



“NOVEL INTEGRATED SOLUTION OF OPERATING A FLEET OF DRONES WITH MULTIPLE SYNCHRONIZED MISSIONS FOR DISASTER RESPONSES”

ResponDrone

Deliverable 12.4: Public behaviour studies and strategy report

Project Deliverable Report

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Glossary of terms and abbreviations used	
Abbreviation / Term	Description
GDPR	General Data Protection Regulation
MES	Ministry of Emergency Situations of Armenia
SMS	Short messaging service

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1. Executive Summary

Drones still appear to be new and somewhat unknown to the vast majority of the public. The focus group discussions revealed that most of the participants were not familiar with the concept of using drones in first response operations. Participants associated drones with both amateur photo- and videography, with toys for kids, or military operations, or did not know anything particular about drones. People living in urban areas were more likely to have encountered drones.

Comments on the acceptance of drone operation were split between the negative feedback, triggered mainly by privacy concerns and noise and, to a lesser extent, the understanding of the potential improvements that novel technologies could offer for emergency response. All of the participants indicated that they would be willing to tolerate some disturbance if it were for the purpose of saving lives or mitigating disasters. It is highly desirable that the emergency drones carry/give special identification (colour, logo, sound, lights), and that the residents are informed about the flights/drills beforehand. Also, benefits and disadvantages of using drones were discussed, and measures to increase the public awareness and acceptance were suggested.

2. Introduction

As part of the “Task 12.3: Behaviour studies to increase public acceptance”, this activity has studied the public acceptance of novel drone technologies by conducting focus group discussions across six countries (France, Netherlands, Greece, Bulgaria, Latvia and Armenia). Two focus groups have been conducted by the ResponDrone partners in each country. The countries were carefully chosen to represent different cultural settings within the EU and Neighbourhood countries. The objective of the focus groups has been to identify benefits and barriers that may impact public acceptance of drone technologies. Ultimately, this task aims to develop recommendations on how to communicate and position the societal benefits of using drones for emergency response in order to increase public acceptance of using drone technology.

The surveys and focus groups conducted in other similar studies of the industry have also been considered with the purpose of learning the best practices and formulating targeted questions for our own focus groups¹. It appears that some of the studied reports have broader coverage and look beyond emergency situations, into using drones for police intelligence, orders delivery, agriculture, as well as the frameworks regulating the industry. These aspects fall out of the scope of this project report and therefore only the techniques of collecting public feedback through focus groups have been leveraged to design a questionnaire corresponding to the requirements for developing and operating a situational awareness system in emergency situations. The questionnaire is available in the Methods and Results section of this report. The questionnaire has been distributed to partners in all six countries to assist them in conducting the focus group discussions. Each focus group meeting included 8 to 10 participants.

¹ The most relevant such report, “Public Perception: Drones. Survey Results 2019” by the Institution of Mechanical Engineers, is referenced at the end of the document [26].

3. Task 12.3.1 – “Acceptance of novel drone technologies”

3.1 Methodology

A total of eight questions were included in the distributed questionnaire. They have been used by the ResponDrone partners to conduct focus group discussions.

1. *What is your experience with drones?*
2. *How often do you see drones flying over your residential area or your working space (if outdoors)?*
3. *When you have noticed drones operating, what were the effects on you (positive, negative, neutral)?*

Note for moderator. Example types of negative effects:

- *Noise - they are too loud*
- *Altitude - they fly too low and can hit myself, others or important objects*
- *Privacy - I do not know what they are flying for, whether they are spying/collecting private information/taking photographs/videos of places they shouldn't*
- *Safety - it can be a terrorist drone that is carrying explosives or a criminal trying to cause harm*

4. *What reactions have you had to drones (positive, negative, neutral)?*
5. *Can you recognize from looking at the flying drone whether it is a civilian drone (such as for amateur photography) or an emergency service drone? What would help you recognise that it is an emergency service?*
6. *Drones are widely and increasingly used in modern rescue operations for First Response to disasters. What potential value (or advantages and disadvantages – from your perspective) do you see in using them in emergencies?*
7. *If you knew that the drone is on an emergency mission to save lives, would you be more likely to accept the effect that it may have on you?*
8. *What can be done to increase the acceptance of drones in your community?*

Note for moderator. For example:

- *Inform the residents about the flight beforehand*
- *Explain the purpose of the flight*
- *Avoid flying directly over the houses and recreation areas*

The questions have been designed to allow for an open discussion and to solicit feedback from the respondents in a maximally free manner, without imposing or hinting any answers. Some questions also had additional information for moderators to keep in mind (such as illustrative examples, specific options, etc.) which, however, were to be used by the moderators only to provide additional context and help participants in understanding the subject of the question. As a rule, the discussions were to be kept open and not directed by the moderator.

