

Drones, flying all- rounders?

In brief

- Drones are unmanned flying objects, which are operated remotely within visual contact (class 1) or without visual contact (class 2).
- The field of application is very diverse and ranges from individual, commercial up to military use.
- Drones have been operating in Austria for several years, especially for sporting events and disaster drills.
- Since 1.1.2014, civilian use of drones in Austria has been generally regulated by law. Detailed regulations are yet to be drafted.
- The possible ubiquitous private and commercial use poses a challenge for society, but also for legislators, especially the protection of privacy and environmental aspects.

What is it about?

The use of drones is gaining more importance nowadays. Originally devised for military use, a new market for civilian use is emerging too, with drones designed for search and rescue operations after mountaineering accidents or avalanches, reconnaissance and loss assessment in disaster cases or collection of geo data and aerial photographs. Further fields of application are the inspection of high-voltage power lines and pipelines, the use as 'flying scarecrow' in agriculture, in forestry, but also the monitoring and reporting of large-scale sporting events such as the Olympic Games (London 2012).

Equally varied is the on-board equipment, ranging from cameras for (live) broadcasting of photos and videos to thermographic cameras or other sensors.

Depending on the area of application, drones are operated by different entities, be it humanitarian, commercially orientated, scientific or governmental institutions. Over the years, drones also have become affordable for private individuals. This considerably expands the field of application and target groups and therefore opens up new areas of conflict, too. Recently, even parcel delivery by drones has been announced (Amazon).

Technical development, operational implementation into airspace, different fields of application, and safeguarding of rights such as privacy urgently require comprehensive legal framework conditions.

The European Union is currently working on a uniform regulation of civil aviation at European level. On 1 January 2014, the amendment of the Austrian Aviation Act (LFG) came into force at national level. Included are fundamental provisions for the operation of private as well as commercial use of drones.

There are three types: drones operating without direct visual contact to the operator (class 2) are subject to the provisions of manned civil aviation. For class 1 drones, which have a much shorter range and smaller size, these provisions do not apply. For both classes, the approval of the Austrian air traffic control authority *Austro Control* and a notification to the *Data Protection Commission* are required. For the third class, so called flying models, simplified rules apply.



Foreground: A drone in use for a search and rescue operation
Michaelgeorges / CC-BY-SA-3.0

Analysis

The current classification of drones entails a problem: the rules of civil aviation only apply to class 2 drones. There are no traffic rules for the smaller class 1 drones in Austria, which raises concerns for maintaining flight safety. Improper insurance regulations in the event of damage complicate the situation. The Aviation Act (LFG) is considered a law providing guidelines which lacks detailed regulation for practical implementation. A standardized EU-wide regulation is being sought for early 2015, but again, this will also affect only class 2 drones.

In Austria, a profitable market is emerging: numerous agencies and companies are involved in research and development. If civilian use of drones actually becomes a routine, regulation will be challenged to balance private, commercial and public interests.



Quadrocopter with on-board camera or video equipment
Don McCullough / CC-BY-2.0

A further problem arises regarding the protection of privacy. With a great variety of possible on-board equipment drones may easily intrude private space. We identified the following areas of conflict:

- Measures that are intended to increase general security – such as the monitoring of the air during major sporting events – might be in opposition to individual freedom. Depending on the field applications, possible usage has to be balanced in relation to public benefit and individual harm.
- In commercial use, (unauthorized) photographs of people, land or buildings may be taken.
- Private use of drones might exceed the sole purpose of the flight. Eavesdropping or filming of individual talks on a neighbour's property by a micro drone might occur.

What to do?

The civilian use of drones, be it private or commercial, challenges society greatly; therefore, a systematic legal framework is required.

- The regulation of class 1 drones should be given priority. A comprehensive and detailed legal framework with clear distribution of responsibilities is necessary. Traffic rules, licensing and appropriate rules for insurance, liability, and damage are required for drone operation. Class 1 drones should be integrated into the proposed EU-wide aerospace regulation.
- By using drones, privacy can easily be violated in various and new ways. Protection of privacy can be ensured by both a legal framework as well as a privacy-by-design approach.
- In particular the scenario of ubiquitous usage of drones requires an in-depth and comprehensive technology assessment to investigate diverse social issues such as the balance of interests but also environmental aspects such as noise.
- The use of drones has to be balanced with regard to expenses, costs and benefits, and the preservation of rights, depending on different types of application such as rescue, TV transmission, delivery service, etc. At this stage, the search for alternatives is essential.

Further reading

Report on Surveillance Technology and Privacy Enhancing Design. *Surprise Project Deliverable 3.1*.

Link: surprise-project.eu/wp-content/uploads/2013/06/SurPRISE-D3.1-Report-on-surveillance-technology-and-privacy-enhancing-design.pdf

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