



European Union Aviation Safety Agency

Comment-Response Document (CRD) 2023-04 (A)

RELATED NPA: 2023-04 — RELATED OPINION: No 03/2024— RMT.0682

19.6.2024

Performance-based navigation (PBN) specifications for oceanic operations

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1. Summary of the outcome of the consultation

Since NPA 2023-04 addressed two different subject matters, i.e. introduction of ACAS Xa for operations in the single European sky (SES) airspace and performance-based navigation (PBN) specifications for oceanic operations, EASA has reviewed the respective comments separately and decided to address the second subject matter as part of this comment-response document (CRD) 2023-04 (A). CRD 2023-04 (B), dedicated to the comments and the related EASA feedback on the introduction of ACAS Xa for operations in the SES airspace, is planned to be published at a later stage, together with the EASA decisions detailed in Section 1.2.1 of Opinion No 03/2024.

This summary describes the outcome of the NPA public consultation and complements the description of stakeholders' views in Section 2.4.2 of Opinion No 03/2024. The evaluation of the feedback received not only covers the comments on the proposed amendments to Commission Implementing Regulation (EU) 2018/1048 (PBN IR), but also the comments on the proposed amendments to the guidance material (GM) associated with that Regulation, which is currently included in Annex II to AMC & GM to AUR, Issue 2.

The evaluation of the comments on the proposed amendments to the GM on PBN has allowed EASA to publish draft amendments to Annex II to 'AMC & GM to AUR, Issue 2' together with Opinion No 03/2024. The draft GM is a revised version of the GM proposed in the NPA and it is published for information only. The draft GM is intended to complement the draft amending Regulation and contribute to a better understanding.

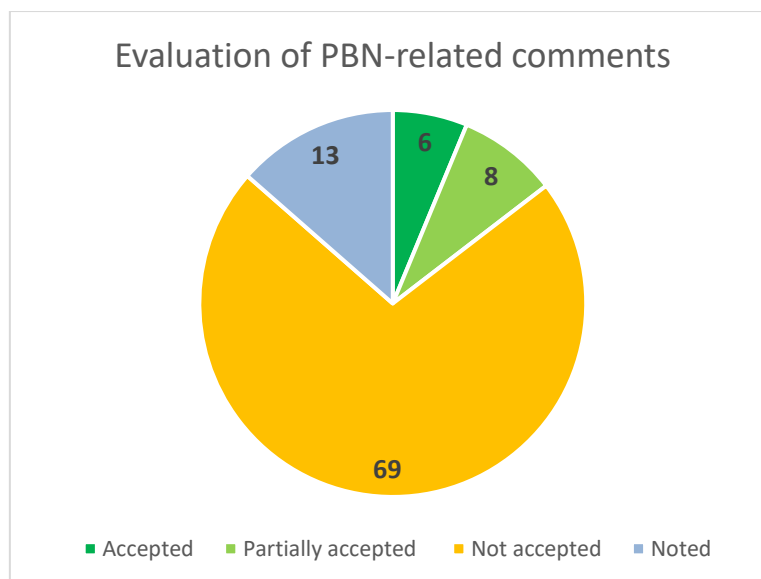
After reviewing the 96 comments on the proposed amendments to Regulation (EU) 2018/1048 and the related GM, EASA concludes that the amendments are not perceived as controversial.

In general, the comments focused on the proposed amendments to the GM. The proposed amendments to the Regulation have barely been commented, except to clarify that helicopters will be allowed to use suitable RNP or RNAV specifications on the continental shelf; therefore, the feedback received supported the regulatory proposals.

The statistics displayed below show that many comments have not been accepted, mostly because the commentators have made amendment proposals that are clearly outside the scope of NPA 2023-04. In addition, they would require impact assessments, as well as discussions/consultation with the rest of stakeholders concerned.

The following table and figure display the evaluation of the comments received:





Stakeholder category	Accepted	Partially accepted	Not accepted	Noted	Grand Total
Aerodromes	-	-	3	-	3
Aircraft manufacturers	1	-	1	1	3
Aircraft operators/pilots	-	2	1	1	4
ATM/ANS service providers	4	4	2	4	14
City/town/municipality	-	-	47	-	47
Competent authorities & national agencies	1	1	7	-	9
European Agencies	-	1	-	7	8
Individuals/citizens/associations	-	-	8	-	8
Grand Total	6	8	69	13	96

In most cases, the comments that appear as ‘not accepted’ either:

- challenged the restrictions that stem from Article 5 of the Regulation; or
- proposed a fundamental change to Article 3 of the Regulation, which could impact the current PBN mandate significantly.

As for the proposals that some commentators have regarding Article 5, EASA agrees with most of the concerns expressed, as they are consistent with the information gathered by EASA during the monitoring and support to implementation activities. For this reason, subject to coordination, EASA intends to perform an impact assessment of the restrictions imposed by Article 5, evaluating the feasibility and suitability of the related regulatory objectives, in particular, the replacement of conventional navigation procedures with the required PBN routes and approach procedures by 6 June 2030. This would also require the inclusion of a rulemaking task in the European Action Plan for Aviation Safety (EPAS) to permit the publication of another NPA, which should contain any proposed amendments for consultation with stakeholders.

EASA does not agree with the amendments that many commentators have proposed to Article 3. These amendments relate to environmental concerns, primarily associated with noise in the vicinity of aerodromes. They are based on recital (7) of the Regulation, which was not translated into proper

regulatory provisions when the Regulation was adopted. This recital refers to serious adverse consequences which could outweigh the potential safety, capacity and efficiency benefits of the PBN mandate.

As explained in the response to comment #12 (see Chapter 2), the implementation of recital (7) would require fundamental discussions that are outside the scope of NPA 2023-04. The proposal to amend Article 3 seeks to allow the application of alternative regulatory requirements in specific situations. Additionally, EASA considers that the proposal would introduce ambiguity regarding the situations and the alternative requirements to be applied, thus undermining the mandate to harmonise PBN implementation. Comment #12 is seconded by 62 more comments, all submitted by German commentators. These 63 comments read very similar, and, in some cases, are duplicated or contain copies of the same text.

The above justifications explain why most of the PBN-related comments have not been accepted by EASA. Chapter 2 includes replies to individual comments and supplements the above summary.



2. Individual comments and responses

In responding to the comments, the following terminology is applied to attest EASA's position:

- (a) **Accepted** — EASA agrees with the comment and any proposed change is incorporated into the text.
- (b) **Partially accepted** — EASA either partially agrees with the comment or agrees with it but the proposed change is partially incorporated into the text.
- (c) **Noted** — EASA acknowledges the comment, but no change to the text is considered necessary.
- (d) **Not accepted** — EASA does not agree with the comment or proposed change.

2.3. How we want to achieve it - overview of the proposed amendments

p. 10

comment 400

comment by: LfV

The repeal of Regulation (EU) No 716/2014 (the 'PCP Regulation') resulted in the deletion of the ATM functionality No1 (AF#1) with a view to avoiding inconsistencies and duplication of PBN requirements in the European Union's legislation." This is not correct as it was only the PBN-related provisions that were removed from the successor to the PCP regulation, the EU IR 2021/116, better known as the Common Project One. The rest of ATM functionality No 1 (AF1) were retained with some cosmetic changes.

response Noted.

Since the implementation of the ATM sub-functionality performance-based navigation (PBN) is regulated under Commission Implementing Regulation (EU) 2018/1048, it was deleted from ATM functionality No1 (AF#1), thus excluded from the common project one. The text of the NPA was not correct, but it has no impact on proposed amendments, hence the comment is only noted.

AUR.PBN.2005 Routes and procedures

p. 70

Comment 2

comment by: ENAIRE



Article/AMC/GM	Original Text	Proposed amended text	Rationale
<p>3.7. Draft amendments to Regulation (EU) 2018/1048 and related AMC & GM</p> <p>AUR.PBN.2005 Routes and procedures (8)</p> <p>New GM proposed.</p>	<p>N/A</p>	<p>It is suggested that a new GM associated to AUR.PBN.2005 (8) is defined, in order to address the existing inconsistency (admitted by ICAO) between “RNAV 10” (designator for the PBN specification itself) and “RNP 10” (designator for other elements, such as e.g. airspace designations or aircraft authorizations).</p> <p>Suggested text:</p> <p>****BEGINNING****</p> <p>GM1 AUR.PBN.2005 (8)</p> <p>“RNAV 10” is used to designate one of the available oceanic PBN specifications in the ICAO PBN Manual (Doc. 9613).</p> <p>However, due to historical reasons, and in order to maintain global consistency with the PBN concept, other elements related to the said specification, as e.g. airworthiness and operational authorizations or airspace/route designations may still be referred to as “RNP 10”.</p> <p>****END****</p>	<p><i>Note – the following paragraphs have been extracted from the ICAO PBN Manual (Doc. 9613), 5th (advance, unedited) edition, which has only recently been made available to the public. However, they have suffered no relevant change with respect to the equivalent sections in the (still official) 4th edition.</i></p> <p>1) ICAO PBN Manual, page I-1-8:</p> <p>1.2.4.5 Accommodating inconsistent RNP designations</p> <p><i>1.2.4.5.1 The existing RNP 10 designation is inconsistent with PBN RNP and RNAV navigation specifications. RNP 10 does not include requirements for on-board performance monitoring and alerting. For purposes of consistency with the PBN concept, RNP 10 is referred to as RNAV 10 in this manual. Renaming current RNP 10 routes, operational authorizations, etc., to an RNAV 10 designation would be an extensive and expensive task, which is not cost-effective. Consequently, any</i></p>



			<p><i>existing or new operational authorizations will continue to be designated RNP 10, and any charting annotations will be depicted as RNP 10 (see Figure I-1-3).</i></p> <p>2) ICAO PBN Manual, page II-B-1-1:</p> <p>Chapter 1 IMPLEMENTING RNAV 10 (DESIGNATED AND AUTHORIZED AS RNP 10)</p> <p>1.1 INTRODUCTION</p> <p>1.1.1 Background</p> <p><i>This chapter addresses the implementation of RNP 10 to support 50 NM lateral and the 50 NM longitudinal distance-based separation minima in procedural oceanic or remote area airspace. This guidance has been titled RNAV 10 for consistency with the other chapters in this manual. This designation and version of the material do not change any requirements, and do not affect operators who obtained an RNP 10 authorization from their relevant State regulatory authority. RNAV 10 does not require on-board performance</i></p>
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			<p><i>monitoring and alerting. However, the designation of the airworthiness and operational authorization as well as airspace/route designation remains “RNP 10” in order to retain the validity of the present publications and extensive authorizations. Recognizing the extent of existing airspace designations and operational authorizations under RNP 10 designation, it is anticipated that any new airspace designations and aircraft approvals will continue to use the “RNP 10” term while the required PBN application will now be known as “RNAV 10.”</i></p>
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Response Partially accepted.

Although the 4th edition of the ICAO PBN Manual is listed as a reference for the implementation in GM1 AUR.PBN.2005, new guidance material will be provided to recognise the RNP 10 designation for routes/airspace in consistency with the aircraft’s operational and airworthiness approvals. Your proposed wording will be considered, but the contents will be limited to airspace/route designation (e.g. in the AIP), as aircraft certification and operational authorisations fall within the scope of other domains that are not addressed by Regulation (EU) 2018/1048.

comment 24

comment by: *Mörfelden-Walldorf*

Mörfelden-Walldorf is a city proximate in the south of Frankfurt Airport, it is already significantly affected by aircraft noise. The municipality/city/county has 35.000



residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.“

response Not accepted.

See the reply to comment #12.

comment 40

comment by: *Gemeinde Nauheim*

Nauheim is a **municipality** in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The municipality has **11000 residents** who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 or Article 5 of the regulation is suggested:

Article 3 PBN requirements / Article 5 Exclusive Use of PBN

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.



comment

49

comment by: *Stadt Immenhausen*

Immenhausen is a [city](#) in the vicinity of [Kassel Airport](#), it is already significantly affected by aircraft noise. The [city](#) has 7.100 [residents](#) who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

„It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

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response

Not accepted.

See the reply to comment #12.

comment

202

comment by: *EUROCONTROL*

AUR.PBN 2005 Routes and Procedures - Paragraph 5 (Page 70)

1. 1. Section 3.7 of the NPA introduces an amendment to AUR.PBN.2005 which offers, in Paragraph 5, a derogation for ATM/ANS providers to implement terminal RNP 1 ATS routes (SIDs/STARs) with or without RF and/or vertical constraints. With the updated PBN Manual (ICAO Doc 9613, Edition 5), why is the option for A-RNP not provided? The lateral performance of A-RNP for arrival and departure is now fixed at +/-0.3 NM. This flexibility would enable busy, high-density terminal airspaces to take advantage of the improved navigation performance as well as knowing that A-RNP certified aircraft have RF as a requirement. The application of A-RNP prior to the Final Approach Fix (FAF) would mean that parallel runways with a spacing of >2224m could support Mode 1 (independent) parallel approach operations utilising A-RNP to RNP APCH; runway spacings <2224m would normally still require RNP AR APCH or a traditional PA operation. This option could potentially deliver significant benefits in larger terminal airspaces which probably support aerodromes with multiple runways.

