



White Paper: New FAA Reauthorization Act Unlocks Operational Freedom for Public Safety Teams with Actively Tethered UAS

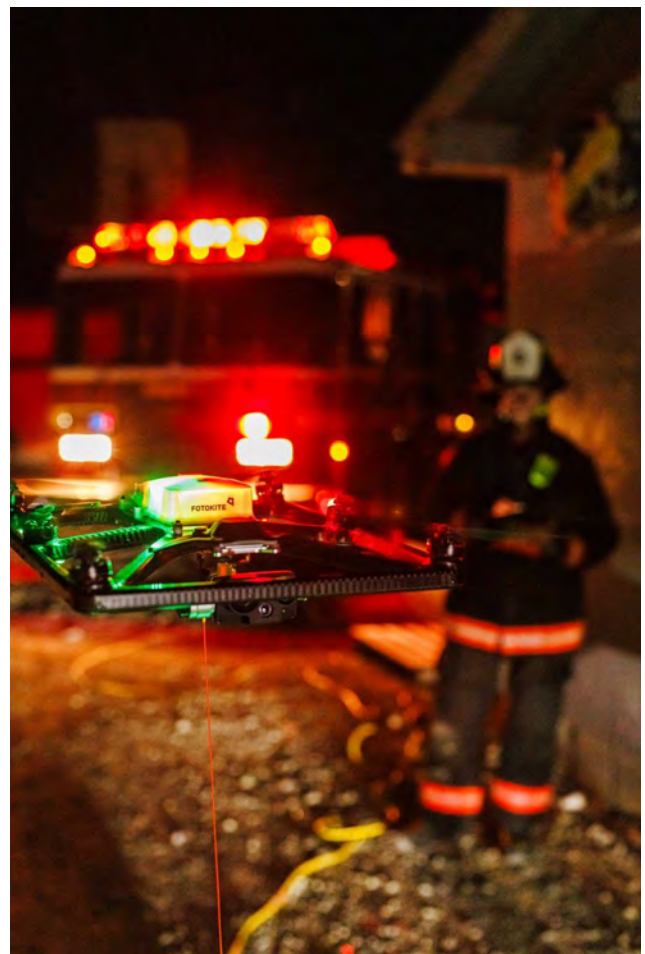
Introduction

The recent passage of the Securing Growth and Robust Leadership in American Aviation Act (FAA Reauthorization) of 2024 (H.R.3935) marks a significant milestone for firefighters, public safety, and law enforcement agencies seeking to leverage cutting-edge drone technology. This landmark legislation builds upon a specific category of unmanned aircraft systems (UAS) known as "Actively Tethered UAS," and grants public safety organizations unprecedented operational flexibility. This white paper will outline the background of this UAS category, key provisions of the new law, highlight the advantages of Actively Tethered UAS, and explore some implications for public safety missions.

Background

2018's [FAA Reauthorization Act](#) established a new category of drone: Actively Tethered Unmanned Aircraft Systems. Ever since that law passed, the FAA has permitted increased operational freedoms to Public entities (including professional firefighters and law enforcement) utilizing this newly defined category of UAS. Namely, those Public entities have been permitted to operate Actively Tethered UAS in their operations without the requirement to undergo remote piloting certifications (commonly referred to as Small Unmanned Aircraft Rule Part 107 license) or obtain a Certificate of Authorization (COA). Actively Tethered UAS were also made exempt from airworthiness certification requirements. Lawmakers justified these increased operational freedoms based on the advantages that Actively Tethered UAS can bring to operators in terms of safety, redundancy, and autonomy in comparison to traditional piloted unmanned aerial systems. Meanwhile, Part 107 and COA requirements have remained in place for Public entities operating all other categories of UAS. Operators of Actively Tethered UAS, however, were still subject to the restrictions of flight operations within the US' airspace just like traditional piloted drones. These restrictions can be summarized in the following points:

- 'Public' entities, as interpreted by the FAA, explicitly does not include Volunteer Firefighters, which make up 65% of the USA's total firefighters according to the National Volunteer Fire Council. This resulted in professional firefighters and volunteer firefighters having to meet different regulatory requirements in order to harness the advantages of Actively Tethered UAS.
- Maximum operating altitude Above Ground Level (AGL) for Actively Tethered UAS operations was still limited to the AGL ceilings depicted in the [UAS Facility Maps](#) for piloted drones, which limit emergency response teams from operating in urban areas and near airports, even for life-saving missions, unless they have specific authorizations to do so beforehand.



