European Union Aviation Safety Agency

Opinion No 03/2024

in accordance with Article 76(1) of Regulation (EU) 2018/1139

Implementation of the regulatory needs in support of the SESAR deployment

Introduction of ACAS Xa for operations and PBN specifications for oceanic operations in the single European sky (SES)

RMT.0682 (SUBTASK 1)

EXECUTIVE SUMMARY

This Opinion proposes regulatory amendments pertaining to two different subject matters in support of operations in the single European sky (SES): the use of Airborne Collision Avoidance System (ACAS) Xa and the harmonised use of performance-based navigation (PBN) specifications for oceanic and remote continental operations.

The proposed amendments introducing the use on a voluntary basis of ACAS Xa within the SES, based on the transposition of related ICAO Standards and Recommended Practices (SARPs), are expected to increase safety, and to improve harmonisation.

The proposed amendments on PBN would allow the use in the SES of ICAO RNAV 10 and RNP 4 navigation specifications, which have been specifically designed to support operations in en-route oceanic and remote continental airspace. The use of RNAV 10 and RNP 4 instead of RNAV 5, which is the only specification recognised for use in SES, is expected to preserve the required level of safety through more stringent aircraft requirements against the loss of the navigation function (continuity failure). In this regard, the proposed amendments would keep the aircraft performance compatible with the air traffic services (ATS) and communication, navigation, and surveillance (CNS) services available in such airspace.

REGULATION(S) TO BE AMENDED

— Regulation (EU) No 1332/2011 (ACAS)

— Regulation (EU) 2017/373 (ATM/ANS)

— Regulation (EU) 2018/1048 (PBN)

AFFECTED STAKEHOLDERS

Providers of ATM/ANS (ANSPs); aircraft operators; aircraft and system/equipment manufacturers; national authorities, EASA.

WORKING METHODS

Development	Impact assessment(s)	Consultation
ACAS Xa: By EASA with external support PBN: By EASA	ACAS Xa: Detailed PBN: Light	NPA — Public

RELATED DOCUMENTS / INFORMATION

— ToR RMT.0682, issued on 10.12.2019

— NPA 2023-04, issued 26.5.2023

— CRD 2023-04 (A)

PLANNING MILESTONES: Refer to the latest edition of EPAS *Volume II*.

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1. About this Opinion

1.1. How this regulatory material was developed

The European Union Aviation Safety Agency (EASA) developed this NPA in line with Regulation (EU) 2018/11391 (the 'Basic Regulation')[1] and the Rulemaking Procedure[2]. Rulemaking Task (RMT).0682 is included in the 2024 edition of Volume II of the European Plan for Aviation Safety (EPAS)[3]. Its Subtask 1 concerns the development of regulatory material to:

— permit the operation of aeroplanes equipped with either airborne collision avoidance system (ACAS) II collision avoidance logic version 7.1 or ACAS Xa; and

— address identified PBN operational issues.

The amendments related to the introduction of new technologies for ACAS have been developed by EASA in conjunction with the Federal Aviation Administration (FAA) and with the support of Eurocontrol subject matter experts.

The amendments to the PBN regulatory requirements have been developed by EASA, on the basis of the analysis of relevant data provided by ENAIRE and the Network Manager.

