Manager Procedure Design Airways New Zealand Ltd	greg.perris@aeropath.aero

	Pakistan (2)		
98.	Mr. Fazal ur Rehman	Senior Joint Director (ATS) PAKISTAN Civil Aviation Authority	drfazalatco@gmail.com
99.	Mr. Muhammad Uzair Bilal	Sr. Assistant Director PAKISTAN Civil Aviation Authority - CNS Directorate	uzair.bilal@caapakistan.com.pk
	Papua New Guinea (4)		
100.	Ms. Lorraine Tuat	Publications Officer AIS/PANS-OPS	tuat@niuskypacific.com.pg
101.	Ms. Nelisa Katsin	Supervisor Publications AIS/PANS-OPS	nkatsin@niuskypacific.com.pg
102.	Mr. David Boschat	Cartographer Airspace Data – AIS/PANS-OPS	dboschat@niuskypacific.com.pg
103.	Mr. Ilaitia Tabakaucoro	Acting Executive Manager-ATS, NuiSky Pacific Limited,	itabakaucoro@niuskypacific.com.pg
	Philippines (4)		
104.	Ms. Priscilla Bautista	Air Traffic Management Officer Civil Aviation Authority of the Philippines (CAAP)	pinkpai.bautista@gmail.com
105.	Mr. Rey Anthony de Arca	Aircraft Engineering Safety Inspector Civil Aviation Authority of the Philippines (CAAP)	reyantdearca@gmail.com
106.	Ms. Rochelle Aquino	Air Traffic Management Officer Civil Aviation Authority of the Philippines (CAAP)	rs_radar@yahoo.com
107.	Mr. Paterno Labuga	Flight Operation Safety Inspector	patlabuga@gmail.com

		Civil Aviation Authority of the Philippines (CAAP)	
	Republic of Korea (7)		
108.	Mr. Hyeong-cheol Kwon	Airspace & flight procedure Ministry of Land, Infrastructure and Transport, Republic of Korea / Air Traffic Management Office	cheol89@korea.kr
109.	Mr. Jaekyoung Im	Air Traffic Controller Ministry of Land, Infrastructure and Transport, Republic of Korea / Air Traffic Management Office	minamgeng@korea.kr
110.	Mr. Junho Lee	Assistant Director Ministry of Land, transport and Maritime Affairs, Republic of Korea	garund9@korea.kr
111.	Mr. Kyutae Kim	Ministry of Land, Infrastructure and Transport, Republic of Korea	kimkt23@korea.kr
112.	Mr. Daygun Lee	Research Engineer Korea Institute of Aviation Safety Technology	dk88lee@kiast.or.kr
113.	Mr. Jiyeon Song	Researcher Korea Institute of Aviation Safety Technology	jy0519s@gmail.com
114.	Mr. Taehyeon Joo	Research Engineer Korea Institute of Aviation Safety Technology	joo9311@kiast.or.kr
	Singapore (4)		
115.	Mr. Ahmadul Fatta Mohamed Noor	Procedure Designer Civil Aviation Authority of Singapore (CAAS)	Ahmadul_Fatta_NOOR@caas.gov.sg
116.	Mr. Jimit Singh	Head (Flight Procedure Design Office) Civil Aviation Authority of Singapore (CAAS)	Jimit_SINGH@caas.gov.sg
117.	Mr. Roy Sng	Executive Procedure Designer	Roy_SNG@caas.gov.sg

		Civil Aviation Authority of Singapore (CAAS)	
118.	Mr. Wee Jui Chua	Senior Chief (systems Planning & Development) Civil Aviation Authority of Singapore (CAAS)	joe_chua@caas.gov.sg
	Sri Lanka (5)		
119.	Mr. Anthony Keil	Designated Civil Aviation Inspector - Aircraft Flight Operations Civil Aviation Authority of Sri Lanka	dscaiafo@caa.lk
120.	Mr. Lushan Fernando	Director - Operations Civil Aviation Authority of Sri Lanka	dops@caa.lk
121.	Mr. Thilina Warnasinghe	Senior Civil Aviation Inspector Civil Aviation Authority of Sri Lanka	scaiatmops@caa.lk
122.	Ms. Thilini Herath	Senior Civil Aviation Inspector - ATMSP Civil Aviation Authority of Sri Lanka	scaiatmsp@caa.lk
123.	Mr. Mihiri Yapa Pahalage	Senior Electronics Engineer Airport and Aviation Services (Sri Lanka) Ltd.	mihi.yapa@gmail.com
	Thailand (20)		
124.	Mr. Jakkraphong Saraphak	Flight Operation Officer Civil Aviation Authority of Thailand (CAAT)	jakkraphong.s@caat.or.th
125.	Mr. Apiwat Torpradit	Flight Operations Standards Civil Aviation Authority of Thailand(CAAT)	apiwat.t@caat.or.th

