European Union Aviation Safety Agency

Notice of Proposed Amendment 2025-07 (A)

issued in accordance with Article 6 of Management Board Decision 01-2022

Detailed specifications and associated acceptable means of compliance and guidance material

Artificial intelligence trustworthiness

RMT.0742 – SUBTASKS 1 AND 2

WHAT THIS NPA IS ABOUT	
This Notice of Proposed Amendment (NPA) proposes a new set of detailed specifications on artificial intelligence (AI) trustworthiness for the safe use of AI in aviation in response to Regulation (EU) 2024/1689 (the Artificial Intelligence Act) Chapter III, Section 2. The objectives are to support the deployment of AI in the specific aviation domains identified in the EU AI Act Article 108 and establish a comprehensive AI-trustworthiness regulatory framework that will allow for the potential seamless deployment of AI in other aviation domains in the future. The proposed regulatory material is expected to maintain the current level of safety and provide benefits in terms of innovation and efficiency to the aviation sector.	
REGULATIONS INTENDED TO BE AMENDED/ISSUED: n/a	**ED DECISION INTENDED TO BE ISSUED** ED decision 20XX/XXX/X – DS.AI, AMC & GM
AFFECTED STAKEHOLDERS NCAs, NSAs, DOA holders, ETSOA holders, POA holders, unmanned aircraft manufacturers, aircraft operators (manned and unmanned), aircrew, CAMOs and MOs, ATM/ANS providers, ATCOs, common information service providers (CISPs), u-space service providers (USSPs), training organisations (such as approved training organisations, declared training organisations, organisations operating FSTDs, ATCO training organisations, maintenance training organisations), ADR operators, organisations responsible for provision of AMS at aerodromes, organisations involved in the design and production of safety-related aerodrome equipment, organisations responsible for the provision of ground handling services, etc.	

WORKING METHODS		
Development	**Impact assessment(s)**	**Consultation**
By EASA with external support	Light	NPA – public

RELATED DOCUMENTS/INFORMATION
ToR RMT.0742, Issue 1, dated 19 June 2024
PLANNING MILESTONES: Refer to the latest edition of the EPAS *Volume II*.

Contents

1. About this NPA

1.1. How this regulatory material was developed

The European Union Aviation Safety Agency (EASA) developed this Notice of Proposed Amendment (NPA) in line with Regulation (EU) 2018/1139[1] (the Basic Regulation) as amended by Regulation (EU) 2024/1689 (the EU AI Act) and the Rulemaking Procedure[2]. This rulemaking activity is included in the *European Plan for Aviation Safety (EPAS) Volume II 2025 edition* under Rulemaking Task (RMT).0742, Subtasks 1 and 2.

The scope and timescales of the task were defined in the related terms of reference (ToR). EASA developed this NPA following a preliminary consultation with its advisory bodies, that is, EU Member States and other affected stakeholders.

When developing the regulatory material, EASA received support from a group of experts established in 2024 as defined in the ToR for RMT.0742. The group included experts from industry, Member States and research organisations.

1.2. How to comment on this NPA

The draft regulatory material is hereby submitted for consultation with the public.

NPA 2025-07 is divided into two parts (A) and (B). The present NPA 2025-07 (A) includes the background information pertaining to the regulatory proposal. NPA 2025-07 (B) includes the proposed new regulatory material.

Please submit your comments using the **Comment-Response Tool (CRT)** available at **http://hub.easa.europa.eu/crt/**[3].

To facilitate the collection and technically support the subsequent review of comments by EASA in an efficient, controlled and structured manner, stakeholders are kindly requested to submit their comments to the respective predefined segments of the NPA within the CRT and refrain from submitting specific comments or all their comments to the 'General comments' segment.

Further, once all comments are placed to the respective predefined segments, there is no need to submit them (as a pdf attachment) to the 'General comments' segment.

The deadline for the submission of comments is **10 February 2026**.

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[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] In case of technical problems, please send an email with a short description to crt@easa.europa.eu.

1.3. The next steps

Following the consultation on the draft regulatory material, EASA will review all the comments received and will duly consider them in the subsequent phases of this rulemaking activity. For this purpose, EASA may involve external experts, including the group of experts that supported this NPA's development.

