



INFORMATION NOTICE

Number: LIC 2018/02



Issued: 24 January 2018

Implementation of Performance Based Navigation – Guidance for Pilots

This Information Notice contains information that is for guidance and/or awareness.

Recipients are asked to ensure that this Information Notice is copied to all members of their staff who may have an interest in the information (including any 'in-house' or contracted maintenance organisations and relevant outside contractors).

Applicability:	
Aerodromes:	Not primarily affected
Air Traffic:	Not primarily affected
Airspace:	Not primarily affected
Airworthiness:	Not primarily affected
Flight Operations:	Not primarily affected
Licensed/Unlicensed Personnel:	All holders of HCAA issued JAR-FCL/Part-FCL Pilot Licences

1. Introduction

1.1 This Information Notice gives further information on the implementation of Commission Regulation (EU) No. 539/2016 Performance Based Navigation (PBN) that amends Commission Regulation (EU) No. 1178/2011 (the Aircrew Regulation).

2. Scope

2.1 The new PBN regulations will require the following:

- From 25 August 2018 pilots may only fly in accordance with PBN routes and procedures after they have been granted PBN privileges as an endorsement to their Instrument Rating;
- All pilots will need to have PBN privileges within their Instrument Rating (IR) or Enroute Instrument Rating (EIR) after 25 August 2020.

3. Applicability for Flight Crew

3.1 The HCAA has adopted a PBN declaration process. To obtain a PBN endorsement pilots have two options;

- a) Undertake PBN IR theoretical knowledge and practical training at an Approved Training Organisation (ATO), which includes passing a theoretical knowledge examination prior to passing a Skill Test or Proficiency Check which includes the applicable PBN IR elements with an examiner authorised to conduct such test or check; or
- b) Make a declaration confirming that the pilot is sufficiently familiar with PBN operations, including the theoretical knowledge elements. Also pass an oral theoretical knowledge assessment prior and in addition to, passing a Skill Test or Proficiency Check which includes the applicable PBN IR elements, with an examiner authorised to conduct such test or check.

3.2 A copy of the **PBN declaration form** is included in **Appendix 1** to this IN. This form must be printed and completed by the applicant prior to attempting the oral theoretical knowledge assessment and the Skill Test or Proficiency Check.

3.3 Examiners should refer to **IN 2018/01**, for guidance on their authorisation process.

4. Undertaking Training at an ATO

4.1 If the pilot attends an ATO, the pilot must ensure that all training undertaken is conducted at an ATO that holds an approval to conduct instrument training, and has updated their syllabus to include the PBN elements.

4.2 The pilot must retain a copy of the course completion certificate issued by the ATO, along with the PBN declaration form and must provide these as evidence to the examiner prior to attempting the Skill Test or Proficiency Check.

4.3 Copies of these forms, must be submitted to the CAA. Examiners must retain a copy and the CAA recommends that the pilot also keeps a copy.

5. Making a Declaration of PBN Familiarity

5.1 All pilots are reminded of their responsibility to ensure that they are capable of operating at an appropriate level of competence in PBN operations prior to operating on routes or procedures that require use of RNAV systems to meet PBN navigation specifications.

5.2 A list of the areas of knowledge is included in **Appendix 2** of this IN. Pilots should ensure they are sufficiently familiar with all of these areas, when making the PBN declaration.

5.3 Prior to attempting the skill test or proficiency check, and at the time of undertaking the oral theoretical knowledge assessment, the pilot must present the PBN declaration form to the examiner. The content of the oral assessment is at the discretion of the examiner but will cover the areas of knowledge in Appendix 2 of this Information Notice.

5.4 The oral assessment may take up to 2 hours. Failing the oral element test may mean that the flight test is failed or partially failed prior to the flight element taking place.

6. Pilots Currently Undertaking IR Training

6.1 For pilots currently enrolled on an integrated or modular course the theoretical knowledge examinations will be revised, to include the necessary PBN knowledge. Any candidate having passed examinations including this revised syllabus will not need to complete the course /oral assessment described in this IN.

7. Third Country Licence Holders

7.1 Holders of ICAO compliant licences issued by third countries wishing to obtain an EASA IR by the existing conversion methods will need to become PBN qualified. The above PBN arrangements therefore apply. However, the licence conversion process will involve an oral element to demonstrate knowledge of the topics set out in Part-FCL. At the discretion of the examiner, knowledge of these topics evidenced by a course completion certificate from an ATO may be taken into account.