126.	Mr. Harit Chatprasit	ANS officer Civil Aviation Authority of Thailand(CAAT)	harit.c@caat.or.th
127.	Mr. Jenpop Thaiying	Senior Flight Standards Development Officer Civil Aviation Authority of Thailand (CAAT)	jenpop.t@caat.or.th
128.	Mr. Jiroj Wuttiplakorn	Helicopter Senior Officer Civil Aviation Authority of Thailand (CAAT)	jiroj.w@caat.or.th
129.	Mr. Karan Chantrong	Air Navigation Services Standards Officer Civil Aviation Authority of Thailand (CAAT)	karan.c@caat.or.th
130.	Mr. Nattapong Konthiang	Airworthiness Officer Civil Aviation Authority of Thailand (CAAT)	nattapong.k@caat.or.th
131.	Mr. Owen Dell	Safety Advisor Civil Aviation Authority of Thailand (CAAT)	owen.d@caat.or.th
132.	Mr. Pakpoom Totemchokchaiyakarn	Flight standard development officer Civil Aviation Authority of Thailand (CAAT)	Pakpoom.t@caat.or.th
133.	Mr. Pannatat Chaleesombut	Aviation Safety Inspector Civil Aviation Authority of Thailand (CAAT)	pannatat.c@caat.or.th
134.	Mr. Pongabha Abhakara	ANS Specialist Civil Aviation Authority of Thailand (CAAT)	pongabha.a@caat.or.th
135.	Mr. Supamit Songpaisan	Flight Operation Inspector Civil Aviation Authority of Thailand (CAAT)	supamit.s@caat.or.th
136.	Ms. Tewanun Kangtrakul	Airworthiness and aircraft engineering Civil Aviation Authority of Thailand (CAAT)	tewanun.k@caat.or.th

137.	Mr. Thapanapat Srimoonsang	Officer Civil Aviation Authority of Thailand (CAAT)	thapanapat.s@caat.or.th
138.	Mr. Thirayu Jankaew	Officer Civil Aviation Authority of Thailand (CAAT)	thirayu.j@caat.or.th
139.	Mr. Korawee Petcharat	Airworthiness Inspector Civil Aviation Authority of Thailand (CAAT)	korawee.p@caat.or.th
140.	Ms. Noppawan Ngoendee	Airworthiness Inspector Civil Aviation Authority of Thailand (CAAT)	noppawan.n@caat.or.th
141.	Mr. Kom Promsuttikul	Strategic Planning Assistant Manager AEROTHAI, Aeronautical Radio of Thailand Ltd.	kom.pr@aerothai.co.th
142.	Mr. Nattapong Siansawasdi	Air Traffic System Engineer AEROTHAI, Aeronautical Radio of Thailand Ltd.	nattapong.si@aerothai.co.th
143.	Mr. Woraphan Muansri	Airspace Design Manager AEROTHAI, Aeronautical Radio of Thailand Ltd.	woraphan.mu@aerothai.co.th
	United States of America (4)		
144.	Mr. Fred Armstrong	Manager Flight Technologies & Procedures Division Flight Operations Group, FAA	merrill.armstrong@faa.gov
145.	Mr. Joel Dickinson	Manager, Aviation Safety, Flight Technologies & Procedures Division, Flight Operations Group, FAA	Joel.Dickinson@faa.gov
146.	Mr. Michael Watkins	Senior ATO Rep - Asia/Pacific United States Federal Aviation Administration (FAA)	michael.w.watkins@faa.gov

147.	Mr. Shayne Campbell	Senior Air Traffic Representative Asia Pacific United States Federal Aviation Administration (FAA)	shayne.a.campbell@faa.gov
	Vietnam (6)		
148.	Mr. Nguyen Huu Duc	Official Civil Aviation Authority of Vietnam	nguyenhuuduc@caa.gov.vn
149.	Mr. Nguyen Tuan	Official Civil Aviation Authority of Vietnam	tuannm@caa.gov.vn
150.	Mr. Huy Nguyen	Aviation Operator Airports Corporation of Vietnam	nthuy@vietnamairport.vn
151.	Mr. Khanh Trinh Ngoc	Deputy Manager - Division of Flight Procedure Design and Cartography Viet Nam Aeronautical Information Centre (VNAIC)	khanhtn@vatm.vn
152.	Mr. Pham VanManh	ATC Viet Nam Air Traffic Management Corporation (VATM)	pvmanh0802@gmail.com
153.	Mr. Thanh Hai Le Tu	Manager Danang International Airport	ltthai@vietnamairport.vn
	CANSO (1)		
154.	Ms. Poh Theen Soh	Director, Asia Pacific Affairs CANSO	Poh.Theen.Soh@CANSO.org
	IATA (9)		
155.	Mr. George Chan	Regulatory Affairs Manager - Operations and Industry IATA	george_g_chan@cathaypacific.com

