



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

Beijing, China, 10-12 March 2015

Agenda Item 3: Global and Regional PBN Updates

FIJI PBN IMPLEMENTATION AND PROGRESS

(Presented by Fiji)

SUMMARY

This paper presents the progress of PBN Implementation in Fiji. The paper also provides a summary on work done towards PBN implementations in the domestic area in Fiji.

1. INTRODUCTION

- 1.1 At the 37th session of the ICAO Assembly in its Resolution A37-11 amendment from A36-23, States and Planning and Implementation Regional Groups (PIRGs) were tasked to appoint PBN focal points, develop PBN implementation plans and implement PBN in accordance with the timelines established in those plans.
- 1.2 Fiji had embarked in 2008 on PBN compliance with A37/11 (which superseded A36/23) with the appointment of the focal person and the development of Fiji PBN Implementation Plan in 2008 and 2010 respectively.
- 1.3 As a beneficiary of the ground work concluded by PBN T/F and now the infancy of PBN ICG, Fiji recognizes and fully supports the tasks to be undertaken by the PBNICG and looks forward to participating in collaboration with ICAO APAC RSO, the PBNICG and its member States to enhance PBN implementation in the ICAO APAC Region.

2. DISCUSSION

- 2.1 Fiji has benefitted greatly from its involvement with the PBN T/F which culminated in the assistance provided by ICAO APAC RSO through a Memorandum of Cooperation (MOC) endorsed in 2013 by the Fiji Government involving Fiji's ANSP – Airports Fiji Limited, CAA Fiji and ICAO APAC RSO. ICAO APAC RSO and IATA have concluded the initial portion of the MOC with a PBN Design Review and PBN Operations Approval held in Fiji in October 2014 which also involved three (3) other Pacific Island States and Regional Airline representatives with ANSP Airports Fiji Limited and CAA Fiji.
- 2.2 The CAA Act 1979 and Air Navigation Regulations 1981 are being harmonized to the Australian and New Zealand Parts to ensure relativity of application in the region and further guidance material on PBN regulations is needed. CAA Fiji has made sufficient references to Draft Parts in the application of PBN however the Annex 11 amendment due in 2015 would provide a superior platform for future applicability of PBN Operations in Fiji. The

Harmonization project is at its final stages with CAA Fiji awaiting final review of the draft before promulgation.

2.3 In 2010, CAA Fiji mandated ADS-B equipage for all Fiji registered aircrafts as a result of an ICAO USOAP finding in 2006. A total of eleven (11) ADS-B ground stations were strategically installed with three (3) ground station capable of combined MLAT/ADS-B to accommodate foreign operators with Mode A, B & C transponders. Fiji achieved 100% Transponder Mode S fitment in December 2013 with significant impact on aviation safety in Fiji’s Domestic in terms of ACAS/TCAS line of defense. Fiji continues to advance work on Tier 3 to Tier 2 Surveillance for Fiji’s Domestic Airspace (AIC 07/09 refers).

2.4

Outcome of PBN Design Review

- RNP-AR being considered for Nadi RWY 20 due to terrain. In addition to accessing feasibility of RNP-AR design, a consultation with airlines and holistic integration of RNP-AR into overall airspace usage for Nadi is needed. This integration activity is identified as part of PBN implementation in 2015-2016.
- The following short-term design and deployment targets were endorsed:

Nadi Airport		
RWY 02	2015	<ul style="list-style-type: none"> • RNP APCH with Baro VNAV for South Arrival • RNP APCH with Baro VNAV with RF to shorten North arrival (the designer may use visual track as a guideline.) • Update ILS procedure as necessary to connect to PBN STAR
RWY 09	2015	RNP APCH with Baro VNAV
RWY 27	2015	Explore RNP APCH with Baro VNAV including option for offset
RWY 20	2016	<ul style="list-style-type: none"> • In 2015, Fiji Airways to explore RNP AR feasibility and coordinate with CAAF to obtain RNP AR Ops Approval, which is also needed for overseas operation. • In 2015, if ready, trail operation for RNP AR RWY 20 • In 2016, AFL to review the integration of RNP AR 20 into the airspace use
Precision Approach	2016	<ul style="list-style-type: none"> • CAAF, AFL and Fiji Airways to study feasibility of GLS for Nadi and develop implementation plan for Nadi-Sydney GLS city-pairs
STAR	2015	RNAV 1
SID 20	2015	RNAV 1
SID 27	2015	RNAV 1
SID 02	2016	Explore RNAV 1
SID 09	2016	Explore RNAV 1