The following instructions were also shared with the moderators of the focus group discussions:

1. *Please ask participants to specify their profession.*
2. *Collect information on the number of male and female participants.*
3. *Check if the participants belong to the age group of 22-57.*
4. *No need to record names of the participants or any other identification information.*
5. *Please record feedback per each question. No need to protocol the entire focus group, provide per each question a brief summary of the opinions expressed during the discussions.*
6. *Try to be inclusive during the focus group and make sure each participant is given the opportunity to speak.*
7. *Provide any other information that you think will be useful for the ResponDrone team to analyse the results of the public acceptance focus group discussions.*

The partners were asked to submit the consolidated results of the focus group discussions to the task team. No detailed protocol of the discussion or individual responses have been solicited. The ResponDrone expert team also participated in both focus group meetings carried out by the MES in Armenia (both online).

The guidelines also prescribed that partners conduct the focus group discussions considering the privacy rules and ensuring the anonymity of the participants and the collected data. The groups were to be formed from representatives of the general public with no particular selection criteria. The participants ideally would represent various regions, from urban and rural communities, and various specialisations and occupations. Partner reports confirmed that all focus groups had an adequate variety of representatives from different groups.

3.2 Results

3.2.1 Participation

The total number of respondents in the focus group discussions exceeded 70 people, with an average of eight participants per focus group. Male and female groups were equally represented,

and the participants age spanned from 22 to 57 years. It was reported that the participants were very interested in the topic and quite enthusiastic during the discussions and welcomed the idea of collecting citizen feedback on the acceptance of novel technologies.

3.2.2 Findings

Drones still appear to be new and somewhat unknown to the vast majority of the public. The focus group discussions revealed that most of the participants were not familiar with the concept of using drones in first response operations. Participants associated drones with either amateur photo- and videography, with toys for kids, or military operations, or did not know anything particular about drones. People living in urban areas were more likely to have encountered drones. Also, drones are usually spotted over touristic attractions, such as beaches or historic monuments.

The feedback on drone operation was split among the respondents from countries where focus group discussions were held, with 2 countries (France and Greece) providing predominantly negative perceptions of drones by the civilians, and 4 others (Armenia, Bulgaria, Latvia and Netherlands) having a mostly neutral stance, again with reservations over the potential usage of drones for surveillance and security purposes. The main concerns voiced by the first group focused around issues related to privacy and security. Normally, seeing a drone would raise questions about who and for what purpose operates it, and whether it was an authorised flight. People would especially feel uncomfortable about the drones flying outside their house without their consent, while others voiced concerns about drones coming too close and injuring them.

The noise created by the drones was another factor causing disturbance, especially amongst older participants. Interestingly, some participants indicated that the noise would at least allow them to know of the drone operating nearby. Other respondents said that seeing the drone operator would make them feel more comfortable while the drones operating with no pilot in sight normally would raise questions about it and ultimately cause anxiety.

Some participants mentioned they were glad to see drones develop, as they appreciate the usefulness of the drone technologies in various aspects of life, such as agriculture and emergency surveillance of possible hazardous events. Most of the respondents normally would not welcome operating drones directly over their residential or recreational areas. However, if it were for emergency missions, then it would certainly be acceptable to tolerate such disturbance, if it could save lives. Everybody agreed that informing civilians in advance of any such drills or operations would make people more comfortable about the purpose of the flights and eliminate possible security and privacy concerns. Therefore, it is important to make the purpose of the flights clear and communicate them through announcements or targeted notifications beforehand. Mobile

alerts (SMS/email) and public announcements were suggested as efficient channels of notification.

