

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

## RA 1380 - Performance Based Navigation

### Rationale

*The drive for improved operating efficiency has resulted in the development of the International Civil Aviation Organization (ICAO) Performance Based Navigation (PBN)<sup>1, 2, 3, 4</sup> concept. This concept moves aviation away from traditional navigation using ground-based beacons to a system more reliant on airborne technologies utilizing RNAV and GNSS, and aims to ensure global interoperability through the standardisation of PBN system performance through internationally agreed specifications. Without appropriate governance of PBN, access to certain procedures may be restricted. In order to fully exploit airspace worldwide there is a requirement to comply with the appropriate PBN standards either through equipage or the demonstration of equivalence.*

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### Definitions

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1. **PBN.** The broad term used to describe the technologies that allow Air Systems to fly flexible, accurate, repeatable and therefore deterministic 2 dimensional and 3 dimensional flight paths using onboard equipment and capabilities. PBN introduces 2 categories of navigation specifications: Area Navigation (RNAV) and Required Navigation Performance (RNP). RNAV and RNP are thereafter designated further (eg RNAV1, RNP1).
2. **RNAV.** RNAV permits Air System operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.
3. **RNP.** RNP is RNAV with the support of on-board performance monitoring and alerting, and relies primarily on the use of Global Navigation Satellite Systems (GNSS).
4. **PBN system performance.** Performance requirements are identified in the navigation specifications, which also identify the choice of navigation sensors and equipment that may be used to meet the performance requirements. These navigation specifications are defined in sufficient detail to facilitate global harmonization by providing specific implementation guidance for states and operators. Furthermore, under PBN, generic navigation requirements are defined based on operating requirements. Operators then evaluate options in respect of available technology and navigation services, which could allow the requirements to be met. An operator thereby has the opportunity to select an option, rather than an imposed solution (ICAO PBN Manual Executive Summary).

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1380(1) Aviation Duty Holders (ADH) and Accountable Managers (Military Flying) (AM(MF)) **shall** ensure that for PBN operations the UK military registered Air Systems for which they are responsible are eligible, capable and qualified to operate in the PBN designated airspace.

<sup>1</sup> As defined in MAA02: MAA Master Glossary.

<sup>2</sup> Refer to RA 2120 – Pilots' Instrument Rating Scheme.

<sup>3</sup> Refer to RA 2380 – Performance Based Navigation Operations.

<sup>4</sup> Refer to RA 3295 – Required Navigation Performance Approach – Controller Responsibilities.

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5. UK military registered Air Systems that regularly use the civil Air Traffic Service (ATS) structure as General Air Traffic **should** comply with or demonstrate equivalence to civil PBN regulatory requirements and standards of performance such as: accuracy, integrity, continuity, and interoperability with respect to Air System functionality and the ability to conduct required PBN operations.

**PBN Approval Process**

6. Senior Responsible Officers (SRO), Operating Duty Holders (ODH) and AM(MF)s **should** include PBN specifications and systems (across all Defence Lines of Development (DLod)) in their Air System Safety Cases (ASSC)<sup>5</sup>;

7. ODHs and AM(MF)s **should**:

a. Ensure Air Systems within their Area of Responsibility achieve the performance required by the RNAV / RNP specifications to be encountered (ie against the RNAV / RNP specifications demanded by particular airspace controlling authorities) through provision of appropriate orders, instructions and MEL (where used);

b. Ensure data for use with PBN systems is assured to appropriate standards<sup>6</sup>, and ensure that appropriate processes exist for the handling, updating<sup>7</sup> and configuration management of electronic navigation data;

c. Ensure aircrew are qualified and competent both in the operation of PBN systems and in any other relevant procedures needed to achieve the performance required by the RNAV / RNP specifications to be encountered;

d. Ensure that Aircrew are qualified against the particular specifications required for operation in specific airspace;

e. When required, assert compliance to civil authorities<sup>8</sup> against stipulated specifications.

8. AM(MF)s **should** be in possession of the appropriate Contractor Flying Approved Organization Scheme (CFAOS)<sup>9</sup> Approval prior to conducting PBN operations.

9. UK military registered Air Systems **should not** conduct RNP Authorization Required Approaches (AR APCH).

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10. Specific Approval is required for RNP 0.3 (for helicopters) and RNP AR APCH for all Air Systems, in accordance with Part-SPA of European Union Commission Regulation Number 965/2012<sup>10</sup> as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 (UK (EU) Reg No 965/2012). For all other approaches and Air Systems, Operations Manual and Training Manual entries, checked by the User Authenticator<sup>1</sup> for the SRO, ODH, and AM(MF), is deemed sufficient. This places PBN on a similar footing as other forms of “everyday” authorization.

