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A Drone Strategy 2.0 for a smart and sustainable unmanned aircraft eco-system in Europe

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Introduction

This public consultation asks for informed opinions on the implementation of the new EU regulatory framework and suggestions to help to identify the steps that could be taken to support a wider use of drones and the concerns that would need to be addressed by EU public intervention.

The questionnaire is structured as follows:

- Respondent's profile
- Conditions to allow new forms of smart and sustainable mobility and aerial services, including their social acceptance
- Functioning of the drone regulatory framework
- Additional issues to be addressed by the forthcoming Drone Strategy 2.0.

The results of this consultation will feed into the forthcoming Drone Strategy 2.0.

The questionnaire concerns the civil use of drones. The term "drones" is used throughout the questionnaire referring to 'Unmanned Aircraft' and the equipment to control them remotely.

[1] Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data, OJ L 008, 12.1.2001, p.1.

About you

- *Language of my contribution
 - Bulgarian
 - Croatian
 - Czech
 - Danish
 - Dutch
 - English

0	⁾ Estonian
0	Finnish
0	French
0	German
0	Greek
0	Hungarian
0	Irish
0	ltalian
0	Latvian
0	Lithuanian
0	Maltese
0	Polish
0	Portuguese
0	Romanian
0	Slovak
0	Slovenian
0	Spanish
0	Swedish
*I am	giving my contribution as
0	Academic/research institution
0	Business association
0	Company/business organisation
0	Consumer organisation
0	EU citizen
0	Environmental organisation
0	Non-EU citizen
0	Non-governmental organisation (NGO)
0	Public authority
0	Trade union
0	Other
* Firs	t name
	Sandra

Surname			
Nicolau Lima			
*Email (this won't be p	oublished)		
sandra.lima@epf.eu			
*Organisation name			
255 character(s) maximum			
European Passengers'	Federation		
*Organisation size			
Micro (1 to 9 en	nployees)		
Small (10 to 49	employees)		
Medium (50 to 2	,		
Large (250 or m			
J (,		
Transparency registe	r number		
255 character(s) maximum		or It's a voluntary database	for organisations seeking to
influence EU decision-makin		CI. It's a voluntary database	Tor organisations seeking to
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*Country of origin			
Please add your country of o	origin, or that of your organis	sation.	
Afghanistan	Djibouti	Libya	Saint Martin
Åland Islands	Dominica	Liechtenstein	Saint Pierre and
			Miquelon
Albania	Dominican	Lithuania	Saint Vincent
	Republic		and the
			Grenadines
Algeria	Ecuador	Luxembourg	Samoa
American Samo	oa [©] Egypt	Macau	San Marino
Andorra	El Salvador	Madagascar	São Tomé and Príncipe
Angola	Equatorial Gui	nea [©] Malawi	Saudi Arabia
Anguilla	Eritrea	Malaysia	Senegal

	Antarctica		Estonia	0	Maldives		Serbia
0	Antigua and Barbuda	0	Eswatini	0	Mali	0	Seychelles
0	Argentina	0	Ethiopia	0	Malta		Sierra Leone
	Armenia		Falkland Islands	0	Marshall Islands		Singapore
0	Aruba		Faroe Islands	0	Martinique		Sint Maarten
0	Australia		Fiji	0	Mauritania		Slovakia
0	Austria		Finland	0	Mauritius		Slovenia
	Azerbaijan		France		Mayotte		Solomon Islands
0	Bahamas		French Guiana	0	Mexico		Somalia
0	Bahrain		French Polynesia	0	Micronesia		South Africa
0	Bangladesh	0	French Southern and Antarctic Lands	0	Moldova	0	South Georgia and the South Sandwich Islands
0	Barbados	0	Gabon	0	Monaco	0	South Korea
	Belarus		Georgia	0	Mongolia		South Sudan
0	Belgium		Germany	0	Montenegro		Spain
	Belize		Ghana	0	Montserrat		Sri Lanka
0	Benin		Gibraltar		Morocco		Sudan
0	Bermuda		Greece		Mozambique		Suriname
0	Bhutan	0	Greenland	0	Myanmar/Burma	0	Svalbard and Jan Mayen
	Bolivia		Grenada	0	Namibia		Sweden
0	Bonaire Saint Eustatius and Saba	0	Guadeloupe	0	Nauru	0	Switzerland
0	Bosnia and Herzegovina	0	Guam	0	Nepal	0	Syria
	Botswana		Guatemala	0	Netherlands		Taiwan
0	Bouvet Island	0	Guernsey		New Caledonia	0	Tajikistan
0	Brazil	0	Guinea		New Zealand	0	Tanzania
0	British Indian Ocean Territory	©	Guinea-Bissau	0	Nicaragua	0	Thailand

