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

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Subcommittee on Aviation
"Unmanned Aircraft Systems: Emerging Uses in a Changing National Airspace"
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Chairman LoBiondo, Ranking Member Larsen and members of the subcommittee, thank you very much for the opportunity to participate in today's hearing. 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.

Many of our members are exploring new and expanded ways that unmanned aircraft systems (UAS) of all shapes and sizes can help American businesses and individuals across the United States realize the potential of this technology. My comments today will focus on emerging uses for UAS in the National Airspace as we seek to take the industry higher and farther.

From inspecting pipelines and newsgathering to inspecting critical infrastructure during disasters such as Hurricanes Harvey, Irma and Maria, 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 UAS into their future operations.

For years, AUVSI has been urging the FAA to use all available means to establish a regulatory framework for UAS. And now, we have initial regulations governing civil and commercial UAS operations. On August 29, 2016, the FAA 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 regulatory framework helped reduce many barriers to low-risk civil and commercial UAS operations, allowing businesses and innovators to harness the tremendous potential of UAS and unlock the many economic and societal benefits the technology offers.

The demand for commercial UAS has since exploded. As of September 2017, more than 79,000 platforms have been registered for commercial use and currently, more than 66,000 remote pilots have been certified to fly in the United States. The FAA expects more than 400,000 UAS to be flying for commercial purposes over the next five years, which is a five-fold increase from today.

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 in order to foster innovation, the FAA created a waiver process under Part 107 that allows for expanded types of operations with the approval of the agency.

To date, the FAA has granted more than 1,300 waivers for expanded operations under Part 107. An AUVSI analysis of the first 1,000 found that companies in 47 states are already taking advantage of the process to operate at night, as well as to operate in certain airspace, beyond line of sight and over people. More than 90 percent of these are small businesses with fewer than 10 employees. The FAA has granted about 74 percent of the waivers to operators who had not previously flown UAS under the Section 333 exemption process, demonstrating how having regulations and rules in place has helped increase the adoption of this emerging technology. High profile use of these waivers includes this year's Super Bowl halftime show, which featured an aerial light show made possible by Intel's waivers to operate multiple UAS at night. BNSF Railway also received a waiver to conduct inspections of its sprawling rail network beyond line of sight.

Much has been accomplished so far because government and industry have banded together to advance UAS. The collaborative process in which we have engaged, and the goals we share of supporting innovation and ensuring the safety of the national airspace, have made for a working relationship that is defined by both productivity and mutual respect. This has led to a more flexible and nimble approach to regulating UAS as well as to more businesses adopting the technology. The Unites States was once falling behind the rest of the world in embracing UAS; now our country is leading the way.

We are at the dawn of a new American renaissance in technology, one that deserves continued government attention and support. In the past, government invested heavily in physical infrastructure – from the nation's air traffic control system to its interstate highway system and the internet – which ultimately had a tremendous impact on commerce. The benefits, however, did not stop there. Over time, the safety, security and efficiency gains we achieved as a nation have vastly outweighed the costs, and the unmanned systems industry will be no different.

Facilitating interstate commerce is the responsibility of the federal government, but government investments in infrastructure didn't originate solely from a sense of obligation; it came from necessity coupled with vision and an embrace of what's possible. Technology is advancing at lightning speed, especially in the realm of UAS. The promise of UAS is not held back by innovation, imagination or technology, but by a lack of regulatory clarity.

We need a new national imperative in unmanned systems that, like the air traffic control system and interstate highway system before it, creates greater capacity, fulfills consumer demand and facilitates the future of commerce. Industry is bringing the technology; government needs to do more to support it and advance innovations.

Part 107 and its waiver process were just the first steps in creating a regulatory framework for UAS integration into the airspace. There is still a high and, as yet, unmet demand for expanded UAS operations that will pave the way for these future innovations. An economic analysis by AUVSI projects that the expansion of UAS technology will create more than 100,000 jobs and generate more than $82 billion to the economy in the first decade following integration into the national airspace. After witnessing the growth of the industry over the last few years and now with Part 107 in place, these figures could be even higher under the right conditions.

These "right conditions" will require a regulatory framework that incorporates rules for expanded uses such as nighttime operations and flights over people. However, this progress has been delayed while stakeholders assess whether the right accountability measures are in place as more users gain access to this technology.

