



Federal Office
of Civil Protection and
Disaster Assistance

Selected use cases and requirements for UAS/Drones operations of civil protection and disaster relief users

CEPT Workshop on Spectrum for Drones, 29.-30.05.2018, Copenhagen



Drones for disaster management – a valuable tool

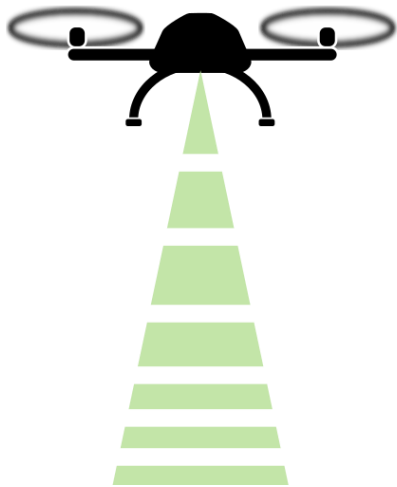
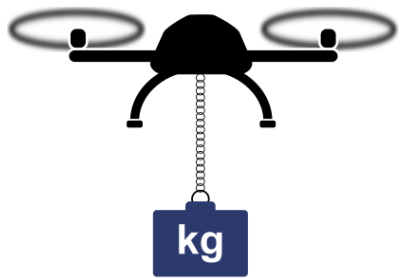


Photo: Feuerwehr St. Augustin

Current legal framework in Germany

- Since April 2017 [new regulation](#) on UAV operations with **specific exceptions for public authorities** and relief organisations
- No permission necessary:
 - Flight with devices up to 25 kg
 - Beyond visual line of sight
 - Over crowd
 - Over sensitive areas (e.g. critical infrastructures, government buildings, etc.)
 - Higher than 100m
 - ...

General capabilities



Use-cases „damage inspection“

Massive explosion of amunition storage in Cyprus, 2011



Photo: DLR/ZKI

Use-cases „Search for injured persons“

Collaps of a large scaffold during construction works, 15.06.2016



Use-cases „Search missed person“

Aerial support for Bavarian Mountain Rescue Organisation



Photo: Bergwacht Bayern

Use-cases „Search missed person“

Aerial support for Bavarian Mountain Rescue Organisation



Use-cases „Aerial imagery to coordinate firefighting“



Photo: Feuerwehr St. Augustin

Use-case „Large scale monitoring for situational awareness“

Extreme flood, June 2013



Photo: Polizei Sachsen

Use-case „Support lifeguards – drop safety buoy“

Since 2018 regularly in use in Mecklenburg-Vorpommern (Baltic Sea coast)



Photos: Wasserwacht DRK

Use-case „Search and Rescue over sea“

Research project LARUS by German Maritime Search and Rescue Association and others



Foto: DGzRS/Michael Rauhe, Bild UAV: HANSEATIC AVIATION SOLUTIONS GmbH, Fotocollage: TU Dortmund

We go in when others have to go out!



Working group to develop a **Service Regulation** for civil protection authorities and organisations

- Since Sept. 2017
- Target: common agreed concept of operations
- First draft by end of this year



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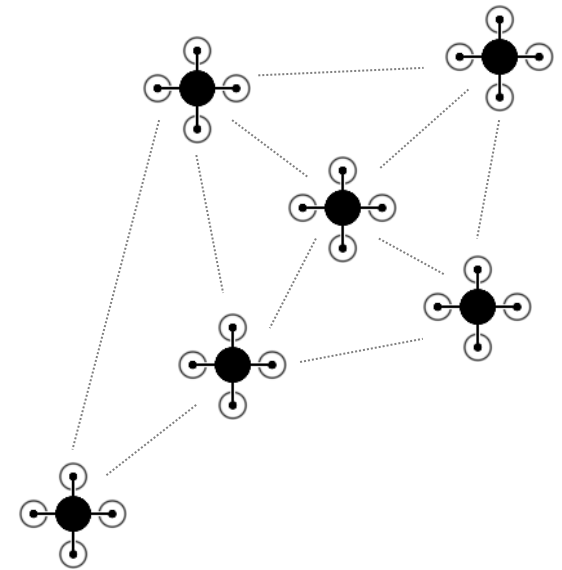
Deutsche Lebens-Rettungs-Gesellschaft e.V.

Drones for disaster management - requirements

- Reliable and robust frequencies for controlling the devices
- Real-time imagery/video transmission
- Operations everywhere and at all times
- Operations out of sight
- Special rules in a (future) traffic management system

Future perspectives

- More autonomy:
 - Detect and avoid
 - Swarms
 - Autonomous replacement of devices during operations
 - Multifunctional devices (instant change of capabilities)
- Larger devices for transport of
 - water for firefighting
 - persons
- Combination with AR/VR
- Automatic data analysis





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Thank you for your kind attention!

Contact

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