8. Administration

- 8.1 A pilot planning to make an application for any licence, rating or certificate at the same time as applying to obtain a PBN endorsement, the appropriate course completion certificate indicating that the PBN elements have been completed must be submitted along with the appropriate application forms for the licence, rating or certificate being applied for.
- 8.2 If the applicant is not applying for any other licence, rating or certificate, then after the completion of any training, if applicable, or making the declaration and passing the oral assessment and Proficiency Check, the pilot does not need to apply for the issue of the PBN endorsement on to their licence.
- 8.3 On successful completion of the Proficiency Check the examiner must sign the pilot's Certificate of Revalidation within their licence, with PBN endorsement in the following format:
Example: B737IR/LV/PBN
IR SPA ME PBN
- 8.4 The HCAA will update the applicable forms taking into account the above changes. The Flight Examiners handbook and Standards Documents will also be updated.

9. Queries and Applications

- 9.1 Pilots should initially address any queries to their chosen ATO or to their operator.
- 9.2 All application forms and the PBN declaration form must be filed at:
HELLENIC CIVIL AVIATION AUTHORITY
FLIGHT STANDARDS DIVISION
LICENSING SECTION
EX US MILITARY BASE , BUILDING 220
VOULIAGMENIS AV ,
HELLINIKON 167 77, GREECE

email: d2b@hcaa.gr

10. Cancellation

- 10.1 This Information Notice Notice, if not cancelled or superseded will remain in force until 31 August 2021.

1. *The HCAA considers this to mean any approved course which includes the IR, including integrated, modular and type or class rating courses*

APPENDIX 1



Form
1000PBN

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ ΥΠΗΡΕΣΙΑ
ΠΟΛΙΤΙΚΗΣ ΑΕΡΟΠΟΡΙΑΣ HELLENIC
REPUBLIC
HELLENIC CIVIL AVIATION AUTHORITY
MEMBER OF EASA
ΜΕΛΟΣ ΤΗΣ EASA
ΔΗΛΩΣΗ
Declaration Form

Αρ. Πρωτ. / Ref. No



ΠΡΟΣ: Την ΥΠΑ, Διεύθυνση Πτητικών Προτύπων, Τμήμα Πτυχίων και Αδειών, Τ.Θ. 70360, ΤΚ 160 10, Γλυφάδα, Ελλάδα
ΤΟ: The HCAA, Flight Standards Division, Licensing Section, P.O. Box 70360, TK 160 10, Glyfada, Greece

Performance Based Navigation (PBN)