UAS registration, for instance, is strongly supported by the national security community. AUVSI has also

long supported a registration system for commercial and recreational UAS operators. We believe that a UAS registration system promotes responsibility by all users of the national airspace and helps create a culture of safety that deters careless and reckless behavior. We are glad Congress recently restored UAS registration for recreational operators as part of the National Defense Authorization Act. This was an expedient way to resolve a sensitive matter across the UAS operator community, but this piecemeal approach to solving issues regarding both commercial and recreational operators may slow progress and hinder efforts to move the industry forward. It may therefore be necessary for Congress to reevaluate the role of Section 336 – the Special Rule for Model Aircraft that was part of the FAA Reauthorization Act of 2012 –to address security concerns and streamline the process for future regulations, such as those governing remote identification standards.

Additionally, Congress must appropriately fund the FAA so it can meet the employment and staffing needs required for the future, including the federal rulemaking processes for UAS integration. Equally as important is additional federal investment to update the FAA's information technology infrastructure. This will allow the agency to automate its UAS processes in collaboration with industry to meet the growing demand for UAS services and enhance the safety and security of the national airspace.

Congress and the FAA must also engage state and local governments in conversations regarding UAS regulations. Maintaining federal sovereignty of the airspace keeps our skies safe and helps foster innovation, but soliciting input from non-federal bodies such as states, municipalities and tribal governments will be integral to moving federal regulations forward. The White House's recent announcement of a UAS Integration Pilot Program is a positive step in that direction. It represents an opportunity for these state and local governments to collaborate with the UAS industry and the FAA to further develop a federal policy framework for integrating UAS into the skies above communities across the nation.

The pilot program will offer a data-driven approach to allow for expanded UAS operations, including beyond line of sight, and UAS traffic management concepts. Importantly, it will also provide a mechanism for state, local and tribal officials to contribute their views to the UAS policy framework, without infringing on the U.S. government's jurisdiction over the national airspace.

Of course, the UAS industry is not relying on the FAA and government alone to advance this technology.

Industry currently shoulders many of the research and development costs to spur innovation, finding solutions to make UAS fly higher and farther, more safely and efficiently.

Industry has partnered with government to advance UAS Traffic Management (UTM) concepts, beginning with Low Altitude Authorization and Notification Capability (LAANC). It has also been a partner in helping develop standards for remotely identifying operators and owners of UAS, building on earlier registration efforts with real-time tracking of UAS operators. AUVSI collected papers on remote identification solutions for UAS from industry stakeholders to help the FAA meet its congressional directive under the 2016 FAA reauthorization extension to develop consensus for such standards.

The RTCA's Drone Advisory Committee (DAC), of which I am a member, also provides a key forum for the FAA and industry to work together to "facilitate the resolution of issues affecting the efficiency and safety of integrating UAS into the NAS."[1] Through its Drone Advisory Subcommittee and three Task Groups, the DAC is working to provide consensus-based recommendations to the FAA. I am also honored to represent the UAS community on the FAA Management Advisory Council (MAC), where I provide input to the FAA on policy and regulatory matters relating to all aviation matters. These important collaborative measures will continue to be important to the growth and security of the UAS industry.

Industry-government collaboration on outstanding issues will be necessary as we work towards further UAS integration, to include platforms above the small UAS threshold and in higher altitudes. This will require dialogue between industry stakeholders and additional federal agencies, such as NASA and DoD, and will help ensure a holistic approach to airspace integration.

The UAS industry is primed for incredible growth, thanks to industry representatives and government regulators nurturing innovation that helps businesses be competitive in the marketplace. We hope that these efforts can be sustained, that a long-term FAA bill can be passed, and that together we continue to reach new historic milestones in integrating this technology into the national airspace and pave the way for regular and widespread UAS use.

Before I conclude, I want to take a moment to offer the UAS industry's thanks to Chairman LoBiondo, who

[1] https://www.rtca.org/content/drone-advisory-committee

recently announced that he would retire at the end of this term. The Chairman was one of the earliest champions of unmanned aircraft systems on Capitol Hill, and in his district in southern New Jersey, which has become an important center for UAS research and development thanks to work at the FAA Technical Center. He has been a tireless advocate for the UAS community, supporting policy that has helped expand the adoption of commercial UAS across dozens of business sectors. We look forward to working with Chairman LoBiondo and the rest of this subcommittee in the coming year to continue to move the UAS industry forward and spur economic and job growth for the nation through a long-term FAA reauthorization measure.

Thank you, again, for the opportunity to speak today. I look forward to answering any questions from the committee's members.