



PREPARED STATEMENT

for the

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COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE**

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“LOOKING FORWARD: AVIATION 2050”

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Chairman DeFazio, Ranking Member Graves, Chairman Larsen, Ranking Member Graves, and distinguished members of the Subcommittee, thank you for calling this important hearing and for the invitation to testify on behalf of PrecisionHawk, Inc. (“PrecisionHawk”). I would like to begin by thanking Congress for passing the FAA Reauthorization Act of 2018 and for providing the necessary funding for the Federal Aviation Administration (FAA) to continue integrating unmanned aircraft systems (“UAS”), also known as drones, into the National Airspace System. Through these measures, Congress has set up critical building blocks to help the United States realize the economic, consumer, public safety, environmental and humanitarian benefits of UAS.

PrecisionHawk is a success story for the current and future state of the growing commercial UAS industry. We currently have 187 employees with offices in North Carolina, Virginia, Illinois and California. We provide advanced UAS software and services across a variety of industries including agriculture, energy, construction, insurance and government. Our algorithms can detect plant disease, forecast crop yield, assess storm damage, detect the risk that a solar panel will catch fire, and predict the likelihood that a distribution pole will fail at a particular wind speed. Our unmanned traffic management (“UTM”) platform, known as LATAS, provides safety information that supports geofencing technology included in roughly 80% of the drones in the United States including airspace maps, runway locations, prisons and critical infrastructure. We also have a distributed pilot network with thousands of Part 107 operators across the country; they can be hired on demand through our national Droners platform to perform services in their local communities including in Oregon, Missouri, Washington, Louisiana, North Carolina, California, Texas, New York and Illinois.

To date, we have raised \$107 million from leading investors¹ and last year we acquired five thriving startups², allowing us to expand in new markets. In 2016, the World Economic Forum named PrecisionHawk among the Top Technology Pioneers, and in 2017 we were ranked among the Top 100 Global Cleantech Companies by the CleanTech Group.

PrecisionHawk is dedicated to working with the FAA and other agencies in support of UAS integration. We performed ground-breaking research on beyond line of sight operations under the FAA Pathfinder Program and we received a waiver to fly commercially beyond line of sight on the day that Part 107 was implemented. We are also participating in the UAS Integration Pilot Program in North Carolina and Virginia, in addition to serving on the FAA Drone Advisory Committee and the FAA Unmanned Aircraft Safety Team.

Leveraging Our Capabilities For the Public Good

We take pride in conducting operations that are not only commercially beneficial but also serve the public interest. In 2018, PrecisionHawk partnered with Concourse Federal Group and Booz Allen Hamilton to deploy UAS in support of an environmental impact study for the Department of Veterans Affairs West Los Angeles Campus (the “Campus”). The vast Campus spans 388 acres and provides care for the largest homeless veteran population in the United States. Using UAS with visual and Light Detection and Ranging or LiDAR sensors, we were able to identify and geolocate over 130 species of trees and plants on the Campus. We also captured high quality data on building and pavement conditions across the entire Campus -- in only a few days. The data we collected was used to build a “digital twin,” which is a 3-D rendering of the Campus

¹ Intel Capital Corporation, Verizon Ventures LLC, Comcast Ventures LP, USAA Property Holdings, Inc., Pioneer Hi-Bred International Inc., Constellation Technology Ventures, ClearSky Power & Technology Fund I LLC, Third Point Ventures LLC, Syngenta Ventures Pte. Ltd., Senator Global Opportunity Master Fund LP, Millennium Technology Value Partners II L.P., Indiana University Foundation, Inc., and Innovate Indiana Fund I, LLC, among others.

² PrecisionHawk acquired all or substantially all of the assets of AirVid Inc. (assets acquired from Acend, Inc.), Droners L.L.C., InspecTools, Inc., Hazon, Inc. and Uplift Data Partners LLC.

that depicts environmental conditions. The environmental impact study is being used by the Department of Veterans Affairs to support the master plan and redevelopment of the Campus to facilitate delivery of services and shelter to several thousand homeless veterans.

