Detecting Fires by Drones

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Drones footage will give us real time information about how a fire is unfolding.
When dealing with wildfires, drones footage will show how the fire is spreading and where it might go next. In dealing with a structure fire, drones can provide key information about exits and entry points, as well as revealing information about the nature of the fire that might not otherwise be possible to gather. Also, when a fire is starting to die out, it can still contain smoldering hot spots that are invisible to the naked eye, and a thermal camera attached to a drone can find these spots and make sure to avoid them.

MAKE EMERGENCY DELIVERIE

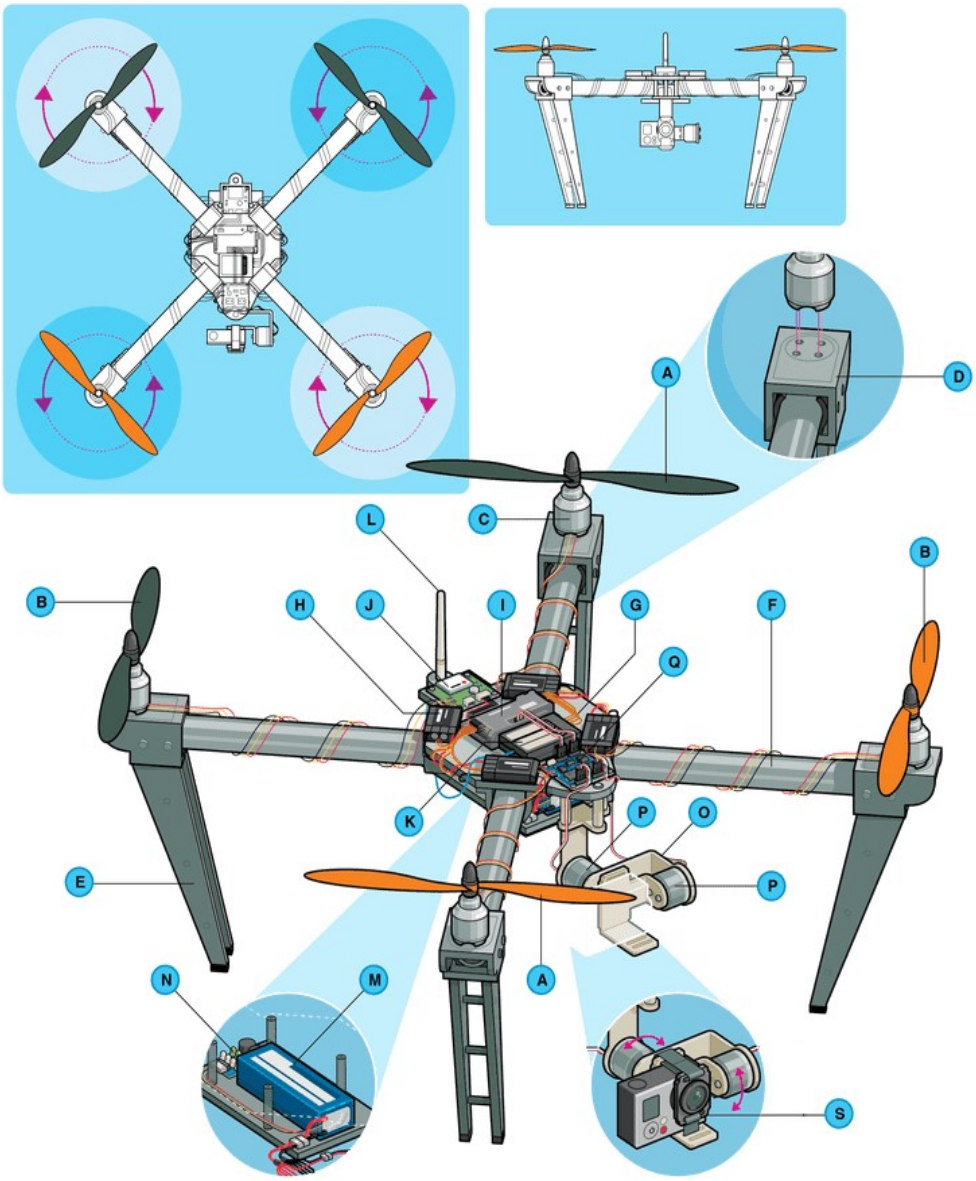
Using drones to make emergency deliveries in disaster situations, carrying items like Automated External Defibrillators (or AEDs), and whatever other equipment might be needed on the ground.

