PREPARED STATEMENT OF BRIAN WYNNE
PRESIDENT AND CEO, ASSOCIATION FOR UNMANNED VEHICLE SYSTEMS INTERNATIONAL

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Committee on Small Business and Entrepreneurship
"Up in the Air: Examining the Commercial Applications of Unmanned Aircraft for Small Businesses"
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Chairman Vitter, Ranking Member Shaheen and members of the committee, thank you very much for the opportunity to participate in today's hearing on unmanned aircraft systems. I'm speaking on behalf of the Association for Unmanned Vehicle Systems International, 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 many small businesses that support and supply this high-tech industry.

UAS increase human potential, allowing us to execute dangerous or difficult tasks safely and efficiently. From inspecting pipelines and surveying bridges to filming movies and providing farmers with aerial views of their crops, the applications of UAS are virtually limitless. It's no wonder businesses – small and large – are clamoring to use this technology.

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. Under the right regulatory environment, there's no question these numbers could go even higher.

For years, AUVSI has been a leading advocate for the safe integration of unmanned aircraft into the NAS. 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. Last year, 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. As a result, American businesses – the vast majority of them small businesses – are left sitting on the sidelines or operating under an onerous exemption process. Let me explain.

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. Since then, the FAA has received nearly 13,000 requests[1] and granted more than 3,600[2] exemptions to businesses looking to use UAS for a variety of applications, including precision agriculture; inspecting infrastructure; mapping and surveying; film, photo and video production; public safety or emergency response; and environmental inspection and regulation.

After analyzing the first 3,000 commercial UAS exemptions, AUVSI found businesses in more than 35 industries, representing more than 1.18 million jobs, are now using UAS technology. These companies contributed about $900 billion to the U.S. economy in 2015 and provide essential services to citizens across the nation.

Additionally, we found that the vast majority of companies receiving exemptions are small businesses. Just as smartphones and tablets revolutionized our economy over the past decade, UAS are transforming the way a number of industries operate, and are 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. Other small businesses are eager to use UAS to improve their existing services and extend their capabilities. For example:

1. Louisiana businesses have received 57 approvals to fly commercially, many of which are small businesses like LandBros Aerial. The startup was founded by two brothers in 2014, who had previously worked in the construction industry and had flown UAS recreationally. One brother is based in New Orleans while the other is based in Baton Rouge. The brothers use small remote-controlled, low-altitude quadcopters equipped with cameras to capture aerial data photos for the commercial and industrial construction industry.

[1] http://www.regulations.gov/#!searchResults;rpp=25;po=0;s=%2522section%252B333%2522%252BFAA;fp=true;ns=true
[2] https://www.faa.gov/uas/legislative_programs/section_333/

2. Another business in Louisiana is New Roads-based Chustz Surveying. The company uses UAS to safely, efficiently, and economically perform aerial data collection and research throughout Louisiana and Mississippi. Its work includes supporting the U.S. Army Corps of Engineers, the Louisiana Coastal Protection and Restoration Authority and furthering the development of Louisiana's oil and gas industries.

3. In New Hampshire, 15 businesses have received approvals to fly commercially. For instance, ArgenTech Solutions is a veteran-owned small business headquartered in Newmarket. It uses UAS to assist in the evaluation and inspection of public utilities, infrastructure and forest fire monitoring. The company's technology allows it to maximize safety during high-risk and hazardous operations.

These are only a few examples, but it is easy to see the far-reaching benefits of UAS technology. But, while some businesses are flying, this current system of case-by-case approvals isn't a long-term solution and in many cases serves as a deterrent. The policies governing the exemption process are more onerous than those contemplated in the proposed small UAS rule.

For example, the Section 333 process typically requires approved UAS operators to hold at least a sport pilot certificate, which requires a minimum of 20 hours of training in a manned aircraft. A sport certificate also costs thousands of dollars to obtain, making cost a barrier to entry for some aspiring UAS operators just as it is for aspiring general aviation pilots. The best way to alleviate this burdensome requirement is for the agency to finalize the small UAS rule. Under the draft small UAS rule, commercial UAS operators will more appropriately be required to pass an aeronautical knowledge test every two years in order to fly.

The onerous requirements of the section 333 exemption process go beyond the pilot training requirements; access to some airspace is also more complicated under a 333 than it will be under the small UAS rule. Currently, a 333 approval comes with what the FAA refers to as a "blanket" certificate of authorization (COA), giving approved commerical operators immediate access to airspace under 200 feet. However, any business wanting to fly higher than 200 feet, say for a bridge inspection or flare stack inspection, will need to apply for a separate COA, which could take up to 60 days to process, according to the FAA's website. By comparison, under the proposed small UAS rule, a certificate of authorization would no longer be required and commercial operators would be allowed to fly as high as 500 feet without going through any of the

bureaucratic red tape that exists now. Put another way, the small UAS rule will provide an additional 300 feet of altitude where commercial operators can fly without needing any special approval from the FAA.