Declaration form regarding PBN Instrument privileges and areas of knowledge

1 Applicant pilot

Όνομα: Name:	Επώνυμο: Surname:	Όνομα Πατρός: Father's Name:	
Οδός: Street:	Τοποθεσία / Πόλη: Place / City:	ΤΚ: Post code:	Χώρα: Country:
Α.Δ.Τ. ή Διαβατηρίου: ID or Passport Number:	Νο τηλ: Tel No:	Κινητό: Mobile:	
Ηλεκτρονικό Ταχυδρομείο: email:		Χώρα έκδοσης, Είδος & Νο Πτυχίου: Country, Type & No of License held:	
Ημερομηνία Γεννήσεως: Date of Birth:	Τόπος Γεννήσεως: Place of Birth:	Ιθαγένεια: Nationality:	Υπηκοότητα: Citizenship:
ΥΠΕΥΘΥΝΗ ΔΗΛΩΣΗ: DECLARATION: A. Με ατομική μου ευθύνη και γνωρίζοντας τις κυρώσεις ⁽¹⁾ , που προβλέπονται από τις διατάξεις της παρ. 6 του άρθρου 22 του Ν.1599/1986, δηλώνω ότι τα περιεχόμενα στην παρούσα αίτηση μου στοιχεία είναι ακριβή ⁽²⁾ και αληθή ⁽³⁾ και έχω πληρώσει τα αντίστοιχα τέλη. ΣΗΜΕΙΩΣΗ: ⁽¹⁾ «Όποιος εν γνώσει του δηλώνει ψευδή γεγονότα ή αρνείται ή αποκρύπτει τα αληθινά με την έγγραφη υπεύθυνη δήλωση του άρθρου 8, τιμωρείται με φυλάκιση τουλάχιστον τριών μηνών. Εάν ο υπαίτιος αυτών των πράξεων σκόπευε να προσπορίσει στον εαυτό του ή σε άλλον περιουσιακό όφελος βλάπτοντας τρίτον ή σκόπευε να βλάψει άλλον, τιμωρείται με κάθειρξη μέχρι 10 ετών. ⁽²⁾ Η ακρίβεια των στοιχείων που υποβάλλονται με αυτή τη δήλωση μπορεί να ελεγχθεί με βάση το αρχείο άλλων υπηρεσιών (άρθρο 8 παρ. 4 Ν. 1599/1986). ⁽³⁾ Οιαδήποτε ψευδής παρουσίαση ή δήλωση ή απόκρυψη πληροφοριών στην παραπάνω αίτηση θα έχει ως συνέπεια την απόρριψή της, την ποινική δίωξη των υπευθύνων κατά το άρθρο 42 ή 220 του Ποινικού Κώδικα και την ανάκληση από την ΥΠΑ οποιουδήποτε ισχύοντος αεροπορικού Πτυχίου ή Πιστοποιητικού Υγείας. <i>On my own responsibility and knowing the presumable penalties ⁽¹⁾, by the paragraph 6 of the article 22 of the N.1599/1986, I declare that the included elements in my present application are accurate ⁽²⁾ and true ⁽³⁾ and I have paid the applicable fees.</i> NOTE: ⁽¹⁾ "Whoever, under his own knowledge, declares untrue facts or denies or withholds the true facts within his/her written declaration under the article 8, he/she will be punished with imprisonment of at least three months. If the responsible of these actions intended, for his own benefit or other's benefit, to draw financial profit harming third person or he/she intended to harm other, he/she will be punished with imprisonment for a term up to 10 years. ⁽²⁾ The accuracy of the elements that are submitted with this declaration can be checked on the basis of a check into other agency's archives (article 8 paragraphs 4 N.1599/1986). ⁽³⁾ Any untrue presentation or declaration or dissimulation of information within the above application will have as a consequence its rejection, the penal prosecution of responsible persons according to the article 42 or 220 of the Penal Code and the revocation of every valid aviation license or Medical Certificate by the Hellenic CAA. B. Ο Ευρωπαϊκός Κανονισμός (ΕΥ) Νο. 1178/2011 όπως τροποποιήθηκε, απαιτεί όπως η διαχείριση όλων των αδειών/πτυχίων του ενδιαφερομένου να πραγματοποιείται από την Αρμόδια Αρχή (ΥΠΑ), η οποία κατέχει και τα ιατρικά δεδομένα αυτού. (Part MED. A.030 and Part FCL. 015) Εάν τα ιατρικά δεδομένα δεν βρίσκονται στην Ελληνική Υπηρεσία Πολιτικής Αεροπορίας, η αίτηση θα εκκρεμεί έως την ενημέρωση των αντιστοίχων φακέλλων του αιτούντος. <i>European Commission Regulation (EU) No 1178/2011 as amended, requires that an individual keeps all his/her licenses administered by the competent authority (HCAA) that holds his/her medical records. (Part MED A. 030 and Part FCL. 015)</i> <i>If the medical records of the applicant are not held by the HCAA, his/her application will be pending until the updates of his/her files.</i>			
Τόπος: Place:	Ημερομηνία: Date:	Υπογραφή αιτούντος: Signature of Applicant:	

ΧΡΗΣΗ ΜΟΝΟ ΑΠΟ ΤΗΝ ΥΠΑ, ΠΑΡΑΤΗΡΗΣΕΙΣ (HCAA USE ONLY, REMARKS)

2 Declaration of applicant pilot

I hereby declare that I meet the requirements laid down in Article 4a of Commission Regulation (EU) No.1178/2011 regarding PBN privileges by:

- Having completed a theoretical knowledge and flight training course in PBN at an ATO with a copy of the Course Completion Certificate attached to this document.

OR

- Previous training and/or familiarity with PBN operations through either:
- Flying for an operator with RNP approach approval, or;
 - Previous familiarity with RNAV and RNP approach operations.