2. 2. Considering that aircraft's performance requirements (navigation specification) must be consistent with the intended operations, the regulation indicates that when higher performance is required, RNP 1 specification should be



	<p>implemented, however this navigation specification may not be aligned with the intended operation (high traffic density, traffic complexity or terrain features). PBN Manual (Edition 5) provides A-RNP for both arrival and departure operations (explained above). In addition, for complex scenarios (terrain) where RNP 1 may not be valid, RNP AR for departure operations is also provided by the PBN Manual.</p> <p>3. For final approach operations the regulation considers all navigation specifications included in the PBN Manual: RNP APCH and RNP AR APCH. Although the implementation of RNP AR is considered as an option where RNP APCH implementation is excessively difficult, the regulation includes the possibility to implement the highest navigation performance required for PBN Approach (RNP AR) following the provisions of the PBN Manual. However, this is not the case for SID/STAR procedures where the use of A-RNP and RNP AR DP is not allowed where higher performance is required (Only RNP 1 is allowed). The regulation seems to be not consistent between Approach and Departure/Arrival requirements with regards the provisions in the PBN Manual.</p>
response	<p>Noted.</p> <p>The implementation of SID/STAR routes based on the A-RNP specification is clearly outside the scope of the proposed amendment. This issue would require fundamental discussions, similar to those prior to the adoption of the Regulation in 2018. At that moment in time, RNAV 1 was chosen as the minimum specification for SID/STAR, whereas RNP 1 was considered suitable in case higher performance was necessary. Only 5 years after the adoption of the Regulation, the agreed implementation of PBN is still in progress, far from being over; the implementation of the mandatory SID/STAR should commence by January 2024 and finish by June 2030; hence, the intent of this amendment proposal is not to challenge the agreed set of common specifications.</p>
comment	<p>203 comment by: EUROCONTROL</p> <p>1. Hybrid SID/STAR procedures - Although not highlighted in the NPA, it should be noted that the use of Hybrid SID/STAR procedures (conventional and PBN) is well extended, and it is not clear whether they follow the regulation. PBN IR states the following:</p> <p><u><i>AUR.PBN.2005 Routes and procedures</i></u> <i>(4) Where providers of ATM/ANS have established SID routes or STAR routes, they shall implement those routes in accordance with the requirements of RNAV 1 specification (RNP 1 where higher performance is required).</i></p> <p>The regulation does not specify whether the entire procedure should be based on RNAV 1/RNP 1. Hybrid procedures have both conventional and RNAV1/RNP 1 segments. The use of conventional segments is due to the lack of coverage of DME/DME for RNAV 1 operations, or due to design criteria.</p>



response	<p>It can be assumed that these procedures should not be used for normal operations from 2030 (conventional segment), however it is not clear their status concerning 2024 requirements.</p> <p>Noted.</p> <p>EASA has discussed the use of hybrid procedures at meetings with its Advisory Bodies, in particular, with the ATM/ANS TeB. In our opinion, requirements for SID/STAR are clear enough in that the entire routes should be designed in accordance with the prescribed specifications. The restrictions to fly conventional segments applies as of 6 June 2030, as per Article 7(2)(a). Hence, the use of hybrid procedures is allowed until the deadline for the completion of the implementation of compliant PBN SID/STAR.</p>
comment	<p>204 comment by: EUROCONTROL</p> <p>Doubts and misunderstandings on the procedure's publication: Notes are added stating that LNAV minima cannot be used, Publication of additional charts (separation of LNAV and LNAV/VNAV minima into different charts) – increasing the size of the already overloaded NAV database No LNAV minima publication at all</p>
response	<p>Noted.</p> <p>Your comment is not detailed enough, as we would need to gather the necessary evidence, including instrument approach charts, to confirm what the issue is. Stakeholders can use the EASA Advisory Bodies to clarify any doubts and communicate potential/detected misunderstandings. Alternatively, our functional mailboxes can be used to send us questions or to report PBN implementation issues.</p>
comment	<p>205 comment by: EUROCONTROL</p> <p>1. RNP APCH (LNAV/VNAV) for CAT H operations - Although not highlighted in the NPA, it should be noted that the PBN IR mandates the implementation of LNAV, LNAV/VNAV and LPV lines of minima at all instrument runway ends, however the regulation does not consider the fact that LNAV/VNAV capability is initially not available for Helicopters.</p>
response	<p>Noted.</p> <p>Your comment will be taken into account for future rulemaking activities. In the meantime, since it is outside the scope, EASA will consider writing a reply to frequently asked questions (FAQs) on PBN IR implementation, as the issue has been reported by other stakeholders as well.</p>
comment	<p>228 comment by: Germann Environment Agency</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into</p>

PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

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response

Not accepted.

See the reply to comment #12.

Article 5 - Exclusive use of PBN

p. 70

comment

11

comment by: *DFS Deutsche Flugsicherung GmbH*

Facts:

- The proposed text of PBN IR 2018/1048 Art. 5 (2) allows the provision of services using landing systems CAT II or CAT III operations.
- The FAQ on PBN implementation clearly exclude GBAS landing systems from the scope of 2018/1048.

Issue:

- Since the term “landing systems” is not specified in detail, the modified text could (still) be interpreted in a way that also GBAS CAT II and CAT III operation could be allowed but not GBAS CAT I.

Proposed text:

2. Paragraph 1 shall be without prejudice to Article 6 and to the possibility of providers of ATM/ANS to provide their services using **satellite-based landing systems of any category or conventional** landing systems enabling CAT II, or CAT III operations within the meaning of point (120e) of Annex I to Regulation (EU) No 965/2012.

response

Partially accepted.

Article 3 of the PBN IR introduces the requirement for implementation of PBN, whereas paragraph 1 of Article 5 does not allow providers of ATM/ANS to provide services based on conventional navigation or non-compliant PBN applications after the transition to PBN is over, i.e. as of 6 June 2030. Since GBAS landing systems (GLS) are neither PBN nor conventional navigation, they are not subject to the paragraph 1 restrictions.

The objective of paragraph 2 of Article 5 was to recognise that, when it comes to approach operations, PBN cannot offer CAT II/III minima. Hence, it clarifies that



landing systems enabling CAT II/III operations are not subject to the paragraph 1 restrictions. In addition, potential operations down to CAT II/III minima supported by SBAS could also be possible in the future through Article 3.

EASA published under [FAQs](#) a clarification to confirm that the objective of the PBN IR was not to restrict the use of GLS CAT I procedures. Actually, all GLS procedures are outside the scope, regardless of the category of the resulting approach procedures.

Nevertheless, we do not see the need to amend Article 5 beyond the minor consistency correction that EASA had proposed for alignment with other rules. The amendment proposed in your comment would require consultation as it could be challenged. For instance, the notion of satellite-based landing systems and conventional landing systems could be unclear, though it is our understanding that the former refers to SBAS and GBAS, while the latter refers to ILS.

Alternatively, we suggest consolidating the clarification given in the EASA FAQs through guidance on Article 5, which will confirm that GLS procedures are not addressed by the PBN IR and can be used without any restrictions before and after 6 June 2030. The guidance could refer to concepts defined in EU rules unambiguously, which consider GBAS landing systems (GLS) and instrument landing systems (ILS). Thus, the additional guidance will make clear that GLS enabling CAT I, CAT II or CAT III operations, as well as ILS enabling CAT II or CAT III operations, within the meaning of point (120e) of Annex I to Regulation (EU) No 965/2012, are not subject to the Article 5 restrictions.

comment

12

comment by: *German NSA (BAF)*

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation.

Therefore, the following clarification to Article 3 of the regulation is proposed:

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response

Not accepted.



Your concern over noise in the vicinity of aerodromes is shared by EASA. However, when implementing PBN, noise may not necessarily increase. The opportunity to design PBN routes and approach procedures and use them as a replacement for conventional navigation could take advantage of the excellent route placement that PBN offers. This could allow avoidance of overflights of populated areas. However, it is true that aircraft flying PBN stick to the nominal trajectories accurately, especially when using GNSS sensors, which results in concentration of the noise footprints. The issue requires a local assessment to prevent and mitigate any potential noise issues through proper urban and aerodrome planning and airspace design.

There is no information about the proposed deviations from ICAO PANS-OPS. Hence, it is important to note that PANS-OPS procedure design criteria, for either conventional or PBN flight procedures, already offer some flexibility to flight procedure designers, which could be exploited to adapt the design and mitigate local issues, including noise; deviations expressly allowed by ICAO PANS-OPS are therefore possible.

Nevertheless, flight procedure design is not covered by the PBN IR; it is regulated in Part-FPD of Regulation (EU) 2017/373, which expressly addresses airspace structures and the flight procedures in such structures. Regulation (EU) 2017/373 considers PANS-OPS as an AMC for which AltMOC could be proposed by stakeholders or the competent authorities if additional deviations from design criteria are necessary.

It is agreed that recital (7) of Regulation (EU) 2018/1048 has not been translated into proper regulatory provisions. This recital refers to serious adverse consequences which could outweigh the potential safety, capacity and efficiency benefits of the PBN mandate. The identification of the conditions under which the regulated parties could deviate from the existing regulatory requirements by applying alternative requirements would be required. However, both the particular conditions and alternative requirements remain undefined.

The implementation of recital (7) would require fundamental discussions that are outside the scope of this proposed amendment, including the definition of what remains undefined.

In addition, your proposal to amend Article 3 is ambiguous and would thus undermine the mandate to harmonise PBN implementation, as it would allow providers of ATM/ANS to systematically deviate from the obligation to implement PBN and decide on their own what is to be implemented locally. It specifies neither which alternative requirements they could apply nor which conditions would justify the deviations, thus allowing implementers to assess themselves whether the benefits pursued by the Regulation are achieved or not. Therefore, the objective to harmonise PBN implementation would be at risk, and the existing Regulation would not serve its purpose.

comment

13

comment by: *ADF, Working Group of German Aviation Noise Commissions*

The Working Group of German Aviation Noise Commissions (ADF - Arbeitsgemeinschaft Deutscher Fluglärmkommissionen) is a national association of all aviation noise commissions and represents the interests of people living close to German airports. The aviation noise commissions, which are mandatory for every German commercial airport, are made up of representatives from the municipalities and districts around the airports and from the aviation industry. Their political function alone means that those involved are concerned both with the prosperity of the locations and with ensuring that air traffic operations are as quiet as possible. This means that the positions established by the aviation noise commissions already balance various interests.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

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Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.

comment

14

comment by: *District administration of Gross-Gerau*

Gross-Gerau is a county in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The county has 280,772 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

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response

Not accepted.

See the reply to comment #12.

comment

15 comment by: *Kommunale Arbeitsgemeinschaft Frankfurt Flughafen/Main*

The „Kommunale Arbeitsgemeinschaft Frankfurt Flughafen/Main“ is a municipal working group of 33 cities, counties and municipalities in the vicinity of Frankfurt Airport, that are already significantly affected by aircraft noise. The residents are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response

Not accepted.

See the reply to comment #12.

comment

16 comment by: *Initiative Zukunft Rhein-Main*

The „Initiative Zukunft Rhein-Main“ is a working group of 21 cities, counties, municipalities, citizens' initiatives and nature conservation associations in the vicinity of Frankfurt Airport, that are already significantly affected by aircraft noise. The residents are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in

response	<p>the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested: Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p> <p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>17 comment by: <i>IHK Frankfurt am Main</i></p> <p>The IHK Frankfurt am Main is the local Chamber of Commerce and Industry, representing all Chambers of Commerce and Industry and their member companies in the Federal State of Hesse with regard to all transportation-related issues. The IHK Frankfurt am Main has acted as a moderator and facilitator in the planning process of the latest expansion projects of Frankfurt Airport. The result of this process was a so-called "mediation package" that included many compromises that all public and private stakeholders affected by the airport expansion agreed upon. This package includes a mitigation scheme for noise reduction dealing with very specific approach and departure routes for Frankfurt airport. This has led to a high degree of public acceptance of the airport which for various reasons is essential for our members and their businesses. Therefore we see a strong necessity to ensure that the current flight paths around Frankfurt will continue to exist in the most precise way possible once PBN is used.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>18 comment by: <i>town Heusenstamm</i></p>



Heusenstamm is a municipality in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The municipality has 19160 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response

Not accepted.

See the reply to comment #12.

comment

19

comment by: *Landeshauptstadt Mainz*

Mainz is a capital city in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The municipality/city/county has ... residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response

Not accepted.

