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N2017/04283/MRTNäringsdepartementet  
Nils Paul

## Svar på remiss från ND om EASA:s förslag till europeisk drönarreglering (obemannade luftfartyg), NPA 2017-05

### Sammanfattning

Transportstyrelsen är positiv till EASA:s förslag till reglering av obemannade luftfartyg, även kallade drönare. Förslaget är riskbaserat och i huvudsak målstyrt och myndigheten anser att det är brådskande att åstadkomma ett gemensamt europeiskt regelverk för drönare.

Transportstyrelsens huvudsakliga synpunkter på förslaget är dessutom:

- Kraven på registrering kommer att innebära stora administrativa kostnader om det inte kan lösas med ett gemensamt europeiskt IT-system. Planerna för att skapa ett sådant nytt IT-system "U-Space" för bl.a. registrering är för vagt beskrivna.
- Open-kategorin är indelad i ett stort antal underklasser vilket kan vara förvirrande för den stora allmänheten som förväntas följa dessa regler med risk för att förslaget inte får önskad effekt.
- Frågan om hur drönare ska få nyttja luftrummet och dela det med andra användare löses inte helt genom förslagen i remissen.
- Vi anser att regler för att skydda privatlivet samt säkerhetskyddsregler inte hör hemma i EASA:s regelverk. Det finns redan sådan lagstiftning inom EU.

De synpunkter som förs fram av myndigheten här och nedan har tagits fram efter samverkan med branschaktörer på drömarområdet.

### Regelutvecklingsprocess

Eftersom EASA:s regelförslag beror av skrivningarna i grundförordningen, som just nu förväntas bli klar i slutet av 2017, kan förutsättningarna ändras för denna NPA.

## Svensk inriktning

Sverige har ställt sig mycket positiva till att det skapas ett gemensamt europeiskt regelverk för obemannade luftfartyg och har i sin instruktion till dessa förhandlingar betonat att vi vill ha målstyrda teknikneutrala regler som inte hindrar den tekniska utvecklingen. Reglerna ska vara riskbaserade och proportionerliga. Den svenska målsättningen har varit att:

”SE ska verka för ett effektivt EU-gemensamt regelverk för drönare som innebär att samhället kan ta vara på den nya tekniken och tjänsterna drönare möjliggör, utan att försämra flygsäkerheten och säkerhet i övrigt eller förutsättningarna för en effektiv verksamhet i luftrummet”.

Det presenterade förslaget innehåller i stort sett det Sverige har önskat men har en hög komplexitet vad gäller Open-kategorin där det är tydligt att EASA anpassat förslaget till önskemål från många olika grupper (små företag, modellflygorganisationer etc.).

## Transportstyrelsens synpunkter

Transportstyrelsen är positiv till EASA:s förslag till reglering av drönare. Det ger möjlighet till att det skapas en gemensam varu- och tjänstemarknad för drönare, drönartjänster och drönarföretag inom Europa, vilket kommer att kraftigt gynna utvecklingen och öka tillgängligheten till effektiva tjänster i samhället. Myndigheten konstaterar att mycket stora förhoppningar ställs till U-Space, ett tänkt it-system för att lösa kraven på registrering, identifiering och ”geofencing”<sup>1</sup>. Konceptet U-Space lanseras som en viktig del av förslaget för att kunna uppnå tillräckligt skydd mot farliga konsekvenser. Formerna för U-Space är dock inte tillräckligt beskrivna för att myndigheten ska kunna ge detaljerade synpunkter. Det framgår inte vem som har ansvaret för att utveckla det, hur det ska samverka med dagens flygtrafiklednings-system eller på vilket sätt det ska finansieras.

Tillsyn (marknadskontroll) inom Open-kategorin ska delegeras till någon myndighet inom Sverige. Myndigheten tror att denna tillsyn kommer att bli kostsam och svår att finansiera. Om Transportstyrelsen ges uppgiften måste man samtidigt se över finansieringsformen.

## Registrering av drönare

Transportstyrelsen är mycket skeptisk till att införa registreringskrav för operatörer av de mindre drönarna om det inte kan ske genom ett gemensamt

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<sup>1</sup> Ett geografiskt avgränsat eller definierat område som bestämts och som "inhägnats" med hjälp av ett IT-system.

europiskt it-system. Den administrativa bördan kan bli avsevärd eftersom antalet drönare förväntas öka dramatiskt.

### Komplex uppdelning och restriktioner inom Open-kategorin

Open-kategorin är uppdelad i ett stort antal underkategorier och klasser. Det bedöms bli svårt att förklara, förstå och efterleva reglerna.