AND

- A successfully completed skill test or proficiency check where I have demonstrated competence in PBN operations in accordance with appendix 7 or 9 to Annex I (Part-FCL).

Applicant's Name: Applicant's Licence Number:

Applicant's Signature: Date:

3 Declaration of examiner regarding PBN checking privileges

I hereby declare that I, before this day, as examiner have performed a proficiency check or skill test which included PBN operations with a minimum of one approach, as well as:

Previous training and/or familiarity with PBN operations through either:

- Having completed a theoretical knowledge and flight training course in PBN at an ATO with a copy of the Course Completion Certificate attached to this document.

OR

- Flying for an AOC holder with previous RNP approach approval, or;
- Previous familiarity with RNAV and RNP approach operations.

For Proficiency Checks only:

- I have endorsed the Certificate of Revalidation in the applicant's licence with PBN privileges.

Examiner's Name: Examiner's Licence Number:

Examiner's Signature: Date:

4 Self-checklist for previous familiarity with PBN experience (by applicant)

I have received theoretical and practical instructions and consider myself proficient with normal and

Area	Theoretical	Practical
PBN limitations	<input type="checkbox"/>	<input type="checkbox"/>
PBN departure	<input type="checkbox"/>	<input type="checkbox"/>
PBN en-route	<input type="checkbox"/>	<input type="checkbox"/>
PBN arrival	<input type="checkbox"/>	<input type="checkbox"/>
2D approach	<input type="checkbox"/>	<input type="checkbox"/>
3D approach	<input type="checkbox"/>	<input type="checkbox"/>
Missed approach according to PBN	<input type="checkbox"/>	<input type="checkbox"/>
Training received at ATO (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
Training received (dd/mm/yy) (if applicable)		

abnormal procedures in the following areas, tick (✓) each item as required:

The form shall be completed at least once for every pilot that has an instrument rating issued without PBN privileges included.

Sections 1, 2 and 4 shall be completed by the applicant.

Section 3 shall be completed by the examiner.

This form should be submitted together with the application form for an instrument or type rating (if applicable) or with the completed Proficiency Check form (LPC or OPC).

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APPENDIX 2

PBN Learning objectives

Subject	Checked Item
PBN	
PBN concept (as described in ICAO Doc 9613)	
PBN Principles	
List the factors used to define RNAV or RNP system performance requirements (accuracy, integrity, continuity and functionality).	
Explain the concept of continuity.	
Explain the concept of concept of integrity.	
State that, unlike conventional navigation, performance-based navigation is not sensor-specific.	
Explain the difference between raw data and computed data.	
PBN components	
List the components of PBN as NAVAID infrastructure, navigation specification and navigation application.	
Identify the components from an example.	
PBN scope	
State that in oceanic/remote, en-route and terminal phases of flight PBN is limited to operations with linear lateral performance requirements and time constraints.	
State that in the approach phases of flight PBN accommodates both linear and angular laterally guided operations.	
Navigation specifications	
RNAV and RNP	
State the difference between RNAV and RNP in terms of the requirement for on-board performance monitoring and alerting.	
Navigation functional requirements	
List the basic functional requirements of RNAV and RNP specifications (continuous indication of lateral deviation, distance/bearing to active waypoint, g/s or time to active waypoint, navigation data storage and failure indication).	
Designation of RNP and RNAV specifications	
Interpret "X" in RNAV X or RNP X as the lateral navigation accuracy (total system error) in nautical miles, which is expected to be achieved at least 95 per cent of the flight time by the population of aircraft operating within the airspace, route or procedure.	
State that aircraft approved to the more stringent accuracy requirements may not necessarily meet some of the functional requirements of the navigation specification having a less stringent accuracy requirement.	
State that RNAV10 and RNP4 are used in the oceanic/remote phase of flight.	
State that RNAV5 is used in the en route and arrival phase of flight.	
State that RNAV2 and RNP2 are also used as navigation specifications.	
State that RNP2 is used in the en route and oceanic/remote phases of flight.	
State that RNAV1 and RNP1 are used in the arrival and departure phases of flight.	
State that RNP APCH is used in the approach phase of flight.	
State that RNP AR APCH is used in the approach phase of flight.	