British Virgin Islands	Guyana	Niger	The Gambia
Brunei	Haiti	Nigeria	Timor-Leste
Bulgaria	Heard Island ar McDonald Islan		Togo
Burkina Faso	Honduras	Norfolk Island	Tokelau
Burundi	Hong Kong	Northern	Tonga
Baranar	riong rong	Mariana Islands	•
Cambodia	Hungary	North Korea	Trinidad and
Gamboala	riangary	Horarica	Tobago
Cameroon	Iceland	North Macedon	
© Canada	India	Norway	Turkey
Cape Verde	Indonesia	Oman	Turkmenistan
© Cayman Islands	© Iran	Pakistan	Turks and
	🚛 .		Caicos Islands
Central African	Iraq	Palau	Tuvalu
Republic			
© Chad	Ireland	Palestine	Uganda
Chile	Isle of Man	Panama	Ukraine
China	Israel	Papua New	United Arab
		Guinea	Emirates
Christmas Island	Italy	Paraguay	United Kingdom
Clipperton	Jamaica	Peru	United States
Cocos (Keeling)	Japan	Philippines	United States
Islands			Minor Outlying
			Islands
Colombia	Jersey	Pitcairn Islands	Uruguay
Comoros	Jordan	Poland	US Virgin Islands
Congo	Kazakhstan	Portugal	Uzbekistan
Cook Islands	Kenya	Puerto Rico	Vanuatu
Costa Rica	Kiribati	Qatar	Vatican City
Côte d'Ivoire	Kosovo	Réunion	Venezuela
Croatia	Kuwait	Romania	Vietnam
Cuba	Kyrgyzstan	Russia	Wallis and
			Futuna

Curaçao	Laos	Rwanda	0	Western Sahara
Cyprus	Latvia	Saint Barthélemy		Yemen
Czechia	Lebanon	Saint Helena	0	Zambia
		Ascension and		
		Tristan da Cunha		
Democratic	Lesotho	Saint Kitts and	0	Zimbabwe
Republic of the		Nevis		
Congo				
Denmark	Liberia	Saint Lucia		

The Commission will publish all contributions to this public consultation. You can choose whether you would prefer to have your details published or to remain anonymous when your contribution is published. Fo r the purpose of transparency, the type of respondent (for example, 'business association, 'consumer association', 'EU citizen') country of origin, organisation name and size, and its transparency register number, are always published. Your e-mail address will never be published. Opt in to select the privacy option that best suits you. Privacy options default based on the type of respondent selected

I agree with the personal data protection provisions

*Contribution publication privacy settings

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

Anonymous

Only organisation details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published as received. Your name will not be published. Please do not include any personal data in the contribution itself if you want to remain anonymous.

Public

Organisation details and respondent details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published. Your name will also be published.

Background:

This consultation feeds into the development of "A Drone Strategy 2.0 for a smart and sustainable unmanned aircraft eco-system in Europe". The aim of the consultation is to seek information and feedback from the most relevant stakeholders and from the wider public as to how a new EU Drone Policy could:

- contribute, through supported EU level for digitalisation and automation, to a new offer of sustainable aerial services and transport, in particular in urban area;
- review the initial implementation of the EU regulatory framework;
- contribute to overcoming barriers to the introduction of the technology and guarantee the widest social acceptance possible by addressing concerns related to environmental protection, in particular related to noise pollution, as well as safety, security and privacy.
- identify synergies between civil, defence and space industries

The markets for drones and drone services are expected to rapidly grow over the coming years as the drone technology is developing. Drone services and drone operations are expected to outnumber, potentially quite significantly, the number of manned aircraft currently in use. There is a great variety of drones with different applications (whether aerial services (measuring, surveillance, filming) or transport and goods or people), weight and size in a fast-evolving market.

Following the adoption of a first EU regulatory framework for drones[1] it is important to foster the uptake of this innovative technology in Europe and, in particular, to ensure public acceptance of drones by tackling issues related to environmental protection, safety, security and privacy and ensuring the full respect of all norms applicable to these policy areas. Even though the new regulatory EU regulatory framework has been applicable for less than one year, millions of drone operations have taken place in Europe under the previous national regulatory frameworks. Therefore, it would be useful to assess the effectiveness of the regulatory framework at this early stage in order to ensure that all the conditions are met in order to allow the European drone sector to contribute to Europe's economic recovery.

