

DRONES IN THE FIELD

FIREFIGHTING DRONES

69

out of the 347 public safety agencies that purchased drones between 2009 and early 2017 were fire departments.



Source: Bard College | Google Maps

MARCH 06

On March 6, 2017, **FDNY** deployed its first ever tethered drone to respond to a 4 alarm fire in a 6-story building on Crotona Park North in the Bronx.

TOTAL ADDRESSABLE MARKET BY INDUSTRY/FUNCTION

A recent report on drone use from Goldman Sachs estimated that **\$881 million** can be spent on drone use in **fighting fires** globally.

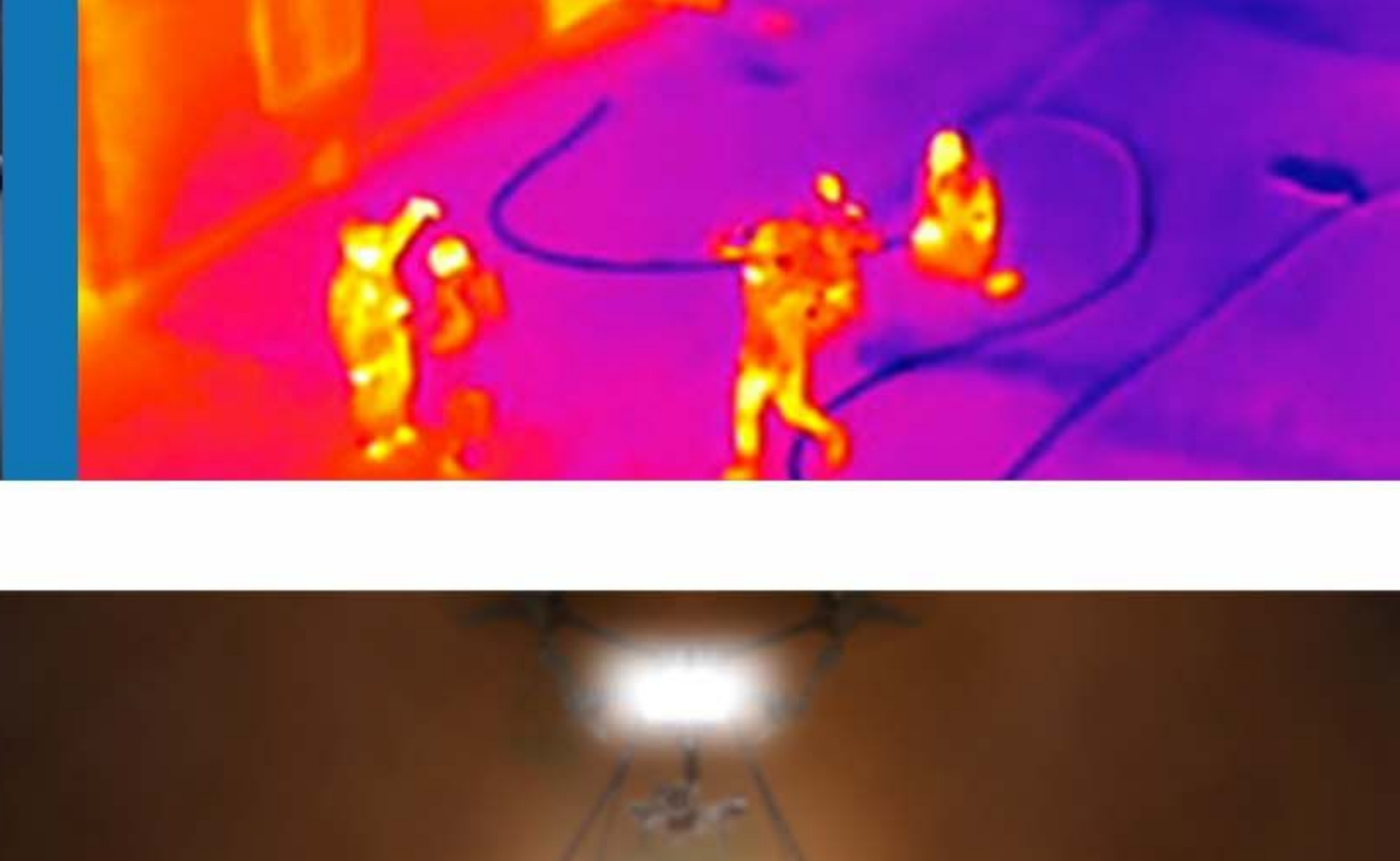
\$881M

HOW DRONES ARE BEING USED FOR FIREFIGHTING



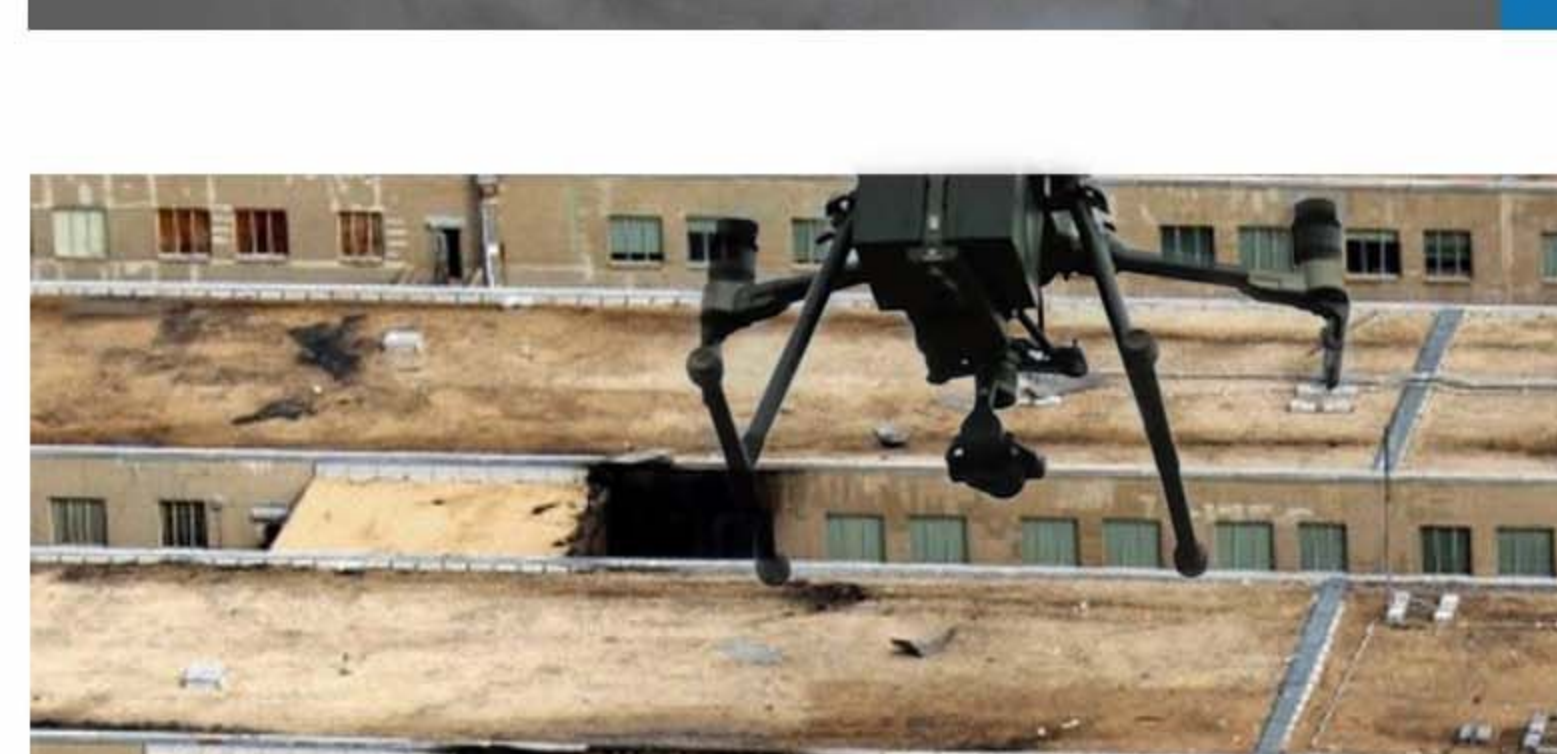
Scene Monitoring

- Deploy aerial assets for overwatch within minutes of arrival on scene
- Rapid 360 degree assessment of burning structures
- See through smoke with thermal imaging cameras to monitor hotspots and crew from above
- Illuminate nighttime scene operations with floodlights



Search & Rescue

- Survey large areas of hard to reach land
- Deliver items to victims with payload drop systems
- Find people at night with thermal imaging cameras and floodlights
- Aerial surveillance in combination with the use of thermal imaging to search and rescue victims.



Post Fire or Disaster Assessment

- Survey and map the scene to assess damage
- Search and locate missing people after a natural disaster
- Use footage for future training purposes



Wildland Firefighting

- See current fire conditions and respond accordingly to changing situations
- Reduce risk through better ground crew monitoring
- Provide more reliable data to command centers
- Identify smoldering hot spots in wildland fires



THE EQUIPMENT

Matrice 210

Offers dual operation for increased flight safety, with the pilot able to reference a small FPV camera located directly at the front of the aircraft. Additionally, it has an HD video-out for display on a remote monitor or transmission to a command center.