Considering the above, EASA may issue a decision issuing the detailed specifications (DSs) as well as the associated acceptable means of compliance (AMC) and guidance material (GM) on AI trustworthiness.

When issuing the decision, EASA will also provide feedback to the commentators and information to the public on who engaged in the process and/or provided comments during the consultation of the draft regulatory material, which comments were received, how such engagement and/or consultation was used in rulemaking and how the comments were considered.

2. In summary — why and what

2.1. Why we need to act

AI is a fast-evolving family of technologies, offering a wide array of economic and societal benefits. As such, AI also affects aviation, considering the growing number of applications for using AI already proposed by industry. While AI applications can enable more advanced automation, they might affect the safety of operations, requiring the adaptation of the current certification and approval frameworks in the domains affected. This is recognised by the AI Act, which, among other things, amends the Basic Regulation to take into account the specificities of AI use in aviation.

2.1.1. Description of the issue

The AI Act establishes the requirements for AI trustworthiness that must be factored into the existing aviation regulatory framework. In particular, current development assurance methods do not fully address the stochastic nature of machine-learning models. Moreover, current human-factors assessment methods do not address the types of interface enabled by AI applications; when developing human–AI teaming concepts to offer people advanced assistance, the aspects of shared situational awareness and allocation of responsibility should be addressed without attributing human characteristics to AI. Finally, AI and machine learning technology may raise additional ethical concerns.

At the same time, aviation stakeholders should be encouraged to foster innovation and use new technologies in their operations, while ensuring at least the same level of safety that is currently attained by aviation in Europe.

2.1.2. Who is affected by the issue

All aviation stakeholders using AI in their particular field of activity are affected, specifically national competent authorities (NCAs), national supervisory authorities (NSAs), design organisation approval (DOA) holders, European technical standard order (ETSO) authorisation holders, production organisation approval (POA) holders, unmanned aircraft manufacturers, manned and unmanned aircraft operators, aircrew, continuing airworthiness management organisations and maintenance organisations, ATM/ANS providers, ATCOs, common information service providers, u-space service providers, training organisations (e.g. approved training organisations, declared training organisations, organisations operating flight stimulation training devices, ATCO training organisations, maintenance training organisations), aerodrome operators, organisations responsible for the provision of apron management services at aerodromes, organisations involved in the design and production of safety-related aerodrome equipment and organisations responsible for the provision of ground handling services.

2.1.3. Conclusion on the need for rulemaking

EASA concluded, as explained in Chapter 3, that an intervention was necessary and that non-regulatory actions cannot effectively address the issue. Therefore, the issuance of a new set of DSs (DS.AI) and the associated AMC and GM on AI trustworthiness is proposed.

Article 108 of the EU AI Act amends the Basic Regulation to take into account the requirements of Chapter III Section 2 of the EU AI Act when using high-risk AI systems in aviation. This has been duly considered in the structure of the DS.AI as reflected in the following table:

EU AI Act Article	EU AI Act Article title	EASA DS.AI Articles	DS.AI Article title
Article 8	Compliance with the requirements	DS.AI.040	Compliance process definition
Article 9	Risk management system	DS.AI.130 DS.AI.140 DS.AI.150 DS.AI.160 DS.AI.170	AI-based system risk assessment AI-based system ethics-based assessment AI-based system intended behaviour AI-based system continuous risk assessment Human-centered design considerations for AI-based systems
Article 10	Data and data governance	DS.AI.120 DS.AI.140 DS.AI.150	AI-based system operational domain AI-based system ethics-based assessment AI-based system intended behaviour
Article 11	Technical documentation	DS.AI.040	Compliance process definition
Article 12	Record-keeping	DS.AI.160	AI-based system continuous risk assessment
Article 13	Transparency and provision of information to deployers	DS.AI.170	Human-centered design considerations for AI-based systems (explainability)
Article 14	Human oversight	DS.AI.110 DS.AI.170	AI-based system classification Human-centered design considerations for AI-based systems
Article 15	Accuracy, robustness and cybersecurity	DS.AI.150	AI-based system intended behaviour

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 issue described in Section 2.1.

More specifically, with the regulatory material presented here, EASA intends to establish a comprehensive and proportionate regulatory framework that addresses existing and future uses of AI in aviation while ensuring appropriate requirements for the protection of passengers and third parties.