11. This regulation does not aim to detail the RNAV / RNP specifications required for particular Air Systems to meet their actual / anticipated modes of operation, nor does it aim to define the actual or likely specifications demanded by particular airspace controlling authorities.

<sup>5</sup> Refer to RA 1205 – Air System Safety Cases.

<sup>6</sup> To meet international / national requirement or as demanded by airspace providers.

<sup>7</sup> Refer to RA 1030 – Defence Aeronautical Information Management.

<sup>8</sup> Declaration of Compliance is articulated through the Flight Plan.

<sup>9</sup> Refer to RA 1028 – Contractor Flying Approved Organization Scheme – Responsibilities.

<sup>10</sup> <https://www.easa.europa.eu/document-library/regulations/commission-regulation-eu-no-9652012>. The Civil Aviation Authority (CAA) is applying this regulation in UK airspace.

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12. PBN creates requirements for Airworthiness Certification<sup>11</sup> and Operational<sup>12</sup> Approval to use RNAV / RNP systems on routes / airspace notified for a given PBN application. RNAV / RNP system functionality as well as its navigation accuracy in a given Navigational Aid (NAVAID) infrastructure environment must comply with the requirements stipulated for the routes / airspace.
13. When the relevant PBN approval process has been completed then the respective UK military registered Air System can be considered as having achieved equivalence to PBN Operational Approval<sup>13</sup> in the civilian domain.
14. When the appropriate Release To Service (RTS) / Military Permit To Fly, supporting documentation, ASSC, and CFAOS Approval are in place; ODHs / AM(MF)s may assert compliance<sup>14</sup> to civil authorities.
15. Defence Airspace and Air Traffic Management (DAATM) is the focal point for PBN policy. DAATM will also provide guidance on forthcoming changes to legislation to the Capability areas and MAA through the International Aviation Regulation and Compliance (IARC) Community of Interest.
16. The ICAO PBN Manual (ICAO Doc 9613) defines PBN (RNAV / RNP) navigation specifications and performance requirements (technical and operational criteria). The manual also details: Air System requirements and operating procedures; specific aircrew knowledge and training where applicable; any requirements for control of navigation databases and oversight of operators; and provides practical guidance to States, regulatory authorities, air navigation service providers, manufacturers and airspace users on how to implement RNAV / RNP applications. The manual comprises two volumes: Volume I contains, amongst other things, guidance on airborne RNAV / RNP systems and aeronautical data processes; Volume II provides the direct support for implementing RNAV and RNP navigation applications.
17. Further guidance on PBN policy, approval and processes may be found in the following:
- a. ICAO PBN Operational Approval Manual (ICAO Doc 9997);
  - b. CAA / Irish Aviation Authority Policy for the Application of PBN in UK / Irish Airspace<sup>15</sup>;
  - c. UK (EU) Reg No 965/2012<sup>10</sup>.
  - d. <https://www.easa.europa.eu/document-library/general-publications/easy-access-rules-air-operations>.
  - e. EASA Certification Specifications Airborne Communications, Navigation and Surveillance<sup>16</sup>.
18. Identification of which PBN approval is required depends on:
- a. What access to airspace, ATS routes, terminal airspace procedures and instrument approach procedures is required;
  - b. The airspace requirement which will dictate the necessary performance (accuracy / integrity / continuity) and functionality required;
  - c. And the navigation infrastructure (sensors) upon which the performance is based.

<sup>11</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B); Refer to RA 1305 – Military Permit To Fly (In-Service), (Special Case Flying) and (Single Task); Refer to RA 5880 – Military Permit To Fly (Development) (MRP Part 21 Subpart P); and RA 1160 – The Defence Air Environment Operating Framework.

<sup>12</sup> 'Operational' is used in the context of this RA because the term 'PBN Operational Approval' is used specifically by ICAO and the CAA.

<sup>13</sup> Against stipulated RNAV / RNP specifications.

<sup>14</sup> Compliance must be determined against each relevant navigation specification; compliance with one does not automatically imply compliance with another.

<sup>15</sup> <https://publicapps.caa.co.uk/modalapplication.aspx?catid=1&pagetype=65&appid=11&mode=detail&id=4744>, Dated 21 Oct 2011.

<sup>16</sup> <https://www.easa.europa.eu/document-library/certification-specifications/group/cs-acns-airborne-communications-navigation-and-surveillance#group-table>.

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19. ADHs and AM(MF)s can refer to the relevant paragraphs in Civil Aviation Publication (CAP) 2025A00<sup>17</sup> and complete a PBN compliance matrix against these latest EASA flight operational requirements.

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<sup>17</sup> Refer to [CAP 2025A00 – Air Operations Regulation 965/2012](#).