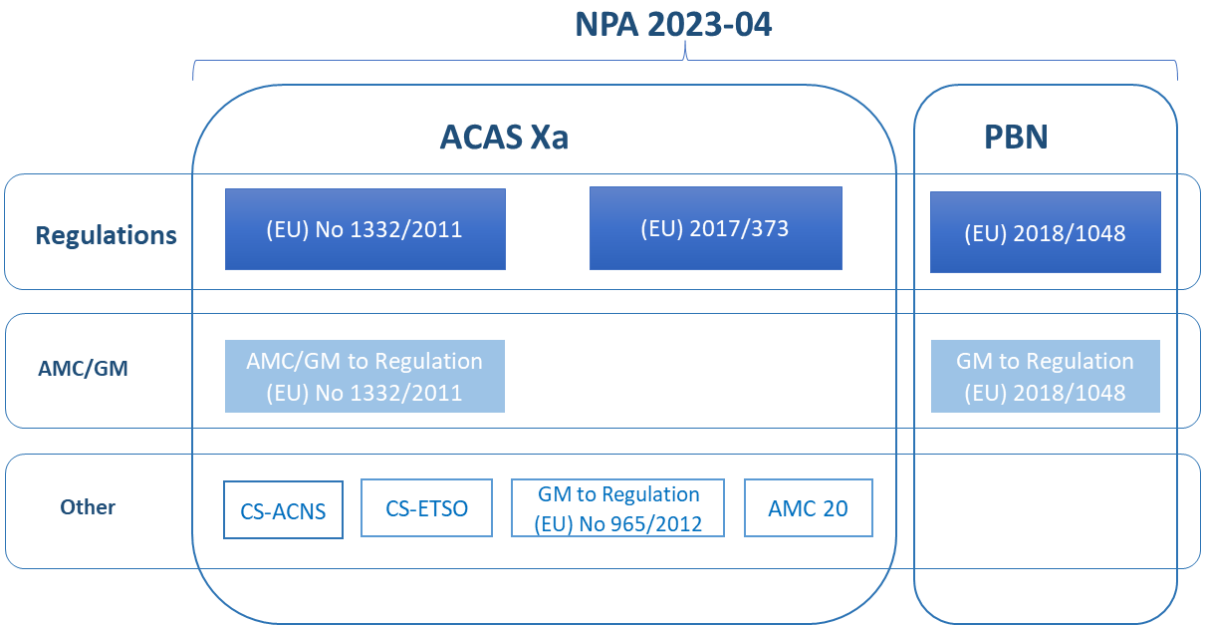
The draft regulatory material was publicly consulted in accordance with the ToR for this RMT via Notice of Proposed Amendment (NPA) 2023-04[4]. The regulatory material proposed to be amended by this NPA is summarised in the figure below.

[1] Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1) (http://data.europa.eu/eli/reg/2018/1139/oj).

[2] EASA is bound to follow a structured rulemaking process as required by Article 115(1) of Regulation (EU) 2018/1139. Such a process has been adopted by the EASA Management Board (MB) and is referred to as the 'Rulemaking Procedure'. See MB Decision No 01-2022 of 2 May 2022 on the procedure to be applied by EASA for the issuing of opinions, certification specifications and other detailed specifications, acceptable means of compliance and guidance material ('Rulemaking Procedure'), and repealing Management Board Decision No 18-2015 (EASA MB Decision No 01-2022 on the Rulemaking Procedure, repealing MB Decision 18-2015 (by written procedure) | EASA (europa.eu)).

[3] European Plan for Aviation Safety (EPAS) 2024 - 13th edition | EASA (europa.eu)

[4] NPA 2023-04 - Introduction of ACAS Xa for operations in the single European sky (SES) airspace & PBN specifications for oceanic operations | EASA (europa.eu)



EASA reviewed the comments received on both ACAS and PBN topics and duly considered them for the preparation of the regulatory material that is presented here.

In accordance with Article 6(9) of Management Board Decision 01-2022, in February 2024 advice from the MAB on the regulatory material proposed with this Opinion was sought, indicating a substantial agreement as detailed in Section 2.4.3.

The draft regulations included in this Opinion, proposing amendments to the EU regulations regarding ACAS (Regulation (EU) No 1332/2011)[5], Common requirement for ATM/ANS providers (Regulation (EU) 2017/373)[6] and PBN (Regulation (EU) 2018/1048)[7], are published in the Official Publication of EASA[8]. For information, EASA published the draft AMC and GM which are intended to be issued to support the application of the Regulations proposed in this Opinion.

Together with this Opinion, EASA published Comment-Response Document (CRD) 2023-04 (A)[9] which provides EASA's feedback on the PBN-related comments.

1.2. The next steps

This Opinion is submitted to the European Commission which, based on the Opinion's content shall decide whether to adopt the proposed draft regulations proposed in the Opinion.

5 Commission Regulation (EU) No 1332/2011 of 16 September 2011 laying down common airspace usage requirements and operating procedures for airborne collision avoidance (OJ L 336 20.12.2011, p. 20) (http://data.europa.eu/eli/reg/2011/1332/oj).

6 Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (OJ L 62, 8.3.2017, p. 1) (http://data.europa.eu/eli/reg_impl/2017/373/oj).

7 Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018 laying down airspace usage requirements and operating procedures concerning performance-based navigation (OJ L 189, 26.7.2018, p. 3) (http://data.europa.eu/eli/reg_impl/2018/1048/oj).