See the reply to comment #12.



comment	<p data-bbox="368 235 416 271">20</p> <p data-bbox="1027 235 1394 271">comment by: <i>Kreis Offenbach</i></p> <p data-bbox="368 293 1394 439">The Landkreis Offenbach is a county in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The county has 362.137 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.</p> <p data-bbox="368 472 1394 797">It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p data-bbox="368 831 711 866">Article 3 PBN requirements</p> <p data-bbox="368 869 1394 1043">Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p data-bbox="368 1055 552 1104">Not accepted.</p> <p data-bbox="368 1122 754 1173">See the reply to comment #12.</p>
comment	<p data-bbox="368 1211 416 1261">21</p> <p data-bbox="496 1211 1394 1261">comment by: <i>ADF, Working Group of German Aviation Noise Commissions</i></p> <p data-bbox="368 1279 1394 1637">The Working Group of German Aviation Noise Commissions (ADF - Arbeitsgemeinschaft Deutscher Fluglärmkommissionen) is a national association of all aviation noise commissions and represents the interests of people living close to German airports. The aviation noise commissions, which are mandatory for every German commercial airport, are made up of representatives from the municipalities and districts around the airports and from the aviation industry. Their political function alone means that those involved are concerned both with the prosperity of the locations and with ensuring that air traffic operations are as quiet as possible. This means that the positions established by the aviation noise commissions already balance various interests.</p> <p data-bbox="368 1671 1394 1995">It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany is so far, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbors, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p>

response	<p>Article 3 PBN requirements:</p> <p>Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p> <p>From our point of view, it is also possible to supplement Article 5 in this matter.</p> <p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>22 comment by: <i>Marcus Merkel</i></p> <p>Büttelborn is a municipality in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The municipality has 15.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>23 comment by: <i>Rendel/Raunheim</i></p> <p>Raunheim is a city in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The city has 17000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.</p>



It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.

comment

25

comment by: *City of Frankfurt am Main - Germany*

Frankfurt am Main is a city in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The city has 768.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.

comment

26

comment by: *City of Frankfurt am Main - Germany*



Frankfurt am Main is a city in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The city has 768.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response

Not accepted.

See the reply to comment #12.

comment

27

comment by: *Rheingau-Taunus-Kreis*

Rheingau-Taunus is a county in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The county has 188.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response

Not accepted.



See the reply to comment #12.

comment

28

comment by: *Lion Roßbach/ Stadt Darmstadt*

Darmstadt is a city in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. Darmstadt has over 165.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response

Not accepted.

See the reply to comment #12.

comment

29

comment by: *Stadt Pfungstadt*

Pfungstadt is a city approx. 18km south of Frankfurt Airport Runway 18W. Pfungstadt since years is significantly affected by aircraft noise, starting at 5am until 11pm. Pfungstadt has about 26.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:



	<p>Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p> <p>Gregory Knop City councillor from Pfungstadt/Germany</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>30 comment by: <i>Magistrat der Stadt Ginsheim-Gustavsburg</i></p> <p>Ginsheim-Gustavsburg is a city in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The city has 16.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 PBN requirements</p> <p>Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>32 comment by: <i>Flughafen Köln Bonn</i></p> <p>I am speaking on behalf of Cologne Bonn Airport as Head of Sustainability and Community Relations. I am the Noise Abatement Officer, responsible for all aircraft noise abatement issues and a member of the Aircraft Noise Commission.</p>



It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany and Cologne Bonn Airport so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the close aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

Best Regards
Martin Partsch

response

Not accepted.

See the reply to comment #12.

comment

33

comment by: *HLNUG*

The HLNUG (Hessisches Landesamt für Naturschutz, Umwelt und Geologie/ Hessian Agency for Nature Conservation, Environment and Geology) collects and evaluates environmental data in general and performs noise mapping of the Frankfurt Airport according to the European Noise Directive. According to our recent noise mapping, more than 110 thousand inhabitants (only in Hesse) are highly annoyed by aircraft noise from Frankfurt Airport.

The HLNUG is worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.



response Not accepted.
See the reply to comment #12.

comment 34 comment by: *SinaJobstHAM*

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements
Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.
See the reply to comment #12.

comment 35 comment by: *City of Maintal*

Maintal is a city in the vicinity of Frankfurt Airport, which is already affected by aircraft noise. The city has residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements
Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.



See the reply to comment #12.

comment	<p>36 comment by: <i>Aircraft Noise Commission Airport Erfurt-Weimar</i></p> <p>„Aircraft Noise Commissions (FLK – Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Airport Erfurt-Weimar (FLK Erfurt-Weimar) advises on measures to protect against aircraft noise at Erfurt-Weimar Airport.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>

comment	<p>37 comment by: <i>Bürgermeister Stadt Obertshausen</i></p> <p>Obertshausen is a city in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise.</p> <p>The city has 25.352 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures.</p> <p>To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 PBN requirements</p>
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	<p>Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>38 comment by: <i>Christian Rau</i></p> <p>Ruesselsheim is a city in the vicinity of Frankfurt Airport and already significantly affected by aircraft noise. The city's approximately 67,000 residents are in large parts worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far suggests that there is a huge amount of conventional IFP that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 or Article 5 of the regulation is suggested:</p> <p>Article 3 PBN requirements / Article 5 Exclusive Use of PBN</p> <p>Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation to the greatest possible extent.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>39 comment by: <i>City of Rodgau</i></p> <p>Rodgau is a City in the vicinity of Frankfurt Airport, it is already affected by aircraft noise. The city has 45000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO</p>



	<p>Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>41 comment by: <i>Aircraft Noise Commission MUC</i></p> <p>Aircraft Noise Commissions (FLK – Fluglärmmmissionen) are independent and mandatory committees at every major commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Munich (FLK Munich) advises on measures to protect against aircraft noise at Munich Airport.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3.7 of the regulation is suggested:</p> <p>"Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible."</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>42 comment by: <i>FLK Weeze</i></p> <p>Attachment #1</p> <p>Aircraft Noise Commissions (FLK – Fluglärmmmissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the</p>

municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Weeze (FLK Weeze) advises on measures to protect against aircraft noise at Frankfurt Airport.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

Which is especially true of our airport:

The airport is located directly on the Dutch border. Most take-offs are in the direction of the Netherlands. This means that Dutch territory is regularly overflown. However, since there is a Dutch military airport about 50 km to the west, according to the international treaty the planes have to make a right turn immediately after take-off and fly back onto German territory. This is the only airport that requires a turn of more than 270° for southern targets.

After years of trials, two variants of curves were finally found that would cause as little aircraft noise as possible for the residents of the Dutch municipality of Bergen, the Siebengewald district there, and the German town of Goch and its Pfalzdorf district. (Attached is a Fanamos plot from 2010, when the trials were still going on.)

These tight curves should also be permitted in the future.

response

Not accepted.

See the reply to comment #12. In addition, specificities regarding local implementation of departure routes should be discussed at local level with implementers and competent authorities.

comment

43

comment by: *Main-Taunus-Kreis, Germany*

Main-Taunus-Kreis is a county in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The county has 242.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.



It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

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response Not accepted.

See the reply to comment #12.

comment

44

comment by: *Main-Taunus-Kreis, Germany*

Main-Taunus-Kreis is a county in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The county has 242.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

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response Not accepted.

See the reply to comment #12.

comment

45

comment by: *District Mainz-Bingen*



The district Mainz-Bingen is a district in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The district has about 210.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.

comment 46 comment by: *Fluglaermbeauftragter Bernd-Olaf Hagedorn*

Nieder-Olm is a municipality in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The municipality/city/county has 30.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 or Article 5 of the regulation is suggested:

Article 3 PBN requirements / Article 5 Exclusive Use of PBN

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.



See the reply to comment #12.

comment

47

comment by: Gemeente Bergen

Aircraft Noise Commissions (FLK – Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Weeze (FLK Weeze) advises on measures to protect against aircraft noise at Frankfurt Airport.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

Which is especially true of our airport:

The airport is located directly on the Dutch border. Most take-offs are in the direction of the Netherlands. This means that Dutch territory is regularly overflowed. However, since there is a Dutch military airport about 50 km to the west, according to the international treaty the planes have to make a right turn immediately after take-off and fly back onto German territory. This is the only airport that requires a turn of more than 270° for southern targets.

After years of trials, two variants of curves were finally found that would cause as little aircraft noise as possible for the residents of the Dutch municipality of Bergen, the Siebengewald district there, and the German town of Goch and its Pfalzdorf district. FLK Weeze can provide you the Fanamos plot from 2010, when the trials were still going on. These tight curves should also be permitted in the future.

Nieuw Bergen, Well and Siebengewald are villages in the vicinity of Airport Weeze in the Netherlands, which are already significantly affected by aircraft noise. Nieuw Bergen has 5.260 residents, Well 2.440 and Siebengewald has 2.083 residents. A significant portion of these residents are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.



response

Not accepted.

See the reply to comment #12. Additionally, specificities regarding local implementation of departure routes should be discussed at local level with implementers and competent authorities.

comment

48

comment by: *Georg*

Sonsbeck is a municipality near Düsseldorf-Weeze Airport, it is already significantly affected by aircraft noise. In the municipality there are ca. 9.000 local residents who fear that the PBN change in flight procedures will result in additional exposure to aircraft noise.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested: Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response

Not accepted.

See the reply to comment #12.

comment

50

comment by: *Airport Niederrhein-Weeze*

Aircraft Noise Commissions (FLK – Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Weeze (FLK Weeze) advises on measures to protect against aircraft noise at Weeze Airport.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in



the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

Which is especially true of our airport:

The airport is located directly on the Dutch border. Most take-offs are in the direction of the Netherlands. This means that Dutch territory is regularly overflown. However, since there is a Dutch military airport about 50 km to the west, according to the international treaty the planes have to make a right turn immediately after take-off and fly back onto German territory. This is the only airport that requires a turn of more than 270° for southern targets.

After years of trials, two variants of curves were finally found that would cause as little aircraft noise as possible for the residents of the Dutch municipality of Bergen, the Siebengewald district there, and the German town of Goch and its Pfalzdorf district.

These tight curves should also be permitted in the future.

response

Not accepted.

See the reply to comment #12. Additionally, specificities regarding local implementation of departure routes should be discussed at local level with implementers and competent authorities.

comment

80

comment by: *Kassenwart*

VSF is an association of people affected by aircraft noise in Bremen. We are actively committed to noise-optimized flight routes. We are also member of Bundesvereinigung gegen Fluglärm.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply



response	<p>alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.“</p> <p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>104 comment by: <i>District Mainz-Bingen</i></p> <p>Mainz-Bingen is a county in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The county has 220.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 or Article 5 of the regulation is suggested:</p> <p><i>Article 3 PBN requirements / Article 5 Exclusive Use of PBN</i> Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>130 comment by: <i>Kai Haase Munich Airport</i></p> <p>Aircraft Noise Commissions (FLK – Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission München advises on measures to protect against aircraft noise at Munich Airport.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation.</p>



Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.

comment 132

comment by: *Stadt Bergisch Gladbach*

Bergisch Gladbach is a city in the vicinity of Cologne Airport, it is already significantly affected by aircraft noise. The city has 112.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.

comment 176

comment by: *Jörg Puchmüller*

Aircraft Noise Commissions (FLK – Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Leipzig-Halle advises on measures to protect against aircraft noise at Leipzig-Halle Airport (LEJ). It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience



from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.

comment 177

comment by: *Stadt Rösrath*

My name is Bondina Schulze, I am the mayor of Rösrath, a city with 29000 residents in the vicinity of Cologne-Bonn airport (CGN) and approximately 170 km away from FRA. Rösrath is already significantly affected by aircraft noise. The residents are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.

comment 178

comment by: *Stadt Hochheim am Main*



Hochheim am Main is a City in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The City of Hochheim has 18.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP., that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested.:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response

Not accepted.

See the reply to comment #12.

comment

179

comment by: *Stadt Neu-Isenburg*

Neu-Isenburg is a [city](#) in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The city has 40,000 [residents](#) who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

„It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

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response

Not accepted.



See the reply to comment #12.

comment

181

comment by: *CANSO*

Facts:

- The proposed text of PBN IR 2018/1048 Art. 5 (2) allows the provision of services using landing systems CAT II or CAT III operations.
- The FAQ on PBN implementation clearly exclude GBAS landing systems from the scope of 2018/1048.

Issue:

- Since the term “landing systems” is not specified in detail, the modified text could (still) be interpreted in a way that also GBAS CAT II and CAT III operation could be allowed but not GBAS CAT I.