Åldersbegränsningarna i Open-kategorin är vidare för restriktiva, myndigheten anser att åldrarna kan sänkas något. Myndigheten anser också att utbildningskraven (godkänd provinstans) för Open-kategorin via en godkänd utbildningsorganisation är för restriktiv.

### Användning av luftrum

Frågan om hur drönare ska få ta plats i luftrummet och dela det med andra användare löses inte helt genom förslagen i remissen. Det framgår t.ex. inte hur drönare ska kunna integreras tillsammans med de luftfartyg som måste flyga på allra lägsta höjderna eller hur drönare ska hanteras inom kontrollerat luftrum, dvs. området närmast flygplatser. Dessutom föreslås att medlemsländerna ska ges möjligheten att definiera luftrum där drönare tillåts eller förbjuds och att dessa luftrum ska publiceras på ett av EASA fastställt sätt. Hur framgår dock inte av förslaget. En eventuell översyn av luftrummet och att definiera särskilda luftrum är ett omfattande och resurskrävande arbete som måste ske i nära samarbete mellan flera olika nationella myndigheter. Eftersom förslaget endast öppnar för möjligheten utan att kravställa, finns en risk att det blir stora skillnader mellan de olika medlemsländerna

### Säkerhetsskydd och integritet

De negativa effekter som drönare kan skapa inom integritetsskydd och säkerhet ska enligt förslaget regleras genom att de flesta drönare måste registreras och ska kunna identifieras. Det förutsätter att ett EU-gemensamt it-system ”U-Space” tas fram, se kommentar ovan. Dessutom anser Transportstyrelsen att regler för att skydda privatlivet, dataskydd samt säkerhets-skydds-regler inte hör hemma i EASA:s regelverk. Det finns redan sådan lagstiftning inom EU.

### Inga regler om transport av farligt gods

Förslaget innehåller inte någon reglering vad gäller transport av farligt gods. Sådana krav behövs sannolikt inte i dagsläget men på sikt och i samband med att större maskiner används kommer behovet att aktualiseras. Sverige bör föra fram detta till EASA i vårt yttrande.

### Omfattande behov av information

Sverige bör ta tillfället i anspråk och föra fram till Europeiska kommissionen och EASA att förslagen rör många nya aktörer inom luftfarten av

vilka flera inte har någon eller mycket begränsad kunskap om vilka krav som ställs, inte minst vid användning av luftrummet. Med anledning av detta bedöms särskilda och omfattande insatser behövas i syfte att sprida information om kommande regelverk, såväl i form av riktade kommunikationsinsatser som genom att vägledande material tas fram för de som berörs av regelverket.

#### Detaljerade kommentarer

Ytterligare ett antal mindre kommentarer finns i bilagan till detta beslut. Där tydliggörs vilken paragraf det handlar om och Transportstyrelsens förslag till nya skrivningar.

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Detta ärende har beslutats av generaldirektör Jonas Bjelfvenstam. I den slutliga handläggningen av ärendet deltog stf generaldirektör Jacob Gramenius, stf sjö- och luftfartsdirektör Gunnar Ljungberg, sektionschef Anders Hermansson, strateg Katarina Wigler och samordnare Magnus Molitor, den senare föredragande.

Jonas Bjelfvenstam  
Generaldirektör

**Remissvar**

5 (22)

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## Bilaga

Paragraf	Regeltext	Kommentar	Förslag till text till ND
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Gen		Often the same text comes twice, both in the subpart and in an annex. To simplify reading it would be better to merge all text that is common for several classes and subcategories to one place.	<p>Sweden is in favour of the proposed rules as they pave the way for a risk based and proportional framework for the introduction of drones in EU, creating a large common market which will promote technological advancements and benefits to the society in general. We are however worried that the OPEN category has been divided into a large number of subcategories and classes. This will cause confusion among many customers, possibly creating unclarities and mistrust in the regulations. We would have preferred less divisions within the OPEN category, to make the implementation easier.</p> <p>We are satisfied that there is room within the OPEN category for companies to develop drones in small numbers, and market them, without the need for a CE Marking procedure. This will make it easier not only for SME:s to engage in small scale development of innovative services, which will benefit the overall development of drone services within the society.</p>
			Specifically we favour the exclusion of indoor activities, and the use of distributed responsibilities for the LUC which relieves some burden from authorities.
Gen		In table 2 on page 15 the weight limit is set to 900 g to 4 kg, but this is not consistent with appendix I.3(b), which only says "less than 4kg".	We are hesitant to include detailed requirements as concerns privacy since there is already existing legislation within this area in EU Member States.

