

Proposal to create common rules for operating drones in Europe



Explained in a few words:**EASA's A-NPA 2015-10: 'Introduction of a regulatory framework for the operation of drones'**

EASA has been tasked by the European Commission to develop a set of European rules for drones. The definition of drones is quite wide, as it includes all remotely piloted and autonomous aircraft: from small consumer devices used for recreation to large aircraft, used over very long distances for security or other critical operations. Therefore, the drone industry is diverse, innovative and international. It has an enormous potential for growth with the associated possibility to create jobs. At the same time, it is needed to ensure a safe, secure and environmentally friendly development, and to respect the citizens' concerns for safety, privacy and data protection. With these

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two sets of priorities, EASA is proposing changes to the existing aviation rules to take into consideration the latest developments of drones (A-NPA: Notice of Proposed Amendment to the rules). You can be part of this process and help shape the future regulations by providing your valuable comments as explained below. This document is a summary of the A-NPA (number 2015-10) and has been translated in all EU languages.

What is in place: Current aviation regulations (Regulation (EC) No 216/2008) require that drones (also called 'unmanned aircraft') above 150kg are regulated in a similar way to other aircraft (manned aircraft). Those below that weight are to be regulated by each Member State of EASA as they see appropriate. However as the use of drones has significantly grown in recent years, Member States had to react quickly, potentially leading to a fragmented market. In addition, drone weight is not the only criterion to use.

This is a proposal for the creation of common European safety rules for operating drones regardless of their weight.

What is changing: The A-NPA is a proposal for the creation of common European safety rules for operating drones regardless of their weight. It proposes a proportional and operation-centric approach. In other words, it focuses more on 'how' and under 'what conditions' the drone is used, rather than only the characteristics of the drone. The A-NPA discusses changes to aviation safety regulations, related to EASA's responsibilities and for this reason does not address directly the subject of privacy or data protection, as this is outside the responsibilities of EASA. This document provides a short summary of the A-NPA document, explaining the intended outcome and repeating the proposals mentioned in the A-NPA. You can read the full A-NPA document here: <http://easa.europa.eu/system/files/dfu/A-NPA%202015-10.pdf>.

EASA is inviting anyone interested on the subject to submit their comments until the 25 September 2015.

The process: At this stage of the process, comments on EASA's A-NPA proposal are received through a dedicated tool on the EASA website (<http://hub.easa.europa.eu/crt/>). EASA is inviting anyone interested on the subject to submit their comments until the 25 September 2015. After this date, EASA will review all the input received integrating where appropriate the ideas or comments into its final proposal. At the end of this consultative process EASA will publish its proposal

(called 'EASA Opinion') and send it to the European Commission to implement the actual regulatory change.

The proposals: The A-NPA contains 33 proposals, all of which are quoted in this document. It proposes to bring under the safety regulations both commercial and non-commercial activities and it introduces three categories of operations as already proposed in the EASA Concept of Operations for Drones¹ published earlier in 2015. These three categories are based on the risk the operation is posing to third parties (persons and property) and are divided into: 'Open category' (low-risk), 'Specific category' (medium-risk) and 'Certified category' (high-risk). The reason for using risk to differentiate drone operations is that, for example, an

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¹ You can read the Concept of Operations here: http://www.easa.europa.eu/system/files/dfu/204696_EASA_concept_drone_brochure_web.pdf

unmanned aircraft over the open sea is less of a risk than a smaller one, operated over spectators in a stadium. It is proposed that Member States designate which of their authorities (or other organisations) will be responsible for the enforcement of the rules.

Proposal 1: It is proposed to regulate commercial and non-commercial operations as the same drone might be used for both commercial and non-commercial activities.

Proposal 2: Three categories will be established for the operation of drones:

- ‘Open’ category (low risk): safety is ensured through operations limitations, compliance with industry standards, and the requirement to have certain functionalities and a minimum set of operational rules. Enforcement mainly by the police.
- ‘Specific’ category (medium risk): authorisation by a national aviation authority (NAA) possibly assisted by a Qualified Entity² (QE) following a risk assessment performed by the operator. A manual of operations lists the risk mitigation measures.
- ‘Certified’ category (higher risk): requirements comparable to those for manned aviation. Oversight by NAA (issue of licences and approval of maintenance, operations, training, ATM/ANS³ and aerodromes organisations) and by the Agency (design and approval of foreign organisations).

Proposal 3: Member States (EASA MS) have to designate the responsible authorities for the enforcement of the regulations. It is proposed not to include into the EU aviation system the oversight of the ‘open’ and ‘specific’ categories. This will provide the EASA MS with the required flexibility at local level, thus not being subject to EASA oversight (‘EASA Standardisation’).

Proposal 4: QEs will be approved and audited by the NAAs or the Agency to ensure their adherence to common rules.

