

AFI Flight Procedure Programme AFI-FPP

AFI PBN Implementation Plan

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Overview



- Historical aspects
- PBN Implementation planning
 - Status of national plans
- Details of the Regional PBN Implementation Plan
- Progress in States
- Conclusion

Assembly Resolutions



2007 - A36-23:

- Introduction of PBN
- PBN Implementation Plans required by 2009 to meet global implementation goals
- Highlight-Approaches with vertical guidance
- Emphasis on VNAV (vertical guidance)

2010 – A37-11:

- Complete a PBN implementation plan as a matter of urgency
- Included LNAV to emphasis
- Superseded A36-23

APIRG Framework



2007 (Nov.) – APIRG 16

- Concl. 16/2
 - Establishment of PBN Task Force charged to develop Regional Plan
- Concl. 16/3
 - Development of State PBN implementation plans harmonized with Regional Plan
- Concl. 16/4
 - National focal points for PBN implementation

APIRG Framework



2009

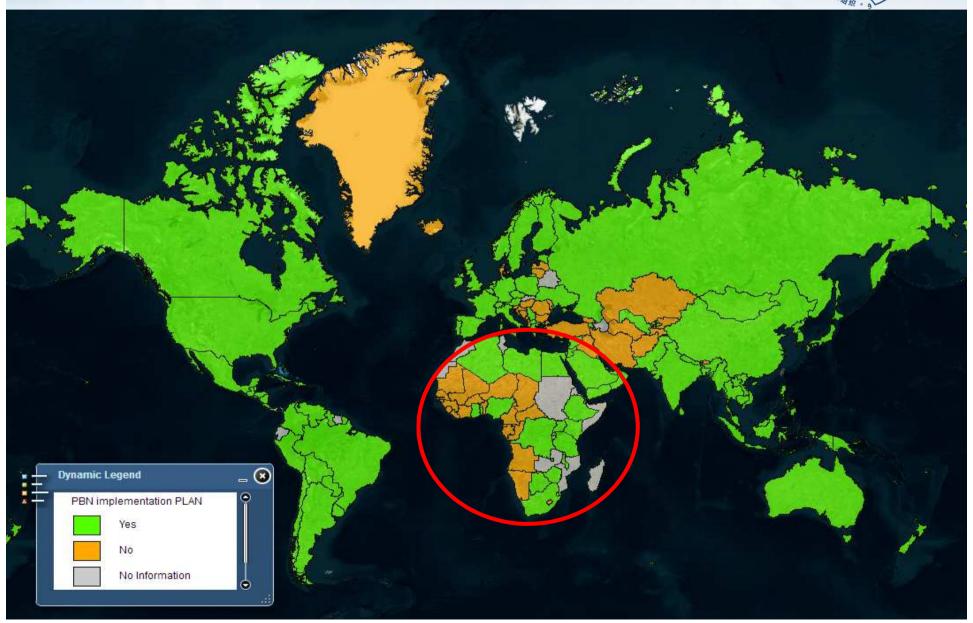
- Workshop and guidance on development of Plans & Implementation Action Plans, templates provided
- Examples of PBN Implementation Action & Action Plans

2010 – APIRG 17

- Concl. 17/47
 - Provided template for State PBN Implementation Plan
 - Urged completion as soon as possible
 - Feedback to Regional Offices by 30 Oct. 2010
- Concl. 17/48
 - Implementation tools provided: Action Plan Templates, project management; reference to others.

PBN Implementation Plan - Status





Regional Goals, Near Term (2008-2012)



Airspace	Nav. Specifications	Nav. Specifications where Operationally Required
En-Route Oceanic	RNAV 10	RNP 4
En-Route Remote Continental	RNAV 10	RNP 4
En-Route Continental	RNAV 5	RNAV 1/2
TMA-Arrival/Departure	RNAV 1 in a surveillance environment	
	Basic RNP 1 in non-surveillance	
Approach	RNP APCH (with Baro-VNAV) OR RNP APCH (LNAV only). Also See Note RNP AR APCH if required	

Note: Where altimeter setting does not exist or aircraft of maximum certificated take-off mass of 5700kg or more, using an aerodrome are not suitably equipped for APV operations.

Near term- 2008-2012 Implementation targets

- RNP APCH (with Baro-VNAV) in 30% of instrument runways by 2010 and 50% by 2012 and priority given to airports with operational benefits. Each instrument runway will have an associated RNP APCH (LNAV only)
- Straight-in LNAV only procedures for instrument runways where there
 is no local altimeter setting available & where aircraft MTOM 5 700 kg
 or more are not suitably equipped for APV operations
- RNAV 1 SID/STAR for 30% of international airports by 2010 and 50% by 2012 and priority given to airports with RNP Approach.
- Review existing conventional and RNAV routes to transition to PBN RNAV 5 or where operationally required RNAV 2/1 by 2012.

