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Chairman Burgess, Ranking Member Schakowsky and members of the subcommittee, thank you for the opportunity to participate in today's hearing on unmanned aircraft systems (UAS). I am speaking on behalf of the Association for Unmanned Vehicle Systems International (AUVSI), the world's largest non-profit organization devoted exclusively to advancing the unmanned systems and robotics community. AUVSI has been the voice of unmanned systems for more than 40 years, and currently we have more than 7,500 members, including over 600 corporate members, from around the world.

UAS will have a huge impact on our society. From inspecting oil pipelines and surveying bridges to filming television shows and providing farmers with aerial views of their crops, the applications of UAS are virtually limitless and they enable researchers, public entities and businesses to do things safer and more cost effectively.

UAS will also have a significant impact on our economy, as the industry is poised to be one of the fastest-growing in American history. Our economic impact study found that during the first decade following UAS integration into the National Airspace System (NAS), the industry will create more than 100,000 high-paying jobs and provide more than $82 billion in positive impact to the nation's economy.[1] Under the right regulatory environment, there's no question these numbers could go even higher.

[1] The Economic Impact of Unmanned Aircraft Systems Integration in the United States (AUVSI)

For years, AUVSI has been a leading advocate for the safe integration of unmanned aircraft into the national airspace. While some industries may try to avoid regulation, AUVSI and its members have been urging the FAA to use all available means to establish a regulatory framework, starting with finalizing the small UAS rule, immediately and without any further delays. We were disappointed that the FAA missed the September 30, 2015, congressionally mandated deadline for UAS integration, and the agency still has yet to finalize a small UAS rule for commercial operations. Meanwhile, American businesses and innovators are left sitting on the sidelines or operating under a restrictive exemption process. Let me explain.

Until the small UAS rule is finalized, the primary way commercial operators may fly is through an exemption process. In May 2014, the FAA announced it would consider granting exemptions for certain low-risk commercial UAS applications under Section 333 of the FAA Modernization and Reform Act of 2012. Currently, the FAA has more than 2,400 pending requests and has granted more than 2,200 exemptions to businesses looking to use UAS for a variety of applications.

According to AUVSI's report on the first 1,000 commercial UAS exemptions,[2] which was released earlier this year, businesses in more than 25 industries representing more than 600,000 jobs are now using UAS technology. These companies contributed about $500 billion to the U.S. economy in 2014 and provide essential services to citizens across the nation.

Let me provide just a few examples:

1. Texas businesses have received 82 approvals to fly commercially. More than a third of these companies are real estate businesses, such as Austin-based Boyd & Boyd Properties. With the ability to now take aerial photos, this small business can capture unique perspectives for their listings, giving them an edge over their competitors. Real estate is also one of the fastest-

[2] Analysis of the First 1,000 Commercial UAS Exemptions (AUVSI)

growing applications of UAS technology nationwide with more than 350 real estate businesses currently approved to fly, according to the National Association of Realtors.

2. Likewise, the construction industry is increasingly looking to use UAS. The Associated General Contractors of America (AGC) and its 26,000 member companies build everything from roadways and bridges to large-scale building complexes. These companies are using UAS to improve project planning and design, safety, efficiency, quality and environmental compliance. UAS are also documenting the progress of large construction projects, like the new Kings arena in Sacramento, to make sure each step is delivered properly and on time.

3. The insurance industry is also latching onto UAS as an essential tool for operations. According to the National Association of Mutual Insurance Companies, insurers are using UAS in risk assessments, especially in dangerous places like high-pitched roofs, and to speed up claims adjudication after disasters, when time is most important in helping victims recover from their losses. In Illinois, for instance, the State Farm Mutual Automobile Insurance Company in Bloomington uses UAS to help evaluate insurance claims, allowing them to get resolutions for customers more quickly.