The Commission intends to deliver the Drone Strategy 2.0 in 2022, as announced in the Sustainable and Smart Mobility Strategy, as well as in the "Action plan on synergies between civil, defence and space industries" which launched a "Drones Technologies Flagship".

[1] Commission Delegated Regulation (EU) 2019/945, Commission Implementing Regulation (EU) 2019/947

A. Respondent's profile

A.1 About you, are you replying

- as an individual in your personal capacity?
- In your professional capacity or on behalf of an organisation?

A.2 Please specify your main field of activity or how you are mainly linked to the drones sector*. Please tick the most appropriate field.

Multiple Choice Question

at least 1 choice(s)
Individual citizen
Aviation professional (working in the aviation industry as a pilot, crew member, controller, etc.)

Drones Operator	
Commercial Air Transport	
Business Aviation	
Recreational aviation	
Aerial work	
Drone Pilot	
Telecom operator	
Aircraft design, manufacturing, or maintenance	
Air navigation service provider	
Aerodrome operator	
U-space service providers	
Common Information Service provider	
National regulator	
$^{\square}$ Qualified entity, or other organisation officially recognized by the national	
authority	
Training organisation for aviation professionals	
Local or Regional authority	
EU institution/body	
Stakeholder/industry association	
Non Governmental Organisations Research organisation/university	
/consultancy	
Other, please specify:	

B. Conditions to allow new forms of smart and sustainable mobility and aerial services, including their social acceptance

Among other uses, drones can be envisaged under two main commercial or professional aspects. First, drones are increasingly used to provide aerial services (e.g.: surveillance (heritage sites, wildflife), firefighting, maintenance and security (railtrack), Seveso emission monitoring, construction sites (measuring, etc), real estate (photography), filming, mapping in agriculture, mine and quarry, etc), within companies, to citizens and to other companies, thus contributing to overall efficiency of the economy. Second, Urban Air Mobility (UAM) is a new form of mobility by drones for people and goods, which is driven by recent technological developments around network connectivity and small, initially piloted, aircraft, also called electric vertical take-off and landing (eVTOL) vehicles or air-taxis. In the future, these eVTOL aircraft operations might be conducted autonomously (with no remote pilot).

However, drone operations, whether for aerial service or for mobility purposes can pose problems in terms of safety, privacy, environment and security. These problems are affecting the social acceptance of drones. Indeed, people can be concerned by the fact that drones are flown over private properties and the noise and visual nuisances drones could bring. The security aspect is also often raised in relation to drones. The objective of this section is to identify the most relevant aspects, which from a citizen or stakeholder's point of view should be addressed in the Drone Strategy 2.0 in relation to the expected increase of drone operations in the coming years.

Do you agree with the following statements?

Matrix

	Strongly Disagree	Disagree	Agree	Strongly agree	No opinion
Safety should be a priority	©	0	0	•	0
2. Privacy should be a priority	0	0	0	•	0
3. The general public has sufficient access to safety and security information related to the use of drones	0	•	0	0	0
4. The general public should be more informed on the environmental aspects related to the use of drones (noise pollution, visual disturbances, etc.)	0	0	0	•	0
5. Drone operations should initially involve only non-commercial operations (e.g. air ambulances, disaster relief, firefighting, crowd control, etc.)	0	0	•	0	0
6. Companies are sufficiently informed of efficiency gains provided by drone services	0	0	•	0	0
7. Urban air mobility can provide good alternatives to ground transportation for goods	0	•	0	0	0
8. Urban air mobility can be a more sustainable alternative to ground transportation for persons	•	0	0	0	0
9. Urban air mobility solutions should always be integrated in the overall mobility offer proposed to the public	0	0	0	•	0
10. Pilot projects should be run in parallel in different cities across the EU to enhance public trust	0	0	0	•	0
11. Disturbance by noise perception, perceived vibrations and visual disturbances will negatively impact social acceptance	0	0	0	•	0

