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**U.S. House of Representatives
Committee on Small Business
Subcommittee on Investigations, Oversight and Regulations
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Chairman Hardy and members of the subcommittee, 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 innovative industry.

Unmanned aircraft systems, or UAS, increase human potential, allowing us to execute dangerous or difficult tasks safely and efficiently. From inspecting pipelines to surveying bridges to filming movies, UAS help save time, save money and, most importantly, save lives. It is no wonder why thousands of businesses—small and large—have already embraced this technology, and many more are considering integrating it into their future operations.

Today, we now have initial regulations governing civil and commercial UAS operations, which means even more businesses are cleared for takeoff. While these regulations have only been in effect for less than a month, there is strong evidence that the commercial UAS market is poised for significant growth, particularly among small businesses. Let me explain.

On August 29, the Federal Aviation Administration implemented the small UAS rule, also known as Part 107. The rule was the result of years of collaboration between government and industry that established a flexible, risk-based approach to regulating UAS. This new regulatory framework helps reduce many

barriers to low-risk civil and commercial UAS operations. In reducing those barriers, the rule allows businesses and innovators to harness the tremendous potential of UAS and unlock the many economic and societal benefits the technology offers.

Part 107 allows anyone who follows the rules to fly for commercial purposes. Generally speaking, operators need to fly under 400 feet, within visual line of sight and only during daylight hours. However, recognizing the need for the rule to be flexible, the waiver process under Part 107 allows for expanded types of operations.

It is clear that businesses are eager to take off. On the first day the rule went into effect, more than 3,300 people had already signed up to take the aeronautical knowledge test, called the Unmanned Aircraft General (UAG) examination, which is one of the requirements under Part 107. Of the more than 530,000 people who have registered their UAS with the FAA since last December, about 20,000 have indicated they are commercial operators. The FAA expects that more than 600,000 UAS could be flying for commercial use over the next year.

Until the regulation became effective, individuals and companies seeking to fly UAS for commercial purposes had to apply for an exemption under the Section 333 provision of the FAA Modernization and Reform Act of 2012. The FAA started granting Section 333 exemptions for certain low-risk commercial UAS applications in September 2014. From that time until the day the final rule took effect last month, the FAA granted more than 5,500 exemptions.

These exemptions provide a window into how the commercial market is taking shape, the numerous industries embracing UAS and the most common applications for the technology. AUVSI analyzed each of the FAA exemptions and found that more than 5,200 businesses received approval to fly for commercial purposes. Of the businesses that received exemptions, the vast majority are small. Over 90 percent of these businesses make less than \$1 million in annual revenue and have fewer than 10 employees. Our analysis also found that UAS are being used in all 50 states for over 40 different types of applications, including aerial photography, emergency management and utility inspection.

These exemptions show that a wide number of small businesses across a range of industry sectors are adopting the technology. Whether it's aiding search and rescue missions, advancing scientific research,

responding to natural disasters, or helping farmers care for their crops, UAS are transforming the way many businesses operate. They also are creating several new ones — from startups focused on developing new UAS platforms 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.

Let me provide some examples:

- One of these businesses is Las Vegas-based Verascan, Inc., which provides imaging, mapping and surveying services to Nevada’s agriculture, mining, construction and oil and gas industries. This past year, it provided aerial survey data to assist in the construction of the I-11 Highway Boulder City Bypass, part of a proposed highway link between Phoenix and Las Vegas.¹
- Another example is North Carolina-based Flyboy Aerial Photography. It was of the first professional photography companies in the Triangle region to use unmanned aircraft. Flyboy was founded by a husband and wife team. Their passion for photography and technology has led them to work closely with real estate agents seeking to show aerial views of property to potential buyers, as well as assist construction companies in surveying and mapping projects more accurately.²
- Finally, Cincinnati-based Rise Above Images provides aerial images for real estate agencies and construction companies in Ohio. The company helps attorneys and insurance agencies reconstruct and analyze the scenes of accidents as well as use aerial photography to help resolve land disputes.³

These are, of course, just a handful of examples of small business currently using UAS to advance their operations and services. And there are many, many more.

An economic analysis by AUVSI projects that the expansion of UAS technology will create more than

¹ http://www.verascaninc.com/blogs/blog_detail/29

² <http://www.flyboync.com/#!services/cuto>

³ <http://www.riseaboveimages.com/#/home>

100,000 jobs and generate more than \$82 billion to the economy in the first decade following integration in to the national airspace. After witnessing the growth of the industry over the last few years and now with Part 107 in place, I am confident those figures will be even higher.

There is no doubt that this year has been a productive one for UAS and, as a result, many American businesses are now able to fly. In addition to the implementation of the small UAS rule, Congress passed and the president signed an FAA extension measure which will advance UAS research, expand commercial operations and enhance the safety of the national airspace for all users — manned and unmanned.

Notably, the extension calls for the creation of a comprehensive UAS research and development roadmap to coordinate industry and government R&D initiatives. The extension also outlines a pilot program for UAS traffic management (UTM) and expands the section 333 exemption process to allow for beyond line of sight operations.

While this measure will provide some short-term stability through September 2017, it is critical that Congress pass a long-term bill next year that will set the industry and the country on a glide path to reap all of the benefits of UAS. The extension is a good start, but there is still much more work to be done.

As was recently highlighted at the White House's Office of Science and Technology Policy and AUVSI Foundation's first-ever drone workshop, government and industry collaboration is critical for keeping up with the pace of our industry's innovations. Key stakeholders in industry and government have successfully fostered a working relationship that has led to a more flexible and nimble approach to regulating UAS, while small businesses have led the charge in adopting the technology.

AUVSI is eager to continue this critical collaboration with the Department of Transportation, the FAA, Congress and other industry stakeholders through initiatives such as the newly-formed Drone Advisory Committee.

In that same spirit, we are hopeful that the sustained efforts of all parties will help pave the way for a true, holistic plan for full UAS integration that includes beyond line of sight operations, flights over people, access to higher altitudes and platforms above 55 pounds. Some of these efforts are already in

motion. The FAA is currently reviewing the recommendations made by the Micro-UAS Aviation Rulemaking Committee regarding flights over people and a draft rule is expected by the end of this year.

The UAS industry is primed for incredible growth, thanks to industry representatives and government regulators nurturing innovation that helps small businesses be more competitive in the marketplace than ever before. We hope that these efforts can be sustained and that we continue to reach new historic milestones in integrating this technology into the national airspace.

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