OPEN CATEGORY

‘Open’ category (low risk): In this category safety is ensured through a minimum set of rules, operational limitations, industry standards, and the requirement to have certain functionalities. Enforcement is done mainly by the police. For this reason, the proposals below aim to describe a set of limitations for operating drones without presenting a regulatory burden or restricting innovative uses, but at the same time ensuring safety for all third parties (individuals and property). For example, ‘Open’ category operation requires constant visual contact with the drone, weight of less than 25 kg, flying the drone below 150 meters high and the concept of geo-fencing. Geo-fencing is the concept of restricting drone access by designating specific areas where the drone’s software and/or hardware is designed not to enter, even if the pilot, without intent, instructs the drone to go.



² *Qualified Entity: means an organisation which may be allocated a specific certification task by, and under the control and the responsibility of, the Agency or a national aviation authority.*

³ Air Traffic Management/ Air Navigation Services

Proposal 5: ‘Open’ category operation is any operation with small drones under direct visual line of sight with an MTOM⁴ of less than 25 kg operated within safe distance from persons on the ground and separated from other airspace users.

Proposal 6: To prevent unintended flight outside safe areas and to increase compliance to applicable regulations, it is proposed to mandate geo-fencing (areas in which drones cannot fly by software design or otherwise) and identification for certain drones and operation areas.

Proposal 7: To ensure safety, environmental protection, and security and privacy, the competent authorities can define ‘no-drone zones’ where no operation is allowed without authority approval, and ‘limited-drone zones’ where drones must provide a function to enable easy identification and automatic limitation of the airspace they can enter and should have a limited mass.

Proposal 8: Standards for identification and geo-fencing functions will be endorsed by the Agency and could be referenced in the market regulations in order to ensure that the majority of consumer products comply with these standards and to ensure harmonisation at technical level. This will enable manufacturers to develop adequate equipment and to declare compliance with these standards.

Proposal 9: The Agency will define a commonly used data format (e.g. for map data) that should be used to provide the information in an open web interface. This information could be made available through service providers, presented through a smartphone app, or directly uploaded to the drone.

Proposal 10: Manufacturers and importers of drones have to comply with the applicable product safety Directive⁵, and will have to issue information to respective customers on operational limitations applicable to the ‘open’ category. The market regulations will be applicable to smaller drones and an upper threshold needs to be established.

Proposal 11: Essential requirements for the intended general product safety directive and related standards will be developed with the involvement of the Agency defining the safety characteristics (e.g. kinetic energy, performance, characteristics, loss-of-link capability) appropriate for the category and subcategory of the drone.

Proposal 12: All drone operations in the ‘open’ category must be conducted within the defined limitations:

- Only flights in direct visual line of sight of the pilot are allowed.
- Only drones with a maximum take-off mass below 25 kg are allowed.
- No operation of drones in ‘no-drone zones’ is permitted.
- Drones operating in ‘limited-drone zones’ must comply with the applicable limitations.
- The pilot is responsible for the safe separation from any other airspace user(s) and shall give right of way to any other airspace user(s).
- A drone in the ‘open’ category shall not operate at an altitude exceeding 150 m above the ground or water.
- The pilot is responsible for the safe operation and safe distance from uninvolved persons and property on the ground and from other airspace users and shall never fly the drone above crowds (> 12 persons).

Proposal 13: For any drone operation over 50 m above ground, basic aviation awareness shall be required for the pilot.

Proposal 14: Create three subcategories in the ‘open’ category:

- CAT A0: ‘Toys’ and ‘mini drones’ < 1 kg

4 Maximum Take Off Mass

5 Applicable product safety directive, general product safety directive refer to the EU regulations to place products on the market (http://ec.europa.eu/growth/single-market/ce-marking/index_en.htm)

- CAT A1: 'Very small drones' < 4 kg
- CAT A2: 'Small drones' < 25 kg

Proposal 15: Additional requirements for CAT A0: 'Toys' and 'mini drones' < 1 kg:

- Any drone sold as a toy or consumer product with a mass below 1 kg could comply with the applicable product safety Directive and shall have limited performance to assure flight below 50 m above ground and local operation or alternatively the means to automatically limit the altitude and the airspace they can enter.
- Operation shall be performed below 50 m above ground.

Proposal 16: Additional requirements for CAT A1: 'Very small drones' < 4 kg:

- Any drone sold as a consumer product which is heavier than 1 kg could comply with the applicable general product safety Directive and shall have the means to automatically limit the airspace it can enter and the means to allow automatic identification.
- Drones operating in the 'limited-drone zones' shall have active identification and up-to-date geo-fencing capability enabled.
- For any operation over 50 m above ground, the pilot needs to have basic aviation awareness.
- Any failures, malfunctions, defects or other occurrences that lead to severe injuries to or fatalities of any person need to be reported.

Proposal 17: Additional requirements for CAT A2: 'Small drones' < 25 kg

- Any drone sold as a consumer product which is heavier than 4 kg could comply with the applicable general product safety Directive and shall have the means to automatically limit the airspace it can enter and the means to allow automatic identification.
- Operation in the 'limited-drone zones' is not permitted in the 'open' category for drones with a take-off mass above 4 kg.
- For any operation over 50 m above ground, the pilot needs to have basic aviation awareness.
- Any failures, malfunctions, defects or other occurrences that lead to severe injuries to or fatalities of any person need to be reported to the Agency.

