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mit den für den klassischen Modellflug relevanten Abschnitten (Scannen nach: "model aircraft", "associations", "clubs")

MSs = Member States

MTOM = MaximumTake Off Mass

UA = Unmanned Aircraft

UAS = Unmanned Aircraft System (einschließlich Steuerung u.a. Ausrüstung)

VLOS/BVLOS = Visual Line of Sight/Beyond Visual Line of Sight

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1.1.6. EASA consultation strategy

EASA consulted stakeholders in several ways throughout the development of this NPA. The following is only a brief overview:

— UAS questionnaire for operators;

— UAS questionnaire for manufacturers;

— UAS questionnaire for authorities;

— UAS questionnaire for training schools;

— feedback from expert group;

— contacts with manufacturers; and

— UAS questionnaire for model aircraft associations.

The results of the various consultations are presented throughout this NPA, e.g. in several graphs or quoted comments from stakeholders. The following Sections contain a brief description of each questionnaire.

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Which category does your UAS fit (according to the UAS categories in the 'Prototype' Regulation?

Model Aircraft 30 %

A1, 13.22 %

A2, 12.44 %

A3, 17.11 %

Specific, 9.22 %

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1.1.6.4.

Expert group

A total of five meetings were held with a group of experts. The group was composed of NAAs representatives, members of the manned and unmanned aviation community, members of model aircraft and sport flights associations, and manufacturers of manned and unmanned aircraft, including toys.

The comments received on the IA helped to further improve the text. In addition, information provided by the group in the meetings or via email, e.g. on occurrences, was also beneficial.

Model aircraft associations

A survey was sent to model aircraft associations. The feedback provided by 18 MSs helped to better understand the current situation with respect to model aircraft in several MSs. Many of the graphs included in Chapter 1 ‘Problem definition’ are based on the results of this survey.

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1.2.3.1.2 Driver 2 — New actors compared to manned aviation and different uses (commercial/leisure)

Another main driver of the issues is the fact that UAS operators and manufacturers are in often new actors in the aviation market. Manufacturers develop UAS with automatic features that assist the remote pilot in conducting the flight, not requiring the remote pilot to have special skills, and that allow the remote pilot to concentrate on managing the payload. In some cases, the UA may even automatically follow the remote pilot or track persons or objects. Therefore, the remote pilot could be interested not primarily in flying the UA but in its image-recording capabilities for the aerial imagery and other uses, and, therefore, in operating these products in a wide variety of locations.

This wider public interest makes drones rapidly proliferate, while the remote pilots have, on average, less awareness of the aviation safety culture, as well as a lower level of competences than the model aircraft community. Consequently, these newcomers are deemed to present a higher risk for sensitive areas and zones. Compared to manned aviation:

— many remote pilots do not have sufficient skills/competences for the aviation world;

— the spectrum of UAS uses is very broad; and

— the risk of remote pilots showing reckless behaviour is higher.

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Geofencing and automatic performance limitations of UAS or advisory system:

This function requires position determination (e.g. using a global navigation satellite system (GNSS) or other means), a database of geo-limitation data, and control functions in order to comply with any restrictions on the time and location of UAS operation. When the UA takes off from, or approaches to, a zone subject to UAS restrictions, the remote pilot may receive an advisory or the UAS itself may be designed not to exceed those limitations.

A number of consumer UAS are already equipped with some 'geofencing' and positioning-related performance limitation capabilities39. However, it should be noted that although technology enabling geofencing and performance limitation features already exists, there are still a number of shortcomings in the effective implementation of these functions. In particular, there is a lack of standards and validated data to feed these functions.

In addition, not all UAS can be fitted with such technology since they need to be equipped with a flight control system, which in some cases, considerably increases the cost or is unfeasible with the type of operations (e.g. model aircraft).

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The following is a list of the most common technical requirements that might be used to mitigate the inherent risk of UAS operation:

— Positioning limitations include both geographical limitations (defined using geographical coordinates) and non-geographical limitations, based on the positioning of the UA, such as height/altitude or range (see also Section 1.2.4.2).

— Flight control technology: UA sold on the market differ from classical model aircraft particularly because the internal flight control loop is automatically addressed by the system, and the remote pilot does not therefore need to have skills to stabilise the aircraft during flight.