While many of these regulations are burdensome for large corporations, they are especially challenging for small businesses that do not have full time lawyers and compliance officers to help navigate the confusing set of policies that currently govern UAS. Even the process of applying for a section 333 exemption itself is costly and difficult for small business owners.

In addition to the bureaucratic nature of the 333 exemption process, the patchwork of state and local laws under consideration in many states pose additional challenges for small businesses. In the absence of a permanent federal regulatory framework for UAS, states and municipalities are filling the void. Any small business flying in multiple states may encounter – and need to comply with – different laws and regulations governing commercial UAS operations. Complicating matters, states and municipalities don't have the authority to enforce some of the laws they are passing or considering.

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." Meanwhile, in December 2015, the FAA asserted its regulatory authority over the U.S. airspace and cautioned states and municipalities against enacting conflicting UAS legislation. In a fact sheet, the FAA stated, "Congress has vested the FAA with authority to regulate the areas of airspace use, management and efficiency, air traffic control, safety, navigational facilities, and aircraft noise at its source. A consistent regulatory system for aircraft and use of airspace has the broader effect of ensuring the highest level of safety for all aviation operations."

The FAA's message is clear. State proposals have the potential to create a complicated patchwork of laws that may erode, rather than enhance, safety. Yet, until a regulatory framework is finalized states will continue trying to fill the gap. We have seen state legislatures pursue duplicative registration and permitting systems, altitude limitations and numerous other regulations that could burden and confuse small business owners.

While my industry supports the safe, non-intrusive use of UAS technology, we're concerned about creating inconsistencies with federal law. The FAA was right to assert its authority over the airspace and it is time for

the agency to finish the job and finalize the regulatory framework for UAS. Once this happens, we will have an established framework for UAS operations that will allow anyone who follows the rules to fly. It will do away with the case-by-case system of approvals that currently exists, reducing the barriers to UAS operations for businesses large and small. A consistent, federal regulatory framework will bring clarity to the regulations governing commercial UAS operations and obviate the need for states and municipalities to enact their own laws, which have the potential to create confusion and compliance burdens for small businesses.

In addition to helping the UAS industry thrive, putting the small UAS rule in place will provide the necessary tools and training to create a culture of safety around the use of UAS. As more commercial operators are certificated, 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 help thwart careless and reckless operations.

And because safety is essential for all users, AUVSI, in partnership with the Academy of Model Aeronautics and the FAA, last year developed the UAS safety campaign "Know Before You Fly" to educate newcomers to UAS, many of whom have no aviation experience, about where they should and shouldn't fly.

AUVSI also served on the Department of Transportation's task force on registration. This collaborative effort to develop an efficient process for UAS registration has led to increased accountability across the entire aviation community with hundreds of thousands of recreational operators now registered with the FAA. Under the FAA's draft small UAS rule, commercial operators would be required to register their platforms.

Building upon the successful work of the registration task force, AUVSI recently accepted an invitation to join the FAA's Micro UAS Aviation Rulemaking Committee. This process will help develop a flexible, risk-based approach to regulating UAS, something the industry has long supported. Focusing on the risk profile of a particular UAS operation instead of solely regulating the platform being flown is an approach that has been successful in other countries with growing commercial UAS industries and will provide access to the national airspace with minimal barriers for low-risk UAS operations.

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 and development, and a UAS traffic management network that will 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.

Given the technology's potential, we will continue to underscore that the FAA needs to finalize the small UAS rule as quickly as possible. Moreover, Congress needs to pass – and the President needs to sign into law – an FAA reauthorization measure.

This measure is critical for accelerating and expanding the commercial use of UAS and the most immediate way to encourage additional collaborative innovation between the numerous governmental and private sector stakeholders. AUVSI has been engaged with the committees and staffs leading the FAA reauthorization efforts in both chambers of Congress to address specific recommendations on how this can be accomplished.

UAS technology is at an exciting and pivotal stage. The technology is developing rapidly, with new applications being highlighted nearly every day, much faster than our country's capacity to develop the necessary regulations. We need to make sure that the FAA adopts the proper framework to keep up with this technology and is sufficiently resourced to work with industry stakeholders to perform essential research ensuring the safety of our airspace.

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