Proposal 18: In dedicated areas the operation of drones (or models) can be performed in the 'open' category according to the conditions and procedures defined by the competent authority

Proposal 19: Tethered aircraft up to a mass of 25 kg or a defined volume for aircraft lighter than air can be operated in the 'open' category outside 'no-drone zones' below 50 m above ground or water, or in dedicated areas notified to other airspace users.

SPECIFIC CATEGORY

'Specific category' (medium risk): In this category authorisation is required by an authority (NAA) following a risk assessment performed by the operator. A manual of operations lists the measures that have been taken to minimise or mitigate the risks. The 'Specific category' for example includes all operations that exceed the restrictions of the 'Open category'.



Proposal 20: ‘Specific risk operation’ is any operation with drones which poses more significant aviation risks to persons overflown or which involves sharing the airspace with manned aviation. Each specific aviation risk needs to be analysed and mitigated through a safety risk assessment.

Proposal 21: A safety risk assessment shall be performed by the operator taking into account all the elements that contribute to the risk of the particular operation. For this purpose, the operator shall:

- provide to the competent NAA all the information required for a preliminary applicability check of the category of operation;
- provide to the competent authority a safety risk assessment

covering both the drone and the operation, identifying all the risks related to the specific operation, and proposing adequate risk-mitigation measures.

- compile an appropriate Operations Manual containing all the required information, descriptions, conditions and limitations for the operation, including training and qualification for personnel, maintenance of the drone and its systems, as well as occurrence reporting and oversight of suppliers

Proposal 22: The competent authority of the State of the operator shall be responsible to issue the OA⁶ after the review of and agreement with the operator’s safety risk assessment and the Operations Manual in the ‘specific’ category.

Proposal 23: The operation shall be performed according to the limitations and conditions defined in the OA:

- The operator shall not carry out specific operations, unless holding a valid operation authorisation.
- The operator shall ensure that all involved personnel is sufficiently qualified and familiar with the relevant operation procedures and conditions.
- Before the initiation of any operation, the operator is responsible to collect the required information on permanent and temporarily limitations and conditions and to comply with any requirement or limitation defined by the competent authority or to request specific authorisation.



Proposal 24: The operation in the ‘specific’ category might be performed with drones or equipment that is certified or otherwise approved. The operation might exceed the operational limitations for the certified equipment when specifically authorised and when the operation ensures application of adequate risk mitigations as identified in the OA.

Proposal 25: Operators may voluntarily make use of suppliers or personnel holding certificates or voluntarily apply for a Remote Operator Certificate (ROC) detailing the means on how responsibilities are shared and having adequate privileges to authorise operations

Proposal 26: Equipment, parts and functionalities might be approved independently from the drone itself and an approval may be granted. The IRs will define the required processes based on the ‘European Technical Standard Order (ETSO)’ process. The process for release and continuing airworthiness oversight needs to be adapted as equipment might not be installed on certified drones. This might cover ground stations or qualified ‘detect and avoid equipment’ installed on drones in the ‘specific’ category.

Proposal 27: The IRs define the organisational requirements for the operator to qualify for a ROC and to obtain adequate privileges in order to authorise/modify its own operations

Proposal 28: It is proposed that industry and standardisation bodies be requested to provide standard solutions to address the safety risks, e.g. for airworthiness aspects. Together with standard Operations Manuals, the safety risk assessment process would be simplified.

CERTIFIED CATEGORY

‘Certified’ category (higher risk): requirements comparable to those for manned aviation. These operations will most likely involve large drones used for operations by small or large organisations. Oversight is performed by the NAA (issue of licences and approval of maintenance, operations, training, ATM/ANS and aerodromes organisations) and by the Agency (design and approval of foreign organisations). In the ‘Certified’ category drones are treated in a similar way as manned aircraft. They are certified for their airworthiness and from this perspective they have operational restrictions, similar to manned aircraft. Of course, other operational restrictions may apply for example from air traffic control services or airspace availability, but this is outside the scope of this A-NPA.



Proposal 29: In order to operate a drone in the ‘certified’ category, the airworthiness of the aircraft and its compliance with environmental standards shall be ensured in the same way as it is done today for manned aviation by issuing a TC or Restricted Type Certificate (RTC) for the type, and a CofA or restricted CofA for the particular drone.

Proposal 30: The organisations responsible for the design, production, maintenance and training shall demonstrate their capability by holding respectively design, production, maintenance and training organisation approvals when required due to the risk posed by the operation.

Proposal 31: The pilot shall be licensed and the operator shall hold a ROC.

Proposal 32: CSs will be adopted by the Agency covering a broad range of different drone configurations, defining the safety objectives. They will be supplemented by industry standards endorsed by the Agency to allow for fast reaction on developments and might also cover operational and licensing aspects.

Proposal 33: It is currently not foreseen to separate the IRs for the ‘certified’ category from the IRs for manned aviation.

European Aviation Safety Agency
Ottoplatz, 1
D-50679 Cologne, Germany
easa.europa.eu

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