— Energy limitation: it refers to limiting the kinetic energy transmitted by the UA during a collision.

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1.2.4.7. Issue 7 — Disproportionate rules for special categories (privately built and model UAS)

1.2.4.7.1 Drivers

The main driver of this issue is that new technology allows to extend hobbyist flights to other types of aircraft apart from classic models.

1.2.4.7.2 Description

Model flying is an activity with a long history. Many of the aviation pioneers developed their designs based on tests conducted with models, and model aircraft remain an important element of aerospace education. They range from 'free-flight' aircraft weighing little more than a gram up to complex turbine-powered aircraft with an MTOM of 150 kg. Model aircraft activities have a good safety record due to the safety culture developed by the model clubs as well as national and international model aircraft associations. UAS can be considered as an evolution of model aircraft. Modern technology can greatly assist remote pilots, thus drastically reducing the skills required to operate a UAS. Almost anyone can operate a UAS both for leisure or commercial purposes, however, the nature of the operation does not change the risk posed to third parties. Model aircraft have therefore lost their monopoly on leisure flights with remotely piloted aircraft. A definition

distinguishing between model aircraft and UAS cannot be easily developed also because some model aircraft are equipped with some form of an assisted flight control system. On the other hand, some model pilots argue that they would be reluctant to use such a technology assisting them in flying the aircraft (e.g. a flight control system) since this would reduce their pleasure. However, this technology is widely used in UAS since the remote pilot in that case is likely more interested in the payload (e.g. a camera) than in flying the UA. Therefore, a definition of UAS, to differentiate them from model aircraft, could be based on the presence of a flight control system that allows a UAS to fly in BVLOS range. This approach was rejected since it was considered that automation can also be integrated with model aircraft to a certain extent. Moreover, the code of conduct developed by the model clubs and associations is what contributes to the safety of hobbyist operations and not the type of aircraft used. In most cases, model clubs and associations have operating procedures and they raise awareness, and in some cases, they also provide their members with training, thus creating a safety framework.

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Do you have a published code of conduct that members of your club must respect?

NO 3

YES 15

Another category of UAS to be considered are the 'privately built' ones, not available on the market but built by individuals. The risk posed by these systems is that there are no means to ensure their reliability. Although aircraft of this type are mostly operated by model clubs, there are hobbyist UAS operators not willing to join model clubs and/or associations. From the above, it is clear that model aircraft operators and new UAS operators have generally a different starting point in terms of risk awareness and remote-pilot competences as many clubs publish the code of conduct that their members must respect. Therefore, the main issue is how to find a balanced and proportionate approach for special categories of UAS as model aircraft.

1.2.4.7.3 Background

Model aircraft

In some MSs, model aircraft operations are clearly defined and regulated by established model clubs and associations, in accordance with the regulatory framework of their NAA. These national regulations are mostly considered to be fit for purpose by both the remote pilots and their NAA. Based on the replies provided by model aircraft associations, a total number of 1.5 million model aircraft across the EU could be estimated.

A series of detailed questions were posed to model aircraft associations in order to better map the situation. Graph 18 shows the importance of model aircraft, considering the high number of EU operators.

Does your country have detailed regulation for model aircraft NO 6 YES 12

In your country, are model aircraft activities limited to authorised airfields? Yes 4 No 14

As regards the registration of model aircraft, the following comments were received, among others:

— all models have to carry the identification of the owner/pilot; and

— the models of club members are not registered; only models for competitions bear the license number of the competitor.

Privately built UAS

According to the replies received on the EASA UAS operators questionnaire 2017, privately built UA are used by many operators.

Are you operating privately built models? Yes 29 No 23

Privately built models could be used also in model aircraft associations: (Statistik auf Grund der Umfrage)

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1.2.4.7.4 Consequences

The main consequence of this issue is the barrier to the market. If model aircraft would be required to comply with the same requirements mandated for UAS, they could be even prohibited or at least a disproportionate burden could be imposed on them. For this reason, some special alleviations need to be identified for this aircraft category.

1.2.4.7.5 Development of the issue if no action is taken

In case no regulatory action is taken at EU level and MSs keep their national regulation for model aircraft, some MSs might require clubs and associations to comply with technical requirements, altering the nature of model flights, or mandate operators to apply for an authorisation in order to operate in the specific category, and carry out a risk assessment.