8 http://easa.europa.eu/document-library/opinions

9 https://www.easa.europa.eu/en/document-library/comment-response-documents/crd-2023-04a

In parallel with the European Commission adoption process, EASA will continue working on the development of the associated draft acceptable means of compliance (AMC), guidance material (GM) and certification specifications (CSs). EASA will adapt the draft AMC and GM to the potential changes that may be introduced in the final text of the subject EU regulations during the aforementioned process.

1.2.1. ACAS

Together with this Opinion and for information only, EASA publishes the draft amendments to AMC and GM related to Regulation (EU) No 1332/2011, which may be subject to potential modifications as appropriate, e.g. to ensure alignment with the final text of the amending regulation.

In addition to the amendment to implementing rules and the AMC and GM to Regulation (EU) No 1332/2011, NPA 2023-04 included proposals for consequential amendments to the GM to Regulation (EU) No 965/2012[10], AMC 20, CS-ACNS and CS-ETSO, as shown in the figure provided in Section 1.1.

EASA will ensure alignment of the resulting decisions with the final text of the amending regulation where applicable. To summarise, the following decisions are planned to be issued following the publication of the amending regulation by the European Commission:

— Decisions containing amendments to the AMC and GM to Regulation (EU) No 1332/2011 and respectively the GM to Regulation (EU) No 965/2012.

— Decisions containing amendments to AMC 20, CS-ACNS and CS-ETSO.

When issuing these decisions with a dedicated CRD, EASA will also provide feedback to the commentators and information to the public on who engaged in the process and/or provided comments on the draft AMC, GM, AMC-20, CS-ACNS, and CS-ETSO during the consultation, how such engagement and/or consultation was used in rulemaking, and how the comments were considered.

Note: Although the processing of the AMC 20, CS-ACNS and CS-ETSO proposed amendments may be accomplished independent from the adoption and issuance of the amendments to Regulation (EU) No 1332/2011 and Regulation (EU) 2017/373, EASA is considering issuing such Decisions together with the decisions on AMC and GM to Regulation (EU) No 1332/2011 and GM to Regulation (EU) No 965/2012, to ensure regulatory consistency.

1.2.2. PBN

In order to improve the common understanding of Regulation (EU) 2018/1048 (the 'PBN IR'), EASA has prepared draft amendments to the GM on common airspace usage requirements and operating procedures concerning PBN. This material is published together with this Opinion for information only, and may be subject to potential modifications, e.g. to ensure alignment with the final text of the amending regulation.

Following the adoption and issuance of the amendment to the PBN IR, EASA will issue a decision with the related GM to support the regulation application. When issuing the decision, EASA will also provide

[10] Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296 25.10.2012, p. 1) (http://data.europa.eu/eli/reg/2012/965/oj).

a link to the aforementioned CRD, which lists the comments received on the proposed GM during the public consultation, as well as how the comments were considered.

2. In summary — why and what

This Opinion includes proposed amendments to the regulatory framework related to two separate topics: the use of ACAS Xa in the SES airspace (Regulation (EU) No 1332/2011 and Regulation (EU) 2017/373), and the harmonised use of oceanic PBN navigation specifications in the SES airspace (Regulation (EU) 2018/1048). Hence, this Opinion has been structured accordingly.

2.1. Why we need to act

2.1.1. Enable the use of ACAS Xa in the SES and update the regulatory framework to align it with the latest ICAO Annex 10 Volume IV Amendment 91 changes

Enabling the use of ACAS Xa in the SES

Amendment 91 to the International Standards and Recommended Practices, Aeronautical Telecommunications — Surveillance and Collision Avoidance Systems (Annex 10, Volume IV to the Convention on International Civil Aviation) introduced the airborne collision avoidance system Xa (ACAS Xa) and its specific variation ACAS Xo. ACAS Xa was introduced as an alternate to the TCAS II collision avoidance logic version 7.1 (TCAS II version 7.1).

As the EU regulatory framework is already referring to ACAS II with a collision avoidance logic version 7.1, and since ACAS Xa was validated for operation in the SES, there is a need to adapt the EU regulatory framework to align it with the ICAO SARPs to enable the use of ACAS Xa in the SES airspace for both European and third-country operators. The use of ACAS Xo has not been yet assessed in the SES airspace and therefore, for the time being, is not subject to regulatory action.