The respondents mentioned that civil drones are easily recognisable, as they are mostly simple and small models. However, it is not easy to fully understand their mission if they are flying at a high altitude. The drones flying at high altitudes cannot be recognised neither by model/type nor their assigned mission. When asked what would help them recognise the drones on emergency missions, the participants suggested the following options:

- **Colour:** The respondents suggested having the emergency drones in special colours that are visible from a distance. The mark-up could follow the same logic as for cars used, for example, by the police, the ambulance services and the fire brigades. Mainly orange, blue and red colours were named as options.
- **Flashing lights:** Some mentioned that even the colour would not be sufficient to distinguish the drones operating at high altitudes, therefore it was suggested that the emergency drones also be supplied with flashing lights, sending signals at a certain frequency.
- **Sound:** A participant suggested certain sound signals or sirens to be assigned for the emergency drones, as sometimes especially under the sunlight neither the colour nor the flashing light could be noticed.
- **Logo:** A logo of the civil service would also be helpful, but it would have to be large and recognisable.

All of the respondents confirmed the absolute necessity for the emergency drones to be distinguishable by specific characteristics in order to avoid misconception or confusion.

All focus groups agreed that the acceptance of drones would be greatly enhanced if people knew they were on an emergency mission, even if flown at a low altitude. For many respondents drones in such cases are comparable to emergency vehicles and people are trained to give priority to fire, police or health services on the road. A few participants underlined the need to distinguish between rescue operations and surveillance missions; the use of drones in the latter case would not be acceptable for them.

Among the advantages of using drones in emergency situations, participants saw the following capabilities of drones:

- area reconnaissance, panoramic overview and monitoring of the situation (in case of hazards, bombings or terrorist attacks);
- capacity of search and rescue operations in deserted areas (mountains, forests, other zones far from habitats), or collapsed buildings during the earthquakes;
- maritime search and rescue (carrying a thermal reconnaissance camera and a life buoy);
- patrolling areas at risk of fire;
- delivering supplies of urgent importance, such as water, food, first aid kits;
- drones with the capacity of carrying weight up to 120 kg could be used to evacuate a person from inaccessible places;
- broadcasting messages from authorities from the air;
- rapid access to the scene, faster than a police or a fire car;
- safe for emergency services;
- quickly obtaining and transmitting data for supporting decision-making.

Aware that drones are usually an expensive equipment, some respondents raised issues such as the cost of operation as well as the maintenance and replacement of drones in case of accidents. The need for legislation, regulating the usage of drones in emergency situations was also highlighted. Finally, drones were generally viewed as a supplementary technology tool and not as a replacement for the regular emergency services.

Overall, drones draw an interest from the public as a new technology, and people want to learn more about their types, capabilities, and application. However, little is yet known to the public about their usage in emergency situations. Some respondents also expressed reservations regarding the capacity of the involved public services to address the challenges related to integrating drones into everyday operations of first responders' work. Therefore, it was suggested to introduce measures to raise awareness about using drones in first response operations and boost their acceptance. The full list of recommendations can be found in chapter 5 of this deliverable.

3.3 Next Steps

Task 12.3.1 is the first of two sub-tasks of Task 12.3 "Behaviour studies to increase public acceptance" and will be followed by Task 12.3.2 "Strategy design to improve public acceptance". Based on the results of Task 12.3.1 and the potentially positive environmental, economic and social impacts that can generate the integration of a fleet of drones in a situational awareness system for first responders, a strategy to increase public acceptance for the wide use of drones in emergency situations will be elaborated. Guidelines will be produced for input to Task 12.6.



RESPONDRONE Deliverable 12.4

The Task 12.3 will be entirely dedicated to developing recommendations on how to communicate and position the societal benefits of using drones for emergency response in order to increase public acceptance of using drone technology.

4. Task 12.3.2: “Strategy design to improve public acceptance”

Objectives

Based on the results of Task 12.3.1: Acceptance of novel drone technologies, which explored the public acceptance of drone technology and identified benefits and barriers that may impact their public acceptance by conducting focus group discussions across ResponDrone project End-user organizations, the objective of Task 12.3.2 was to create a Strategy Design to improve public acceptance. Guidelines/recommendations were produced as input to Task 12.6.

4.1 Methodology

The overall methodology considered the findings of Task 12.3.1 and explored, through a literature review, the potential positive environmental, economic, and social impacts that applying a fleet of drones may provide to identify general recommendations, tools and methods used to improve social acceptance of new technologies, including drones, in an emergency response. A checklist was also created for the project End-users to follow when a new technology, and specifically drones, are introduced. A short survey was distributed to the project End-user organizations to identify the as-is situation in those organizations with respect to the methods/principles used to increase the public acceptance of new technologies.