We have also seen what a powerful tool UAS can be in emergency response operations. Last fall, PrecisionHawk deployed UAS teams to aid in the response efforts in Hurricanes Florence and Michael. During Florence, we worked with the North Carolina Department of Transportation (“NC DOT”) Division of Aviation. We used UAS to capture and transmit real-time imagery and video of mobility infrastructure flood and damage assessments including impacted bridges and dams, road wash-outs, and eroded beaches across the south-eastern part of North Carolina. The data captured enabled NC DOT to facilitate real-time decision making around road closures, evacuation routes, and re-opening thoroughfares. The images captured served as a baseline record that was used to support the expansion of a federal disaster declaration to additional counties devastated by the storm.

PrecisionHawk also worked with two large east-coast energy utility companies after Hurricane Florence in South Carolina, and Hurricane Michael in Florida, to survey outage areas. During these operations, we located down powerlines and flooded substations to determine where to safely deploy repair crews and what equipment they would need to bring. We also deployed UAS to locate safe access points for repair crews and to help them avoid using roads that were flooded. These missions helped restore power faster to homes and businesses in South Carolina and Florida. Even one day of energy disruption can cost millions of dollars.

In partnership with an insurance company, we are working to expedite the insurance claims process by using UAS data to assess damage to structures after natural disasters. For people who have lost their homes or businesses, the emergency continues until after their insurance claims are

processed and their properties are rebuilt. I would like to thank Congress for responding to our request to expand the circumstances in which civil operators can benefit from the Emergency Certificate of Authorization (e-COA) process in Section 353 of the FAA Reauthorization Act of 2018 to facilitate claims processing and reconstruction efforts. Thank you for sharing our passion to help people get back into their homes and businesses in the aftermath of a disaster.

UAS Are Engaging Our Youth in Aviation and Creating the Jobs of the Future

UAS are bringing new excitement and engaging our nation's youth in aviation, in a way that we haven't seen in decades. The low cost and ease of use of consumer UAS has made the practice of aviation accessible for the first time in history. We are seeing more and more high schools and colleges integrate UAS into their program offerings. For some pilots, flying begins as a hobby and later turns into a part-time job and possibly a career. At PrecisionHawk, we have hired many college students during their summers and they have had the opportunity to travel across the country with us and learn to fly. Some of these students have stayed on with us after graduation, as employees.

UAS are also opening up employment opportunities that may not otherwise exist, particularly for persons who have mobility challenges. For example, in rural Missouri as a young man, Andrew Kuster suffered a tragic injury that left him partially paralyzed and confined to a wheelchair. His interest in drone technology started as a hobby, but before long he figured out how to put the technology to productive commercial use. He started a drone business, Tri County Drone, which inspects power lines and rooftops, surveys farms and construction sites, and takes action videos of motocross sports, across all of southern Missouri. UAS provide Mr. Kuster with the ability to be gainfully employed doing work that would be impossible for him to do otherwise,

and to provide for his family including his young daughter³. In his own words, Mr. Kuster states that “Being self-sufficient is something I pride myself on”.

UAS are also being used across several industries including mining, energy, and insurance to enhance worker safety and efficiency. Climbing roofs or utility poles can be hazardous tasks – by outfitting adjusters and inspectors with UAS, we are helping them perform their work safer and faster. We often focus on the risks that UAS may introduce into the NAS, and forget to consider the risks that they mitigate in terms of worker safety. For example, 34 individuals lost their lives due to tower-related incidents between 2013 and 2016.⁴

Looking Forward: UAS in 2050

The future uses for drones are only limited by our imagination. By 2050, we will have full integration of airspace at low and high altitudes, including a variety of vehicles of all sizes, passenger drones, traditional aircraft, and even vehicles we have yet to imagine. We will break the paradigm of a single drone completing a single mission. In the future, a single drone will conduct multiple missions simultaneously. For example, a drone on a mapping mission will also monitor traffic during rush hour, detect fires, and automatically report accidents to authorities, enabling quicker response times. Different drones will also communicate with each other to complete a single mission, such as search and rescue, or delivery. Drones will trigger automated actions including inspection, repair, insurance claims processing, and even the ordering of materials.