The following airspace usage requirements enable the ACAS use in the SES airspace:

— Commission Regulation (EU) No 1332/2011: Article 3 ‘Airborne collision avoidance system’ and its Annex (Part-ACAS) currently allow only the use of ACAS II collision avoidance logic version 7.1 (ACAS II version 7.1). This regulation should be amended to enable the use of ACAS Xa.

The following air operations requirements refer to airspace usage requirements:

— Commission Regulation (EU) No 965/2012 (the ‘Air OPS Regulation’): points CAT.IDE.A.155, NCC.IDE.A.140 and SPO.IDE.A.131 refer to the airspace requirements defined in Commission Regulation (EU) No 1332/2011;

— Commission Regulation (EU) No 452/2014[11]: point TCO.205 states that when undertaking operations within the airspace above the territory to which the Treaty applies, third-country operators shall equip their aircraft with and operate such navigation, communication and surveillance equipment as required in that airspace. Within SES airspace, the relevant applicable rule for this purpose is Commission Regulation (EU) No 1332/2011.

Unless Commission Regulation (EU) No 1332/2011 is amended, aircraft of European and third-country operators equipped with ACAS Xa will not be permitted to access and operate within the SES airspace.

[11] Commission Regulation (EU) No 452/2014 of 29 April 2014 laying down technical requirements and administrative procedures related to air operations of third country operators pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 133 6.5.2014, p. 12) (http://data.europa.eu/eli/reg/2014/452/oj).

Update Commission Regulation (EU) 2017/373 to align with ICAO Annex 10 Volume IV up to Amendment 91

Point CNS.TR.100(d) of Commission Regulation (EU) 2017/373 stipulates the requirements for CNS providers and refers to ICAO Annex 10 Volume IV on surveillance radar and collision avoidance systems in its 4th edition of July 2007, including all amendments up to and including No 89.

Such reference needs however to be updated and synchronised with the latest ICAO amendments, as Amendments 90 and 91 to ICAO Annex 10 Volume IV have since been published.

Updating other ACAS-related documentation

To support and reflect the use of ACAS Xa in the SES airspace and to provide AMC and GM consistent with the amended regulation as well as with the subsequent revision of CS-ACNS, the relevant AMC and GM to Regulation (EU) No 1332/2011 need to be updated.

2.1.2. Changes to PBN airspace usage requirements

The PBN IR requires the deployment of PBN approach procedures, standard instrument departure routes (SIDs), standard instrument arrival routes (STARs), and ATS routes for the en-route phase of flight. Such PBN routes and approach procedures are to be implemented in the SES by providers of air traffic management/air navigation services (ATM/ANS) and aerodrome operators.

As discussed with Member States at meeting 1-2021 of the ATM/ANS TeB, EASA agreed to evaluate potential amendments to the PBN IR in response to the following issues:

Point AUR.PBN.2005(6) of the Annex to the PBN IR requires the implementation of ATS routes in accordance with the requirements of the RNAV 5 specification for all SES en-route operations. The RNAV 5 specification was developed to support operations in continental airspace; however, SES also has oceanic airspace. In this regard, it was drawn to EASA's attention that, for instance, in the vicinity of the Canary Islands, there is an oceanic sector where there are some ATS routes already designed in accordance with the RNAV 10 specification. Unlike RNAV 5, RNAV 10 was developed to support the implementation of routes in oceanic (and remote continental) airspace; however, the existing routes are not compliant with the PBN IR, thus forcing the service provider to implement routes based on an ICAO specification that was not designed for oceanic applications.

Point AUR.PBN.2005(5) of the Annex to the PBN IR prescribes the use of the RNP 1 specification together with some additional navigation functionalities. In particular, the use of, at least, one of the functionalities listed in point AUR.PBN.2005(5) was made mandatory, which could be incompatible with the required operations. However, a minor correction would allow the use of such functionalities only where necessary, i.e. subject to local needs instead of mandatory implementation.