Zenmuse XT

A plug-and-play thermal imaging camera that offers visibility through smoky conditions and allows the operator to see potential problem spots from a safe vantage point and direct water output for higher efficiency.

Zenmuse Z30

An aerial zoom camera with 30x optical and 6x digital zoom for a total magnification up to 180x, ideal for keeping an eye on fire crew activity and post-fire inspection to aid in investigative reports.

Inspire 1 v2.0 + Zenmuse XT

An entry level thermal drone package that combines the compact size and ease of use of the Inspire 1 v2.0 and the powerful infrared capabilities of the Zenmuse XT, offering detailed thermal aerial imaging to identify the conditions of the fire in a matter of seconds.



FIRE DEPARTMENT DRONE REQUIREMENTS

Types of Certificate of Waiver/Authorization (COA) to operate a small unmanned aircraft in the national airspace as a public aircraft operator for a public safety agency

- Blanket Area Public Safety (BAPS) COA** - Allows operation under 14 CFR part 107 rules.
- Jurisdictional COA** - Allows operations in Class D, E, and C airspace as well as operations conducted at night. Must file a Notice to Airman (NOTAM) prior to flight.
- Emergency COA** - Allows for the one time operation of the UAS at that location based on an imminent risk to life type event where manned aircraft may need to be available or the risk to manned aircraft is too great.

Whether identifying smoldering hot spots, providing 360-degree views of a fire scene, or surveillance of difficult to reach places, there is no doubt that firefighting drones can play a large part for fire departments by reducing hazards to life and property.

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