12. Drone companies should closely work with regulators, local governments and communities to ensure community engagement	0	©	©	•	•
13. Regulatory measures should ensure that noise related issues are addressed (corridors for drone, hours limits, size of drones, etc.)	0	0	0	•	•
14. Regulatory measures should ensure that drones are compatible with EU privacy law	©	0	•	0	0
15. Every city can currently easily accommodate vertical take-off and landing operations	•	0	0	0	0
16. Urban design development should start taking into account drone operations in order to facilitate their operations	0	0	•	0	0
17. There is a need to develop new types of intermodal infrastructures, including vertiports, to support Urban Air Mobility operations	0	0	0	0	•
18. Cooperation mechanisms between various level of authorities should be established for authorisation of operation of drones in urban area	0	0	•	0	0
19. U-space airspace services (e.g. network identification service, a geo-awareness service, a UAS flight authorisation service and a traffic information service) should allow the safe integration of manned and unmanned aircraft operations	©	•	©	•	•
20. U-space airspace services should be available in every urban area	0	0	0	0	•
21. Drone services will have an impact on skills, and new training offers adapted to the smart mobility and drone services should be made available	0	0	•	0	•

Please elaborate on your answers to the above statements, in particular if you have "no opinion". (max 500 words)

Working on behalf of passengers, EPF has conducted research on the needs of various stakeholders, through our AURORA project. More information can be found in the report available here: http://www.epf.eu/wp/aurora-first-workshop/

C. Functioning of the current drone regulatory framework?

Following the adoption in 2018 of the EASA Basic Regulation[1] setting out the EU competence on all drones irrespective of their weight, and subsequent Implementing rules, namely the Commission Delegated Regulation (EU) 2019/945 and Commission Implementing Regulation (EU) 2019/947, the EU has implemented a risk-based approach to drones and drone operations. The EU law distinguishes three categories of operations[2]: the Open Category (low risk type of operations not requiring a prior authorisation from the competent authority), Specific Category (medium risk requiring either an authorisation or based on a Standard Scenario or a Light UAS operator Certificate) and Certified Category (high risk requiring the certification of the drone, the pilot and the operator). The EU drone regulatory framework has become applicable since the 31st of December 2020. Save for the rules to be applied to the Certified Category, the EU drone regulatory framework is almost complete and has become applicable since the 31st of December 2020.

The aim of this section is to obtain stakeholders' views on the benefits the drones regulations have so far brought to drone operators/pilots in the 'Open' and 'Specific' categories, since they became applicable at the end of 2020.

- [1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018R1139
- [2] https://www.easa.europa.eu/domains/civil-drones-rpas
- C.1 Do you perform drone operations in the 'Open' Category? (please chose one or more categories).

Recreational user
Aeromodelist in the Open category
Aeromodelist in the context of a model aircraft club or association
Public administration, state bodies and research institutions
Professional use: Individual company
Professional use (open category): small enterprise (10 to 49 persons
employed)
Professional use (open category): medium enterprise (50 to 249 persons
employed) Professional
Professional use (open category): large enterprise

C.2 As an operator in the 'Open' category, what is your opinion on the following issues of the new Drone Regulations (R945/R947)?

Matrix

	Strongly disagree	Disagree	Agree	Strongly agree	No opinion
The new drone Regulations have contributed to clarify the conditions of operations for small drones of less than 25 kg	0	•	0	0	0

2. As a drone operator, my national registration system is easy to use	0	•	0	0	0
3. Provision of drone safety information by the competent authorities and guidance is sufficient	0	0	0	0	0
4. Transition measures allowing the use of non C-class label drones are useful	0	0	0	0	0
5. Drones meeting the requirements of the Open Category will be available	0	0	0	0	0
6. Definition of drone geographical zones is appropriate	0	0	0	0	0
7. The new Drone Regulations provide adequate protection to citizens from risks and concerns related to safety.	©	0	0	0	0
8. Drones Rules provides adequate protection to citizens from risks and concerns related to security.	0	0	0	0	0
Drones Rules provides adequate protection to citizens from risks and concerns related to privacy.	0	0	0	0	0
10. The new Drone Regulations provide adequate protection to citizens from risks and concerns related to noise.	0	0	0	0	0
11. Provisions regarding remote pilot competency for recreational operations are easy to apply	0	0	0	0	0

Please elaborate on your answers to the above statement	s, in particular if you
replied "No Opinion". (max 500 words)	

Matrix

	Strongly disagree	Disagree	Agree	Strongly agree	No opinion
The new drone Regulations have contributed to clarify the conditions of operations for small drones of less than 25 kg	•	•	0	•	0
As a drone operator, my national registration system is easy to use	0	0	0	0	0

