



PAPPUS
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PBN SOP Guidance Material

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Photo: Fly My Sky BN2,
Aspen1000 G430W

Scope

- References
- Philosophy
 - RNP1 as the reference
- Differences to legacy IFR
- SOP Guidance Material outline
- Additional Guidance outline

References

References

Philosophy

Differences

SOP Guidance

Additional
Guidance



Philosophy

Designed to be:

- Integrated with current IFR procedures
- Simple
- Suitable for FW & RW Ops
- Included in:
 - PBN Manual for organisations operating under Part 91 and Part 135; or
 - exposition and/or training manual for Part 135 operations.

Philosophy

A Navigation Specification is either:

1. RNAV specification - used in a **surveillance environment**, or
2. RNP specification - used in a **limited or no surveillance environment**.

This is why RNP includes on-board self-contained performance monitoring and alerting because it is expected to be conducted in a limited or no surveillance environment.

RNP1 as the reference

Normal procedures used during RNP1 operations are appropriate for most requirements of RNP1/RNP2/RNAV1/RNAV2 departures and arrivals.

- For specific guidance refer to:
 - ICAO Doc 6913 and
 - AC91-21



Differences to legacy IFR

Once PBN compliant equipment is selected:

1. Software Configuration Management
2. Navigation Database Management
3. RAIM prediction
4. Notification on the Flight Plan - Items 10 & 18
5. Retrieval of the named procedure from the database
6. Confirmation of the named procedure
7. Contingency Procedures

SOP Guidance Material

- SOP Start
 - PBN/RNP operations
 - Navigation Database Management
 - **Flight Planning**
 - In-Aircraft
 - **General**, System Pre-flight, Departure, Enroute, Approach, Missed Approach
 - Contingency Procedures
- SOP End
- Additional Guidance Material

SOP Guidance Material

[Text in square brackets *including italics*]

- examples that can be modified by operators to suit their operation; OR
- space for text to be inserted;
- OR examples or abbreviations using specific equipment type (say GNS430/530 or GTN650/750) that need to be changed to suit specific aircraft equipment.

SOP Guidance Material

accuracy (i.e. 1.0 NM for RNP 1) are briefly allowable.

- RNP1 operations beyond 30nm from the ARP require the RAIM Integrity alarm to be set to 1nm; [the pilot must be competent in the procedure to change equipment RAIM limits].
- *[Flight Mode requirements for automated aircraft should be considered for each phase of flight. These may or may not be specific to PBN operations.]*

System Pre-flight

- The navigation database must be current.

Departure

- Ensure [**DPRT**] mode (RNP1.0) is annunciated prior to takeoff.
- The pilot must be able to use RNP 1 equipment to follow flight guidance for lateral navigation (e.g., LNAV) no later than 500 ft above airport elevation.
- Ensure GPS mode changes from [**DPRT to TERM**] after the SID sequence is complete

En Route

- Outside 30nm of the departure airfield, the navigation system will default to RNP 2.0 nm [indicated by the **TERM** annunciation changing to **ENR**].

¹¹ ICAO Doc 9613, Volume II, Implementing RNAV and RNP pII-C-3-10

¹² This can be mitigated by: Selection – read chart then enter in GPS; Cross check: Read (exactly) from GPS and confirm on chart.

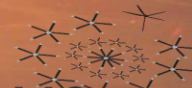
¹³ ICAO Doc 9613, Volume II, Implementing RNAV and RNP para 3.3.5.6.3

Additional Guidance

- Airworthiness Certification Requirements or aircraft eligibility
 - Software Configuration Management Plan outline
- Minimum Equipment List
- Complexity of Operations
- Aircraft Equipment
 - LNAV+V Approach
 - Database Suitability

Additional Guidance (long)

- Aircraft Equipment
 - Selection of Destination and Alt aerodromes
 - Departure
 - Prior to commencing procedure
 - During procedure
- Abnormal Procedure
 - Occurrence reporting
- Documentation
- Pilot Knowledge and Training



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Software Configuration Management Plan

Annex A: Software Configuration Management Plan Outline

1. Introduction
 - 1.1. Table of Contents
 - 1.2. List of Effective Pages
 - 1.3. Record of Amendments
2. Software Management
 - 2.1. Purpose
 - 2.2. Base Document Reference
 - 2.3. Applicable Equipment Installed
 - 2.4. Software Management
 - 2.5. Software Upgrade
3. Avionics System Configuration Data
 - 3.1. Purpose
 - 3.2. Computer Requirements
 - 3.3. Configuration Procedure

Appendix A: Aircraft Software Revision Management

Current Software Revision								
ATA Chap	Function	Hardware	Hardware P/N (Mod Level)	Hardware Reference	Software Title	Software P/N	Software Media P/N	Installation Procedure

Optional Software						
ATA Chapter	Function	Hardware	Software Title	Technical Data	Purpose for Software as outlined in Technical Data	Reason for not updating