A technical requirement, such as an auto-return function, would require the operator to equip the aircraft with a flight control system that would change the way and philosophy a model aircraft is conducted. In practice, this hobby would be prohibited.

On the other hand, the requirement for an authorisation for a model aircraft to be operated in the specific category could be not proportionate considering the current satisfactory safety framework and records of model clubs and associations.

In some MSs, operators might be obliged to be registered with a model club to operate their UAS. This would not only represent an additional cost as they would have to pay a membership fee, but would also restrict their operations within specific areas.

1.2.6. Who is affected? **(offenbar nicht der Modellflug - fehlt in der Aufstellung)**

General public: all EU citizens impacted by risks related to UAS operations, either as clients of UAS services or UAS users for private purposes. UAS could support innovative services with a high potential for welfare and new jobs; however, they pose a safety, security, and privacy risk.

UAS manufacturers: UAS manufacturers, including many SMEs and start-ups. Manufacturers (especially SMEs) might be impacted by additional technical requirements in the regulatory framework. Indeed, it could be very costly to implement those requirements. Furthermore, the limitations imposed might have a negative effect on the operators' demand for UAS, and therefore negatively impact the manufacturers as well. This stakeholders' category includes manufacturers of various UAS types, such as toys and/or models.

UAS operators: commercial and non-commercial operators. They are also affected as they would have to comply with requirements for training or operational limitations. All this could create a barrier to some users.

MSs: (civil aviation, aviation, data protection, market, privacy or security authorities). Authorities would need to deal with the demands and expectations of the growing UAS sector, develop regulations, organise UAS licensing and oversight, check declarations and authorisations, issue certificates, address registration issues, set up training for UAS operators and train their employees. In addition, authorities would need to enforce public policy, with regard to safety, privacy, and security matters. The authorities concerned are at local, national and EU level (EASA).

Economy: Many businesses may include the use of UAS in their business model. This could lead to lower costs and/or innovative services. Typical examples are the agricultural, energy, and delivery sector.

Airspace users: they are quite affected by UAS as shown by the number of UAS occurrences above a certain altitude. The future definition of a UTM system will definitely affect them.

The UAS market includes a list of services with a high potential for development. The following is a graphical representation of the importance of UAS from the service market point of view:

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(f) Disproportionate rules for special categories:

Subcategory A3 has been designed to offer the possibility to model aircraft pilots not willing to join a model club or not flying the dedicated zones defined by the MS, to operate in the open category. Operations in Subcategory A3 may be conducted with privately built UAS, or UAS Class C3 or Class C4. This last class was developed with a minimum set of technical requirements focusing mainly on providing the remote pilot with operational instructions issued by the manufacturer, as well as on raising the remote pilot's awareness of the EU regulations through a leaflet. The only constraint is that mass-produced model aircraft must comply with Class C4 requirements. However, this will create a negligible additional burden for manufacturers. Indeed, model aircraft currently available on the market are already required to display a CE marking to show compliance with the applicable regulations (e.g. Directive 2014/53/EU[58] on radio equipment).

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Model aircraft would be required to be supplied with a manufacturer instructions manual and an awareness leaflet. This would imply a negligible economic impact.

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Hobbyists: good flexibility is provided to this group, offering a variety of choices to operate UAS. Operators in this sector may typically use several UAS types:

- UAS put on the market, bearing a CE marking (for Classes C0, C1, C2, C3 or C4);
- privately built UAS; and
- model aircraft either privately built or put on the market without bearing a CE marking.

A dedicated Class C4 under Subcategory A3 has been developed in the open category, allowing hobbyists and model aircraft pilots to enjoy their operations in areas where they pose limited risk to third parties. Class C4 UAS are required to be supplied with a manufacturer instructions manual and an awareness leaflet. As an alternative, MSs have the flexibility to define zones dedicated to UAS hobbyist flights only, where different limitations may be established. Moreover, MSs may recognise the ability of model clubs and associations to create a safety culture among their members, by issuing a special authorisation to the club or association allowing deviations from Regulation (EU) 201X/XXX. In this way, hobbyist flights may continue to be conducted as today.