As for Article 5 of the PBN IR, alignment with Regulation (EU) 2021/2237[12] is necessary. This Regulation became applicable on 30 October 2022 to amend the Air OPS Regulation; in particular, it deletes points (13) to (16) of Annex I to the Air OPS Regulation, which contained the definitions for CAT I, CAT II, CAT IIIA, and CAT IIIB. Regulation (EU) 2021/2237 replaced these definitions with point (120e), which is consistent with the new ICAO approach classification and no longer differentiates between CAT IIIA

[12] Commission Implementing Regulation (EU) 2021/2237 of 15 December 2021 amending Regulation (EU) No 965/2012 as regards the requirements for all-weather operations and for flight crew training and checking (OJ L 450, 16.12.2021, p. 21) (http://data.europa.eu/eli/reg_impl/2021/2237/oj).

and CAT IIIB operations, but refers to CAT III operations instead. If Article 5 is not amended in line with the amendments made to the Air OPS Regulation, the PBN IR would point at definitions of Category III operations that no longer exist, thus adding to confusion.

2.2. What we want to achieve — objectives

The overall objectives of the EASA system are defined in Article 1 of the Basic Regulation. The regulatory material presented here is expected to contribute to achieving these overall objectives by addressing the issues described in Section 2.1. The specific objectives are detailed in Sections 2.2.1 and 2.2.2.

2.2.1. Enabling the use of ACAS Xa in SES airspace

The objectives of this proposal are to:

— support harmonisation of the EU regulatory framework with ICAO SARPs and with other regions (i.e. USA);

— to enable the safe use of ACAS Xa in the SES airspace and thus to prevent inappropriate limitations for ACAS Xa-equipped aircraft to the access to the SES airspace;

— reflect the state of the art and best industry practices by updating the relevant documentation.

2.2.2. Changes to PBN airspace usage requirements

The objectives of the proposal are to:

— avoid a potential safety regression linked to the mandatory use of the RNAV 5 specification in airspace other than continental airspace;

— harmonise the use of ICAO navigation specifications that were specifically designed to support operations in oceanic and remote continental airspace; and

— promote the use of the radius to fix (RF) functionality and/or altitude constraints together with RNP 1 SID and STAR only where necessary.

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

2.3.1. Enabling the use of ACAS Xa avionics in SES airspace

To achieve the objectives set in Sections 2.2 and 2.2.1 above, amendments to Regulation (EU) No 1332/2011 and Regulation (EU) 2017/373 are proposed as follows:

Commission Regulation (EU) No 1332/2011:

— The definition of ACAS II in Article 2 has been revised to specify that ACAS Xa and TCAS II with a collision avoidance logic version 7. 1 (TCAS II version 7.1) are both considered ACAS II.

— Point AUR.ACAS.1005(1) has been modified to specify only ACAS II, which, considering the additional details in the ACAS II definition, will allow operators equipped with a TCAS II version 7.1 or an ACAS Xa to comply with the ACAS equipage requirement.

— Point AUR.ACAS.1005(2) has been modified to expand the ACAS II voluntarily equipage requirement to include TCAS II version 7.1 and ACAS Xa.

Note: Point AUR.ACAS.1005(3) remains unchanged.

Commission Regulation (EU) 2017/373:

— Point CNR.TR.100(d) has been modified to synchronise the reference to Annex 10 Volume IV with the latest Amendment 91, relevant for the ACAS Xa introduction and to correct the edition number of the ICAO Annex 10 Volume IV.

The proposed ACAS regulatory material (draft amending regulation) is published as Annex I to this Opinion.

The targeted applicability of the regulatory material is 2024, as soon as the amending regulation can be published. EASA considers that no transition period is necessary, as the proposal just enables ACAS Xa-equipped aircraft access to the SES airspace as an alternate to TCAS II version 7.1 equipage.

2.3.2. Changes to PBN airspace usage requirements

To achieve the objectives set in Sections 2.2 and 2.2.2 above, amendments to the PBN IR are proposed to:

— permit the use of the ICAO RNAV 10 or RNP 4 navigation specifications in oceanic and remote continental airspace[13];

— remove the obligations that impose the use of the RF functionality or altitude constraints together with RNP 1 SID and STAR, so that the design of the routes is consistent with the local performance and operational needs; and

— ensure alignment with the current definition of CAT III operations, as per the Air OPS Regulation.

At the moment, some EASA Member States make use of the RNAV 10 specification in the SES, so the proposal eliminates any impact on the existing routes, which can remain unchanged without making any investments.

The proposed amendments clarify that, regardless of the type of airspace (continental, oceanic or remote continental), helicopters' routes are still allowed to use suitable RNP or RNAV specifications, namely RNAV 1, RNP 1, or RNP 0.3.