The operational freedoms to public operators and the restrictions mentioned above were reinforced in the FAA's Advisory Circular in December 2022 and helped to clarify any uncertainties that potential operators, particularly volunteer firefighters, had surrounding this new category of UAS.

In the nearly six years since the last FAA Reauthorization, the public safety sector has seen hundreds of thousands of missions using Actively Tethered UAS. They have been operated successfully for incident management, structure fires, wildfires, search and rescue operations, swift-water rescues, law enforcement missions, building collapses, large event security, traffic control, training exercises, and many more high impact missions serving communities across the United States. Through these missions' successes and learnings from this relatively new UAS category, both lawmakers in Congress and the FAA carefully considered and implemented further improvements to the operational freedoms granted to public safety operators utilizing Actively Tethered UAS.

On May 16, 2024, the recent FAA Reauthorization was signed into law with significant updates to the Actively Tethered UAS category. Below we outline the key updates and how they positively impact public safety operations.



Reaching this milestone for the sake of supporting public safety operations is a special moment for the industry. By expanding operational freedoms to first responders, US law makers and the FAA are answering the call for access to Actively Tethered UAS where they are needed the most.”



Three Key Provisions of the Securing Growth and Robust Leadership in American Aviation Act of 2024

1. Crucially, the new law exempts public safety organizations from several regulatory requirements when operating Actively Tethered UAS compared to traditional piloted drones and passively tethered UAS. These exemptions include:
 - Operation in Zero-Grid Airspaces: Public safety organizations may now operate Actively Tethered UAS in areas where traditional drones can not be flown without specific waivers and prior approval from the FAA. This includes urban areas and near airports, wherever public safety operations are needed.
 - No Remote Pilot Certification: Public safety personnel, including all volunteer firefighters, are not required to hold a Part 107 Remote Pilot Certificate to operate an Actively Tethered UAS.
 - No Certificate of Authorization (COA): Public safety organizations, including volunteer fire departments, are not required to obtain a COA for Actively Tethered UAS operations.

These exemptions significantly reduce the administrative burden and operational barriers for public safety agencies, enabling faster and more efficient deployment of this force-multiplying UAS category.

2. Additionally, the new law expands the scope of public safety organizations which may operate Actively Tethered UAS within the regulatory advantages listed above by defining “Public Safety Organizations”. Whereas in previous law, only professional public operators could access Actively Tethered UAS with the regulatory advantages above, the new definition clarifies that all public safety personnel, whether paid or volunteer, meet the qualification of operating an Actively Tethered UAS without the need for a Part 107 Drone Pilot License or COA. This clarification is critical to the 65% of US firefighters that are volunteers.
3. H.R.3935 also builds upon the definition of Actively Tethered UAS with additional safety-oriented updates: each one must be equipped with safety features to maintain flight control in case of power or control failure and initiate a controlled landing if the tether is ever severed. Consistent with the previous category definition, Actively Tethered UAS are always physically tethered with a persistently taut tether connected to a base station and the tether provides continuous power and control, ensuring safe operation and retrieval



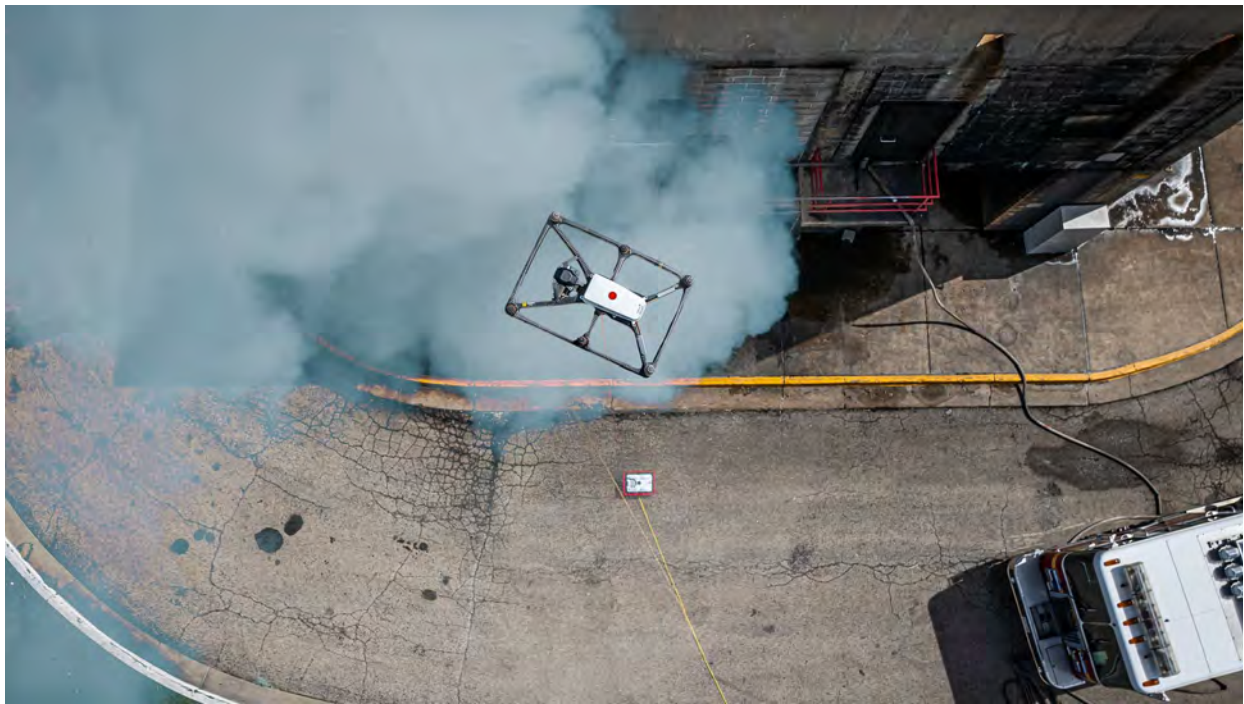
Important Operational Requirements for Actively Tethered UAS