Proposed text:

2. Paragraph 1 shall be without prejudice to Article 6 and to the possibility of providers of ATM/ANS to provide their services using **satellite-based landing systems of any category or conventional** landing systems enabling CAT II, or CAT III operations within the meaning of point (120e) of Annex I to Regulation (EU) No 965/2012.

response

Partially accepted.

See the reply to comment #11.

comment

187

comment by: *UNH*

The Forum Airport and Region (Forum Flughafen und Region - FFR) serves as a forum for exchange between the region and the aviation industry : the One important task is the development and implementation of active noise abatement measures, the information of citizens and the discussion of positive and negative effects of air traffic in the region. The institution includes representatives of the aviation industry, politics, municipalities and business associations, for example, who try to jointly reduce the negative impacts of airport operations. In agreement with the Chairpersons of the Forum, the following comments are made on the draft regulation:

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in



	<p>the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>218 comment by: <i>Stadt Goch</i></p> <p>Aircraft Noise Commissions (FLK – Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Weeze (FLK Weeze) advises on measures to protect against aircraft noise at Weeze Airport.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p> <p>Which is especially true of our airport:</p> <p>The airport is located directly on the Dutch border. Most take-offs are in the direction of the Netherlands. This means that Dutch territory is regularly overflown. However, since there is a Dutch military airport about 50 km to the west, according to the international treaty the planes have to make a right turn immediately after take-off and fly back onto German territory. This is the only airport that requires a turn of more than 270° for southern targets.</p> <p>After years of trials, two variants of curves were finally found that would cause as little aircraft noise as possible for the residents of the Dutch municipality of Bergen, the Siebengewald district there, and the German town of Goch and its Pfalzdorf district.</p> <p>These tight curves should also be permitted in the future.</p>
response	<p>Not accepted.</p>



See the reply to comment #12. Additionally, specificities regarding local implementation of departure routes should be discussed at local level with implementers and competent authorities.

comment

221

comment by: *Kreis Segeberg*

Kreis Segeberg is a [municipality](#) in the vicinity of Hamburg [Airport](#), it is already significantly affected by aircraft noise. The [municipality](#) has 285.000 [residents](#) who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.“

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

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response

Not accepted.

See the reply to comment #12.

comment

223

comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

General Comment on Regulation (EU) 2018/1048 article 5 – Exclusive use of PBN

The Swedish Transport Agency acknowledges the positive aspects of Regulation (EU) 2018/1048 Article 5 - Exclusive use of Performance-Based Navigation (PBN) that demands aerodrome operators to implement PBN approaches to the runways.

However, the Swedish Transport Agency urges the EU Commission and EASA to consider postponing the implementation date when PBN IR expressly forbids the use of conventional navigation procedures. Alternatively, the Swedish Transport Agency proposes allowing the simultaneous use of conventional navigation procedures and PBN routes and approach procedures beyond June 6th, 2030.

This position is rooted in the current security situation, where disruptions to navigation satellite signals are frequent, and Galileo's full operational functionality is not yet achieved.

As of 6th June 2030, the PBN IR expressly forbids the use of conventional navigation procedures and the use of non-compliant PBN applications to promote the implementation of PBN routes and approach procedures. The regulation does not explicitly demand the removal of conventional navigation aids supporting conventional navigation procedures, but concerns arise about their potential removal due to rationalization resulting from exclusive PBN use.

Such an outcome should be avoided to maintain robust navigation systems, vital for aviation safety, especially in light of the prevailing security situation. This consideration aligns with Basic Regulation (EU) 2018/1139, Article 1 point 3g, which emphasizes evidence-based decision-making to uphold a high uniform level of civil aviation safety.

The Swedish Transport Agency has great concern that these requirements directly dismantles one of the safest ways to bring an aircraft to the ground, ILS CAT I. During the implementation of Regulation (EU) 2018/1048, this hazard was not apparent. The current scenario presents a different perspective that should influence future decision-making.

A new aviation hazard stems from conflict zones affecting Global Navigation Satellite Systems (GNSS). The war in Ukraine has intensified disruptions through jamming and spoofing. With shortcomings in the EGNOS system and GNSS vulnerability, the Swedish Transport Agency has assessed the date when the PBN IR expressly forbids the use of conventional navigation procedures and the use of non-compliant PBN applications as a high-risk hazard to aviation safety. The hazard is outlined in the State Plan for Aviation Safety (SPAS). The flight safety risks will increase mainly around Controlled flight into Terrain (CFIT) and Loss of Control (LOC) with the existing requirements in (EU) 2018/1048 Article 5.

Furthermore, the Swedish Transport Agency predicts that by 2030, not all aircraft will have the capability to fly RNP APCH with LPV minima (SBAS). Currently, only a minority of the fleet operating at Swedish aerodromes have the LPV capability, with the lowest average at major aerodromes. Upgrading to LPV capability is sometimes complicated or even impossible.



	<p>Consequently, only RNP approach method with CAT I minima available will not be accessible to all aircraft, and may result in a number of aerodromes with precision runways not being able to use minima down to 200 feet for all aircraft post-2030. Consequences might be an increased number of missed approaches, compromising flight safety and regularity.</p> <p>The Swedish Transport Agency acknowledges the positive aspects of Regulation (EU) 2018/1048, however respectfully beseeches the EU Commission and EASA to consider postponing the PBN IR's date of enforcement or permitting simultaneous use of conventional navigation procedures and PBN routes/approach procedures beyond June 6th, 2030. This stance prioritizes safeguarding conventional navigation equipment from decommissioning, given the paramount importance of robust navigation systems in the prevailing security context.</p>
response	<p>Not accepted.</p> <p>EASA agrees that the operational context has deteriorated since the PBN IR was adopted and is subject to threats that increasingly exploit GNSS vulnerabilities. Your safety concerns are acknowledged and shared, and similar discussions already take place at EASA, which monitors the effects of RFI closely and publishes recommendations through safety information bulletins (SIB), particularly, EASA SIB No 2022-02R2. EASA also intends to assess the impact of the Article 5 restrictions in 2024.</p> <p>Your proposal for postponement of the Article 5 restrictions and simultaneous use of PBN and conventional navigation is however outside the scope of NPA 2023-04 and is considered controversial, so it would certainly require another NPA to ensure that any resulting amendment proposals are subject to public consultation. For this reason, your proposal cannot be accepted, though your argument will be duly considered when future tasks to amend the Regulation (EU) 2018/1048 are included in the EPAS.</p>
comment	<p>226 comment by: <i>Stadt Meerbusch</i></p> <p>Meerbusch is a city in the vicinity of Düsseldorf Airport. Meerbusch is already significantly affected by aircraft noise. The city has about 58.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p>

	<p>Article 3 PBN requirements</p> <p>Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>227 comment by: <i>Stadt Geldern</i></p> <p>Aircraft Noise Commissions (FLK – Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Weeze (FLK Weeze) advises on measures to protect against aircraft noise at Frankfurt Airport.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 PBN requirements</p> <p>Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p> <p>Which is especially true of our airport:</p> <p>The airport is located directly on the Dutch border. Most take-offs are in the direction of the Netherlands. This means that Dutch territory is regularly overflown. However, since there is a Dutch military airport about 50 km to the west, according to the international treaty the planes have to make a right turn immediately after take-off and fly back onto German territory. This is the only airport that requires a turn of more than 270° for southern targets.</p> <p>After years of trials, two variants of curves were finally found that would cause as little aircraft noise as possible for the residents of the Dutch municipality of Bergen,</p>



response	<p>the Siebengewald district there, and the German town of Goch and its Pfalzdorf district. (Attached is a Fanamos plot from 2010, when the trials were still going on.) These tight curves should also be permitted in the future.</p> <p>Not accepted.</p> <p>See the reply to comment #12. Additionally, specificities regarding local implementation of departure routes should be discussed at local level with implementers and competent authorities.</p>
comment	<p>244 comment by: <i>Kreisverwaltung Kleve</i></p> <p>Aircraft Noise Commissions (FLK – Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Weeze (FLK Weeze) advises on measures to protect against aircraft noise at Airport Weeze Niederrhein. As a representative of the district administration of Kleve on the aircraft noise commission, I would like to make the following comments:</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:</p> <p>Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible. Which is especially true of our airport: The airport is located directly on the Dutch border. Most take-offs are in the direction of the Netherlands. This means that Dutch territory is regularly overflown. However, since there is a Dutch military airport about 50 km to the west, according to the international treaty the planes have to make a right turn immediately after take-off and fly back onto German territory. This is the only airport that requires a turn of more than 270° for southern targets. After years of trials, two variants of curves were finally found that would cause as little aircraft noise as possible for the residents of the Dutch municipality of Bergen, the Siebengewald district there, and the German town of Goch and its Pfalzdorf district. These tight curves should also be permitted in the future.</p>



response

Not accepted.

See the reply to comment #12. Additionally, specificities regarding local implementation of departure routes should be discussed at local level with implementers and competent authorities.

comment

327

comment by: *Bundesvereinigung gegen Fluglärm e.V.*

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a following clarification to Article 3 or Article 5 of the regulation is suggested:

Article 5 Exclusive use of PBN / Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response

Not accepted.

See the reply to comment #12.

comment

328

comment by: *City of Siegburg, Germany*

Siegburg is a city in the vicinity of Cologne/Bonn Airport, it is already significantly affected by aircraft noise. The city has over 40.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:



	<p>Article 3 PBN requirements</p> <p>Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>329 comment by: <i>Stabsstelle für Fluglärmschutz Stadt Frankfurt am Main</i></p> <p>Frankfurt is a city in the vicinity of Frankfurt Airport, it is already significantly affected by aircraft noise. The city/county has 767.000 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.</p> <p>It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 or Article 5 of the regulation is suggested:</p> <p>Article 3 PBN requirements / Article 5 Exclusive Use of PBN</p> <p>Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.</p>
response	<p>Not accepted.</p> <p>See the reply to comment #12.</p>
comment	<p>330 comment by: <i>Mülheim an der Ruhr</i></p> <p>Mülheim an der Ruhr is a city in the vicinity of Düsseldorf Airport (ICAO-Code: EDDL), it is already significantly affected by aircraft noise. The whole area of the town is a flight expectation area. The city has 174.677 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures. Mülheim an der Ruhr is also a Member of the Aircraft Noise Commissions (FLK - Fluglärmkommissionen) established for Düsseldorf Airport. Aircraft Noise Commissions (FLK - Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law.</p>

The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Düsseldorf (FLK Düsseldorf) advises on measures to protect against aircraft noise at Düsseldorf Airport.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.

See the reply to comment #12.

comment

331

comment by: *Mitteldeutsche Flughafen AG*

The Mitteldeutsche Flughafen AG operates the Leipzig/Halle (LEJ) and Dresden (DRS) airports within the group. In connection with the operation of the airports, we strive to promote noise-reduced take-off and landing procedures in order to minimize the impact of aircraft noise on the population in the vicinity of the airports.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

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Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.



response Not accepted.
See the reply to comment #12.

comment 332 comment by: *MUNV*

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

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Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.

response Not accepted.
See the reply to comment #12.

comment 338 comment by: *Hessian Ministry for Economics, Energy, Transport and Housing*

This comment suggests to make further amendments to Regulation 2018/1048 in order to avoid legal uncertainties when designing and implementing PBN flight procedures in the EU. This would be important in order to be able to maintain existing and develop further noise abatement procedures tailor-made for a specific airport and its neighbouring communities. The comment stems from practical experience as Noise Abatement Commissioner with issues due to the EU PBN regulations pertaining to Frankfurt Airport (which accounts for appr. 5% of all the population in the EU with a aircraft noise level of Lden 55 according to the Environmental Noise Directive). But it is also relevant for other airports.

The use of PBN flight procedures has the potential to optimize flight paths, enhance safety and streamline flight procedures internationally. But they also come with a set of ICAO based rules and recommendations for procedure design and operation (e.g. ICAO Doc. 8168 Vol. II), that differ from those for conventional procedures or leave less leeway for site specific optimisations even when the same level of safety would be ensured. Applying these rules and recommendations without any adjustments according to the necessities of a specific airport can hamper the full benefits of PBN and can in certain cases even lead to severe negative outcomes concerning the intensity and distribution of aircraft noise in the vicinity of airports. This is especially the case for procedures involving curves in the first miles of a departure procedure or certain approach procedures, which can be necessary to circumvent densely



populated areas or for dedicated runway or flight path operations to allow for a specific temporal or contingency distribution management of noise.

Today there are uncertainties if and how far deviations from such rules can be implemented when alternative means to maintain adequate safety levels in a PBN procedure are available. While recital 7 accounts for such deviations, this is not being reflected in the regulation itself yet. We have started to implement PBN procedures in Frankfurt even before the regulation existed and are currently in the process of transforming the existing conventional procedures in PBN. The comment explicitly does not aim to deviate from a speedy implementation of PBN, but to enable us to make the best use of it and avoid legal uncertainties because many of the existing procedures can only be transformed into PBN with exemptions from certain ICAO rules for PBN. The need for clarification in the regulation 2018/1048 is even more important, though, to not only transform the existing procedures, but also to be able to use the navigation technologies in the future to develop new or optimise existing procedures with the best possible navigation and design toolset in order to avoid settlement areas, manage noise distribution or use more energy or emission efficient procedures.

Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.“

response Not accepted.

See the reply to comment #12.

comment 360

comment by: *Gemeinde Neunkirchen-Seelscheid*

Neunkirchen-Seelscheid is a municipality in the vicinity of Köln/Bonn Airport, it is already significantly affected by aircraft noise. The municipality has approximately 200 residents who are worried about the threat of additional pollution from aircraft noise due to the PBN change in flight procedures.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, **avoid seriously increasing the noise level for the aerodrome neighbours**, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. **It needs to be clarified in the regulation, that this is still a possibility when implementing PBN.** Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements



	Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible."
response	Not accepted. See the reply to comment #12.

comment	398 comment by: <i>Aircraft Noise Commission Düsseldorf</i> It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested: Article 3 PBN requirements Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.
response	Not accepted. See the reply to comment #12.

comment	399 comment by: <i>LFV</i> LFV thanks EASA for this well-reasoned NPA and the opportunity to enter an opinion on it. In connection to the proposed changes to EASA GM to PBN IR and specifically the item "Clarification on the deadline for use of ILS/MLS approaches down to CAT I minima in normal conditions", LFV would like to point out that this change does not alter our reading of the regulation text. Our view is that the proposed clarification did not attend to the concerns voiced by stakeholders in various fora in the recent years and mostly centering on whether the satellite navigation service as currently available in the European environment, is sufficiently performant and robust to enable a permanent large-scale withdrawal of ILS CAT I facilities. In relation to this LFV will offer the following perspective from its position as CNS service provider:
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- ILS service is not scalable
 CAT I facility that is retained solely for contingency purposes alone, as intended in PBN IR beyond 2030, will need to remain operating and be maintained in accordance with the same maintenance philosophy as what applies under conventional (pre-2030) use.

This means that an ILS facility will incur the same operating cost whether it is fulfilling the role of the primary navaid or is retained for contingencies; otherwise it cannot be assumed ready for operation when needed and is not meaningful in its role as a contingency means. Hence there is no economic benefit to PBN IR Art 5 in its current reading at least for what concerns conventional navaids for approach operations.

- What defines a contingency?

Annex 10 in principle defines two performance standards to SBAS availability and continuity, differentiated by a range of factors including traffic complexity, density, weather and crucially, the availability of alternative navigation aids, ref Annex 10 Vol I table 3.7.2.4-1 Note 4 and 5. As PBN IR Art 5 intends to remove these alternative navigation aids, in the absence of a more concrete guidance from PBN IR, statesor ANSPs will be enticed to embrace the higher performance standard in a greater extent (availability > 0.99, continuity risk < 1e10-4).

According to the EGNOS SDD data published by EUSPA, EGNOS struggled to meet this higher performance level in the majority of territory under our responsibility for the majority of the past year. As per PBN IR Art 6, SBAS not meeting the ICAO SARPS constitutes an automatic contingency and hence a cause for conventional approach service at below CAT II levels (ILS CAT I, NPA) to be continually offered. As SBAS performance is affected by periodic magnetic solar activity driven by the 9-to-11-year solar sunspot activity cycle, any assessment on sustainment or deletion of CAT I facilities needs to take the solar cycle into account and anticipate that while solar activity can be expected to diminish around and immediately following the passage of the 2030-date, it will be prudent to retain as many CAT I or NPA facilities as needed until it has been satisfactorily proven that the EGNOS service will perform at the strictest SARPS level in the next immediate solar cycle, which NASA expects to peak in 2036

response

Noted.

We invite you to share your concerns with EASA directly, using our fora to provide EASA with advice (EASA Advisory Bodies) or our functional mailboxes. As your comment rightly states, NPA 2023-04 does not change the meaning of Article 5; it is intended to ensure full alignment between the Regulation and its guidance material, as EASA guidance cannot contradict EU law adopted by the European Commission.

EASA intends to assess the impact of the Article 5 restrictions in 2024 (subject to coordination) and will consider your input when planning new rulemaking tasks to be included in the EPAS; in particular, future tasks could consider the above-mentioned impact assessment and evaluate the feasibility to reach the objectives



associated with Article 5 by the regulatory deadline, i.e. 6 June 2030, in the existing context.

Our replies to comment #1 and comment #9 may also be of interest to you, as they are closely interrelated.

Finally, your comment refers to ILS operating and maintenance costs, arguing that they will remain the same. This is true for individual systems that could be retained to deal with contingencies at strategic locations, but not globally, as some of these facilities could be removed from the network of ground navigation aids with the consequent savings.

ANNEX - SUBPART PBN - PERFORMANCE-BASED NAVIGATION

p. 70

comment

401

comment by: CAA Norway

PBN specifications for oceanic operations - Regulation (EU) (EU) 2018/1048

Text suggestion AUR.PBN.2005 Routes and procedures:

(8) By way of derogation from point (6), where providers of ATM/ANS have established ATS routes in oceanic or remote continental airspace, they shall implement those routes in accordance with the requirements of the RNAV 10 or the RNP 4 specifications, or other suitable RNP/RNAV applications specific to rotorcraft operations (*helicopter operations*).

Rationale:

This is due to expected need for increased lateral accuracy in the oceanic airspace caused by other activities on the continental shelf, such as offshore powerplants etc

Also suggest to add definitions for “Remote Continental Airspace” and “Oceanic airspace” in GM.

response

Partially accepted.

Please bear in mind that point (7) of AUR.PBN.2005 already considers other suitable RNP and RNAV specifications for rotorcraft, namely RNAV 1, RNP 1 and RNP 0.3. Any of their routes can rely on such specifications, regardless of the type of airspace (continental, oceanic or remote continental). However, in order to clear any doubts, point (8) has been modified to make a clear link with point (7).

Considering that the ICAO PBN Manual refers to continental, remote continental, and oceanic airspace without offering any proper definition, it was decided that the concepts are clear enough and offer a certain degree of flexibility to implementers. At this stage, it is preferred not to propose concrete definitions, which could be



debatable and would better benefit from discussions when future amendments to the Regulation are considered.

GM2 Article 4 Transitional measures

p. 71

comment	<p>129 comment by: <i>DGAC FR (Mireille Chabroux)</i></p> <p>DGAC-FR suggests to add GLS for Cat II operations in the following sentence</p> <p>d) the need to consider CAT II/III ground facilities (ILS, MLS, GLS) to supplement RNP APCH procedures where operations below CAT I minima are required due to local conditions</p>
response	<p>Accepted.</p> <p>It is indeed important to update the guidance to reflect that GLS CAT II minima are already offered in the single European sky, in particular, at Frankfurt Main (EDDF). Hence, the addition will be incorporated.</p>

comment	<p>241 comment by: <i>Airbus DS</i></p> <p>GM2 Article 4, (d): Although could be deleted, we consider that maintaining the reference to GLS in this particular article would be beneficial to understand the whole scope.</p>
response	<p>Accepted.</p> <p>The EASA proposal to amend point (d) considered the removal of references to GLS CAT I procedures/facilities, as they are outside the scope of the Regulation and, therefore, remain unaffected. It was assumed that any references to them could be misleading, but this and other comments received has made EASA reconsider. Hence, we will not delete the second part of point (d). It will be slightly revised to be consistent with the GLS breakthroughs; in particular, the publication of GLS CAT II minima at Frankfurt Airport (EDDF).</p> <p>In general, references to GLS will be retained in order to consider the entire operational context. Further clarification to the guidance material on Article 5 will also be introduced in order to further clarify the scope of the Regulation, as well as the scope of the restrictions that Article 5 introduces as of 6 June 2030.</p>

GM1 Article 5 Exclusive use of PBN

p. 72

comment	<p>1 comment by: <i>DFS Deutsche Flugsicherung GmbH</i></p> <p>Facts:</p> <ul style="list-style-type: none"> The proposed text of GM1 to Art. 5 clearly confirms the usage of ILS CAT I until 06 JUN 2030. For the sake of contingency (Art. 6) the use of ILS CAT I
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would be possible beyond this date. It has been stated by EASA that the non-coverage of an area by SBAS does not constitute a contingency case.

- Our understanding of the regulation is that existing ILS CAT II/III systems must not be used for ILS CAT I operations.
- In various meetings concerns have been expressed that the limited availability of SBAS receivers by June 2030 could limit the uptake of LPV 200 usage by airspace users.
- Apart from contingency cases ILS CAT I must be replaced by PBN procedures even if those came along with higher decision heights (LNAV/VNAV) or higher operational risks (BARO VNAV), c.f. EASA SIB 2023-03 dated 09MAR2023) in case of unavailability of SBAS LPV 200.

Issues:

1. Given a potentially insufficient equipment rate with SBAS receivers and limitations in SBAS coverage, the strict exclusion of ILS CAT I could become problematic.
2. It is questionable if this approach means an improvement in terms of safety and/or efficiency. Especially when available ILS CAT II/III systems could support ILS CAT I operations.

Resolution proposal to solve issue Nr. 2:

It is recommended to allow the usage of ILS CAT I procedures where an ILS system is in place and -for any reason - the use of SBAS LPV 200 is not possible. It should be clarified in the FAQ that ILS CAT II/III systems may be used for ILS approaches also under CAT I conditions.

response

Not accepted.

We share your understanding regarding the following:

- The lack of SBAS coverage is not considered to be a contingency. A loss or degradation of SBAS services, where they are provided, is.
- Article 5 precludes the use of ILS CAT II/III ground equipment to fly ILS CAT I minima as of 6 June 2030.
- Flying LNAV/VNAV minima instead of LPV or ILS CAT I minima is less safe, as minima will be nominally higher and BARO-VNAV guidance is also vulnerable to QNH-setting errors and temperature effects.

Precisely for this reason, EASA has proposed an amendment to ensure alignment between the guidance material on Article 5 and its provisions. Your resolution proposal however would require an amendment to Article 5 'to allow the usage of ILS CAT I procedures where an ILS system is in place and — for any reason — the use of SBAS LPV 200 is not possible', but such an amendment is outside the scope of NPA 2023-04. In addition, the replies provided to FAQs must also ensure alignment with the current formulation of Article 5, so ILS CAT II/III NAVAIDs should be used to fly down to CAT II/III minima.

Nevertheless, EASA may consider including a new task in the EPAS to conduct an evaluation of the feasibility to meet the objectives of Article 5 by the regulatory



deadline, i.e. 6 June 2030. This could be particularly relevant considering that the restrictions to use ILS CAT I remain, even for runways where LPV minima cannot be made available to airspace users (regardless of the reasons).

EASA confirms that it is monitoring whether LPV minima could effectively replace ILS CAT I by 6 June 2030. With the data available to EASA in July 2023, considering runways targeted by the PBN IR in the 30 EASA Member States, it is possible to look at runways served with ILS NAVAIDs and check LPV minima implementation:

Ground equipment	RWYs served with LPV (APV-I)	RWYs served with LPV-200	RWYs without LPV	Total
ILS CAT I	125	135	125	385
ILS CAT II or ILS CAT III	42	107	54	203

Part of the runways were not served with LPV minima, which can be partly explained by the implementation deadline, which is 25 January 2024 for precision approach runways. It should be noted that, according to the above table, not all runways served with LPV minima offer an SBAS CAT I (LPV-200) procedure.

EASA confirms that it is aware of areas that suffer lack of coverage, as indicated in your comment, which also explains why LPV minima are not yet available in some cases. Moreover, implementation monitoring also shows locations where the flight procedure design criteria cannot be met or where the procedure cannot be published due to airspace restrictions (e.g. proximity to third-country borders), i.e. runways where LPV minima implementation has been reported as impossible.

Apart from LPV minima availability, it is admitted that aircraft also need to be properly equipped, so EASA continues to monitor declared aircraft’s capabilities to fly LPV in EASA Member States, which amounted to 35 % of the fleet in the second semester of 2023. 98 % of the aircraft declared ILS capabilities in the same period.

comment 3

comment by: ENAIRE

Article/AMC/GM	Original Text	Proposed amended text	Rationale
3.7. Draft amendments to Regulation (EU) 2018/1048 and related AMC & GM GM1 Article 5 Exclusive use of PBN	Article 5 precludes the use of instrument approach procedures, other than those predicated on PBN, as per AUR.PBN.2005. As regards CAT I approaches predicated on ILS and MLS, they may in many cases be replaced by SBAS	We suggest that this whole paragraph is deleted from the GM1 Article 5.	1) The fact that ILS and MLS to CAT I minima can only be retained for normal operations until the deadline defined in Article 7(2)(a), i.e. 2030, seems sufficiently clear from Articles 5, 6 and 7 and the PBN IR FAQ published in the EASA website.