Labasa Airport		
RWY 13	2015	RNP APCH
STAR	2015	No need
SID 31	2015	RNAV 1

- The Review agreed that the Fiji PBN plan will be updated by November 2014, then CAA Fiji will post the updated plan on its web site and issued an AIC to notify airspace users about the updated plan by December 2014. In the updated plan, transitional plan for conventional navigation aids should be included.
- The Review agreed scope of work and deployment work plan for Phase 1 of PBN implementation for Nadi as follows:

Step	Activities	Completion date
1	Procedure Design & Documentations	by 28 Feb 2015
2	Ground Validation	by 30 Apr 2015
3	Flight Validation	by 30 Jun 2015
4	AIRAC AIP Publication	20 Aug 2015
5	ATC training	between Aug to Oct 2015
6	ATM System Update	between Aug to Oct 2015
7	Effective Date	15 Oct 2015

- Agreed preliminary design of PBN Approach and SID Procedures for Labasa
- Agreed scope of work and deployment work plan for Phase 1 of PBN implementation for Labasa as follows:

Step	Activities	Completion date
1	Procedure Design & Documentations	by 30 Nov 2014
2	Ground Validation	by 31 Dec 2014
3	Flight Validation	by 30 Jan 2015
4	AIRAC AIP Publication	5 March 2015
5	ATC training	between March to April 2015
6	ATM System Update	between March to April 2015
7	Effective Date	30 April 2015

- The Review also agreed that, starting December 2014, CAAF will submit an implementation progress report to ICAO RSO every two months. Due to substantial design and validation works, automated procedure design software can be helpful both in terms of ensuring proper data integrity and reducing design workload.
- The Review recognized the important requirement for ATC trainings in preparation to the deployment of PBN procedures. To ensure safety and effective use of PBN procedures, ATC should have opportunities for proper training before the effective date of the procedures. The training may include both classroom and simulation trainings. Training materials will then be integrated into relevant ATC operational manuals.
- The Review expected significant operational benefits and improvements which will positively impact the airline operators using new PBN procedures. ANSP has been encouraged to evaluate and communicate these operational benefits to airlines and other stakeholders. These benefits will also be recorded in the Fiji PBN Plan.

2.5

Outcome of PBN Operations Approval

- Fiji registered airlines to consider working with CAA Fiji to obtain the following approvals to be used for operations within Fiji
 - RNAV5, RNAV2 and RNAV1, RNP APCH
 - RNAV10 and RNP4 if applicable
- To support its current international operations and potential future domestic operations, Fiji Airways should consider working with CAA Fiji to obtain the approvals for RNP4 and RNP AR
- Fiji to continue its strong participation in ICAO PBN meetings and activities, including attending future PBN Implementation Coordination Group (PBNICG) meetings.

- CAA Fiji’s Harmonization of Parts to ensure development of regulations as related to PBN and CAA Fiji to issue a Standards Document (SD) on PBN using similar language in regulatory text in Doc 9997 and to update relevant AIP material on PBN.
- CAA Fiji to adopt the ICAO LAM AC as its instrument to support the approval of PBN operations, including related airworthiness certifications, and to adapt as necessary.
- The meeting noticed that Fiji is using RNP4 with 30/30 separation to support UPR operation and RNP4 has been used in Fiji since 2005 in conjunction with neighboring FIRs. Noting that the User Preferred Route (UPR) operation does not yet have the requirement for database usage as required by RNP4 approval, the meeting invited CAAF and AFL to conduct an analysis to ensure that proper data integrity check is performed before the waypoint data entered into the aircraft FMS and target-level of safety is maintained for 30/30 separation. ICAO and IATA are invited to develop/review the guidance material on PBN when used to support UPR operations.

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.

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