UAVs for environmental monitoring

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UAVs for Environmental Monitoring

Content

- Current UAS activity
- Limitations and challenges

UAVs for Environmental Monitoring

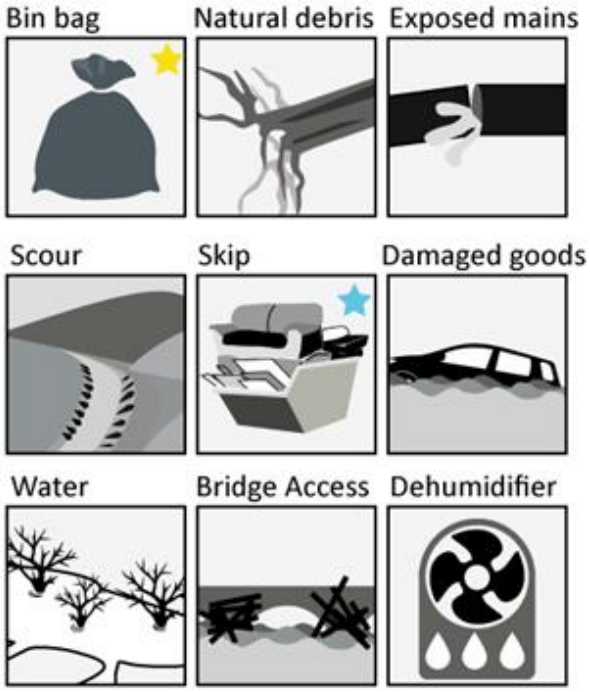
UAVs for Flood Emergency Response

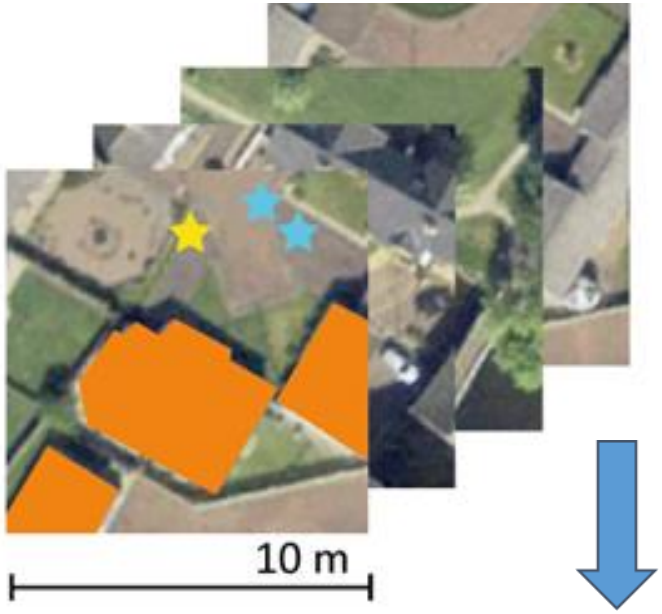
What is the problem?

- 5.2 million properties in England at risk of flooding.
- Average annual flood damage to properties is > £1 billion.
- Cost of repairing a house ≈£10,000 and £50,000.
- Near real-time (48h) accurate mapping of flood extent, property and infrastructure damage in urban areas.

NERC SCIENCE OF THE ENVIRONMENT

UAVs for Environmental Monitoring





Fieldwork (2017/2018) to characterise affected properties:

- Type and age of property
- Presence of basement, extensions, utility buildings
- Reports from eyewitnesses
- Cause of flooding (groundwater, pluvial, fluvial)

Estimation of direct tangible losses

UAS for Environmental Monitoring

UAS for Turtle Monitoring

UAVs for Environmental Monitoring

Limitations and Challenges

- BVLOS requirement for all applications presented
- Speed processing PfCO- extended permission ANO
- Fast route to get extended permission under catastrophe situation
- CAA operational restrictions
- Coordination of UAV licence recognition across countries
- Country specific airspace regulation
- Communication of the complexity of UAVs regulatory restrictions to non-technical operators
- Technological limitations (e.g., flight stability under gusty conditions)
- Data protection GDPR
- Public acceptance of the technology
- Competency level of existing pilots