	<p>approaches that can be operated down to CAT I precision approach minima. There could be locations at which SBAS approaches cannot offer CAT I minima, so existing instrument approach procedures based on ILS, GLS or MLS may be retained and used in normal conditions until the deadline defined in Article 7(2)(a).</p>	<p>2) From our perspective, the main utility of this paragraph in the original GM1 was to discuss possible solutions to the post-2030 accessibility degradation that some airports outside the / in the fringes of SBAS CAT I service areas may suffer. Airports served today by conventional CAT I approach procedures would be “degraded” to APV SBAS at best, unless GBAS CAT I systems are installed (thus forcing those airports’ operator(s) to additional expenditures).</p> <p>Since this discussion is no longer possible in the framework of the current NPA/modification proposal of the PBN IR, this paragraph seems to have become superfluous.</p> <p>3) The statement “Article 5 precludes the use of instrument approach procedures, other than those predicated on PBN, as per AUR.PBN.2005” is no longer valid, as the normal use of GBAS CAT I approaches (which are neither PBN nor conventional) is not precluded.</p>
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response Accepted.

We confirm that the commented paragraph indicated that the normal use of ILS, MLS (no longer available) and GLS (not subject to Article 5) was possible after the



June 2030 deadline. However, with the existing formulation of Article 5, the interpretation provided by the guidance material was not fully correct. It is also agreed that the first sentence of the paragraph is inaccurate, as only conventional approach procedures, other than those supported by ILS CAT II/III, are impacted by the restrictions.

comment

182

comment by: *CANSO*

Facts:

- The proposed text of GM1 to Art. 5 clearly confirms the usage of ILS CAT I until 06 JUN 2032. For the sake of contingency (Art. 6) the use of ILS CAT I would be possible beyond this date. It has been stated by EASA that the non-coverage of an area by SBAS does not constitute a contingency case.
- In various meetings concerns have been expressed that the limited availability of SBAS receivers by June 2030 could limit the uptake of LPV 200 usage.
- Apart from contingency cases ILS CAT I must be replaced by PBN procedures even if those come along with higher decision heights (LNAV/VNAV) or higher operational risks (BARO VNAV) in case of unavailability of SBAS LPV 200.

Issues:

- Given an insufficient equipment rate with SBAS receivers, the exclusion of ILS CAT I could become problematic.
- It is questionable if this approach means an improvement in terms of safety and/or efficiency.

Resolution proposal:

It is recommended, to allow the usage of ILS CAT I procedures if an ILS CAT II/III system is in place and the use of SBAS LPV 200 not possible. It should be clarified in the FAQ that ILS CAT II/III systems may be used for ILS approaches also under CAT I conditions.



response Not accepted.
See the reply to comment #1.

comment **188** comment by: *Flughafen Friedrichshafen GmbH*

The Flughafen Friedrichshafen GmbH is organizing and managing the work of the Aircraft Noise Commission at the airport Friedrichshafen. Aircraft Noise Commissions (FLK – Fluglärmkommissionen) are independent and mandatory committees at every bigger commercial German airport, installed by national law. The Commissions are made up of representatives from the municipalities and districts around the airports and from the aviation industry. The Aircraft Noise Commission Flughafen Friedrichshafen (FLK Friedrichshafen) advises on measures to protect against aircraft noise at Frankfurt Airport. However we are commenting the NPA as the relevant airport in the region.

It is suggested that the opportunity of this NPA is used to clarify another issue that arose while implementing PBN. Experience from PBN implementation in Germany so far is, that there is a huge amount of conventional IFP, that need to be converted into PBN procedures. To achieve this and, at the same time, avoid seriously increasing the noise level for the aerodrome neighbours, deviations from ICAO documents like ICAO Doc. 8168 Vol. II are required. It needs to be clarified in the regulation, that this is still a possibility when implementing PBN. Recital 7 has, so far, not been reflected in the body text of the regulation. Therefore, the following clarification to Article 3 of the regulation is suggested:

Article 3 PBN requirements
Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex. However, providers of ATM/ANS are entitled to deviate from those requirements and apply alternative requirements which are better suited for specific situations, while still achieving the benefits pursued by this regulation as much as possible.“

response Not accepted.
See the reply to comment #12.

comment **189** comment by: *Romanian CAA*

We propose to add the following text:
There could be locations at which SBAS approaches cannot offer CAT I minima, so existing instrument approach procedures based on ILS or MLS may be retained and used in normal conditions until the deadline defined in Article 7(2)(a) or, in exceptional cases, after the deadline defined in Article 7(2)(a), only as a contingency measure.

Reason

Article 6 is not prescribing nor limiting the types of contingency measures that the providers of ATM/ANS shall take in order to ensure that they remain capable of providing their services. For reasons related to traffic safety and regularity, the



	<p>providers of ATM/ANS should be allowed to include ILS CAT I in their post-2030 contingency plans.</p>
response	<p>Not accepted.</p> <p>Article 6 focuses on PBN contingencies only, i.e. situations where, for unexpected reasons beyond the control of ATM/ANS service providers, GNSS or other methods used for performance-based navigation are no longer available.</p> <p>Your proposal, whereby other contingency scenarios could prescribe temporary use of ILS CAT I procedures, would require further discussion and analysis before considering the required amendment; hence, it is considered outside the scope of NPA 2023-04, but it may be considered for future rulemaking tasks.</p> <p>For the time being, be informed that the commented paragraph will be deleted in response to comment #3.</p>
comment	<p>242 comment by: <i>Airbus DS</i></p> <p>GM1 Article 5: It is understood that ILS and MLS procedures will be considered contingency procedures after the deadline (June 2030), while GLS procedures could be used in normal conditions and without limitations after that date. A note is proposed to be added to this article to avoid confusions. Proposal: “Note: After the defined deadline, ILS and MLS procedures will be considered contingency procedures, while GLS procedures could be used in normal conditions and without limitations.”</p>
response	<p>Not accepted.</p> <p>Your proposal would be inaccurate as instrument landing systems (ILS) enabling CAT II or CAT III operations could also be used in normal conditions and without limitations after 5 June 2030. They are not limited to PBN contingency.</p> <p>See also the reply to comment #3.</p>
comment	<p>243 comment by: <i>Airbus DS</i></p> <p>GM1 Article 5: It is necessary to add a clarification about what will happen to aircraft not equipped with GPS-SBAS. Does EASA expect to publish a new mandate for operators requiring the installation of GPS-SBAS?</p>
response	<p>Noted.</p> <p>A mandate to require the installation of SBAS receivers is not foreseen. Such a mandate would require solid grounds, particularly, a safety concern.</p> <p>As explained in recital (3) of the PBN IR, EU legislation requires that aircraft be equipped and flight crew be suitably qualified to operate on the intended route or procedure. Hence, it is obvious that if aircraft are not equipped to fly LPV minima, they will have to fly other minima that may be available (e.g. LNAV/VNAV), provided</p>

that they are properly equipped. EASA has also published a communication to aircraft operators on PBN implementation, where the transition to PBN is summarised and we urge aircraft operators to get ready for the changes; in particular, the communication states the following: 'Considering that, as of 6 June 2030, ILS CAT I approaches will only be used in case of contingency, aircraft operators should consider equipping their aircraft with satellite-based augmentation system (SBAS) avionics supporting RNP APCH operations to LPV minima and training their flight crews accordingly to ensure accessibility to airports in meteorological conditions requiring CAT I operations.'

See also the replies to comment #3 and comment #1, where the issue is widely discussed.

comment

333

comment by: IATA

If GBAS and / or GLS is removed, MLS consequently should also be erased. The new regulatory amendment should not promote or demote any technology against other/s.

It is suggested either keeping both GLS and MLS, or removing the two.

response

Partially accepted.

MLS seems to be of no interest in EASA Member States, as these systems are no longer available. The guidance still refers to them for the sake of completeness. EASA guidance will continue to refer to GLS, where necessary, in order to represent the operational context globally.

Please see the responses to comment #241 and comment #3.

comment

334

comment by: IATA

Comment ref this paragraph in the GM - "[...] so existing instrument approach procedures based on ILS, GLS or MLS may be retained and used in normal conditions until the deadline defined in Article 7(2)(a)." [...]

The text is misleading. Cases in which, after the 6th of June 2030, the SBAS LPV200 performances are still not met in certain peripheral airports (see performance maps of EGNOS LPV200 service definition document SDD) is not well addressed.

For those cases, SBAS approaches could not offer operating minima equivalent to CAT I, but higher, and based on the proposed working, the involved airports would not be allowed to provide CAT I with ILS after 2030. And as a consequence, airlines will not be served with the same previous levels of accessibility and safety, but lower.

Therefore, it is suggested to put in the GM1 to Article 5 the following statement: "at locations at which SBAS approaches cannot offer CAT I minima, other instrument approach procedures (e.g. based on ILS) may be retained" (it literally comes from



response

page 9 of this NPA document). In other words, it is suggested to remove the part "[...] and used in normal conditions until the deadline defined in Article 7(2)(a)"

Not accepted.

The reality is that the Regulation does not allow providers of ATM/ANS to continue to use ILS CAT I procedures at those runways where SBAS approaches cannot offer CAT I minima. In general, as of 6 June 2030, it does not allow providers of ATM/ANS to continue to use ILS CAT I even if LPV minima are not available at all, due to lack of SBAS coverage or due to procedure design constraints; hence, the issue is greater than what the comment expresses, so EASA may consider including a new task in the EPAS to conduct an evaluation of the feasibility to meet the objectives of Article 5 by the regulatory deadline.

In the meantime, EASA guidance must be aligned with Article 5, so in NPA 2023-04 an amendment had been proposed to avoid misinterpretations; hence, your proposal cannot be accepted because it would cancel the necessary change and, most importantly, it would require an amendment to Article 5, which is outside the NPA 2023-04 scope.

See also the replies to comment #1 and comment #3.

comment

388

comment by: *European Cockpit Association*

In the opinion of the European Cockpit Association, the current outlook for a safe and smooth transition to exclusive use of PBN from the deadline defined in PBN IR Article 7(2)(a) is questionable from an operational perspective due to a number of reasons:

Safety issues with APV/baro-VNAV.

A number of relatively recent and serious air safety incidents indicate significant safety issues with APV/baro-VNAV, involving critical loss of terrain separation during final approach. Controller-pilot communication issues and use of an incorrect QNH setting have been determined to be contributing factors. This topic has recently gained much needed attention and discussion aimed at improving safety, re. relevant safety bulletins. The European Cockpit Association is committed to contribute to this process, but is concerned that the safety risk might be exacerbated as PBN implementation moves ahead with increasing use of APV/baro-VNAV. Currently, it is difficult to determine the amount of time and effort needed to sufficiently mitigate this safety threat.

Proposed change

- Keep GM1 Article 5 in its present form to allow for continued use of e.g. ILS for normal operations when needed, and consider amending the PBN IR Article 5 when appropriate.
- Review PBN IR (11) and the draft meeting report from ICAO EUR PBNC TF/8 & EUROCONTROL NSG/35 – PBN ISG/4.

The rationale is to ensure a safe and smooth transition to exclusive use of PBN, re. PBN IR (11). The present text in GM1 Article 5, which allows for the retention of other



instrument procedures (e.g. ILS) for normal operations at locations at which SBAS approaches cannot offer CAT I minima, is more sensible although it doesn't correctly reflect the current PBN IR.

Current state of PBN and LPV implementation, challenges, and expectations re. future fleet equipage

Re. draft meeting report from ICAO EUR PBNC TF/8 & EUROCONTROL NSG/35 – PBN ISG/4 (12-14 April 2023, Paris, France):

7.1 part 2 (page 9):

As per Q4 2022, only 9 % of flights declared LPV capability (may be inaccurate)

7.4 (pages 11-12):

APV/baro-VNAV has no benefits at smaller aerodromes

It is unlikely that the majority of aircraft will be equipped with LPV by 2030, due to costs and potentially unavailable retrofit solutions

Tangible safety and economic benefits of replacing ILS with LPV are under question. LPV may provide a degraded service when compared to ILS in certain areas.

The meeting noted that it would be of value to investigate the possibility of considering exemption on the removal of ILS for certain circumstances. EASA pointed out that this is not currently part of PBN IR requirements and any consideration in this regard would require an amendment to the PBN IR through the EC comitology process.

Proposed change

- Keep GM1 Article 5 in its present form to allow for continued use of e.g. ILS for normal operations when needed, and consider amending the PBN IR Article 5 when appropriate.

- Review PBN IR (11) and the draft meeting report from ICAO EUR PBNC TF/8 & EUROCONTROL NSG/35 – PBN ISG/4.