While the new law offers greater operational freedoms, certain requirements must still be met to ensure the safety of the airspace above and around public safety operations. These requirements include:

- **Altitude Restrictions:** Operations must be conducted at or below 150 feet above ground level (AGL) within Class B, C, D, E, or G airspace, adhering to the ceilings depicted on the FAA's UAS Facility Maps. Operations within zero-grid airspaces (e.g., airports) are permitted in emergency and/or life-saving situations by notifying the FAA (e.g. notify and coordinate deployment location with local air traffic controller via radio) while responding to an incident.
- **No Overflight of Non-Participants:** Actively Tethered UAS cannot be flown directly over individuals not involved in the public safety operation.
- **Visual Line of Sight (VLOS):** Operators must maintain VLOS of the Actively Tethered UAS at all times.

Yield to Manned Aircraft: Actively Tethered UAS must yield the right of way to all manned aircraft.





Advantages of Actively Tethered UAS for Public Safety

Actively Tethered UAS offer several distinct advantages for public safety missions:

- **Enhanced Safety:** The tether acts as a physical safeguard, mitigating the risk of flyaways and uncontrolled descents, while adding power, control, and communications redundancy over the tether compared to traditional piloted drones. Intelligent use of a persistently taut tether can also result in a fully piloting-free operation, reducing operational risks and operator training thresholds.
- **Extended Flight Time:** The continuous power supply from the tether enables extended flight times, ideal whenever public safety responses require operations longer than a traditional drone's single-battery flight time.
- **Real-Time Situational Awareness:** The tether allows for real-time transmission of high-quality video and system controls, providing critical situational awareness to incident commanders and first responders without the dependency on remotely-transmitted video and controls.
- **Versatility:** Actively Tethered UAS can be rapidly deployed in various scenarios, including fully GPS-independent operations within 15 seconds of arriving on scene.

The Fotokite Sigma: The Leading Actively Tethered UAS Solution

The Fotokite Sigma is an Actively Tethered UAS that meets the requirements of the new law and has been specifically built for public safety teams and missions. The system has been used by public safety organizations across six continents to enhance situational awareness, improve decision-making, and help first responders save lives and stay safe.

Conclusion

The Securing Growth and Robust Leadership in American Aviation Act of 2024 represents a significant step forward for public safety agencies seeking to leverage drone technology. By granting greater operational freedom and reducing regulatory barriers, the new law empowers public safety organizations to utilize Actively Tethered UAS more effectively in their missions. As these systems continue to evolve and mature, they are poised to play a defining role in enhancing public safety and protecting communities across the nation.

Sources

Securing Growth and Robust Leadership in American Aviation Act's language can be found below, with Actively Tethered UAS language found in Section 926: <https://www.congress.gov/bill/118th-congress/house-bill/3935>. This language amends US Code Title 49 Sections 44801 and 44806.

A summary of the amendments related to Actively Tethered UAS law can be made available upon request and clean text versions of Title 49 Sections 44801 and 44806 as amended by H.R. 3935 can be viewed as incorporated into the U.S. Law Code [here](#).

Disclaimer: This white paper is intended for informational purposes only and should not be considered legal advice. Public safety organizations should consult with their legal counsel to ensure compliance with all applicable regulations and requirements.