Larger drones will launch smaller drones to perform rapid-response missions. They will detect small atmospheric and geological changes, and provide us with early warning signals to help us prevent disasters, such as mud slides, earthquakes and tsunamis before they occur. By

³ An interview with Mr. Kuster is available here: https://www.youtube.com/watch?v=3LT_CIEI_sE

⁴ Occupational Safety and Health Administration: <https://www.osha.gov/doc/topics/communicationtower/index.html>

monitoring water and food quality and insect populations, drones will prevent disease outbreaks. They will monitor the population of animal and plant species to give us early warnings before they become endangered. Drones of the future will be a combination of aircraft and ground autonomous vehicle, roaming the streets to complete missions and recharge power, and then flying to a location where they are needed for the next mission.

These applications will all be developed by people who have access to UAS technology and use their imaginations to discover solutions and push the boundaries of what is possible. The key to unlocking the limitless future potential of drones is simple: put in place the regulatory building blocks to enable flight in more ways and in more places: flights over people, flights at night, flights in controlled airspace, flights beyond visual line of sight, and fully autonomous flights managed by a UTM system.

Achieving Global Leadership Through Forward-Leaning Regulations

With the implementation of Part 107 in August of 2016, the United States took the global lead in establishing a set of reasonable regulations to govern basic commercial operations. Those regulations have opened up many of the commercial and societal benefits that I have mentioned. More than two years later, many other jurisdictions, such as Canada, Japan, and the European Union, have yet to finalize their basic commercial rules.

The United States must continue to lead with forward-leaning regulations. The FAA has the opportunity, right now, to lead the world in creating remote identification (“Remote ID”) regulations and standards. This is a topic that many of us in the industry spent months of time on during an FAA Aviation Rulemaking Committee that spanned the summer of 2017, where it was impressed upon us that the need for these solutions was urgent. Remote ID is considered essential by national security stakeholders in order for the FAA to proceed with any other rulemaking for

advanced UAS operations, such as flight over people. Nearly two years later, we are still awaiting a proposed regulation from the FAA on this topic. The industry is eager for this to move forward, and some companies have even deployed remote identification solutions in advance of the FAA's rulemaking, in order to start solving safety and security challenges. We respectfully ask Congress to ensure that the FAA proceed with the next steps in this process as soon as possible, and to also complete the pending rulemaking for flight over people and night operations, which will unlock even more beneficial operations.

One way the United States could easily lose its global leadership advantage is to pursue policies that create a patchwork of inconsistent, confusing, or burdensome UAS regulations that differ from state to state, city to city, or even block to block. Proposals in Congress over the last two years to carve up the airspace arbitrarily, and undermine the FAA's exclusive jurisdiction over the safety of the skies is the largest regulatory threat our industry faces. Last August, I wrote an editorial on this topic⁵. We thank Congress for codifying the UAS Integration Pilot Program – which will further an understanding on the possible state, local and tribal government interests in UAS – while maintaining the FAA's exclusive jurisdiction over airspace.

Congress recently directed the Government Accountability Office to prepare a report on fee mechanisms concerning UAS. While we need FAA and other agencies to have sufficient resources to support our industry, we are just in our infancy. The imposition of new fees or other costs could severely damage operators like us. We believe the drone industry is worth an investment by the country as a whole, during this period, and ask that new fees be deferred until stable and repeated sources of revenue are well established, similar to the early years of traditional

⁵ “Drone Benefits Are Here to Stay – The FAA's Drone Oversight Should Be Too”, Diana Cooper, *The Hill* (Aug. 24, 2018): <https://thehill.com/blogs/congress-blog/politics/403420-drone-benefits-are-here-to-stay-the-faas-drone-oversight-should>

commercial aviation in this U.S. The industry is also working hard to shoulder much of the research and development, infrastructure, and network costs of technology solutions such as Remote ID, the Low Altitude Authorization and Notification Capability, and UTM, so that the FAA can be most efficient with the resources it has available for UAS programs. Thank you again for the opportunity to testify today and I look forward to your questions.