European Union Aviation Safety Agency

Notice of Proposed Amendment 2024-107

issued in accordance with Article 6 of MB Decision 01-2022

Regular update of the AMC & GM to Commission Implementing Regulation (EU) 2019/947

Operation of drones in the 'open' and 'specific' category

AMC & GM to Regulation (EU) 2019/947 — Issue 1, Amendment 3

RMT.0730 — Subtask 3

EXECUTIVE SUMMARY

This Notice of Proposed Amendment (NPA) proposes to amend the acceptable means of compliance (AMC) and guidance material (GM) to the Annex to Commission Implementing Regulation (EU) 2019/947 due to the introduction of a new version of the specific operations risk assessment, i.e. SORA 2.5.

The objective is to introduce some simplifications while maintaining a high level of safety for the operation of unmanned aircraft systems (UASs) in the 'specific' category, and to improve the level of harmonisation in the implementation of the Regulation while fostering a level playing field.

REGULATION(S) INTENDED TO BE AMENDED/ ISSUED	**ED DECISION(S) INTENDED TO BE AMENDED**
n/a	— ED Decision 2019/021/R 'AMC and GM to Commission Implementing Regulation (EU) 2019/947'

AFFECTED STAKEHOLDERS

UAS operators (private and commercial); national competent authorities; UAS maintenance organisations; UAS maintenance training organisations; UAS continuing airworthiness management organisation; UAS maintenance licence holders; UAS manufacturers; other airspace users (manned aircraft); general public

WORKING METHODS

Development	**Impact assessment(s)**	**Consultation**
By EASA	Light	Focused (Advisory Bodies) — NPA

RELATED DOCUMENTS / INFORMATION

— ToR RMT.0730 - Regular update of the acceptable means of compliance and guidance material to Commission Implementing Regulation (EU) 2019/947 on the rules and procedures for the operation of unmanned aircraft | EASA

— ED Decision 2022/002/R - Regular update of the AMC & GM to Regulation (EU) 2019/947: AMC & GM to Regulation (EU) 2019/947 — Issue 1, Amendment 2 | AMC & GM to the Annex to Regulation (EU) 2019/947 — Issue 1, Amendment 2 | EASA

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

Table of contents

1. About this NPA

1.1. How this regulatory material was developed

The European Union Aviation Safety Agency (EASA) identified the need to mitigate the safety risk involved in UAS operations conducted in the 'specific' category' and to foster the uniform and harmonised application of Commission Implementing Regulation (EU) 2019/947 (the UAS Regulation) (as described in Chapter 2), and after having assessed the impacts of the possible intervention actions, identified rulemaking as the necessary intervention action.

This rulemaking activity is included in the 2024 edition of Volume II of the European Plan for Aviation Safety (EPAS)[1] under Rulemaking Task (RMT).0730 Subtask 3.

The text of this NPA is based on the specific operations risk assessment (SORA) v2.5[2] published by the Joint Authorities for Rulemaking on Unmanned Systems (JARUS) and consulted through the JARUS website. All comments, including those provided by European stakeholders, were addressed and EASA participated in their review and assessment. The related comment-response document (CRD) is available on the JARUS website[3]. EASA adapted the JARUS version of SORA 2.5 to the peculiarities of the UAS operations conducted in the European sky and developed the related regulatory material in line with Regulation (EU) 2018/1139[4] (the Basic Regulation). Considering that SORA v2.5 was already publicly consulted by JARUS, this consultation focuses on the adaptations to the European peculiarities that were developed according to the Rulemaking Procedure[5], as well as in accordance with the objectives and working methods described in the Terms of Reference (ToR) for this RMT[6].

1.2. How to comment on this NPA

Since a public consultation was already carried out by JARUS, the subject draft regulatory material is hereby submitted for consultation with the EASA advisory bodies.

Please, submit your comments via email to **drones@easa.europa.eu** using the Excel file **Comment sheet - NPA 2024-107 (RMT.0730 Subtask 3)**.

The deadline for the submission of comments is **31 January 2025**.

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1 European Plan for Aviation Safety (EPAS) 2024 - 13th edition | EASA

2 Publications – JARUS

3 http://jarus-rpas.org/wp-content/uploads/2024/10/SORA-v2.5-External-Comment-Response-Document.xlsx

4 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).

5 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)).

6 ToR RMT.0730 - Regular update of the acceptable means of compliance and guidance material to Commission Implementing Regulation (EU) 2019/947 on the rules and procedures for the operation of unmanned aircraft | EASA (europa.eu)

1.3. The next steps

Following the focused consultation of the draft regulatory material, EASA will review all the comments received and will duly consider them in the subsequent phases of this rulemaking activity.

