

► This RA has been substantially re-written; for clarity, no change marks are presented – please read the RA in its entirety ◀

## RA 2380 – Performance Based Navigation Operations

### Rationale

*Performance Based Navigation (PBN) is one of several enablers of an Air Traffic Management concept that offers enhanced use of airspace and reduces reliance on legacy fixed navigation aid installations. It has been widely adopted by international military and civilian operators, however, the incorrect use of PBN procedures could drive an increased Risk to Life (RtL) to all airspace users. This Regulatory Article (RA) requires that Aviation Duty Holders (ADH) and Accountable Managers (Military Flying) (AM(MF)) have robust orders and procedures in place to enable PBN operations.*

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#### Definitions relevant to this RA

#### 2380(1): Air System and Pilot Requirements

#### 2380(2): Performance Based Navigation Procedures and Pilot Training

### Definitions

#### Definitions relevant to this RA<sup>1</sup>

1. **Area Navigation (RNAV).** RNAV is a navigation method that permits Air System operation on any desired flight path using ground and space based or on board navigation aids. This allows efficiencies over legacy direct Track navigation where the Air System was required to Track between ground based navigation aids as waypoints on a route.
2. **Required Navigation Performance (RNP).** RNP is RNAV with the support of on board performance monitoring and alerting.
3. **PBN.** The PBN concept specifies that Aircraft RNAV and RNP system performance requirements are defined in terms of accuracy, integrity, continuity and functionality. It enables Air Systems to fly flexible, accurate and repeatable 2-dimensional and 3-dimensional flight paths. PBN encompasses both RNAV and RNP navigation specifications.
4. **Navigation Specifications (Nav Spec).** Nav Specs are a set of Aircraft and Aircrew requirements needed to support PBN operations within a defined airspace. Nav Specs define lateral navigation accuracy in terms of total system error (TSE). For example, RNAV 10 / RNP 10, where the lateral TSE must be within 10 NM for at least 95% of the total flight time. These Nav Specs allow Certification of Air Systems for PBN operations based on their navigation system performance rather than equipment requirements.

### Regulation 2380(1)

#### Air System and Pilot Requirements

2380(1) ADH and AM(MF) **shall** ensure PBN operations are only conducted by Air Systems within their Area of Responsibility (AoR) that are approved for PBN operations and by pilots who are appropriately qualified.

<sup>1</sup> More detailed definitions are in the International Civil Aviation Organization (ICAO) Doc 9613 PBN Manual – Chapter 1 – Description of PBN.

**Acceptable  
Means of  
Compliance  
2380(1)**

**Air System and Pilot Requirements**

5. PBN operations **should** only be conducted on Air Systems approved in accordance with (iaw) RA 1380<sup>2</sup>.
6. Pilots **should** only undertake PBN operations after they have been granted PBN privileges as an endorsement to their instrument rating iaw RA 2120<sup>3</sup>.
7. Except for Air Systems capable of and approved for single pilot Instrument Flight Rules, all operating pilots **should** hold the same PBN endorsement, unless pilots are under training and / or are being supervised by an appropriately Qualified Aircrew Instructor or civilian equivalent.

**Guidance  
Material  
2380(1)**

**Air System and Pilot Requirements**

8. Useful training material for PBN operations is available via the Eurocontrol PBN Portal<sup>4</sup>.

**Regulation  
2380(2)**

**Performance Based Navigation Procedures and Pilot Training**

- 2380(2) Where ADH / AM(MF) have PBN approved Air Systems within their AoR, they **shall** define in orders the requirements for PBN operating procedures and pilot training.

**Acceptable  
Means of  
Compliance  
2380(2)**

**Performance Based Navigation Procedures and Pilot Training**

9. When defining PBN procedures and pilot training, ADH and AM(MF) **should** refer to ICAO Doc 9613<sup>5</sup>. Orders **should**, as a minimum, address the following subjects for each required Nav Spec, where applicable:

- a. Aircraft Requirements.
- b. Operating Procedures.
- c. Navigation Equipment.
- d. Flight Plan Designation.
- e. En Route.
- f. Pilot knowledge and Training.
- g. Navigation Database.

**Guidance  
Material  
2380(2)**

**Performance Based Navigation Procedures and Pilot Training**

10. A comprehensive syllabus for Pilot Knowledge and Training can be found in European Union Aviation Safety Agency (EASA) – Easy Access Rules for Flight Crew Licensing Annex I (Part FCL).

11. Further detailed Guidance Material for PBN operations and training can be found in the following publications:

- a. ICAO Doc 9613 PBN Manual.
- b. UK Civil Aviation Authority (CAA) Civil Aviation Publication (CAP) 1926 – RNAV Substitution.
- c. EASA – Easy Access Rules for Air Operations, Annex V, Subpart B.

<sup>2</sup> Refer to RA 1380 – Performance Based Navigation.

<sup>3</sup> Refer to RA 2120 – Pilots' Instrument Rating Scheme.

<sup>4</sup> Eurocontrol PBN Portal at <https://pbnportal.eu>.

<sup>5</sup> Refer to ICAO Doc 9613 – PBN Manual Vol II.