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

The proposed DS.AI establishes technical specifications for:

— scope and AI techniques;

— concept of operations;

— AI-based system classification;

— operational domain;

— AI-based system risk assessment;

— AI-based system ethics-based assessment;

— AI-based system intended behaviour;

— AI-based system continuous risk assessment;

— human-centred design considerations for AI-based systems.

This set of technical specifications is initially targeted at supervised and unsupervised machine learning and will be progressively extended to other AI techniques. The non-binding and modular nature of the proposed DS, AMC and GM are intended to facilitate the progressive integration of new AI techniques. The expected safety benefits of certain AI applications and the insights gained from experience in service are key drivers supporting the preparation of regulatory material to address AI deployment.

Some exclusions from the scope of the DS have been identified, to avoid the risk of innovative AI technology contributing to any fatalities or uncontained environmental effect, to prevent the use of online learning techniques which are not compatible with the current approval frameworks, to limit the use of AI techniques (symbolic or hybrid-AI) that do not yet fall within the technical scope of this DS and to ensure human oversight at development time when using generative AI techniques by avoiding the double development and verification with AI tools.

2.4. Stakeholders' views

This NPA was developed with the active support of experts from affected industry, NCAs, NSAs and research bodies.

The overall views of all the stakeholders involved in the preparation of this NPA were positive.

The NPA was also discussed with EASA advisory bodies to gather important feedback that improved the proposal.

2.5. Other information

RMT.0742 Subtask 3 will allow the AI trustworthiness framework proposed by the present NPA to be used seamlessly and proportionately by establishing links with various aviation domains' existing Regulations or connecting with the existing regulatory material, as applicable.

In particular, the structure of the DSs and associated AMC and GM is tailored to ease the activities of RMT.0742 Subtask 3. For domains that already have an approval framework for systems or equipment

(e.g. product certification, ATM/ANS), the links will be essentially drawn directly at the level of the applicable AMC and GM.

The DS also anticipates the learning assurance standards currently in preparation under the joint EUROCAE WG-114 /SAE G34. Should this standard be published before the ED Decisions related to this NPA and at the required level of quality, recognition of this standard should be confirmed. In any case, AMC2 DS.AI.150 provides an abstraction layer of objectives supporting applicants on setting up their learning assurance processes. Should AMC1 DS.AI.150 be removed, AMC2 DS.AI.150 will provide the necessary guidance in the anticipation of future standards publication.

3. Expected benefits and drawbacks of the proposed regulatory material

EASA assessed that an intervention was required and that new regulatory material is necessary to effectively address the issue described in Section 2.1, because the objectives described in Section 2.2 cannot be achieved effectively by non-regulatory action.

The proposed regulatory material has been developed in view of the better regulation principles, considering the regulatory fitness principles as well.

The proposed DS.AI introduces horizontal requirements across multiple aviation domains for the development, integration and oversight of AI-based systems in aviation.

EASA also assessed the impacts of the proposed regulatory material to ensure that the regulatory material delivers its full benefits with minimum drawbacks.

The proposed regulatory material will bring the following **benefits**.

(a) By aligning with the EU AI Act while remaining under the remit of the EASA Basic Regulation, the regulatory material ensures that only AI systems with acceptable risk profiles are approved for use. This should significantly reduce the operational safety risks associated with the deployment of high-risk AI applications.

(b) The horizontal approach adopted avoids duplicating AMC and GM for each aviation domain and potentially risking the inconsistent approval of AI applications in the longer term. Moreover, this approach enables an agile and adaptable centralised framework to avoid burdening all aviation stakeholders unnecessarily when amendments are needed. For aviation domains without a regulatory framework for system development, a lighter approach based on existing tool qualification standards is proposed.

(c) By establishing a harmonised baseline, DS.AI should help stakeholders prepare for future regulation of AI across domains. While generative AI tools and general-purpose models are not yet fully covered, the current proposal creates a flexible foundation for adaptation as technology evolves.

(d) DS.AI embeds considerations for transparency and human–AI teaming and supports the development of AI systems that are both technically reliable and operationally understandable, thereby enabling safer human–AI interaction.

