drones, sensing and journalism

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HELLO
Drone usage survey: sensing is unexplored

General
- 241 drone operators surveyed
- 28 have flown for 'newsgathering or journalistic' purposes
- 25 classify themselves as working in the news media sector
- Primary activities are: photography, survey, commercial filmmaking

Opportunities:
- Aerial/unique perspectives
- Live streaming

Challenges:
- Permissions to fly, and the delay it takes to get permission. This is particularly challenging for breaking news scenarios
- Future: better cameras/longer battery life
- ONLY ONE RESPONDENT MENTIONED WORK THAT WASN’T BASED AROUND STANDARD IMAGE CAPTURE: THEY WERE USING THERMAL
Sensing examples
Sensing research: opportunities to cross-pollinate with (drone) journalism

Key drone affordances
- Speed
- Range
- Height
Aerosee: UAV Mountain Rescue Project

- **UAV Ground Station**
- **Image data**
- **UAV**
- **Internet**
- **UCLAN Servers**
- **Mountain Rescue Control Centre**
- **Search Locations**
- **Data Processing**
- **Crowd sourced imagery analysis by online ‘Search Agents’**

- **Rescue Team**
  - Dispatched directly to sightings
Crowd-Sourced Imagery Analysis

Mission brief: We are trying to find a missing person. Please help by tagging the image if you think you can see them. Simply click on the image to begin tagging. If you make a mistake, click 'Remove Tag'. Hover over the list below to see your tag locations. Once you have finished, click next image to continue the search.

Your tags:

Next Image
Our injured walker was first tagged within 69 seconds of the image being uploaded to the aeroSee website.
Agricultural Surveying
Isle of Rum
Near Infra-red
Orthomosaic of area containing the plot
Minefield Surveying
Cambodia (part 1: GPS)
Minefield Surveying
Cambodia

(part 2: GPS and Multispectral camera to identify where mines may be)
Air quality monitoring

(GPS and PM2.5, PM10, Carbon monoxide, sulphur dioxide, nitrous oxide and ozone)
Children exposed to 30 per cent more air pollution than adults because they are shorter, study finds
UNIVERSITY OF CENTRAL LANCASHIRE, UK

Air Quality Data Sampler

Measures: PM, NO2, CO, SO2, O3
Journalism: innovating process
dronehack journalism
Vienna and Manchester
Talking
sensors

- Camera
- Button
- Temp & Humidity
- Magnetic Field
- Light
- Motion
- Gesture
- Dust
- Ultra Violet
- Sound (recorder)
Dust sensor
The dust sensor detects the level of dust present in the atmosphere. A good example of a use would be to measure particles in the air in areas with high levels of smog.

Light Sensor
This sensor measures the ambient light level. Applications include measuring the light pollution in an urban area.

UV Sensor
The UV sensor behaves similarly to the light sensor but is only responds to ultraviolet light.

Ultrasonic range finder
This sensor uses a beam of ultra sound to measure distance. This sensor is often used for collision avoidance on drones and other mobile robots.

Temperature and humidity sensor
This sensor simultaneously measures ambient temperature and humidity. On a drone it could be used to provide more accurate local weather reports.

Sound Sensor
This sensor does not record sound but measures the surrounding noise level. It could be used to listen for survivors after an earthquake or building collapse.

Sound Recorder
Unlike the sound sensor this sensor digitally records sound and can replay the recording at a later date. It could be used to record short messages from survivors during search and rescue.

Air Quality Sensor
The air quality sensor reacts to range of harmful gasses such as carbon monoxide, acetone and formaldehyde. It cannot give individual readings of each gas but will give a rough indication of how safe the air is.

CO2 sensor
This sensor measures the concentration of carbon dioxide in the atmosphere. It could be used in parallel with the air quality sensor to give a more comprehensive value for the quality of the air.

Moisture sensor
This sensor can be used to detect moisture in soil or to detect water on the sensor. It could be used to find out the suitability of soil for planting crops.

LCD Screen
The LCD is a liquid crystal display capable of displaying text. The screen includes a backlight allowing it to be used in all light conditions. If drones are being used to locate survivors during an earthquake for example, it could be used to relay a message to survivors to reassure them that help is on the way.

Flammable Gas Sensor
This sensor is used to detect gas leaks indoor and outdoor. It is capable of detecting H2, LPG, CH4 and alcohol. This sensor’s primary purpose is to detect gas leaks.

GPS
The GPS module allows the drone to localize itself. This gives the operator the option of using preprogrammed flight paths to control the drone than flying it manually.

HCHO sensor
This sensor detects formaldehyde gas in the air around the sensor. This can be extremely useful as formaldehyde can be both toxic and extremely flammable. This can be used on conjunction with other gas sensors to provide an extremely comprehensive reading of air quality.
The bad drone
Air quality - data fusion

Personal pollution monitor

Drone my Day

Forest Fire monitor

Bat detecting

Demonstration monitoring
DroneHack Retweeted
The Sharp Project @sharpproject · 21 Jan 2017
Replying to @sharpproject
Congratulations!

dronehack @drone_hack
“the regs”: certification required for commercial work
Thank you

@_johnmills