State that RNP 0.3 navigation specification is used in all phases of flight, except for oceanic/remote and final approach, primarily for helicopters.	
Use of PBN	
Airspace planning	
State that navigation performance is one factor used to determine minimum route spacing.	
Approval	
State that the airworthiness approval process assures that each item of the area navigation equipment installed is of a type and design appropriate to its intended function and that the installation functions properly under foreseeable operating conditions.	
State that some PBN specifications require operational approval.	
Specific RNAV and RNP systems functions	
Recognise the definition of an RF leg.	
Recognise the definition of a fixed radius transition.	
Recognise the definition of a fly-by-turn and a fly-over.	
Recognise the definition of a holding pattern.	
Recognise the definition of an ARINC 424 path terminator.	
Recognise the definition of the following path terminators: IF, TF, CF, DF, FA, CA.	
Recognise the definition of an offset flight path.	
On board performance monitoring and alerting	
State that on-board performance monitoring and alerting of flight technical error is managed by on-board systems or crew procedures.	
State that on-board performance monitoring and alerting of navigation system error is a requirement of on-board equipment for RNP.	
State that on-board performance monitoring and alerting of path definition error are managed by gross reasonableness checks of navigation data.	
Abnormal situations	
State that abnormal and contingency procedures are to be used in case of loss of the PBN capability.	
Database management	
State that, unless otherwise specified in operations documentation or AMC, the navigational database must be valid for the current AIRAC cycle.	
Requirements of specific RNAV and RNP specifications	
RNAV 10	
State that RNAV10 requires that aircraft operating in oceanic and remote areas be equipped with at least two independent and serviceable LRNSs comprising an INS, an IRS FMS or a GNSS.	
State that aircraft incorporating dual inertial navigation systems (INS) or inertial reference units (IRU) have a standard time limitation.	
State that operators may extend their RNAV10 navigation capability time by updating.	
RNAV 5	
State that manual data entry is acceptable for RNAV 5.	
RNAV/RNP1/2	

State that pilots must not fly an RNAV/RNP1/2 SID or STAR unless it is retrievable by route name from the on-board navigation database and conforms to the charted route.	
State that the route may subsequently be modified through the insertion (from the database) or deletion of specific waypoints in response to ATC clearances.	
State that the manual entry, or creation of new waypoints by manual entry, of latitude and longitude or place/bearing/ distance values is not permitted.	
RNP 4	
State that at least two LRNSs, capable of navigating to RNP4 and listed in the flight manual, must be operational at the entry point of the RNP airspace.	
RNP APCH	
State that pilots must not fly an RNP APCH unless it is retrievable by procedure name from the on-board navigation database and conforms to the charted procedure.	
State that an RNP APCH to LNAV minima is a non-precision instrument approach procedure designed for 2D approach operations.	
State that an RNP APCH to LNAV/VNAV minima has lateral guidance based on GNSS and vertical guidance based on either SBAS or BaroVNAV.	
State that an RNP APCH to LNAV/VNAV minima may only be conducted with vertical guidance certified for the purpose.	
Explain why an RNP APCH to LNAV/VNAV minima based on BaroVNAV may only be conducted when the aerodrome temperature is within a promulgated range.	
State that the correct altimeter setting is critical for the safe conduct of an RNP APCH using BaroVNAV.	
State that an RNP APCH to LNAV/VNAV minima is a 3D operation.	
State that an RNP APCH to LPV minima is a 3D operation.	
State that RNP APCH to LPV minima requires an FAS data-block.	
RNP AR APCH	
State that RNP AR APCH requires authorisation.	
A-RNP	
State that Advanced RNP incorporates the navigation specifications RNAV5, RNAV2, RNAV1, RNP2, RNP1 and RNP APCH.	
State that Advanced RNP may be associated with other functional elements.	
PBN Point in Space (PinS) departure	
State that a PinS departure is a departure procedure designed for helicopters only.	
State that a PinS departure procedure includes either a “proceed VFR” or a “proceed visually” instruction from landing location to IDF.	
Recognise the differences between “proceed VFR” and “proceed visually” instruction.	
PBN Point in Space (PinS) approach	
State that a PinS approach is an instrument RNP APCH procedure designed for helicopters only, and that may be published with LNAV minima or LPV minima.	
State that a PinS approach procedure includes either a “proceed VFR” or a “proceed visually” instruction from the MAPt to a landing location.	
Recognise the differences between “proceed VFR” and “proceed visually” instruction.	