Considering the above, EASA may issue a Decision in order to amend the AMC and GM to Commission Implementing Regulation (EU) 2019/947 to support its application.

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

The core element of UAS operations in the 'specific' category is the risk assessment methodology known as the specific operation risk assessment (SORA), which was published by JARUS in 2017. Since then, the methodology has been applied by UAS operators from various countries. Feedback was collected by the JARUS community, leading to the need for modifications to simplify and facilitate its application. A new version, SORA 2.5[7], was published by JARUS in May 2024. More details are provided in the next sections.

2.1.1. Description of the issue

The main issues identified with the application of SORA 2.0 were as follows:

— the ground risk was based on a qualitative description of the population density, making it difficult to apply;

— the conditions triggering the requirements to contain the operation within its operational volume were overprescriptive;

— the language and structure of the text was not easy for UAS operators to read and follow.

2.1.2. Who is affected by the issue

The current SORA places a burden on UAS operators and manufacturers to identify the requirements and evidence needed to ensure the safety of UAS operations, as well as for national competent authorities to analyse them. The risk assessment is open to interpretation, making it difficult to achieve uniform implementation among the EASA Member States.

2.1.3. Conclusion on the need for rulemaking

EASA concluded, as explained further in Chapter 3, that intervention was necessary and that non-rulemaking action could not effectively address the issue. Therefore, amendments to the related AMC and GM are necessary.

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 draft 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 increase the safety, efficiency and harmonisation as regards the implementation of the UAS Regulation.

[7] Publications – JARUS

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

The SORA 2.5 package includes amendments to the Main Body and to Annexes A, B, E and I. Additionally, it introduces Annex F. The modifications introduced in SORA 2.5 are summarised in the explanatory note published by JARUS[8].

EASA made limited changes to the JARUS SORA 2.5 to address European-specific provisions:

— The cybersecurity provisions were not included because, after analysing the JARUS proposal, they were considered insufficiently proportionate. A report has been developed and submitted to JARUS for consideration in future revisions.

— According to the Basic Regulation, competence for verifying compliance with production, operational, and training aspects is assigned to national competent authorities, while competence for design aspects is assigned to the European Commission, exercised through EASA. For UASs classified with a specific assurance and integrity level (SAIL) of IV, manufacturers are required to obtain a design verification report from EASA. Similarly, this applies when a mitigation or containment measure with a high level of robustness is used. For operations classified under SAIL V and VI, a type certificate issued in accordance with Part 21 of Commission Regulation (EU) No 748/2012 is required.

— The option for national competent authorities to require a different level of robustness for containment in exceptional cases has been added. This may apply, for example, to special UAS operations such as the inspection of a closed runway at an aerodrome with multiple runways.

— For reviewing supporting evidence for mitigation and operational safety objectives of an application, national competent authorities may use different approaches:

  — Directly assess evidence;

  — Make use of ‘recognised entities’ to assess the evidence and provide recommendations to the competent authority. In this case, the competent authority retains the responsibility to define the final assessment and may define the process to recognise such entities;

  — Make use of ‘designated entities’; these entities should be understood as ‘qualified entities’ according to Article 69 of the Basic Regulation. EASA shall propose in the upcoming NPA on the regular update of Commission Implementing Regulation (EU) 2019/947 (planned for 2025), to replace the term ‘designated’ with ‘qualified’. Such entities need to comply with the ‘essential requirements for qualified entities’ described in Annex VI to the Basic Regulation and may even be granted the privilege to issue a certificate of operational authorisation by the competent authority.

— UAS terminology has been standardised throughout EU documentation by using:

  — fixed-wing configurations such as aeroplanes, kites, gliders, etc.;

  — rotorcraft helicopter, including all vertical-lift configurations having up to two rotors;

  — rotorcraft gyroplane, a special configuration with a non-powered rotor;