These are only a few examples, but it is easy to see the far-reaching benefits UAS will add to the American workforce. Just as microprocessors and wireless telecommunications revolutionized our economy over the past decade, UAS are transforming the way industries operate and creating several new ones as well, from startups focused on developing new UAS platforms and components to entrepreneurs creating new business models that offer specific UAS services.

While some businesses have successfully navigated the complex Section 333 process, the current system of case-by-case approvals isn't a long-term solution for the many commercial operators wanting to fly. While some operators are flying, many are not. Meanwhile, some of the requirements under the Section

333 process are more onerous than those contemplated in the draft small UAS rule. For example, the Section 333 exemptions typically require UAS operators to hold at least a sport pilot certificate. The draft small UAS rule, however, would require commercial operators to pass an aeronautical knowledge test every two years – which is similar to a flight exam.

The lack of regulations isn't just limiting the economic potential of this industry; it is also causing states and municipalities to fill the void, at times with laws that they may not have the authority to enforce. In recent months, New York, California and New Hampshire have attempted to pass laws to regulate the national airspace.

While my industry supports the safe, non-intrusive use of UAS technology, we're concerned about creating inconsistencies with federal law. Only the FAA can regulate airspace; states and municipalities cannot. According to Title 49, Part A, Section 1 of the U.S. Code, "The United States Government has exclusive sovereignty of airspace of the United States."[3]

In the absence of FAA action, we may soon be facing a legal quagmire. Challenges to questionable state laws will tie up the courts and at a significant expense to U.S. taxpayers. It is critical for the federal government to assert its preemption authority over the National Airspace System.

In addition to helping the UAS industry thrive and avoid confusion over conflicting federal and state laws, putting the small UAS rules in place will provide the necessary tools and training to create a culture of safety around the use of unmanned aircraft. As more commercial UAS operators are certified, they will join the long-standing aviation community, which I have been part of for the last 20 years as an instrument-rated general aviation pilot. They will foster the aviation community's principles of airmanship and self-policing to promote safety and thwart careless and reckless operations.

[3] http://www.gpo.gov/fdsys/pkg/USCODE-2011-title49/html/USCODE-2011-title49-subtitleVII-partA-subparti-chap401-sec40103.htm

Because safe operations are essential for all users of the national airspace, AUVSI, in partnership with the Academy of Model Aeronautics and the FAA, last year developed a UAS safety campaign called "Know Before You Fly." This effort educates newcomers to the technology about where they should and shouldn't fly. Many retailers, manufacturers and distributors of UAS, as well as organizations representing the manned aviation community, have signed onto the campaign as supporters.

AUVSI also serves on the U.S. Department of Transportation's task force on UAS registration. This collaborative effort to develop an efficient process for UAS registration should lead to increased accountability across the entire aviation community. Under the FAA's proposed small UAS rule released earlier this year, commercial operators would be required to register their platforms. Extending this requirement to consumer UAS users will help promote responsibility and safety.

Finally, we need to start looking beyond the initial phase of UAS integration and lay the groundwork for more transformational uses of UAS technology through a deeper national commitment to UAS research and development. Specifically, AUVSI has highlighted the need for a comprehensive industry-government UAS research plan, more resources for the federal government to coordinate UAS research & development, and a UAS traffic management network that could be operational in the foreseeable future.

We need to make sure we are doing all we can to support the UAS industry's growth and development; otherwise we risk stunting a still-nascent industry and restricting the many beneficial uses of this technology. The longer we take, the more our nation risks losing its innovation edge, along with billions in economic impact.

UAS technology is at an exciting and pivotal stage. The technology is developing rapidly, with new applications being introduced nearly every day, and at a rate much faster than it takes to develop the necessary regulations. We need to ensure the FAA adopts the proper framework to keep up with the rapid

development of UAS technology and is sufficiently resourced to work with industry and other stakeholders to perform essential research to maintain the safety of our airspace.

Thank you again for the opportunity to speak today. I look forward to answering any questions the subcommittee might have.