4.2 Review of the Literature

The determinants of public acceptance of new technologies have come under close scrutiny in the past decade. It is important for policymakers and emergency agencies to understand whether the use of drones would be accepted by the public and which aspects alter this perception. Perceived risk, benefit, trust, knowledge, age, and gender are the most often reported determinants, which remain dominant [22]. Research on public acceptance tends to take place in the post-commercialization **phase** of a new technology, when public concerns begin to emerge[22]. Therefore, many articles encourage the proactive effort to identify public perceptions and values prior to commercialization when strategic decisions have not been made and the public can participate in the research and development process.

While UAVs have long been used in the realm of the military, in recent years they are increasingly employed in the civil, emergency, recreational, and commercial domains and are viewed as providing innovative and cost-effective technological solutions. The expansion of their use for an ever wider array of civilian activities can be largely attributed to their advancements in terms of technology and functions and their rapidly increasing availability.

D8.1 “The regulatory landscape, gaps and challenges” covers the regulations that are currently in place in the countries of the End Users involved in the ResponDrone project.

The use of drones entails high social and economic expectations. Several studies exist on the benefits to the economy due to the increased usage of drones, in such fields as agriculture, energy, public safety and security, E-commerce and delivery, mobility, etc.

Besides direct economic benefits and job creation, like the drone manufacturers’ expenditures on utilities, supplies, professional services, meals, and entertainment that generate economic benefits to the national economies, the development of the drone industry entails also indirect macroeconomic and societal externalities. For example, in the fields of safety and environmental protection, the use of drones has significantly increased the success of search and rescue operations and alleviated the negative impact of chemicals on the natural environment with the help of precision agriculture [1] [2].

Regarding the acceptance of new technologies, including drones, according to Gupta et al [22], the socio-political context, in which technologies are embedded, shapes the public’s perception of those new technologies. Trust in government is a key factor; when citizens trust the government, they are more likely to comply with laws [14]. Personal characteristics, such as their social-economic class, can determine trust in government, which can also be reinforced through previous positive experiences [14]. It is important to achieve trust in public organizations and institutions based on professionalism and integrity. This public trust in turn allows a smoother path to acceptance of drones in use by government agencies.

Furthermore, public perception of drones is also formed from mainstream news media and television series [21]. Hence, the direction of the media should be of carefully reviewed by researchers working in the field of public acceptance of drones.

In general, on the one hand there could be high social and economic positive effects arising from the increased usage of drones, such as improved search and rescue, better transportation of medications, precision agriculture, etc.; On the other hand, there are a number of disturbances that the use of drones can cause, the most notable of which are privacy issues and noise pollution.

Both the reviewed literature and the results of Task 12.3.1 suggest that beyond having a "basic" understanding of the usage of drones for aerial photography and videography, the public has limited knowledge of the additional possibilities and functionalities of drones as innovative technologies, particularly in industry and commerce. At the same time, public support for public

safety, search and rescue, environment and scientific research use of drones can be high, while commercial and hobby usage are not normally supported [3] [4] [5] [6] [7].