Based on the items stated above, the European Cockpit Association joins the call on EASA and other relevant parties to consider amendments to the PBN IR and the GM to allow exemptions for the continued use of ILS CAT I during normal operations after the deadline defined in Article 7(2)(a).

Overall, the European Cockpit Association is concerned that the industry as a whole may not be fully prepared to make a safe and smooth transition to exclusive use of PBN before the current deadline.

response

Partially accepted.

With respect to your proposed change, please see the reply to comment #334.

As for your concerns regarding BARO-VNAV APV procedures, EASA published [SIB No. 2023-03](#), where a number of recommendations have been disseminated to



supplement what is already in place to prevent and mitigate the effects of incorrect barometric altimeter settings.

It is important to monitor whether the number of these events increase, but it should be recognised that the implementation of LNAV/VNAV minima flown with BARO-VNAV equipment will replace non-precision approaches (NPAs) based on conventional navigation, which are subject to the same vulnerability (incorrect barometric altimeter settings); the EASA SIB explains that vertical guidance provided by ILS is not vulnerable to an incorrect barometric altimeter setting, so the use of BARO-VNAV APV instead of ILS CAT I approaches exposes the flight to QNH/QFE errors.

Regarding PBN implementation, EASA monitors the progress of the PBN approach procedures implementation and fleet equipage in EASA Member States (not in ECAC). In the second semester of 2023, 35 % of the fleet declared capabilities to fly LPV minima, and these aircraft performed 11 % of the approach operations in EASA Member States (very similar to ECAC). The percentage of LPV-capable aircraft (35 %) is possibly more relevant than the percentage of flights performed by them, and it could be argued that 35 % is far from the current percentage of aircraft that declared ILS capabilities in the same period, i.e. 98 %. A remarkable annual rate would be necessary to ensure that most aircraft are equipped with LPV by 2030, and a mandate to require SBAS retrofitting has been discarded in line with your comment and as explained at the ICAO EUR PBNC TF/8 & EUROCONTROL NSG/35.

It is agreed that LPV may provide a ‘degraded’ service in certain areas when compared to ILS CAT I, due to EGNOS underperformance, e.g. service deviations from ICAO continuity requirements and impossibility to publish CAT I minima due to LPV 200 service availability figures (see also the reply to comment #1).

EASA will use data from its monitoring activities to continue to evaluate the readiness to ensure a smooth transition to PBN by June 2030, including the impact of the restrictions that exclude the use of ILS CAT I minima in normal operations. However, this is outside the scope of the existing rulemaking task. Nevertheless, EASA intends to perform an impact assessment in 2024 (subject to coordination) and may consider a new rulemaking task in the EPAS to conduct an evaluation of the feasibility to meet the objectives of Article 5 by the regulatory deadline.

GM1 Article 7 Entry into force and application p. 72

comment

4

comment by: ENAIRE

Article/AMC/GM	Original Text	Proposed amended text	Rationale
3.7. Draft amendments to Regulation (EU)	GM 1 Table – 2020 and	A double suggestion is made to EASA, so that the most convenient	This would address any implementation, by some ATM/ANS



<p>2018/1048 and related AMC & GM</p>	<p>2024 milestones.</p>	<p>option is selected by the Agency:</p>	<p>provider, of oceanic/remote ATS routes below FL150.</p>		
<p>GM1 Article 7 Entry into force and application</p>		<p>Option 1) - to add a new row to the “ Implementation by 25 January 2024” section of the table, as follows:</p>	<p>Regarding Spain’s current RNAV 10 ATS routes, some of them have FL145 as their lowest flight level. However, their highest FL in all cases can be found above FL150.</p>		
		<p>****BEGINNING****</p>			
		<table border="1"> <tr> <td data-bbox="810 651 1066 936"> <p>RNAV 10 or RNP 4 for ATS routes in support of oceanic and remote continental operations established below FL150</p> </td> <td data-bbox="1070 651 1114 685"> <p>(8)</p> </td> </tr> </table>	<p>RNAV 10 or RNP 4 for ATS routes in support of oceanic and remote continental operations established below FL150</p>	<p>(8)</p>	
<p>RNAV 10 or RNP 4 for ATS routes in support of oceanic and remote continental operations established below FL150</p>	<p>(8)</p>				
		<p>****END****</p>			
		<p>Option 2) – not to make additions to the 2024 table, and delete the FL distinction in the new row to the “3 December 2020” section of the table, as follows:</p>			
		<p>****BEGINNING****</p>			
		<table border="1"> <tr> <td data-bbox="810 1458 1066 1664"> <p>RNAV 10 or RNP 4 for all ATS routes in support of oceanic and remote continental operations.</p> </td> <td data-bbox="1070 1458 1114 1491"> <p>(8)</p> </td> </tr> </table>	<p>RNAV 10 or RNP 4 for all ATS routes in support of oceanic and remote continental operations.</p>	<p>(8)</p>	
<p>RNAV 10 or RNP 4 for all ATS routes in support of oceanic and remote continental operations.</p>	<p>(8)</p>				
		<p>****END****</p>			
<p>response Accepted.</p>					



It is confirmed that non-compliant oceanic routes below FL 150 would need to consider RNAV 10 or RNP 4 by 25 January 2024. In other words, Article 7(2)(d) applies to both AUR.PBN.2005(6) and AUR.PBN.2005(8), since the latter is introduced as a derogation from the former.

However, Spain’s routes are already compliant and, therefore, the proposed change has no impact on the current routes, even if they consider levels below FL 150. Any new routes are assumed to be designed in compliance with the Regulation, so the deadlines will be relevant for existing routes, if not compliant.

Although AUR.PBN.2005(8) would apply to all flight levels, oceanic routes cover usually high flight levels, so it was chosen to limit the guidance to the most common cases. A similar approach was taken for rotorcraft routes, which are only associated with the 2024 deadline in GM1 to Article 7.

In any case, the guidance will be amended in consideration of your proposals.

comment 5

comment by: ENAIRE

Article/AMC/GM	Original Text	Proposed amended text	Rationale
3.7. Draft amendments to Regulation (EU) 2018/1048 and related AMC & GM GM1 Article 7 Entry into force and application	GM 1 Table – 2024 milestone “RNP 1(+): RNP 1 specification including RF and/or vertical paths defined by constraints”	New proposed text: ****BEGINNING**** RNP 1(+): RNP 1 specification including, where the operational scenario so requires, RF and/or vertical paths defined by constraints ****END****	Harmonization with the NPA’s proposal for AUR.PBN.2005 Routes and procedures (5).

response

Accepted.

We confirm the inconsistency detected by the commentator. The amendment proposed in the comment will be duly considered to ensure alignment with the proposed changes to the Annex to the PBN IR.

comment 210

comment by: EUROCONTROL

[Attachment #2](#)



GM1 Article 7 Entry into force and application - Table 7 (Page 72)

This NPA proposes an Entry into Force for the oceanic Nav Specs as 3 December 2020 and above FL 150. We question why this change is historical and also note that UN857 in the GCCC FIR is from FL145-FL660. Would suggest the implementation date is set for 25 Jan 2024 and cover all oceanic FLs.

Tango 9 and Tango 290 are North/South Oceanic ATS routes in the Shanwick OCA (EGGX FIR). T9 Southbound only from FL300 to FL400. T290 is Northbound only from FL290 to FL410. These two Tango routes do not require datalink, Both T9 and T290 are RNP 2 continental offshore routes but require low continuity, i.e. **1 x Long Range Navigation System (LRNS) as well as 1 x HF, and ADS-B.**

See attached file

From NAT Doc 007:

12.1.2 For unrestricted operation in the NAT HLA an approved aircraft must be equipped with a minimum of two fully serviceable LRNSs. Aircraft may be approved for NAT HLA operations when equipped with only a single LRNS. However, such aircraft are only permitted to plan and fly routes specified for this purpose (see paragraph 12.2) and on other particular routings serving individual traffic axes e.g., the Tango routes, routings between the Iberian Peninsula and the Azores/Madeira and routes between Iceland and Greenland (See Chapter 3).

Tango 9 and Tango 290 Requirements:

a)	VHF 8.33Khz equipped (Field 10a: 'Y')
b)	NAT HLA certified (Field 10a: 'X')
c)	RNP2 certified: -Field 10a: GNSS – 'G' -Field 10a: RNP – 'R' -Field 10a: Other Info – 'Z' -Field 18: "NAV/RNP2"
d)	Surveillance equipment - SSR Mode S - Field 10d: E Transponder - Mode S, including aircraft identification, pressure altitude and extended squitter (ADS-B) capability ADS-B B1 Ads-B with dedicated 1090 Mhz ADS-B "out" capability.

Conclusion

Although not proposed in NPA 2023/04, A-RNP, RNP AR DP and possibly RNP 2 are logical future options for operations within domestic airspace and providing them as options offers potential benefits for ATM/ANS providers both in the en-route and in high-density/complex terminal airspaces. In the case of A-RNP, a SID/STAR lateral performance of +/-0.3NM is expected to improve airspace efficiency and, for multiple runway aerodromes, possibly offer another, less demanding, option for PBN supported parallel approaches.



The ICAO SASP has clearly stated that for parallel approaches only 3D operations are permitted for safety reasons; this is defined in the SOIR (ICAO Doc 9643). If the runway spacing permits the use of RNP APCH to support parallel approaches, what is the impact on the requirement to publish three lines of minima on the RNP APCH charts?

The regulation seems to be not consistent with some established operations/procedures as Hybrid SID/STAR and RNP APCH (LNAV/VNAV) for CAT H.

Moreover, the PBN IR seems to be only aligned with the PBN Manual for approach operations but not for Departure/Arrival operations.

Finally, NPA 2023-04 proposes the introduction of RNAV 10 and RNP 4 for oceanic operations above FL150 from 3 Dec 2020. Why does this not cover all published flight levels, why is it historical and finally why is RNP 2 (high & low continuity) not considered as an option?

response

Partially accepted.

Regarding flight levels of oceanic routes, please see the reply to comment #4.

As for Shanwick EGGX, it is EG airspace that belongs to a non-EU Member State and to the ICAO NAT Region. Hence, it is outside the scope of the PBN IR and, therefore, not addressed by NPA 2023-04. The specifications that the UK chooses are not relevant to our proposal.

We prefer not to offer the whole set of specifications for oceanic operations, otherwise there would be no airspace requirement harmonisation and stakeholders may consider any of the specifications considered in the ICAO PBN Manual for enroute, departures, etc. Recognising that some specifications could offer advantages in particular environments, we prefer to restrict our choice to RNAV 10 and RNP 4, as justified in the NPA.

As for consideration of other ICAO specifications in the future, we believe that this discussion should take place at a later stage, as explained in the reply to comment #202 in more detail.

Hybrid SID/STAR will not be compliant as of 6 June 2030 and we consider that the Regulation is clear enough, as confirmed in the reply to comment #203. The publication of LNAV/VNAV minima for CAT H approach operations does not make sense, so we do not expect that they are implemented. In any case, EASA will consider publication of replies to FAQ on PBN IR implementation to clarify these two issues, as they are outside the intended scope.

Simultaneous approaches cannot be flown using RNP APCH down to LNAV minima, as explained in your comment. These are operational considerations that the three-line-of-minima requirement is not supposed to address, as it would necessitate a



level of detail that is simply not expected. On the other hand, a future update of the references provided in GM1 AUR.PBN.2005 *Routes and procedures* could consider an update to the second edition of ICAO Doc 9643, where up-to-date guidance is provided. Either the aerodrome or the service provider responsible for putting in place the procedures could argue that LNAV minima are not useful at the aerodrome, provided that the approach runway configuration considers simultaneous parallel approaches to the runways all the time; in other words, there could be runway configurations where the runways do not apply simultaneous approaches and, therefore, LNAV minima could be used.

6.2. Related EASA decisions p. 80

comment 6

comment by: ENAIRE

Reference	Article/AMC/GM	Original Text	Proposed amended text	Rationale
Annexes to ED Decision 2018/013/R – page 9	GM1 AUR.PBN.2005 Routes and procedures	Whole GM1	To be determined by EASA (update of ICAO PBN reference materials).	<p>Although not addressed by NPA 2023-04, several references contained in this GM1 are outdated. A non-controversial update may be useful and consistent with the removal of the CAT IIIA/B/C concepts.</p> <p>The new references may have a significant impact on PBN implementation activities; e.g. the amended Doc 9905 changes the conditions according to which an RNP AR procedure implementation may be feasible or not.</p>



response

Noted.

EASA concurs that the references are static and have become outdated; however, the proposed change is outside the scope of NPA 2023-04, and an analysis would be necessary to decide on the updates; in particular, EASA would like to confirm whether some or all the references provided in the guidance material can turn dynamic instead of remaining static and also confirm the relevance and completeness of the proposed references.