Gen		How will the identity be verified of the person taking the online test? If this can not be verified, is it then reasonable to require this kind of test?	
art 3. 2	The UAS operator shall register itself and the UA, as required by this Regulation, with the entity designated for that purpose by the Member State where the operator has its principal place of business or place of residence, and shall display the registration information on the UA it operates.	It requires a lot of resources by the Member State to administrate this register.	Sweden is questioning this general requirement as it is applied in the details later. The registration of the very large numbers of drones expected, requires a rather sophisticated setup with manufacturers, retail salers and registration authorities. The key to this is proposed to be the U-Space concept, but there are still lots of unclarities about how this will be solved in practice. How will it be financed? How and by whom will it be developed? This has to be clarified expeditiously, otherwise we will most probably not be able to register all the drones that likely will be in operation when the legislation comes into place. Sweden therefore suggests to increase the weight limits for the need to register drones. There is also much continuous administration being created by this requirement, when in many cases both the operator and the drones need to be registered.

art 10.2	The competent authority for the UAS operator referred to in paragraph 1 of this Article is the competent authority of the EU Member State where the UAS operator intends to operate.	What about operators having their principal place of business outside EU and plans to operate in several countries within the EU, can they choose what country to be registered in?	-
art 12	bra att vi får designera luftrum, publ "in a manner ..."	vi måste få veta hur det ska publiceras enligt EASA:s önskemål, så att vi kan utveckla dessa nödvändiga IT-stöd för alla luftrumsanvändare.	Sweden is in favour of this article since it gives the flexibility needed for each country to design the airspace and its use according to national interests. We are specifically looking forward to see what EASA will propose as AMC to this paragraph, when it comes to the format for exchanging the airspace data.
open.10(a)	develop the policy and procedures adapted to its operation and size, and designate a remote pilot for each operation	What content should the policy and procedures cover? How and when will these policies and procedures be reviewed and approved since there is no requirement to have an approval for OPEN-category?	Sweden is of the opinion that this requirement goes too far for the smallest classes C0 and C1. We do not expect the low risk operations with these classes will need policies and procedures adapted the specific needs for each single operator. We could however expect that the drone manufacturers could produce general operating procedures, but they would not be adapted to each user.
AMC1 open.10(a)			



open.20(a)	Except when already registered in accordance with the specific-category requirements, UAS operators shall register themselves and the UA, pursuant to Article 3 of this Regulation, in a manner and format established by the Agency.	To require that both the operator and the UA shall be registered creates heavy administration, but with questionable effect on safety.	Sweden would prefer in this paragraph that registration is mandatory for operators, but not for drones up to 4 kg.
AMC1 open.20(a)		If the operator shall be registred, then it would be desirable to also require telephone number and e-mail address.	Sweden proposes that email address and telephone number should be included in this AMC.
open.20(f)	The registration shall remain valid for three years and shall be renewable	This is not in line with general approach to have unlimited validity on approvals and certificates. Since there is also a requirement for updating the registration for every change (d), that requirement would then be sufficient alone.	-

AMC1 open.30(a)(1)	operate only one UA at a time.	If the remote pilot have the ability to take control, then there should not be a limitation to only operate one UA at a time. Typical example is flying with a swarm of preprogrammed drones.	-
AMC1 open.30©(2)	maintaining a safe distance of the UA from uninvolved people, property, vehicles, and other airspace users such that they are not endangered by the UAS operation	should also include safe distance to domestic cattle	-
open.30©(6)	keep the UA in VLOS or within a range such that the remote pilot, or a UA observer situated within the line of sight of the remote pilot, maintains VLOS; clear and effective communication shall be established between the remote pilot and the UA	What is purpose of this requirement? Shall the observer be in visual line of sight of the pilot? If so, for what purpose? Isn't the intension that <u>either</u> the pilot or the observer has the aircraft within visual line of sight?	Sweden questions this article as it is written. There is no need for the remote pilot and the observer to be within line of sight. The important thing is that the observer can see the UA, and that the remot pilot and the observer have established a clear and effective communication.

