

ICAO / IFPP Committee Report

Presented to: ACF 13-2

By: Mike Webb, US Member ICAO IFPP

Date: October 30, 2013



Federal Aviation
Administration



Overview

- **ICAO INTEGRATION WORKING GROUP (IWG) REPORT**
- **ICAO State Letter**
- **NEXT STEPS**
 - **PARC PBN CHARTING ACTION TEAM**

ICAO IWG REPORT

The following are the approved Integration Working Group (IWG) task listing:

- **Clarification of provisions related to the specification of Area Minimum Altitudes (AMA)**
- **Clarification of provisions related to the publication of En-route Airway Directional Restrictions**
- **Development of SBAS charting requirements. (Task 3.4)**
- **Clarification of provisions related to waypoint relocation**
- **Develop design procedures for “Path Descriptors” within a PBN context**
- **Fixed Radius Transition (FRT) turn performance identification on ATS routes**
 - **Development and Identification of charting recommendations to support new PBN criteria as well as other new technologies (eg, GBAS, SBAS)**

ICAO IWG REPORT

- **Adaptation of procedure design magnetic variation terminology**
- **Development and Identification of charting recommendations to support new PBN criteria as well as other new technologies (eg, GBAS, SBAS)**
- **Charting of RNAV Routes**
- **Clarification of Navigation Specification and Accuracy Requirements for ATS Routes**
- **Development of charting and navigation data requirements to promote harmonization of charts, databases and avionics systems**
- **Portrayal of altitudes on terminal charting**
- **SID/STAR Charting data and depiction requirements**
- **Significant Point publication and depiction requirements**
- **Step-down fix publication requirements**
- **Charting requirements for Helicopter PinS Approach/Departure Route Manoeuvring Segment**

ICAO IWG REPORT

- **Introduction of the concept of Transitions to ICAO documentation**
- **Continued review of harmonization in the area of information promulgation and publication**
- **Development of charting requirements for Helicopter PinS Approach and Departure Procedures**
- **Development of charting and navigation data requirements to promote harmonization of charts, databases and avionics systems**
 - **Old IFPP job 3.2 (IFPP/1)**

Portrayal of altitudes on terminal charting

- **SID/STAR Charting data and depiction requirements**
- **Significant Point publication and depiction requirements**
- **Step-down fix publication requirements**
- **Introduction of the concept of Transitions to ICAO documentation**
- **Continued review of harmonization in the area of information promulgation and publication**

ICAO IWG REPORT

- **Development of charting requirements for Helicopter PinS Approach and Departure Procedures**
- **Development of SBAS charting requirements**
- **ICAO Location Indicator scheme enhancements**
- **SBAS lines of minima for LPV charts**
- **Coordinate/support ICAO activities for the update of doc. 8697**
- **Harmonization Aspects of Conventional Navaids and PBN Procedures**
- **Development of SBAS charting requirements**
- **ICAO Location Indicator scheme enhancements**
- **SBAS lines of minima for LPV charts**
- **Coordinate/support ICAO activities for the update of doc. 8697**
- **Harmonization Aspects of Conventional Navaids and PBN Procedures**

ICAO State Letter

- **US Agreed to PBN Charting changes**
 - PBN Equipment Requirements
 - PBN Navigation Specifications
 - New Parenthetical requirements
 - PBN Route Identification
- **US Disagreed in changing the name from RNAV to RNP in the procedure title**
- **2022 date for implementation of PBN Charting Items**

Next Steps

- **Awaiting ICAO resolution of State Letter Comments**
- **Performance Based Operations Aviation Rulemaking Committee (PARC) PBN Charting Action Team**
 - Goal Recommendation to implement changes to charting to support PBN Instrument Procedures
 - Follow up to PARC Action Team from 2011
 - Kickoff Meeting, November 12-13, 2013, Tetra Tech offices in Rosslyn VA and web meeting.

Backup Slides

- **Mike Webb**
- **202-385-4603**
- **Mike.webb@faa.gov**



ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

- **Addresses approach, departure, and arrival procedures.**
 - It addresses both PBN specific procedures as well as so-called hybrid procedures, procedures that are a combination of both PBN and non-PBN Navigation.
- **It does not address non-PBN Procedures.**

ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

Impact Details:

- International and National Policy guidance
- Database standards –
- Database editions –
- Charting -
- Production Systems and Process –
- ANSP limitations –
- Chart producers
- Synchronization of chart & database production –
- Procedural changes –
- Compliance –
- Cost & cost justification –
- Certification –
- IAP parentheses –
- Retrofit –
- Safety Management System (SMS) and Risk Hazard Assessments –

ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

Impact Details:

- **Flight Deck avionics –**
- **Flight Deck and Non-Flight Deck avionics –**
- **DO-200A**

ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

Traditional Procedure Titling

Title (Part One)	Parens (Part Two)	Duplicate Procedure Identification Or Circling Suffix (Part Three)	Runway or Final Approach Course (Part Four)
RNAV	(GNSS)	X, Y, Z Or A, B, C	Rwy 17L or 234

Proposed Procedure Titling

Title (Part One)	Duplicate Procedure Identification Or Circling Suffix (Part Two)	Runway or Final Approach Course/ (Part Three)	Parenthetical (Part Four)
RNP	X, Y, Z Or A, B, C	Rwy 17L Or 234	See next figures

ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

Parenthetical Discussion

<u>List Content</u>	<u>Meaning</u>
No Parenthetical	(procedure has at least LNAV line of minimums, may also have any valid combination of the other lines of minimums)
LPV Only	(procedure has only LPV lines of minimums)
LNAV/VNAV Only	(procedure has only LNAV/VNAV lines of minimums)
LPV, LNAV/VNAV Only	(procedure has both LPV and LNAV/VNAV lines of Minimums but no LNAV)
LP Only	(procedure has only LP lines of minimums)
AR	(Authorization Required based on Doc 9613 and Doc 9905)

ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

Approach PBN Requirements Box

- **RF Leg Required = Indicator of such a requirement somewhere in the Procedure, see procedure details for specific requirements. ¹**
- **Missed Approach requires less than RNP 1, = Indication provided only when NavSpec is RNP AR**
- **RNP Less than 0.3 anywhere, = Indication provided only when NavSpec is RNP AR. Indicator of such a requirement somewhere in the Procedure, see procedure details for specific requirements.**
- **Hybrid Procedure Requirements. = All non-PBN procedure charts that include PBN segments will include the appropriate NavSpec Name and all appropriate additional requirements for those segments.**

Note: there is no change to the naming of non-PBN procedures , directly or implied, in this statement. In addition, the charting requirements of any RNAV NavSpec that have been used in the Hybrid Procedure shall be met. This also applies to the equipment options available in the RNAV NavSpecs.

ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

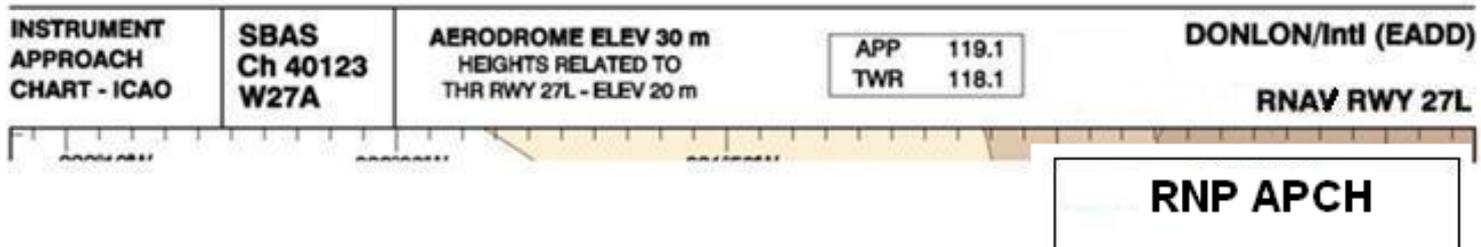
Arrival/Departure Requirements Box

- **Navigation Specification, example = RNAV 1, RNAV 2, etc,**
- **Additional Requirements, example =**
 - RF Leg Capability Required,
 - Accuracy Value when the ADV RNP NavSpec is used
- **Hybrid Procedure Requirements**
 - All non-PBN procedure charts that include PBN segments will include the appropriate NavSpec Name and all appropriate additional requirements. Note there is no change to the naming of non-PBN procedures, directly or implied, in this statement. In addition, the charting requirements of any RNAV NavSpec that have been used in the Hybrid Procedure shall be met. This also applies to the equipment options available in the RNAV NavSpecs.
- **Navigation Specification Requirement Limitations,**
 - This portion is intended to cover the following – If the NavSpec allows for options and the procedure designer has to limit the options, this must be stated in this section.

