



Public Safety Small Unmanned Aerial Systems (sUAS) Compliance Training: Literature Review & Use Case Study

Small Unmanned Aerial Systems (sUAS), also known colloquially as drones and referred to commonly as UAS, UAV (unmanned aerial vehicle), or RPV (remotely piloted vehicle), provide a valuable mechanism to assist first responders with emergency response. The use of drones within the public safety departments has rapidly expanded as their capabilities to assist in emergency response operations are realized. As drones' safety policies and standards continue to evolve, many fire departments in the U.S. and elsewhere are without the proper information, knowledge, and experience needed to establish and maintain a compliant, legal public safety program. This topic directly relates to the activities addressed by *NFPA 2400, Standard for Small Unmanned Aircraft Systems (sUAS) Used for Public Safety Operations*. The overall project aims to develop a training program to provide the guidance, knowledge, and learnings to assist fire departments and public safety organizations to establish a compliant drone program.

Project Goal & Approach

This research provides a snapshot of the current technology, including current use cases, barriers to success, job performance requirements, best practices, and the current regulatory framework of UAS applications for public safety operations. The research conducted a comprehensive review of applicable literature on the use of drones by public safety organizations, including an overview of applicable regulatory framework. Public safety drone use-case information were collected and summarized using the information collected from various public safety organizations across the United States.

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Access the NFPA online training [here](#).

Research by:

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Summary Observations

In the near future, a single system or network of autonomous sUAS can potentially be deployed quickly and can be redistributed as necessary to gather information from any "areas of focus" that the incident commander believes could be in danger. This way, a network of just a few sUAS could monitor an area large enough to accomplish the task of several ground-based sensors or more expensive manned aerial assets. However, before remotely piloted aircraft can safely operate in the same airspace as other piloted aircraft, sUAS and their operators need to demonstrate a high level of operational autonomy and robustness as well as the ability to safely "detect and avoid" other air traffic. These elements are crucial for the safe and effective integration of UAS into firefighting operations.

The progress made in regulatory landscape has been significant in recent years and expected to change rapidly over the coming year, particularly as Remote ID and Unmanned Traffic Management systems come online and are enforced. Many states have regulated drone flights by commercial or public operators to various degrees through public statutes or state regulations but tracking this is difficult due to the rapidly changing state and local regulatory practices.

The research provides an exhaustive survey of sUAS use across the United States, broken down by region, organizations, operational requirements, and types of sUAS. This survey is designed to help decision makers better understand the factors that influence other organizations about what UAS technology to use, how to use the technology, and what guides the development of standard operating procedures in their organization.

The report also concludes with an annotated bibliography of sUAS uses in various first response and firefighting applications to provide an overview of the present state-of-the-art and resources for future assessment and integration of sUAS into public safety operations.