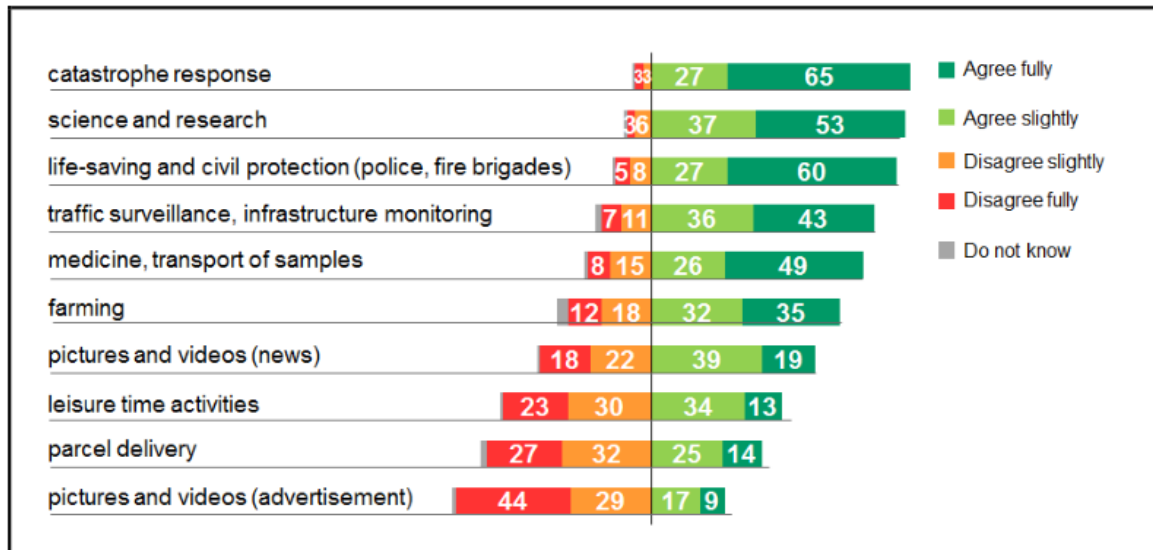


Figure 1: Acceptance was the highest for official uses such as ‘catastrophe response’ [19].

Recent studies on the public acceptance of drones in different areas, such as emergency management, environment, security screening technologies, dam management, etc., provide for typical principles for social acceptance, which are: transparency, awareness-raising and inclusivity [8] [9] [10].

Transparency entails that information about new technologies, including drones, should be communicated in a correct, user-friendly, and timely manner, and can be easily checked if need be. The key concerns and perceived risks surrounding the usage of drones must become part of the discussion at the policy, and legislative levels to foster public acceptance.

As for the public’s risk perception, trust or distrust of the information about the usage of drones is of great importance [21].

It was found that the knowledge of a technology was not the factor that caused people to worry about its dangers, but the credibility of the information received; perceived risks declined as perceived benefits increased [21]. Therefore, trust is a crucial variable influencing perception and the communication of information. In the same study, people were willing to tolerate higher levels of risk if the processes involved were voluntary, immediate, familiar, and controllable [21]. Risks could be subject to ‘social amplification’ through the media and other forms of communication of the information [21]. It is important to note that the focus is on the public’s acceptance of the risks associated with the use of the drone and not their acceptance of the new technology.

Although the quantification of an acceptable level of risk is important, other immeasurable factors such as economic, political, and moral climates play an equal role.

All said, the better people are informed about the possible risks, the more they accept the use of drones if the benefits outweigh the risks associated with it [20].

As for the terminology and risk perception, Clothier et al. in 2014 [15] focused on the terminology that can influence the public's perception of drones. Terminology is known to be a significant issue for the drone industry. Different terms are used to describe drones including Unmanned Aerial Vehicles (or UAVs), remotely-piloted aircraft and autonomous aircraft [15]. It is widely recognized within the industry that there are potentially more negative associations made with the term "drone" compared to other terms. However, the study found that terminology had minimal impact on the public's perception, which contrasts with the results from analysis of media articles and industry beliefs [15]. It is worth mentioning that this result might change depending on various factors such as region, social class, political status, and literacy of the population. This point should be further explored as the effect of terminology on risk perception is still unclear.

Awareness raising means that there is a need for targeted outreach and public awareness raising efforts regarding the extended functionalities of drones and their capacities, including in emergency management, because, irrespective of its intent, whether implemented for disaster management, law enforcement, or other safety-related purposes, privacy concerns represent a significant barrier against the social acceptance of drones. It is also beneficial to try to find new ways of messaging, including alignment with how drones fit in the bigger developmental picture of a particular state. Another aspect worth understanding is the effect of public perception on the acceptance of a new technology [21]. It is necessary to consider how the public's perception can influence their behavior. Public acceptance in this instance is the decision to implement a proposal, whereas acceptability is the public's willingness to consider a technology seriously [21]. It is important to mention that populations are highly differentiated, and their interests and values might be conflicting.

Differences in perceptions according to age and gender are also variables that have been explored. Research has found that older people are more supportive of the use of drones compared to younger people, especially for rescue and emergency uses [18]. Other articles have mentioned how females are more concerned with the risks of the utilization of drones (Figure 2) [20].

Another social factor affecting public perception is the knowledge towards drones. It is our inclination to assume that people with a STEM background should be more interested in emerging technologies. However, Gupta et al (2012) [21] deduced that there was no difference in between STEM vs non-STEM background with respect to attitudes towards drones.