Regional Goals, Mid Term (2013-2016)



Airspace	Nav. Specifications	Nav. Specifications where Operationally Required
En-Route Oceanic	RNAV 10,	RNP 4
En-Route Remote	RNAV 10,	RNP 4
Continental		
En-Route Continental	RNAV 2, RNAV 5	RNAV 1
TMA Arrival/Departure	Expand RNAV 1, or RNP-1 application	
	High density TMAs Mandate RNAV 1, or RNP-1	
Approach	 Expand RNP APCH with (Baro-VNAV or 	
	Augmented GNSS), Supplemented with	
	LNAV only procedures. Also see note	
	 Implement RNP AR APCH where there are 	
Note: In addition where	operational benefits	

Note: In addition, where altimeter setting does not exist or aircraft of maximum certificated take-off mass of 5700kg or more, using an aerodrome are not suitably equipped for APV.

Mid term- 2013-2016 Implementation targets

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- RNP APCH (APV) (Baro-VNAV or Augmented GNSS) in 100% of instrument runways where practical, by 2016.
- RNP APCH (LNAV only minima) in 70% of instrument runways by 2014, 100% by 2016
- Straight-in LNAV only procedures for instrument runways where there
 is no local altimeter setting available & where aircraft MTOM 5 700 kg
 or more are not suitably equipped for APV operations
- RNAV 1 or RNP 1 SID/STAR for 100% of international airports by 2016.
- RNAV 1 or RNP 1 SID/STAR for 70% of busy domestic airports where there are operational benefits.

• Implementation of additional RNAV/RNP Routes as required.

State's progress -Terminal (on desktop)



TE ICAO DESIGNATOR DAAG ALGERIA* FAILU ANCOLA* DBBB BENIN FESK BOTSWANA DFFD BURKINA FASO HBBA BURUNDI* FKYS CAMEROON GYAC CAPE YERDE* FEFF CENTRAL AFRICAN RE FTTJ CHAO* FMCH COMOROS FCBB CONGO DIAP COTE D'IVOIRE FZAA D R CONGO* HDAM DIBOUTI* HECA EGYPT* FGSL EQUAT GUINEA* HHAS ERITEA* HAAB ETHIOPIA GBYD GAMBIA* GOV GUINEA* GOV GUINEA* GOV GUINEA* SOM LESOTIO* GRAD HUK KENYA FYMM MADAGASCAR HULY LIEVA* FMMI MADAGASCAR FWIC MALAWI GABS MALI GOPP MAURITANIA FIMP MAURITIUS GMMN MOROCCO* FOBBR MOZAMBIQUE* FYWH MALAWI GABS MALI GOPP MAURITIUS GMMN MOROCCO* FOBBR MOZAMBIQUE* FYWH MALAWI GABS MALI GOPP MAURITIUS GMMN MOROCCO* FOBBR MOZAMBIQUE* FYWH MALAWI GABS MALI GOPP MAURITIUS GMMN MOROCCO* FOBBR MOZAMBIQUE* FYWH NAMIBIA* BRIN NIGER DNAA NIGERIA* HEYE RWANDA FFST SAO TOME & PRINCIP GOO'Y SENEGAL FSSS SUDAN* FOMS SWAZILAND* DXXX TOGO DITTA TUNISIA* HUEN UGANDA UK (BIOTI*)* UK (ST. HELENA & ASI HTDA UNITED REPUBLIC OF	D															
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	REPUBLIC OF TANZANIA*	3	6	5												Yes
FLLS ZAMBIA*		6	12	8												Yes
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		TOTAL NO OF INT'L		TOTAL NO OF INST	TOTAL NO OF RNP	TOTAL NO OF RNAV	TOTAL NO OF	TOTAL NO OF	TOTAL NO OF		TOTAL NO OF INST	TOTAL NO OF RNP	TOTAL NO OF RNAV	TOTAL NO OF	TOTAL NO OF	
		AIRPORTS	TOTAL NO OF RWYS	TOTAL NO OF INST	TOTAL NO OF RNP APCH	APCH	RNAV/RNP SID	RNAV/RNP STAR	DOMESTIC AIRPORTS	TOTAL NO OF RIARYS	TOTAL NO OF INST	APCH	TOTAL NO OF RNAV	RNAV/RNP SID	RNAV/RNP STAR	

En-route progress



- Over 80 trajectories facilitated by ICAO and IATA (and member airlines) agreed since 2010
 - Most implemented
 - Challenges include
 - Differences in coordinates of same way point at FIR boundaries, jagged segment
 - Lack of confidence, lack of training, preference of starburst route system
 - Limitations in understanding: on issues like PBN itself, safety assessments and regulatory implications
- Now working on tracks to facilitate flexibility and provide transition to UPR/Free routing

En-route progress





En-route progress





28 March 2014

Page 14

Conclusion



- Nearly 7 years since 36th Assembly Session
- No more than 14 States have developed national PBN implementation plans
- Of the 14, most are without implementation <u>action</u> plans which form part of corporate plans, and/or plans are not part of corporate perfmance
- Despite support provided by IATA and member airlines, implementation targets far from being met
- Bottom line Lots of ground to cover