	observer;		
GM1 open.30©(9)	In order to respect other people's right to privacy, UA should not be flown at an altitude of less than 20 m over private property without the owner's consent.	This is not consistent with AMC1 UAS.OPEN.30©(2): "maintaining a safe distance of the UA from uninvolved people, <u>property</u> , vehicles, and other airspace users such that they are not endangered by the UAS operation".	This is not consistent with AMC1 UAS.OPEN.30(c)(2): "maintaining a safe distance of the UA from uninvolved people, property, vehicles, and other airspace users such that they are not endangered by the UAS operation".
UAS.OPEN.40	Requirements applicable to UAS operations in Subcategory A1 UAS operations in Subcategory A1 shall be: (a) performed with a UA: (1) <b>privately</b> built,...		Sweden would prefer to use another word than "privately" since there may be prototypes or drones manufactured in small numbers in this category, built by professionals as well as companies of any size.

open.40(b)(3)	with an active electronic identification system, when using a UA Class C1 fitted with a camera of more than 5 megapixels (MP) and a real-time video transmission link or any other type of sensor able to record personal data	The requirement of 5 MP is not relevant.	Sweden is of the opinion that this requirement does not fit in EASA rules which should be safety oriented. Prescriptive requirements as this are also vulnerable to changing technologies and should be avoided.
UAS.OPEN.60(a)	(a) with a UA: (1) privately built, having an MTOM, including payload, of less than 25 kg; or (2) Class C3, as defined in Appendix I.4 to this Annex; or (3) Class C4, as defined in Appendix I.5 to this Annex;		Sweden questions the setup of this article. The subcategory is A3 and the rules should be risk based, proportional. Therefore classes C0-C2 should be allowed here as well.

<p>AMC1 open.60(b)(a)</p>	<p>Operations in Subcategory A3 may be conducted with UAS: (1) bearing a Class C0 marking, required to comply with the technical requirements of Appendix I.1 to Annex I to Regulation (EU) 201X/XXX; (2) bearing a Class C1 marking, required to comply with the technical requirements of Appendix I.2 to Annex I to Regulation (EU) 201X/XXX; (3) bearing a Class C2 marking, required to comply with the technical requirements of Appendix I.3 to Annex I to Regulation (EU) 201X/XXX; (4) bearing a Class C3 marking, required to comply with the technical requirements of Appendix I.4 to Annex</p>	<p>It is reasonable to allow all classes of UAS to be flown in subcategory A3, but only requirements for distance from people, property etc. is stated. What other requirements shall a class C0-C2 follow when flying according to subcat A3 (e.g. remote pilot competence, age limit, registration etc)? It does not seem to be reasonable to, for example, require a C0 pilot to be 16 years old to fly in A3.</p>	<p>In subcategory A3, all classes C0-C4 should be allowed. But there should also be some kind of accompanying proportionality. It does not seem to be reasonable to, for example, require a C0 pilot to be 16 years old to fly in A3.</p>
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	<p>I to Regulation (EU) 201X/XXX; (5) bearing a Class C4 marking, required to comply with the technical requirements of Appendix I.5 to Annex I to Regulation (EU) 201X/XXX; and (6) privately built.</p>		
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<p>AMC1 open.60(b) and (d)</p>	<p>(b) UAS in this Subcategory are not intended to be operated in congested areas or close to aerodromes or over uninvolved persons.</p>	<p>Can not see any particular difference between b) and d). E.g. what is the difference between "close to aerodomes" and "safe distance from the boundaries of aerodrome"?</p>	<p>Sweden asks for a clarification, there seems to be a lack of coherence between "close to aerodromes" in 60(b) as compared to "safe distance from the boundaries of aerodrome" as in 609(d).</p>
	<p>(d) When the operation is conducted with a privately built UAS or UAS Class C4, the remote pilot should keep the UA at a safe distance from the boundaries of congested areas or aerodromes such that no third party is endangered in case of UA malfunction or loss of control. The safe distance should be determined based on the actual performance of the UA.</p>	<p>It would be desirable to have some examples of operations that are allowed under C3 and C4 respectively. The difference is quite vague.</p>	<p>Sweden would appreciate some explanation and guiding examples of how to interpret this text.</p>

open.70(a)	The remote pilot basic competence, required by UAS.OPEN.40(b)(5)(i) and UAS.OPEN.60(b)(3)(i), shall be valid for three years and shall be renewable in a manner and format established by the Agency	UAS-OPEN.40(b)(5)(i) refers to the requirement: "up to the maximum height for UAS operations in the open category;" UAS.OPEN.60(b)(3)(i) does not exist.	-
open.70(a)	The remote pilot basic competence, required by UAS.OPEN.40(b)(5)(i) and UAS.OPEN.60(b)(3)(i), shall be valid for three years and shall be renewable in a manner and format established by the Agency	This requirement will create a huge work load for the authority responsible for the administration and surveillance of this, considering the questionable effect it will have on flight safety.	-