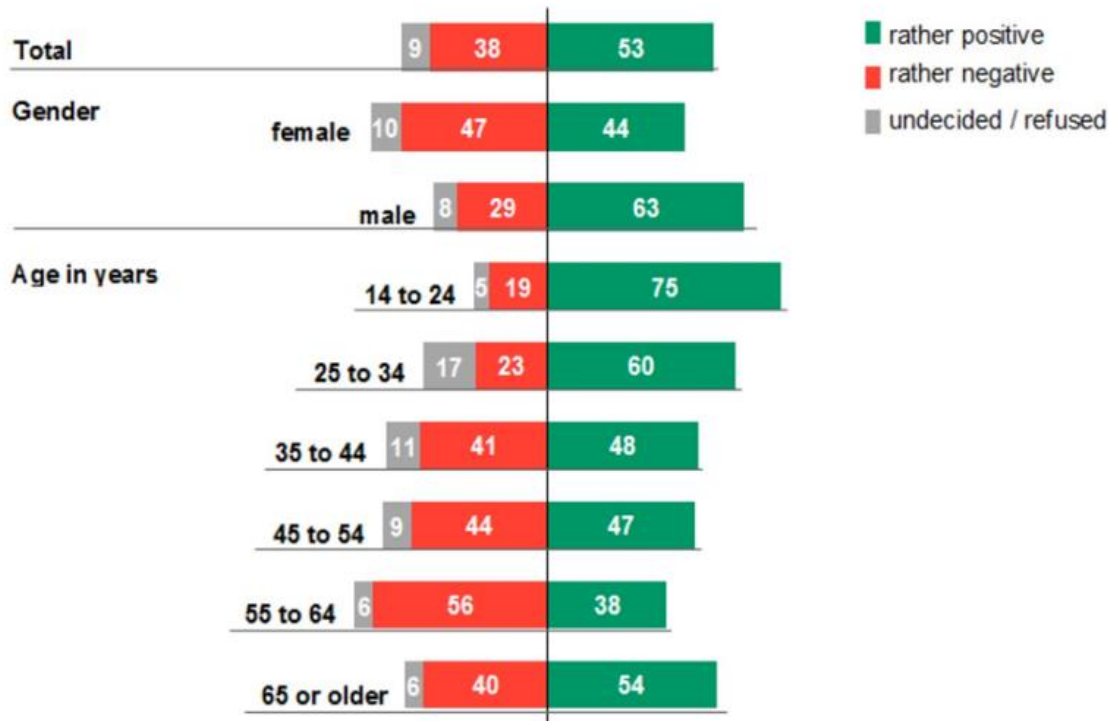


Figure 2 : “Male respondents are more positive toward civil drones compared to females [20].”

Inclusiveness means that the affected individuals, sizable stakeholder and vulnerable groups, civil society groups, and academia are included into the discourse and policymaking discussion and are able to influence the decision development process [11] [12]. It is also important to adopt a mutual understanding system between the organization and public. There should be a shift from an information model to an interactive and understanding model [21].

Another factor that can impact the public acceptability of any new technology is the capability of law enforcement or relevant bodies to punish the responsible agents in case of wrongdoing [13].

The general consensus revealed by the reviewed literature and the results of the focus group discussions conducted in the Task 12.3.1 led to the conclusion that to improve the public’s acceptability of UAVs, including in emergency management:

- (a) the opportunities presented by the use of that technology should be accentuated;
- (b) the process of introduction of the new technology, including drones, should be transparent and include the public and major stakeholder groups; and
- (c) targeted outreach and awareness raising/communication campaigns should be conducted to inform about opportunities, and also manage the real and perceived risks.



All in all, it is shown that attitudes of the public about technology in general are not stable and can easily be altered by how and when the subject is introduced [17]. It is important to mention that asking people about their views on the acceptability of a new technology is not only about obtaining their favorite technical features or perceived risks but recognizing that there are normative and political priorities as well [21]. It should be considered that the public reaction towards a UAV incident is perceived to be more severe in the early stages of civilian operation [16] and their first experience with drones will set the tone for the future. By first applying drone applications for the betterment of society positive experiences will be generated, which will result in support for their implementation for a wider arena for commercial uses [24].

