

# Setting Standards for Drones in the First Responder Community



**Homeland Security**

Science and Technology

## UNMANNED AERIAL SYSTEMS ARE TAKING OFF

The Unmanned Aerial Systems (UAS) industry is expected to pass \$80 billion in spending in the next decade, driven by shifting military strategies and expanding UAS use by other government agencies and the private sector. Though UAS—also known as “drones”—are frequently in the news and are a solid feature of the popular imagination, there is a lot to learn about how to make them more effective.

## FIRST RESPONDERS – AND LOCAL AND FEDERAL AGENCIES – RELY ON SMALL UAS FOR SAFETY AND SPEED

UAS are an important emerging option for first responders in areas too dangerous or inaccessible for humans. The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) coordinates tests and operational standards so first responders can make the best UAS acquisitions decisions.

## STANDARD TEST METHODS IMPROVE UAS, HUMAN PERFORMANCE

Since October 2016, an S&T partnership with the National Institute of Standards and Technology (NIST) has included the creation of standard test methods (ASTM E54-09) to measure robot maneuvering, mobility, sensors, energy, radio communication, dexterity, durability, reliability, logistics, safety, autonomy and operator proficiency. These standard tests use tangible, repeatable reliability measurements to ensure operator confidence in the capability of the drone, while building operator familiarity and skill.

## INTERAGENCY COOPERATION BREEDS STAKEHOLDER CONSENSUS

S&T's Standards program also works closely with the National Fire Protection Association (NFPA) to develop operational standards for minimum requirements relating

to UAS operation, deployment, and implementation by emergency response departments and personnel.

Standard NFPA-2400 will establish operational protocols and minimum job performance requirements for personnel who operate and support UAS services. This standard, combined with ASTM E54 standards, will facilitate minimum requirements for UAS selection, care and maintenance by emergency response departments and personnel.

S&T is part of an American National Standards Institute (ANSI) initiative to explore establishing a new ANSI collaborative on UAS, including representatives from federal agencies, standards development bodies and other key stakeholder groups.

## RECENT UAS STANDARDS ACTIVITIES

NFPA-2400 was recently published and establishes operational protocols for small UAS emergency response use by departments and personnel. In February 2018, S&T began assisting with developing use case scenarios as part of a joint ASTM/NFPA UAS Public Safety Working Group. Additionally, Version 1 of the ANSI UAS Roadmap was published in December 2018, and Version 2 is currently being drafted.

## PERFORMERS AND PARTNERS

- National Institute of Standards and Technology
- Federal Aviation Administration
- ASTM International
- National Fire Protection Association
- Mississippi National Guard
- University of Mississippi
- American National Standards Institute