open.70(b)	The certificate of competence, required by UAS.OPEN.50(e)(1), shall be valid for five years and shall be renewable in a manner and format established by the Agency	This requirement will create a huge work load for the authority responsible for the administration and surveillance of this, considering the questionable effect it will have on flight safety.	-
app I.1	awareness leaflet - C0	The requirement from GM1 OPEN.30©(9), "UA should not be flown at an altitude of less than 20 m over private property without the owner's consent" and from AMC1 UAS.OPEN.40(b)(1) "when flying close to or over people, the UA should not fly below 3 m from ground level" are not mentioned on the leaflet.	There seems to be a lack of information in the leaflet as regards the 20 meter above private property and the text on "should not fly below 3 meter from ground level".
AMC1 to app I.2(p)	awareness leaflet - C1	On the leaflet an age limit of 14 years is stated, which can not be found anywhere else in the regulation (except in table 2 on page 15).	On the leaflet an age limit of 14 years is stated, which can not be found anywhere else in the proposed regulation. It is only mentioned in table 2 on page 15.

		The requirement from AMC1 UAS.OPEN.40(b)(1) "when flying close to or over people, the UA should not fly below 3 m from ground level" is not mentioned on the leaflet.	The requirement from AMC1 UAS.OPEN.40(b)(1) "when flying close to or over people, the UA should not fly below 3 m from ground level" is not mentioned on the leaflet.
Spec.10(a)	develop the policy and procedures adapted to its operation and size	What content should the policy and procedures cover? Is it related to UAS.SPEC.70 operations manual?	Sweden would appreciate further guidance what content the policy and procedures should cover? Is it related to UAS.SPEC.70 operations manual?
AMC1 spec.10(a)			-
spec.50(d)	After submission of the operational declaration, the UAS operator shall be entitled to start the operation if all conditions and mitigations identified in the corresponding standard scenario are met.	does the approved operational declaration have unlimited validity?	It is unclear if the approved operational declaration has unlimited validity.

app I.2 (b)	be made of materials and have performance and physical characteristics such as to ensure that in the event of an impact with a human body, the energy transmitted to the human body is less than 80 J, or, as an alternative, have an MTOM, including payload, of less than 900 g and a maximum cruising speed of 18 m/s;	900 g and 18 m/s gives the kinetic energy of 146J. Wouldn't it be better to adjust the limit of 80J to 146J (or 150J) instead? Seems like the 80J limit will be pointless.	Sweden would like to have an explanation why 80 J is mentioned since the energy created by 900 grams moving at 18 m/s would be substantially more than 80 J. The limit of 80J would be "pointless". 150 J would be more appropriate.
app I.2 (d) and (k)		basically the same wording in both sentences	
app I.3 (l)	be equipped with lights, as required for the operating conditions	this requirement is ambiguous. What kind of operating conditions?	Sweden would appreciate a better wording, since the proposed one is ambiguous.

AMC1 to app I.3(n)	Awareness leaflet - C2	The following is stated: "when flying over other people's property, do not fly below 20 m without their permission", but does not seem to be consistent with AMC1 UAS.OPEN.30©(2)(a) which says "maintaining a safe distance of the UA from uninvolved people, property, vehicles, and other airspace users such that they are not endangered by the UAS operation".	This text does not seem to match AMC1 UAS.OPEN.30(c)(2)(a).
app I.4 (i)	be equipped with lights, as required for the operating conditions	this requirement is ambiguous. What kind of operating conditions?	Sweden would appreciate a better wording, since the proposed one is ambiguous.

AMC app I.4(j)	Awareness leaflet - C3	The following is stated: "when flying over other people's property, do not fly below 20 m without their permission", but does not seem to be consistent with AMC1 UAS.OPEN.30©(2)(a) which says "maintaining a safe distance of the UA from uninvolved people, property, vehicles, and other airspace users such that they are not endangered by the UAS operation".	This text does not seem to match AMC1 UAS.OPEN.30(c)(2)(a).

AMC app I.5(d)	Awareness leaflet - C4	<p>The following is stated: "when flying over other people's property, do not fly below 20 m without their permission", but does not seem to be consistent with AMC1 UAS.OPEN.30©(2)(a) which says "maintaining a safe distance of the UA from uninvolved people, property, vehicles, and other airspace users such that they are not endangered by the UAS operation". It is also not consistent with the requirement UAS.OPEN.60(c), to keep a safety distance from boundaries of congested areas of cities, towns or settlements.</p>	<p>This text does not seem to match AMC1 UAS.OPEN.30(c)(2)(a).</p>
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