The targeted applicability of the regulatory material is 2024, as soon as the amending regulation can be published; in should be noted that no transition period is considered necessary due to the lack of impact on the existing routes.

Article 44(1)(a) of the Basic Regulation empowers the Commission to adopt implementing acts laying down detailed rules as regards the use of airspace and airspace structures, including operating procedures concerning PBN.

The proposed PBN regulatory material (draft amending regulation) is published separately, as Annex II to this Opinion.

[13] ICAO Document 9613 *Performance-based Navigation (PBN) Manual*, Fifth Edition – 2023

2.4. What are the stakeholders' views

2.4.1. Enabling the use of ACAS Xa in the SES airspace and other ACAS-related changes

There were 315 comments received on the ACAS topic in the various sections of the NPA; however, there were no comments on the proposed amendments to the implementing rules (i.e. Regulation (EU) No 1332/2011 and Regulation (EU) 2017/373). Nonetheless, some comments received on the supporting AMC and GM may be considered relevant for the proposed amendment to Regulation (EU) No 1332/2011; as such they are summarised below.

A comment indicated that clarity as to what constitutes an ACAS II is needed. A similar comment was received during the internal review of the regulatory text, coupled with the recommendation to update the ACAS II definition provided in the Regulation (EU) No 1332/2011. As a result, in the proposed regulatory text for the Regulation (EU) No 1332/2011, the definition of ACAS II is updated to explicitly refer to TCAS II version 7.1 and ACAS Xa. Furthermore, aligned with the main intent of this rulemaking task, point AUR.ACAS.1005(2) has been modified to clearly indicate the ACAS II equipment allowed (i.e. TCAS II version 7.1 or ACAS Xa) in case of voluntary ACAS II equipage.

A comment referred to the introduction and use of ACAS Xo within the SES airspace which can be useful in certain operational scenarios, e.g. to avoid unnecessary TCAS resolution advisories (RAs) during the independent parallel approaches such as at Madrid-Brajas (LEMD) airport. It should be noted that ACAS Xo has not been assessed with regard to operations in the EU; nonetheless, its assessment will be planned in accordance with the EPAS, as necessary.

A comment requested an ACAS Xa forward-fit mandate. The main benefit of ACAS Xa is that it offers operational advantages (optimising the RAs leading to an improved regularity of flight and increasing the ATM efficiency). However, the safety benefit obtained through upgrading from TCAS II version 7.1 to ACAS Xa together with the improved ATM efficiency were not proven to justify an ACAS Xa forward-fit mandate. Therefore, it is proposed that the choice would be for the operator to opt for equipage with either ACAS Xa or TCAS II version 7.1.

The CRD file with the ACAS comments and responses will be provided along with the Decisions, as specified in Section 1.2.1. and will include EASA's feedback on the individual comments received, as well as a summary of stakeholders' comments, explaining how they have been taken into account.

2.4.2. Changes to PBN airspace usage requirements

Very few comments on the proposed amendments to the Regulation were received, and none of them expressed disagreement with the proposed amendments to the PBN IR, as per NPA 2023-04.

However, one of them requested additional clarity to ensure that helicopters will be allowed to use suitable RNP or RNAV specifications on the continental shelf. This is aligned with the intent of the NPA, and EASA has introduced an addition to the text proposed in point (8) of *AUR.PBN.2005 Routes and procedures*. This addition makes clear that point (8), which introduces RNP 4 and RNAV 10 in oceanic and remote continental airspace, will apply without prejudice to point (7), which already allows to use RNP 0.3, RNAV 1 or RNP 1 specifications for rotorcraft operations in any kind of airspace.

There were several comments on issues that were not addressed by NPA 2023-04 (i.e. outside the scope), which are controversial in nature. These comments also proposed some amendments, which would require an impact assessment and consultation through a new NPA; they address:

— the restrictions that stem from Article 5 of the Regulation;

— a fundamental change to Article 3 of the Regulation.

With respect to the comments on Article 5, EASA agrees with most of the concerns expressed, as they are consistent with the information gathered during the ongoing monitoring and implementation support activities. For this reason, EASA intends to use up-to-date data to perform an impact assessment of the restrictions imposed by Article 5, thus evaluating the feasibility and suitability of the related regulatory objectives, in particular, the use of PBN instead of conventional navigation procedures as of 6 June 2030. The introduction of a dedicated rulemaking task in the EPAS will be subject to further consideration and coordination.