156.	Ms. Megan Yin	Manager-International Air Traffic System Asia Pacific IATA-United Airlines	yuanmegan.yin@united.com
157.	Mr. Prashant Sanglikar	Assistant Director Safety IATA	sanglikarp@iata.org
158.	Mr. Hironori Shimauchi	Assistant Manager IATA- Nippon Cargo Airlines	hironori.shimauchi@nca.aero
159.	Mr. Imshik Shin	Deputy General Manager - CNS/ATM IATA- Korean Air	imshik.shin@koreanair.com
160.	Mr. John Moore	Assistant Director, Safety & Flight Operations, ASPAC IATA	moorej@iata.org
161.	Mr. Jose Fernandez	Assistant Director, Safety & Flight Operations, ASPAC IATA	fernandezj@iata.org
162.	Mr. Nilesh Patil	Head Flt Ops Safety, Security & Quality IATA-Singapore Airlines	NileshM_Patil@singaporeair.com.sg
163.	Mr. Andrew Carew	Flight Operations Manager IATA- Air Vanuatu	acarew@airvanuatu.vu
164.	Mr. Guannan Chen	Pilot China Eastern Airlines	chenguanna@ceair.com
165.	Mr. Tian Maohua	Pilot China Eastern Airlines	tianmaohua@ceair.com
	IFALPA (3)		
166.	Mr. Evanporez Singh	Captain IFALPA	evanporez@mapa.org.my

167.	Mr. Farouk Zahir	RVP ASIA EAST IFALPA	faroukzahir@gmail.com
168.	Mr. Sivanit Ratanadib	IFALPA Director IFALPA	pastrium@gmail.com
	ICAO (5)		
169.	Mr. Raphael Guillet	Chief ICAO Asia and Pacific Regional Sub-Office **BEIJING**	rguillet@icao.int
170.	Mr. Liu Lujiang	Deputy Chief ICAO Asia and Pacific Regional Sub-Office **BEIJING**	lujiangliu@icao.int
171.	Mr. Vijay Kumar Mishra	Regional Officer (PBN) ICAO Asia and Pacific Regional Sub-Office **BEIJING**	vkmishra@icao.int
172.	Ms. Sunok Lee	Regional Officer(ATM) ICAO Asia and Pacific Regional Sub-Office **BEIJING**	slee@icao.int
173.	Ms. Yang Siqi	Support Clerk/Programme Assistant ICAO Asia and Pacific Regional Sub-Office **BEIJING**	sqyang@icao.int

Attachment 2

List of WPs and IPs for PBNICG/9

Working Papers (WPs)

1. WP01 - Provisional Agenda
2. WP02 - Provisional Order of Business
3. WP03 - Global and Regional PBN Update(Secretariat)
4. WP04 - Implementation Status of Regional RNP transition plan(Secretariat)
5. WP05 - PBN Implementation Partnership Program Concept(Secretariat)
6. WP06 - Radio Frequency Interference of GNSS Signal(Secretariat)
7. WP07 - RNP-XLS with 30 deg interception of FAT_LLZ(India)
8. WP08 - CDO and CCO Implementation(Secretariat)
9. WP09 - CDO and CCO Implementation(Australia)
10. WP10 - CDO and CCO Implementation(China)
11. WP11- United States PBN Operations Approval Process Overview(USA)
12. WP12- PBN OPS Approval(Australia)
13. WP13- PBN OPS Approval(India)
14. WP14- RNP AR Departure Operational Approval in Nepal

Information Papers (IPs)

1. IP01 - PBN Implementation India
2. IP02 - CDO-CCO Implementation Progress in Indonesia
3. IP03 - Indonesia International PBN Routes Plan City Pair
4. IP04 - PBN Operational Approval Implementation and Challenges-Indonesia
5. IP05 - Malaysia Regional Transition Plan Progress
6. IP06 - Continuous Descent Operations (CDO) Performance Monitoring at Incheon International Airport (RKSI)(ROK)
7. IP07 - PBN Implementation Progress(Pakistan)
8. IP08 - Thailand's PBN Implementation Progress
9. IP09-Progress of PBN Implementation in Myanmar
10. IP10 - PBN Implementation Progress in Indonesia