[8] Publications – JARUS

  - VTOL-capable aircraft (including rotorcraft), which include vertical-lift configurations with three or more rotors and fixed-wing aircraft capable of vertical take-off and landing;
  - lighter-than-air configurations, including airships, hot-air balloons, etc.
- The term ‘EVLOS’ (extended visual line of sight) has been removed throughout SORA, as EU regulations never refer to it. It has been replaced with ‘BVLOS with AO’ (beyond visual line of sight operation with airspace observer) since it is equivalent. The requirement to develop procedures and correct phraseology between the remote pilot and the AO has been added.
- Before deciding to use SORA to assess the risk of an operation (refer to paragraph S3.1, ‘Introduction to SORA walkthrough’), the UAS operator should check if for the drone used the exclusion criteria for small-tethered aircraft in Annex I to the Basic Regulation apply. Additionally, the concept of harmless drones has been removed, as it is already embedded in the ‘open’ category as UAS with class label C0.
- In Step #2, the maximum speed of UA with a take-off mass of less than 250 g, considered to have an iGRC of 1, has been reduced to 19 m/s to be consistent with the maximum speed of UAS with class label C0.
- In Step #5, the strategic mitigation measures for VLOS are extended to cases where the airspace observer is situated alongside the remote pilot. EASA considers this an error since the mitigation is valid even when the airspace observer is distant from the remote pilot to extend the operational range. The paragraph has been amended to include operations where one or more airspace observers are located such that the UA is always under the VLOS of either the remote pilot or one airspace observer. The AO must be able to scan the sky and communicate in real time with the remote pilot, informing them of other manned or unmanned aircraft in the operational area.
- In Step #8, when using a UA that weighs less than 250 g, containment is always low. It is clarified that the reference weight is the take-off mass. Moreover, this is not valid if the operation is a multiple simultaneous operation (MSO), where the competent authority may have additional safety and security considerations.
- Paragraph 5.2.3 of Annex A has been amended as follows:
  - the reaction time of 1 second to activate a parachute is not considered realistic; a more conservative estimate of 3 seconds has been indicated;
  - the use of a parachute as an ‘alternative’ contingency procedure has been removed, as UAS operators should not be encouraged to activate parachutes within the operational volume;
  - the altitude measurement error of 1 m for the barometer is not considered realistic and has been replaced with ‘10 m’.
- In Annex B, the text related to M2 mitigation has been slightly amended to reflect MoC SC.Light-UAS.2512 published by EASA. Specifically, the provisions for the level of integrity of criterion #1 have been modified using MoC text, which is considered clearer and equivalent.
- OSO #2, ‘UAS designed and produced by a competent and/or proven entity’, has been split into two criteria: one for the design organisation and another for the production organisation,

reflecting the division of competence in the EU system between national competent authorities and EASA. This was already present in EASA SORA 2.0.

— In OSO #3, the criteria for the UAS operator and the design organisation have been separated. Maintenance inputs that the design organisation should provide to the UAS operator have been included in a new criterion. This does not introduce any content changes, as JARUS SORA already showed in the OSO table that criterion #1 applied to both the UAS operator and the design organisation. EASA's addition only clarifies this. Moreover, the title of OSO #3 has been changed to 'Maintenance of UAS' to reflect this approach.

— The level of robustness for OSO #5 is inconsistent with the definitions in paragraph S2.4: for SAIL III, it is 'low', but evidence needs to be available. This approach aligns more with a medium level of robustness. To avoid confusion, the level of robustness has been elevated to 'medium' without changing the provisions in Annex E for OSO #5. A similar change has been introduced for OSO #4 to reflect that, in the EU system, a DVR is required for UAS operated in SAIL IV, and a type certificate is required for SAIL V and VI under Part 21 of Commission Regulation (EU) No 748/2012. To maintain consistency, the level of robustness for SAIL IV is set to 'medium', and for SAIL V, it is set to 'high', without modifying the provisions in Annex E for OSO #4.

— The reference to functional test-based (FTB) approach has been removed from OSO #4 for SAIL IV, as it is only acceptable up to SAIL III, as explained in the FTB means of compliance published by EASA.

— The JARUS SORA 2.5 package includes Annex F, which describes the ground-risk model and provides mathematical justifications for the ground-risk classes used in SORA. This document is not intended for daily use by UAS operators but should be considered by operators with advanced skills when proposing deviations from the ground-risk tables in the SORA main body. It was decided not to publish it as acceptable means of compliance or guidance material but rather to refer to the version available on the JARUS website. The most commonly used formula is for calculating the critical area tailored to a defined UAS, which has been made available on the Innovative Air Mobility Hub through an automated algorithm.

— JARUS proposed a new structure for the SORA main body, distinguishing between 'guidance' (examples or explanations) and 'requirements' (procedures to be followed). In the EU regulatory system, the term 'requirements' refers to provisions defined in regulations, so it has been replaced with the term 'procedures'. Additionally, the proposed format was incompatible with the IT tools used by EASA. Each section's nature as either 'guidance' or 'procedure' has been indicated in brackets.

— The application form and issuance of the operational authorisation have been adapted to the peculiarities of SORA 2.5. More specifically, the application form has been amended to reflect Section A.2 of SORA Annex A.