CREATE PRE-FIRE PLANS

Situational awareness is everything when it comes to saving lives and preventing damage during a fire, and half the battle is knowing what you're walking into.
Using drones to capture images and create orthomosaic maps of key buildings and facilities, like schools, within the areas where they work.
These maps help us to know where the exits are, and can be used by the incident commander during a fire to provide a comparison between normal conditions and fire conditions for different parts of a building.

CONDUCT INVESTIGATIONS

Using drones after a fire has burned out to survey the scene and collect images that can be turned into orthomosaic maps. These maps serve as a record of the post-fire scene, so that even if the scene changes over time there is still a complete data set that can be used to investigate what might have caused the fire, and how it burned while it was active.



A. PROPELLER(counter-clockwise)

B. PROPELLER(clockwise)

C. MOTOR

D. MOTOR MOUNT

E. LANDING GEAR

F. BOOM

G. MAIN BODY

H. ESC

I. FLIGHT CONTROLLER

J. GPS MODULE

K. RECEIVER

L. ANTENNA

M. BATTERY

N. BATTERY MONITOR

O. GIMBAL

P. GIMBAL MOTOR

Q. GIMBAL CONTROLLER

S. THERMAL CAMERA (FLIR C2)

Fire Detection
Detects fires even without smoke present at up to 6km away, day or night. Risk of Fire Detection (Hot Spot). Detect a Potential fire before it occurs or monitors equipment for thermal failure.

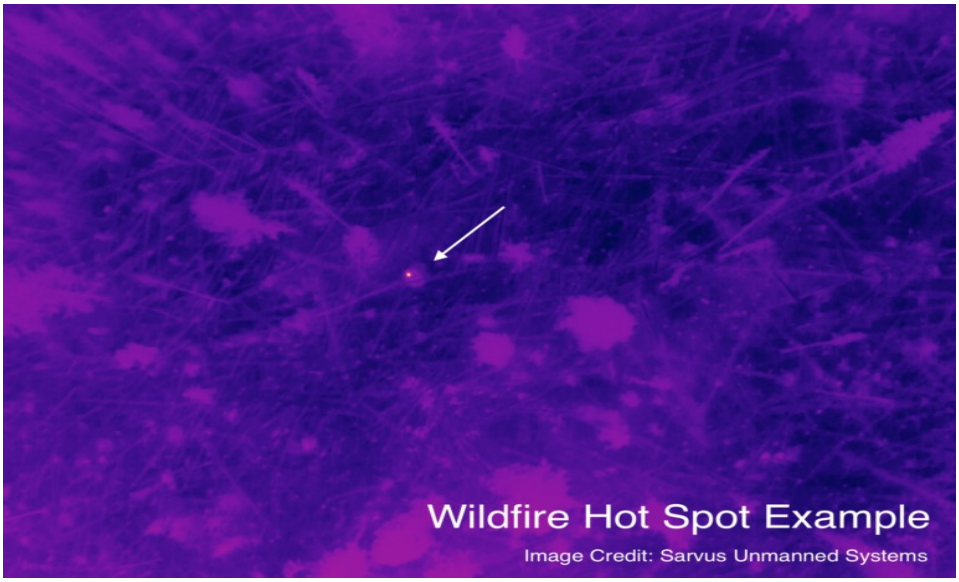
Multiple Alarm Types
Visual, Serial, Communication, and contact closures signal an alarm state.

Versatility
Can be used for fire detection/prevention, security, and equipment monitoring; all at the same time.

Analog or IP
Full functionality available when using either analog or IP camera systems.

Integration
The cameras are developed for simple integration into third-party systems, as part of a wider fire detection and protection system.

Thermal infrared cameras can see hot spots in the forest that are primed for ignition, as well as areas that may have escaped containment. In some cases, roots may smolder for several days beneath the ground surface. If hot spot locations are provided to the fire crew in a timely fashion, they can cool or extinguish them to prevent further spreading. It is also critical to “clear” the area before civilians are allowed to return into an evacuation zone. Drones excel at mapping and data collection, which frees up larger wildfire aviation assets to deploy crews, move equipment, and drop flame retardants and water onto the wildfire.



Features of Thermal Camera:

MSX® Image Enhancement
The C2 features FLIR's unique MSX that adds key details from the on-board visible light camera to the entire infrared image in real time. The result: an all-in-one, undiluted thermal picture with visible light features that lets you instantly recognize where the problematic heat pattern is. MSX is real-time whether watching the camera's LCD or streaming video over USB.

Ref: https://www.flir.com/products/c2/