For the above reasons, your comment will be considered when future rulemaking tasks are included in the EPAS.

comment

7

comment by: ENAIRE

Reference	Article/AMC/GM	Original Text	Proposed amended text	Rationale
Annexes to ED Decision 2018/013/R – page 10	GM1 AUR.PBN.2005(1) Routes and procedures	Contractual arrangements covering the implementation of approach procedures based on the European Geostationary Navigation Overlay Service (EGNOS) are expected to be established between the providers of ATM/ANS responsible for implementing RNP APCH down to LPV minima and the EGNOS service provider, as per paragraph 3.1 of Annex I to Commission Implementing Regulation (EU) No 1035/2011.	New proposed text: ****BEGINNING**** Contractual arrangements covering the implementation of approach procedures based on the European Geostationary Navigation Overlay Service (EGNOS) are expected to be established between the providers of ATM/ANS responsible for implementing RNP APCH down to LPV minima and the EGNOS service provider, as per Commission Implementing Regulation (EU) 2017/373, regarding formal interfaces and	Although not addressed by NPA 2023-04, the Implementing Regulation (EU) 1035/2011 quoted by this GM is no longer in force. A non-controversial regulatory update may be useful and consistent with the removal of the CAT IIIA/B/C concepts. The proposed



		Similar provisions in Commission Implementing Regulation (EU) 2017/373 regarding contracted activities, i.e. ATM/ANS.OR.B.015, and the associated AMC & GM, may be of help to providers of ATM/ANS.	contracted activities, i.e. ATM/ANS.OR.B.005, ATM/ANS.OR.B.015, and their associated AMCs & GMs. ****END****	amended text is provided only as a first proposal, i.e. any other wording defined by EASA will be considered acceptable (provided that its scope is restricted to the said update).
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response

Accepted.

EASA is of the view that the proposed change is certainly not controversial and references to Regulation (EU) No 1035/2011 no longer make sense considering that contracted activities are currently regulated in point ATM/ANS.OR.B.015 of Regulation (EU) 2017/373. Hence, EASA will update the text of the guidance material despite the fact that this was outside the scope of NPA 2023-04.

comment

8

comment by: ENAIRE

Reference	Article/AMC/GM	Original Text	Proposed amended text	Rationale
Annexes to ED Decision 2018/013/R – page 10	GM1 AUR.PBN.2005(3) Routes and procedures	The term ‘appropriate SBAS coverage’ refers to the EGNOS Safety of Life (SoL) service area, as declared in the EGNOS SoL Service Definition Document (SDD). The EGNOS SoL	*Replace “European GNSS Agency (GSA)” by “European Union Agency for the Space Programme (EUSPA)”. *Replace “Amendment 89 to ICAO Annex 10”	Although not addressed by NPA 2023-04, a non-controversial regulatory update may be useful and consistent with the removal of the CAT IIIA/B/C concepts. Additionally, the GSA has been replaced by the EUSPA.



		<p>SDD is published by the European GNSS Agency (GSA), including the performance commitment maps, as provided by the certified EGNOS provider.</p> <p>It is expected that the signal-in-space meets the performance requirements defined in Amendment 89 to ICAO Annex 10, Volume I, prior to implementing SBAS-based procedures.</p> <p>[...]</p> <p>For those areas where the SBAS performance commitment does not meet the average continuity risk specified in Amendment 89 to ICAO Annex 10, Volume I, it is still possible to implement SBAS-based procedures.</p>	<p>with a more recent amendment (TBD by EASA taking into account the ICAO schedule for the forthcoming Amendment 93).</p>	<p>See further comments below concerning other possible modifications to <i>GM1 AUR.PBN.2005(3) Routes and procedures.</i></p>
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		[...]		
response	<p>Partially accepted.</p> <p>EASA agrees to replace the GSA by EUSPA in consistency with Regulation (EU) 2021/696, which established the Union Space Programme and the European Union Agency for the Space Programme.</p> <p>With regard to the update of technical references, EASA considers that the review of technical references deserves an analysis before the changes are implemented (see also the reply to comment #6).</p> <p>Partially accepted.</p> <p>EASA agrees to replace the GSA by EUSPA in consistency with Regulation (EU) 2021/696, which established the Union Space Programme and the European Union Agency for the Space Programme.</p> <p>With regard to the update of technical references, EASA considers that the review of technical references requires an analysis before the changes are implemented (see also the reply to comment #6).</p>			

comment 9

comment by: ENAIRE

Reference	Article/AMC/GM	Original Text	Proposed amended text	Rationale
Annexes to ED Decision 2018/013/R – page 10	GM1 AUR.PBN.2005(3) Routes and procedures	The term ‘appropriate SBAS coverage’ refers to the EGNOS Safety of Life (SoL) service area, as declared in the EGNOS SoL Service Definition Document (SDD). The EGNOS SoL SDD is published by the European GNSS Agency (GSA), including the performance commitment maps, as provided by the certified EGNOS provider.	N/A	EASA is invited to consider the fact that, during several months in 2022 and 2023, and in a continuous basis, some parts of the EU containing LPV approaches have experimented real EGNOS performances worse than the values declared in the SoL SDD. This has led to the temporary suspension of those LPV approaches from a EASA



				Member State's AIP. It is recommended that EASA develops this GM (or adds new GMs) to provide Member States with more details on how to address these situations.
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response

Noted.

EASA, being the EGNOS service competent authority, is aware of the performance degradations experienced since 2022, and has been monitoring the issue since then. The reasons for the underperformance have to do with the effects of the solar cycle, which are more aggressive than expected, and the changes to the infrastructure (RIMS removal).

In early September 2023, it was decided that the EGNOS SoL SDD would be updated to reflect the existing performance, in particular, through up-to-date commitment maps.

The availability had experienced a significant regression at some airports that used to meet the 99 % availability requirement to publish LPV minima; the availability had decreased by 30 % in some cases. This could perfectly justify the temporary suspensions of the related minima in the AIP.

Your proposal to provide further guidance will be duly considered for future updates of EASA guidance material, but changes would certainly require discussions and consultation; hence, it is outside the NPA 2023-04 scope.

Considering the need for an update, the EGNOS Safety of Life SDD (v3.5) was eventually published on 23 November 2023.

7. Appendix 1 - PBN Oceanic Routes p. 82

comment

31 comment by: *Swiftair / Technical*

Dear Sirs,
I'm writing you on behalf of Swiftair according to the NPA 2023-04 published on May 2023 for PBN specification for oceanic operations (Appendix1)
The objective of this written is to explain the Swiftair situation related of RNAV10 in our fleet.



	<p>Since twenty years we are operating routes in the oceanic sector of the Canarias' FIR/UIR with ATR72-200series and unfortunately this ATR model is not capable to RNAV10 (RNP10).</p> <p>We would like to confirm with EASA the possibility to continue operating in the oceanic sector of the Canarias's FIR with RNAV5 capability.</p> <p>We must consider the high economic impact of the measure if the RNAV10 were to be implemented on these routes and also considering that it is not possible to upgrade avionics on this aircraft model. Add to this the excellent navigation performance on this route demonstrated year after year by the ATR72-210 fleet on a daily basis, adding furthermore that this is an essential perishable cargo transport for the Canary Islands.</p> <p>Requesting therefore an exemption or alternative solution.</p> <p>Best regards</p>
response	<p>Noted.</p> <p>For the sake of safety, the 5 routes that ENAIRE has published in the Spanish AIP as RNP 10 routes require RNP 10 (RNAV 10) capabilities (see Section 3 of Appendix 1). The existing regulatory proposal does not imply any changes to such routes, which can remain unchanged and be operated by aircraft declaring RNP 10 capabilities.</p> <p>There are other routes in this airspace that do not require RNP 10 capabilities, in particular, the oceanic sector in the Canarias FIR (GCCCCOE) also contains some overland and/or coastal ATS routes based on the RNAV 5 specification. These routes are not considered to be in an oceanic environment and, therefore, remain unaffected by the proposal. Moreover, other RNAV 5 routes in other sectors of the Canarias FIR will continue to require RNAV 5 specification, as specified in the AIP. Please consider the navigation specification required in Spain's AIP to confirm that your aircraft will meet the required capabilities.</p>
comment	<p>206 comment by: EUROCONTROL</p> <p><u>Appendix 1 – PBN Oceanic Routes (Page 82)</u></p> <p>The proposed changes do not allow RNP 2 as an Oceanic option even though there are two published and highly utilised ATS routes in the Shanwick OCA. If the UK is no longer considered in the SES and 1048/2018 then these routes could be ignored, however, one should consider connectivity and possible future application of ATS surveillance separation where communication satisfies RCP 240 (formerly Target-to-Target separation). In addition, the argument in the NPA is that because RNP 2 requires high continuity and CPDLC and there is a small percentage of aircraft certified to this capability, RNP 2 is not considered an Oceanic option. As is shown below, T9 and T290 do not require this level of capability, calling for low continuity, and all high continuity aircraft would fully fulfil low continuity continental requirements.</p>
response	<p>Noted.</p>



Please see reply to comment #210.

In addition, the description given in Appendix 1 explains the communication requirements applied by ENAIRE in the so-called oceanic sector of Canarias FIR for specific routes, which were taken as a particular example in the single European sky. Appendix 1 also states the following: ‘Since no detailed information about RNP 2-capable aircraft exists, RNP 2 data have been excluded’ (see footnote 28, where further explanation is provided). Hence, the material has not concluded on the number of aircraft certified to RNP 2.

comment

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comment by: EUROCONTROL

Appendix 1 – PBN Oceanic Routes - Table B – Note 28 (Page 84)

Note 28 on page 84 points out that there is no code to describe RNP 2 in Item 18 of the 2012 flight plan. Firstly, it should be highlighted that this has been the same for RNP 0.3 and RF (outside of AR certification) which are already mandated in the Implementing Regulation. Secondly, irrespective of the requirements laid out in the NORTH ATLANTIC OPERATIONS AND AIRSPACE MANUAL (NAT Doc 007), the FF-ICE implementation guidance (ICAO Interim Advance Copy Doc 9965) provides recommended alphanumeric codes for RNP 2 - High and Low Continuity, RF, FRT and RNP 0.3 (para 2.7.5.2) to ensure global harmonisation.

response

Noted.

Footnote 28 states that ‘the ICAO 2012 flight plan (FP) does not expressly require the reporting of RNP 2 capabilities’, and continues to explain that, nevertheless, ‘other navigation equipment capabilities that are not usually specified by default could be described in Item 18 of the ICAO FP’. Our point was not the impossibility to report or the total lack of data but ‘operators are not likely to inform about this capability, unless RNP 2 capabilities are required to operate on the routes and the competent authority expressly requires that the RNP 2 capability is indicated.’ The proposal in NPA 2023-04 focuses on oceanic airspace in the single European sky, which is marginal, with just a few routes reported by Spain and France, all of them designed in accordance with the RNAV 10 specification. In EASA’s view, it is then reasonable to conclude that ‘since no detailed information about RNP 2-capable aircraft exists, RNP 2 data have been excluded.’

comment

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comment by: EUROCONTROL

Appendix 1 – PBN Oceanic Routes – General

RNAV 1 for ATS routes for the en-route phase of flight - According to Figure I-1-3. “Navigation specification designations” of the updated PBN Manual (ICAO Doc 9613, Edition 5), RNAV 1 is also a specification for en-route navigation applications. Furthermore, the proximity of some European ATS routes require the use of RNAV 1 specification, as a minimum. This is the scenario for those routes in the south of the Dutch FIR connecting to the London FIR. The regulation does not allow for higher navigation performance than RNAV 5. However, this is not in accordance with the PBN manual and the operational needs of some congested European airspace areas.



response

Besides, this requirement does not only impose a navigation specification not adequate today for all ATS routes, but it also prevents the implementation of higher navigation performances in future areas that might be sooner or later become congested, provided a positive safety assessment. Allowing more flexibility and alignment with the PBN Manual regarding oceanic airspace navigation specifications is more than welcome, in line with that, more flexibility and alignment with the PBN Manual provisions concerning all ATS routes would be desirable.

Noted.

Your proposal is outside the NPA 2023-04 scope, which does not address ATS routes in congested airspace but is limited to routes in oceanic and remote continental airspace. RNAV 5 for enroute operations has been considered the minimum standard for long, as per the supplementary procedures for the ICAO EUR Region (Doc 7030).

Consideration of other specifications would require discussions, similar to those prior to the adoption of the Regulation in 2018. At that moment in time, RNAV 5 was confirmed as the common specification for enroute continental airspace. Only 5 years after the adoption of the Regulation, the agreed implementation of PBN is still in progress, and route implementation should finish by January 2024 (for en-route). Hence, the intent of this amendment proposal does not consider changes to the agreed set of navigation specifications, as an evaluation of the effects of the Regulation cannot be conducted so early.