— AMC1 UAS.SPEC.030(3)(e) has been amended to refer to SORA Annex A, which provides a template for the operations manual. Examples of operations manuals are available on the EASA website[9].

[9] https://www.easa.europa.eu/en/downloads/139674/en

— AMC1 UAS.SPEC.030(2), which provides the application form for operational authorisation, has been amended to reflect the form in Chapter A.2 of Annex A of SORA.

— AMC1 UAS.SPEC.030(3)(e) has been amended to require the development of an operations manual with the structure defined in Chapter A3 of Annex A.

— AMC1 UAS.SPEC.040(1), which provides the form for issuing an operational authorisation, has been amended to reflect the changes provided by SORA 2.5. Additionally, a few new fields have been introduced:

  — dropping of material;

  — maximum number of UAS that may be simultaneously operated by a single remote pilot;

  — type of C2 link.

— Predefined risk assessments (PDRAs — AMC 2 to 6 to Article 11) have not been adapted to SORA 2.5 due to a new PDRA format under development by JARUS, which should improve usability. The new format is expected to be published by spring 2025 following public consultation. EASA may then issue a new decision incorporating them into the EU regulatory framework.

— AMC1/GM1 to Article 11 have been amended to indicate that the EASA decision will be immediately applicable, allowing UAS operators to apply for operational authorisations using SORA 2.5. However, Decision 2019/021/R introducing SORA version 2.0 will not be repealed, thus enabling UAS operators finalising applications for operational authorisations to still apply using SORA 2.0. Each Member State will define for how long it will be accepting applications using SORA 2.0. Both operational authorisations issued based on SORA 2.0 and 2.5 comply with Article 11 of Commission Implementing Regulation (EU) 2019/947. In some cases, SORA 2.0 is more conservative than SORA 2.5, particularly regarding containment requirements. Therefore, UAS operators may find it advantageous to update their operational authorisations to comply with SORA 2.5. Each Member State will define the validity of the operational authorisations issued under SORA 2.0.

2.4. What are the stakeholders' views

JARUS conducted a public consultation and comments were issued to JARUS by the following stakeholders:

— national competent authorities,
— UAS industry,
— EASA,
— other stakeholders.

All the comments were addressed and were evaluated as described in the CRD produced by JARUS[10].

[10] http://jarus-rpas.org/wp-content/uploads/2024/10/SORA-v2.5-External-Comment-Response-Document.xlsx

3. Expected benefits and drawbacks of the proposed regulatory material

EASA assessed that intervention was required and that new or amended AMC and GM are necessary to effectively address the issues described in Section 2.1, because the objectives described in Section 2.2 cannot be achieved effectively by non-rulemaking action.

Keeping the risk assessment methodology as it is, would have created a non-harmonised application of the UAS Regulation due to ambiguity and unclarity of some parts of the text. The proposed amendments are expected to improve clarity without creating any drawbacks.

The proposed regulatory material has been developed in view of the better regulation principles, and in particular the regulatory fitness principles. In particular, the proposed regulatory material is expected to:

— alleviate existing regulatory burden by simplifying the conditions requiring the compliance with high level of containment of the UAS operations;

— limit the regulatory burden created by amended requirements to the minimum by allowing those UAS operators already authorised with SORA 2.0 to keep the validity of their operational authorisation for 2 years.

4. Proposed regulatory material

Please refer to:

— draft ED Decision 202X/XXX/R issuing Amendment 4 to Issue 1 of the Acceptable Means of Compliance and Guidance Material to Commission Implementing Regulation (EU) 2019/947 'AMC and GM to Commission Implementing Regulation (EU) 2019/947 — Issue 1, Amendment 4'

— draft Annex to draft ED Decision 202X/XXX/R 'Acceptable Means of Compliance and Guidance Material to the Annex to Commission Implementing Regulation (EU) 2019/947 — Issue 1, Amendment 4

5. Monitoring and evaluation

EASA plans to monitor and evaluate whether the proposed regulatory material has supported affected stakeholders achieve the objectives described in Section 2.2 by collecting:

— statistics from national competent authorities on operational authorisations they have issued;

— feedback on the authorisation process from national competent authorities and UAS operators during Advisory Body meetings;

— usage data and occurrences from UAS operators.

6. Proposed actions to support implementation

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

— focused communication for Advisory Body meeting(s) (MAB, UAS TeB);

— publication of promotion material on its website;

— organisation of dedicated thematic webinars.

7. References

— Commission Implementing Regulation (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft (OJ L 152, 11.6.2019, p. 45)

Appendix — 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 justification, 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 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

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

[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