



# Austin Fire Department

*"Our Mission Goes Beyond Our Name"*

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[www.austinfiredpartment.org](http://www.austinfiredpartment.org)

## **RESCUE ROBOTICS FAQs**

### **What is the Vision of the RED Team?**

The vision of the Austin Fire Department's Robotic Emergency Deployment (RED) Team is to enhance firefighter safety and improve emergency response through the assessment and implementation of emerging technologies, such as robotics. Such tools should help facilitate increased situational awareness and incident command decisions at emergency scenes.

### **What is the Mission of the RED Team?**

The mission of the RED Team is to mitigate real-world problems through the deployment and use of air, ground, and maritime remotely-operated rescue robotics.

### **What type of robotics will you be using?**

We are currently investigating the applicable uses of ground, air, and maritime rescue robotics.

### **How might robotics help the fire department?**

Safety is our priority and robotics may be used to keep our firefighters from excessive danger while gathering important information about the emergency scene. We can learn about potential hazards through robots equipped with Thermal Imaging Cameras (TICs), air monitoring sensors, and/or mounted cameras. Possible scenarios that may benefit from robotics are:

- **High-rise fires**
- **Search and Rescue**
- **Hazardous Materials mitigation**
- **Flood events**
- **Wildfires**
- **Commercial and residential fires**
- **Post-fire investigations**
- **Pre-fire planning**
- **Scene mapping**

### **How might robotics help the citizens of Austin, Texas and the surrounding area?**

We are constantly exploring better, safer, and more efficient tools to help support our mission of creating safer communities through prevention, preparedness, and effective emergency response. The ability to access and make contact with citizens in distress can potentially be expedited with the deployment of Unmanned Aerial Systems (UASs) (also known as Unmanned Aerial Vehicles, or UAVs) or ground robots. Whether it's a flood victim stranded on a rooftop or a patient lost on the greenbelt, these tools can be deployed to establish contact and accelerate assistance and/or rescue.

### **What can they record?**

The Robotic Emergency Deployment (RED) Team video recordings and imagery will be used for official AFD business only. Copies of RED Team recordings will not normally be made available unless the person requesting the copy is authorized to view the recording and does not otherwise have access to the RED Team data. This may include public information requests after the recordings have been reviewed by the Austin Fire Department's legal counsel.

All RED Team recordings shall be retained for a period of time that is consistent with the City of Austin's Record Management Ordinance, chapter 2-11, and any applicable city Records Control Schedule and/or the state Local Government Retention schedules. For more information, see City code chapter 2-11(Records Management):

<http://www.austintexas.gov/edits/document.cfm?id=221538>.

AFD members will not post, transmit, or otherwise disseminate confidential or sensitive information, including pictures, evidence, or other materials in the Department relating to work assignment, without express permission of the RED Team supervisor.

### **Is there a policy in place for the use of your robotics?**

Once the AFD RED Team is activated, our deployment will be mission specific, and will strictly adhere to current policies and procedures, as with any emergency response.

### **What restrictions are in place to protect citizens' civil liberties and privacy concerns?**

Historically and currently, law enforcement has the ability for aerial views with manned aircraft of emergency scenes. As a result, case law has been established that guides our use of robots. There is no effort here to somehow use a UAS to circumvent well-established Fourth Amendment protections; the technology in a UAS is appropriately limited. For example, our equipment does not allow us to see through walls, listen to conversations, monitor cell phones, etc. Our unmanned systems are mission- and incident-driven only.

### **What is the difference between a "Drone" and a UAS?**

- **According to Webster's Dictionary a drone is:**
  1. *A stingless male bee (as of the honeybee) that has the role of mating with the queen and does not gather nectar or pollen;*
  2. *One that lives on the labors of others;*
  3. *An unmanned aircraft or ship guided by remote control or on-board computers.*

### **According to the Federal Aviation Administration (FAA):**

*A UAS is the unmanned aircraft system and all of the associated support equipment, control station, data links, telemetry, communications, and navigation equipment, etc., necessary to operate the unmanned aircraft.*

### **What kind of robotics do you have?**

AFD is presently researching, testing, and evaluating many different robotic systems to determine what, if any, would work best for us. We currently have two Micro Tactical Ground Robots (MTGRs) that can be used for hazardous materials incidents, structural collapse scene, and confined space rescues. AFD does not currently own any UAS or maritime platforms.

### **Where did you get them from?**

The Combating Terrorism Technical Support Office (CTTSO) is a government agency that is involved with research and development, and testing and evaluation. The CTTSO found out about the Austin Fire Department's RED Team program and determined that we were a very professional group that could benefit from the use of equipment for testing and evaluation while developing our RED Team program. You can learn more at [www.cttso.gov](http://www.cttso.gov).

### **Why not use staffed helicopters to achieve the same goal?**

Manned aircraft play a critical role in public safety aerial operations. The Unmanned Aerial Vehicle (UAV) is a cheaper and quicker "eye in the sky," and acts as a force multiplier for manned aircraft and ground operators. The UAV can do jobs that have been deemed dull, dangerous, and/or hazardous for manned aircraft to fly. Plus, a UAV can get into the air on the scene much faster than a helicopter, and at a fraction of the cost. This allows more systems to be operated, assisting with more incidents needing aerial support. The UAS is not a replacement for manned aircraft systems.

### **What other public safety departments are using UASs?**

We are excited to be one of the first fire departments in the country to seek a Certificate of Authorization (COA) with the FAA for the use of UASs during emergency response. There are a small handful of law enforcement agencies that have successfully applied for and received a COA with the FAA. If you're interested, follow these links for information on the agencies currently using UASs:

- **Arlington Police Department:** <http://www.arlington-tx.gov/police/aviation-unit/>
- **Mesa County Sherriff's Department:** <http://sheriff.mesacounty.us/uav/>
- **Grand Forks Sherriff's Department:** <http://gfcountysheriff.nd.gov/>
- **Michigan State Police:** <http://www.michigan.gov/msp/0,4643,7-123-1579---,00.html>

**The RED Team is currently collaborating with these affiliates for the research and development of rescue robotics in the fire service:**

- University of Texas at Austin
- University of North Texas
- Texas A&M University
- Worcester Poly Technical Institute
- National Institute of Standards and Technology
- Fire Research Grant Foundation
- RP Flight Systems

**Additional frequently asked questions from the FAA about UAS can be found at <https://www.faa.gov/uas/faq/>.**