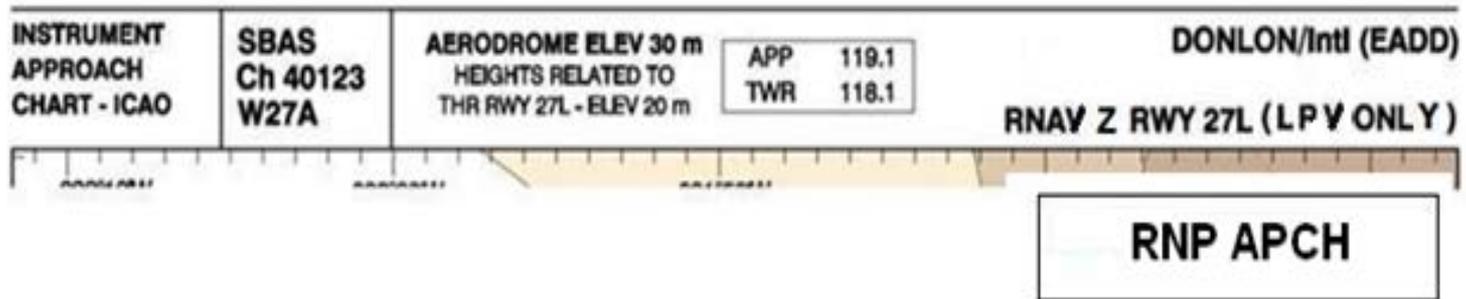
ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

Examples

The base-line RNAV Procedure Chart:



The RNAV Procedure this is limited to LPV only:



ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

Examples

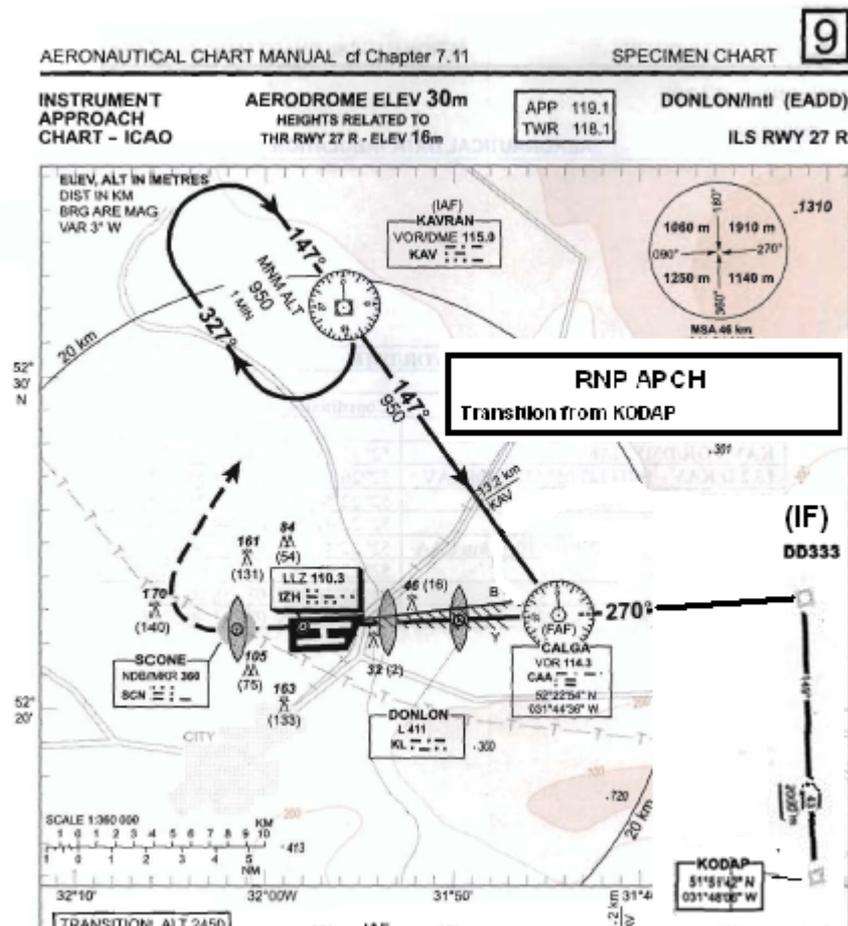
The RNAV Procedure with Authorization Required and an RF Leg Requirement:

INSTRUMENT APPROACH CHART - ICAO	SBAS Ch 40123 W27A	AERODROME ELEV 30 m HEIGHTS RELATED TO THR RWY 27L - ELEV 20 m	<table border="1"><tr><td>APP</td><td>119.1</td></tr><tr><td>TWR</td><td>118.1</td></tr></table>	APP	119.1	TWR	118.1	DONLON/Intl (EADD)
APP	119.1							
TWR	118.1							
				RNAV X RWY 27L (AR)				
				<table border="1"><tr><td>RNP AR</td></tr><tr><td>RF Leg Required</td></tr></table>	RNP AR	RF Leg Required		
RNP AR								
RF Leg Required								

ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

Examples

Arrival/Departure Example



ICAO NAMING CONCEPTS FOR PBN INSTRUMENT PROCEDURES

Next Steps

State Letter distribution this Fall, looking for implementation in 2014

Change over from RNAV to RNP and fully implement by 2028