EASA disagrees with the proposals expressed in the comments that proposed an amendment to Article 3. These comments are related to environmental concerns, primarily associated with noise in the vicinity of aerodromes. They result from recital (7) of the Regulation, which was not translated into proper regulatory provisions when the Regulation was adopted in 2018. The implementation of recital (7) would require fundamental discussions that were also outside the scope of NPA 2023-04. In particular, the proposal to amend Article 3 seeks to allow the application of alternative regulatory requirements in specific situations, which are not properly described in the amending proposal. Therefore, EASA considers that the proposal is ambiguous and, more importantly, it could undermine the mandate to harmonise PBN implementation.

As explained before, EASA has published a CRD, which addresses PBN and complements the information provided above. The CRD includes EASA's feedback on the individual comments received, as well as a summary of stakeholders' comments, explaining how they have been taken into account.

The CRD also provides the comments received on the proposed amendments to the GM on PBN. The analysis of the comments resulted in changes to the amendments initially proposed, which have been published as draft amendments to the GM on common airspace usage requirements and operating procedures concerning PBN (for information only).

2.4.3. MAB's advice for ACAS and PBN proposed amendments

In accordance with Article 6 (9) of MB Decision 1-2022, MAB advice was sought on the draft Opinion. No divergent views have been expressed with regard to the regulatory proposals contained in this Opinion.

3. What are the expected benefits and drawbacks of the regulatory material

3.1. Enabling the use of ACAS Xa in the SES airspace

Technology is continuously developing and thus certification requirements need to evolve to ensure that equipment installed on aircraft meets the latest and safest standards and benefit from the most advanced solutions.

Benefits of the current proposal:

— It enables access of the aircraft equipped with the ACAS Xa, as an alternative to TCAS II version 7.1, to the SES airspace.

— It increases at some extent safety, although mostly operational benefits are derived, by optimising the overall number of RAs, thus improving regularity of flight and increasing ATM efficiency.

The overall improvement from an upgrade from TCAS II version 7.1 to ACAS Xa was not sufficiently proven to justify a mandate; it is envisaged that operators should have the choice to either opt for equipage with ACAS Xa or continue using TCAS II version 7.1.

The proposed amendments to the ACAS II equipage requirements are of a non-controversial nature. While the use of ACAS Xa in the SES airspace brings an overall benefit, there is a limited cost incurred by operators and air navigation services providers (ANSPs). If the proposal allowing continued operation of aircraft equipped with either TCAS II version 7.1 or ACAS Xa is considered acceptable, the drawback is limited to some additional cost primarily for ANSPs to accommodate the aircraft equipped with ACAS Xa as well as some cost on the Network Manager to update the monitoring system, as detailed in Sections 4.2.7 and 4.2.8. respectively, of the impact assessment included in NPA 2023-04.

3.2. Changes to PBN airspace usage requirements

The implications of the mandatory use of RNAV 5 in oceanic airspace were described in a simplified impact assessment, which was commensurate with the consequences of the change and included in Appendix 1 to NPA 2023-04. This assessment recommended that the PBN IR should be amended to permit the use of oceanic specifications for the sake of safety.

The existing oceanic routes in the SES airspace have already been designed as RNAV 10 (RNP 10) routes, hence they can remain published and unchanged. Therefore, the proposal will:

— keep consistency between aircraft performance requirements (the PBN specification) and the navigational performance required for the intended operations;

— result in no economic impacts, whereas the legitimate use of RNAV 10 (or RNP 4 for future routes) will maintain the required level of safety in operations along oceanic routes.

Other changes proposed are, in general, expected to improve clarity and, in particular, preserve flexibility and coherence of SID/STAR route design with operational needs, if based on the RNP 1 specification.

The proposed amendments to the PBN airspace usage requirements are of a non-controversial nature, have a negligible impact on operations, and affect a limited volume of the SES airspace. No drawbacks are expected to result from the proposed changes.

4. Proposed regulatory material

The proposed amendments to the implementing regulations are provided in the two annexes as follows:

— Annex I which consists of a draft Commission Implementing Regulation including proposed amendments to:

  — Commission Regulation (EU) No 1332/2011 as regards common airspace requirements and operating procedures for airborne collision avoidance; and

  — Commission Regulation (EU) 2017/373 as regards common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight;

— Annex II which consists of a draft Commission Implementing Regulation including proposed amendments to the PBN IR as regards the use of PBN specifications for oceanic operations.