5. Recommendations, methods, and tools to increase the public acceptance of drones in emergency response operations derived from the literature review and results of the focus group discussions across six countries conducted in the framework of Task 12.3.1

1. **Publish all drone flights**, informing residents about the flights beforehand and explaining the reasons behind them (through announcements or targeted notifications beforehand, SMS/email and public announcements). For example, the recent article published in <https://uasweekly.com> shows how AirData, the largest online drone fleet data management and real-time flight streaming platform, now offers Chula Vista residents the ability to view and understand the exact location, flight path, and purpose behind each police drone deployment [25].
2. **Have distinguishable features on emergency drones**, to avoid misinterpretation or confusion with remotely piloted aircraft serving other purposes. Task 12.3.1 focus group participants agreed that the acceptance of drones would be improved if people knew the drones are on an emergency mission, even if they fly at a low altitude. For many people, drones in such cases are comparable to emergency vehicles. Considering that people are educated to give priority to fire, police, or health services on the road, understanding that drones are on a rescue mission will improve their acceptance. Distinguishing features can be color, flashing lights, sound, logo, etc.
3. **Undertake early efforts to define a baseline of public values, concerns, and risk perception**. This issue should be tackled early on and not be an afterthought [23].
4. To better understand the process of technology acceptance in society, conduct **research into non-controversial technologies** to identify what factors drive societal acceptance [22].
5. **Evaluate** throughout the stages of development. This assessment should involve rigorous peer review - designed by experts, regulators, and state and local officials at each stage. Evaluation should be seen as a key element in **mid-course** corrections and adaptive management [23].
6. **Educate and raise awareness**. Many people still do not know about the usage of drones in civil protection, which shows the lack of communication and presentation of new technologies by the authorities. Therefore, workshops, focus group discussions, and other activities should be organized by the responsible bodies to communicate information to the public (through radio, TV, Internet, etc.). A **series of topical webinars** or information sessions, panels and presentations can be themed on an identified stakeholder group, on a key thematic issue, or done in partnership with a specialized group.
7. **Prepare short informative videos** on application of drones in emergency situations.
8. **Implement Public Outreach Campaigns/Events**. "Drone demonstrations", where the new technology is taken to communities to show how exactly it works and what are the bene-

fits to the community, can be helpful in increasing public acceptance of novel technologies. These demonstrations can also become a STEM/technical outreach opportunity to motivate and interest young people to engage with the sector.

9. **Include information on emergency drones** in educational programs for schools.
10. Periodically **share information with citizens** on positive and negative aspects of drones for fair representation of both sides to gain high confidence among the population.
11. **Organize drills and simulations** for the civil population using drones.
12. **Involve drones in daily activities** as much as possible, such as food delivery and other logistics, to accustom people to the technology.
13. When preparing awareness-raising materials, **use simple and easy-to-understand terms** instead of complex professional terminology.
14. **Establish a well-formulated legislative framework**, particularly protecting the privacy of the personal data (such as GDPR);
15. **Mark up the zones** where drone flights are allowed.
16. **Organize public dialogue.** Citizens are involved in decision-making concerning key emergent policy topics through public dialogue. Dialogue brings together members of the public from various backgrounds, as well as officials and professionals, to discuss, reflect on, and reach decisions on complex, contentious, or sensitive matters. Evidence demonstrates that giving individuals the proper information, enough time, and in the right conditions can help them widen their viewpoints, embrace “public-mindedness” and help to change opinions.

In particular, the public dialogues can explore:

- The public understanding of drones and their current uses
- Expectations, risks, and concerns about future usage – in particular, which relate to privacy, data protection and safety [5].

17. **Stakeholder engagement.** The groups of key stakeholders from a range of backgrounds can be brought together to discuss the current state of play in relation to drone use in a particular state, to see their views about the benefits and challenges surrounding drone usage; their attitudes towards privacy and data security, health and safety, and autonomy; and their expectations for public attitudes and concerns. Participant engagement can be encouraged through a dedicated website.