3. Provision of drone safety information by the competent authorities and guidance is sufficient		•	0	•	0
Transition measures allowing the use of non C-class label drones are useful	0	0	0	0	0
5. Drones meeting the requirements of the Open Category will be available	0	0	0	0	0
6. Definition of drone geographical zones is appropriate	©	0	0	0	0
7. The new Drone Regulations provide adequate protection to citizens from risks and concerns related to safety.	©	0	0	•	0
8. Drones Rules provides adequate protection to citizens from risks and concerns related to security.	©	0	0	•	0
Drones Rules provides adequate protection to citizens from risks and concerns related to privacy.	0	0	0	0	0
10. The new Drone Regulations provide adequate protection to citizens from risks and concerns related to noise.	0	0	0	0	0
11. Provisions regarding remote pilot competency for recreational operations are easy to apply	0	0	0	0	0

Please elaborate on your answers to the above statements, in particular if you replied "No Opinion". (max 500 words)

C.3 Do you perform drone operations in the 'specific' category? If yes, please chose one category.

Professional use: individual company

Professional use: small enterprise

Professional use: medium enterprise

Professional use: large enterprise

Public administration, state bodies and research institutions

Other

C.4 As an operator in the 'specific category', what is your opinion on the following benefits of the new Drone Regulations (R945/R947)?

Matrix

	Strongly disagree	Disagree	Agree	Strongly agree	No opinion
The new drone regulations are fit for conducting professional activities	0	0	0	0	0
All types of drone services can be fitted under the drone regulations	0	0	0	0	0
The procedure for receiving an authorisation for a drone operation is easy	0	0	0	0	0
4. Drone operators from one Member State can easily operate in another Member State	0	0	0	0	0
5. The availability of drones/equipment meeting the requirements of the 'Specific' Category is adequate	0	0	0	0	0
6. Provisions regarding remote pilot competency for professional operations are adequate	•	0	0	0	0
7. Drones Rules provides adequate protection to citizens from risks and concerns related to safety.	•	0	0	0	0
8. Drones Rules provides adequate protection to citizens from risks and concerns related to security.	•	0	0	0	0
Drones Rules provides adequate protection to citizens from risks and concerns related to privacy.	0	0	0	0	0
10. The system of declarations under the Light UAS Operator Certificate can be used easily	0	0	0	0	0

Please elaborate on your answers to the above statements, in par	ticular if you
replied "No Opinion". (max 500 words)	

C.!	5 Are there any other issues you would like to highlight in relation to the 'Open'
	or me area and an exercise year means are ingringed in relation to the epon

and 'Specific' categories in the drones regulation? Are there issues that are not covered by the Drones Regulations? (max. 500 words)

EPF doesn't operate drones in any of the categories	

D. Additional issues to be addressed by the forthcoming Drone Strategy 2.0.

Matrix

	Strongly disagree	Disagree	Agree	Strongly agree	No opinion
The use of renewable and clean energy should always be obligatory	0	0	0	•	0
The environmental impact of drone operations (noise, emissions, visual nuisances) is not adequately assessed nor addressed	0	0	0	•	0
The drone industry should be subject to circular economy principles (reuse of batteries and recycling of equipment)	0	•	0	•	0
Drones may pose issues on ethical values in certain cases (e.g. use of Artificial Intelligence)	0	0	•	0	0
5. Rules for emergency/landing spots requirements should be established	0	0	0	•	0
6. There is a need to generate synergies and technology transfer between Small and Medium Enterprises	•	0	0	0	0
7. The use of new Information Technologies should be assessed in terms of cyber security	0	0	0	•	0

Please elaborate on your answers to the above statements, in particular if you replied "No Opinion". (max 500 words)

For more information see our report: http://www.epf.eu/wp/aurora-first-workshop/

Are there any other issues you would like to highlight in relation to this initiative, such as issues that should be addressed by EU public intervention? (max. 500 words)?

UAM's success seems to depend on many factors: social acceptance, balancing the environmental costs of its operations, achieving a smooth integration with other transport systems and removing safety and security concerns that could cause accidents.

Our research with UAM stakeholders seems to suggest that if the technological developments around urban air mobility are to be sustainable and accepted in the future,

there has to be a good balance between the social benefits and the risks that those operations might cause. We need to fit the innovative services offered by UAM in the greater picture, integrating it

in the wider context, addressing possible environmental impacts and striving for the greatest level of safety possible.

Citizens should be involved at an early stage in the UAM lifecycle so that services meet real needs.

More info can be found in our paper here: https://aurora-uam.eu/main-findings-from-our-first-stakeholder-report/

Please give reference to any studies or documents that you think are of relevance for this consultation, with links for online download where possible.

Please see our stakeholder report here: https://aurora-uam.eu/main-findings-from-our-first-stakeholder-report/

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