5. Proposed actions to support implementation

With regard to ACAS Xa, EASA intends to:

— monitor the implementation in coordination with Network Manager and propose the required mitigating actions to any identified issues in coordination with the European Commission as required;

— consider safety promotion activities pertaining to the introduction of the ACAS Xa equipage;

— provide support to stakeholders implementing ACAS Xa and to stakeholders making use of the additional information provided by ACAS Xa.

With regard to PBN:

In 2021, EASA commenced ongoing monitoring and support to implementation activities in relation to the PBN IR. This project will remain active until the implementation of all the required ATS routes and approach procedures (required by 6 June 2030). EASA intends to:

— review and analyse the PBN transition plans to verify consistency with the regulatory requirements;

— monitor and report on the status of the implementation, in consistency with the regulatory deadlines and the PBN transition plans;

— monitor aircraft capabilities to perform PBN operations;

— monitor implementation issues, and maintain close coordination with Network Manager and the European Commission for the definition of supporting actions, as required;

— provide support to stakeholders implementing the PBN IR.

6. References

6.1. Related EU regulations

— Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296 25.10.2012, p. 1)

— Commission Regulation (EU) No 452/2014 of 29 April 2014 laying down technical requirements and administrative procedures related to air operations of third country operators pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 133 6.5.2014, p. 12)

6.2. Related EASA decisions

— ED Decision 2018/013/R of 21 November 2018 issuing Acceptable Means of Compliance and Guidance Material to Commission Regulation (EU) No 1332/2011 and Commission Implementing Regulation (EU) 2018/1048 and repealing Decision 2012/002/R of the Executive Director of the Agency of 8 March 2012 — Acceptable Means of Compliance and Guidance Material on common airspace usage requirements and operating procedures 'AMC & GM to AUR'

— ED Decision 2012/018/R of 24th October 2012 on Acceptable Means of Compliance and Guidance Material to Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council — Acceptable Means of Compliance and Guidance Material to Part-CAT

— ED Decision 2013/021/R of 23 August 2013 on adopting Acceptable Means of Compliance and Guidance Material for Non-commercial operations with complex motor-powered aircraft (Part-NCC)

— ED Decision 2014/018/R of 24 April 2014 adopting Acceptable Means of Compliance and Guidance Material to Part-SPO of Regulation (EU) No 965/2012 'AMC and GM to Part-SPO'

— ED Decision 2011/001/R of 23 March 2011 Amending Decision 2003/12/RM on The Executive Director of The Agency of 05 November 2003 on General Acceptable Means of Compliance for Airworthiness of Products, Parts and Appliances « AMC-20 »

— ED Decision 2013/031/R of 17 December 2013 on Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigation and Surveillance 'CS-ACNS – Initial Issue'

— ED Decision 2003/010/RM of 24 October 2003 on Certification specifications, including airworthiness codes and acceptable means of compliance, for European Technical Standard Orders 'CS-ETSO/Initial Issue'

6.3. Other reference documents

— ICAO Annex 10 Aeronautical Telecommunications — Volume IV Surveillance and Collision Avoidance Systems, Amendment 91

— ICAO Document 9871 Technical Provisions for Mode S Services and Extended Squitter Edition 2 (data formats for transponder registers)

— ICAO Document 8168-OPS/611 Procedures for Air Navigation Services — Volume I Flight Procedures

— ICAO Document Doc 4444-RAC/501 Procedures for Air Navigation Service, Air Traffic Management

— ICAO Document 9613 Performance-based Navigation (PBN) Manual, Fifth Edition – 2023

— ED-73E Minimum Operational Performance Specification for Secondary Surveillance Radar Mode S Transponders, May 2011

— ED-73F MOPS for Secondary Surveillance Radar Mode S Transponders, December 2020

— ED-143 Minimum Operational Performance Standards for Traffic Alert and Collision Avoidance System II (TCAS II) version 7.1

— ED-221A Minimum Performance Standards (MOPS) for Traffic Alert and Collision Avoidance System II (TCAS II) Hybrid Surveillance, December 2015

— ED-224 MASPS for Flight Guidance System (FGS) coupled to Traffic Alert and Collision Avoidance System (TCAS), March 2014

— EUROCAE ED-256A MOPS for ACAS Xa with ACAS Xo functionality, June 2023