6. Checklist for End Users to follow when utilizing a new drone technology

Recommendation		Yes	No	Comment
R1. Information about drone flights published	Can residents view and understand the exact location, flight path, and purpose behind each emergency drone deployment?			
R2. Distinguishable features for emergency response drones	Do the drones used for emergency response have distinguishable features, such as color, flashing lights, sound, logo?			
R3. Education and awareness-raising	<p>Are education and awareness-raising activities being conducted when introducing new technology, in particular, drones?</p> <p>Examples include thematic workshops, webinars, communicating information about benefits and risks of the UAVs to the public through radio, TV, Internet, etc., educational videos, inclusion of relevant information in school programs and other means of informing citizens on positive and negative aspects of drones for fair representation of both sides in order to gain high confidence among the population.</p>			

R4. Public Outreach Campaigns/Events	Are drone demonstrations, drills and simulations periodically organized?			
R5. Stakeholder engagement	<p>Is a meaningful stakeholder engagement process periodically conducted to contribute to involving the citizens in decision-making on key emergent policy topics regarding use of drones?</p> <p>Examples include</p> <ul style="list-style-type: none"> - Public dialogues that can explore a) public's understanding of drones and their current uses, b) expectations, risks and concerns about future usage. - Other forms of public participation to generate and obtain public input, such as citizen assemblies, public consultations, surveys, public workshops, where groups of key stakeholders are brought together to discuss the current state of play in relation to drone use in a particular state, their attitudes towards privacy and data security, health and safety, and autonomy; and their expectations for public attitudes and concerns. 			

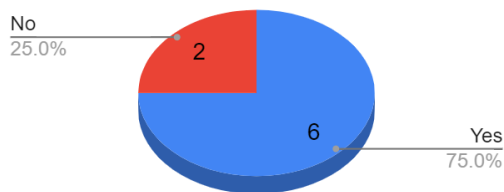
R6. Sound legislative/operational framework	<p>Is there legislation protecting the privacy of personal data?</p> <p>Are the zones where flights are allowed marked up?</p>			
R7. Evaluation	Does regular evaluation take place (mid-course or after each usage of the technology (after each flight in case of drones), for adaptive management and for further developing the new technology?			
R8. Continued research	Are respective entities conducting ongoing research to define a baseline of public values, concerns and risk perception and possible changes/triggers for changes in those categories?			

7. Results of the initial survey among end-user organizations

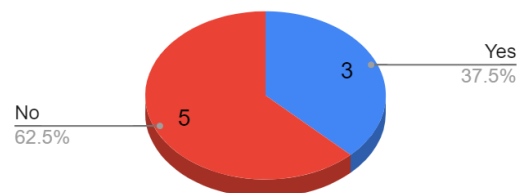
The short survey conducted among the end-user organizations showed that

- The majority of end user organizations uses drones in their emergency response operations and some of them are collaborating with private companies that provide drone flight as a service.

Are drones currently used in your country/organization for disaster management?

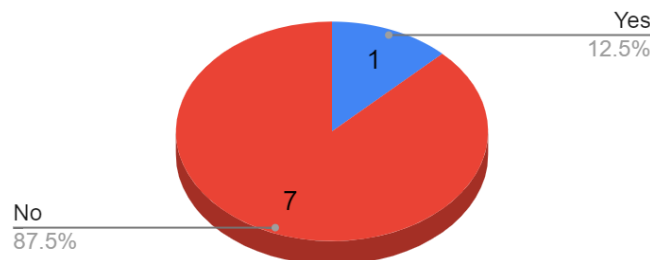


Do you have experience working with private companies that provide drone flight as a service?



- Concerning special distinguishing features of drones, only Regional Administration Varna (Bulgaria) reported having flashing lights.
- The most used ways of communication to send and receive information during the emergency response are phones, social media, and TV.
- Most of the end-user organizations state that there is no regulation in their country that requires publishing all drone flights in public areas. The only organization that confirmed having that regulation is HCFDC (France). End-users reported, however, having no-fly zones and zones that require special permission to operate drones.

Is there a regulation in your country that requires to publish all drone flights in public areas?



- In the replies of all end-user organizations the major stakeholder groups involved in policy making regarding the drone usage in their countries are Government/state institutions (Ministry of Transport, Ministry of Defence, Fire Departments, Air Traffic Management

Units, Departments of Civil Aviation, Air traffic controls, etc.). There was no indication of other groups, like academia, civil society or other non-state entities that are included in the discourse and policymaking discussion regarding drones' usage.

- Disaster/emergency management is included in educational programs for schools in the countries of most end-user organizations.
- Most end-user organizations run drills and simulations for the civilian population, but drones are used in those drills only by the Netherlands.
- 5 out of 8 end-user organizations are using awareness-raising informative videos on application of new technologies in emergency situations.
- 2 end-user organizations – VRH Netherlands and State Fire and Rescue Service of Latvia – reported that there is a practice to mark up the zones where drone flights are allowed.

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