(e) DS.AI adopts a stepwise, assurance-level approach to AI integration. It distinguishes between AI levels and restricts applications in higher-criticality functions unless appropriate safeguards are in place. This encourages controlled experimentation with AI in lower-risk areas, while preventing premature deployment in critical roles.

(f) DS.AI introduces the concept of safety benefits through its AMC on risk assessment, allowing reduced assurance levels when an AI-based system is expected to improve the safety of operations.

(g) DS.AI introduces continuous safety and ethics-based assessments to proactively detect issues, such as unfair bias and unintended functionality. These assessments are proportionate to the criticality of the application or AI level. The continuous monitoring, coupled with requirements

for transparency in data use and model logic, is expected to strengthen public trust in aviation AI systems.

(h) There is growing consensus on the need for explainability, robustness and human-centred design in aviation AI systems. DS.AI addresses these concerns proactively by setting out clear thresholds and prohibitions.

The following **drawbacks** and **stakeholder concerns** have been identified.

(a) Initially, there may be additional workload and cost for industry to put AI trustworthiness compliance methods in place, but, in the medium to long term, this additional cost is expected to be offset by the benefits listed above. EASA will also have to adapt its processes and procedures to the new framework.

(b) There are concerns about the immaturity of quantitative safety assurance for machine learning constituents. There is no consensus or validated method to translate stochastic AI performance into deterministic metrics. This raises concerns about the feasibility of demonstrating compliance with traditional quantitative safety objectives for machine learning constituents.

(c) DS.AI is currently limited to level 1 and level 2 of AI, excludes the use of AI-based systems with potential catastrophic impact and prohibits the use of adaptive (online) learning systems. While this is a necessary safety measure initially, it may be revisited in future amendments of the DS.

(d) Certain compliance requirements introduced — particularly in areas such as AI model verification, data management, ethics-based assessments and continuous risk assessment — are significant. Smaller organisations and start-ups may find these requirements particularly burdensome, potentially creating a barrier to entry or slowing down innovation. However, it is important to remember that the effort is proportional to the criticality and level of AI in the applications.

(e) Despite the aim for DS.AI to harmonise the classification of AI applications, it may be challenging to interpret and implement the distinctions between AI levels consistently across applicants and worldwide authorities during the early phases of implementation.

4. Proposed regulatory material

Please refer to:

NPA 2025-07 (B) — Proposed DS.AI and associated AMC & GM

5. Monitoring and evaluation

No specific monitoring or evaluation of the proposed amendments is anticipated, except the existing standardisation and oversight activities and information exchange between EASA and the relevant stakeholders, which should identify any emerging issues.

6. Proposed actions to support implementation

In order to support affected stakeholders in the implementation of the new regulatory material, EASA plans to take the following actions:

— safety promotion

— workshops

— research.

7. References

7.1. Related EU regulations

— 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

— Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act).

Appendix 1 — Quality of the NPA

To continuously improve the quality of its documents, EASA welcomes your feedback on the quality of this document with regard to the following aspects.

Please provide your feedback on the quality of this document as part of the other comments you have on this NPA. We invite you to also provide a brief explanation, especially when you disagree or strongly disagree, so that we consider this for improvement. Your comments will be considered for internal quality assurance and management purposes only and will not be published (e.g. as part of the comment-response document (CRD)).

1. The regulatory proposal is of technically good / high quality

Please choose one of the options

Fully agree / Agree / Neutral / Disagree / Strongly disagree

2. The text is clear, readable and understandable

Please choose one of the options

Fully agree / Agree / Neutral / Disagree / Strongly disagree

3. The regulatory proposal is well substantiated

Please choose one of the options

Fully agree / Agree / Neutral / Disagree / Strongly disagree

4. The regulatory proposal is fit for purpose (achieving the objectives set)

Please choose one of the options

Fully agree / Agree / Neutral / Disagree / Strongly disagree

5. The regulatory proposal is proportionate to the size of the issue

Please choose one of the options

Fully agree / Agree / Neutral / Disagree / Strongly disagree

6. The regulatory proposal applies the better regulation principles [1]

Please choose one of the options

Fully agree / Agree / Neutral / Disagree / Strongly disagree

[1] For information and guidance, see:

- https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how_en
- https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how/better-regulation-guidelines-and-toolbox_en

7. Any other comments on the quality of this document (please specify)