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Springfield at center of Ohio's UAS effort

State office here boosts area's chances to land unmanned aircraft business. Thousands of jobs, billions of dollars at stake.

By Andrew McGinn

SPRINGFIELD —

The lease at a local technology park for a state office tasked with enticing unmanned aircraft systems companies to Ohio was barely 60 days old when a Florida business announced it would relocate a program to Springfield to develop and commercialize an unmanned airship.

The state's choice to locate the Ohio/Indiana UAS Center and Test Complex within 2,060 square feet of leased office space along U.S. 40 in the Nextedge Applied Research and Technology Park puts Springfield at the center of Ohio's effort to claim a chunk of what promises to be a lucrative new industry.

"It provides the business center for the overall initiative," said Tom Franzen, the city of Springfield's assistant city manager and director of economic development. "It's a big benefit to having them here."

Call them UAS, UAVs or RPA — as in remotely piloted aircraft — or call them drones, but the commercial and civil market for them is predicted to generate more than \$82.1 billion the first decade after they've been cleared for takeoff by the Federal Aviation Administration.

That could happen as soon as 2015.

The industry will create more than 34,000 new manufacturing jobs alone the first three years, according to a widely publicized report by the Association for Unmanned Vehicle Systems International.

That is, once the FAA is satisfied they can be flown safely and with the privacy of citizens protected.

The developer of that unmanned airship, World Surveillance Group, envisions the day when its Argus One — flying aloft with 30 pounds of sensors, cameras and electronics — will be available for purchase to assist first responders or to transmit wireless communications, or to keep watch over military forces in hostile lands.

World Surveillance will work to make it all a reality by tethering the Argus program in Springfield and working with several firms already established in Ohio.

The combined parties will "assist the Ohio/Indiana UAS Test Center by fostering the growth of Ohio as a preeminent aerospace and UAS center," the company's announcement read.

It's hoped other companies follow suit.

"I hope that's exactly what happens," said Dick Honneywell, a retired Air Force Reserve colonel who was appointed by Gov. John Kasich last month to be the Ohio/Indiana UAS Center's first director. "We want businesses to come in here, and they can absolutely succeed."

For Honneywell, 58, it was the easiest sale he's likely to have during his tenure — he didn't know about World Surveillance Group's decision to move the Argus One program here from Easton, Md., until it was announced.

"Besides being surprising," he said, "it was good news. That's exactly the kind of movement we'd like to see."

Glenn Estrella, president and CEO of World Surveillance Group, has been to this part of Ohio and said he's a "fan" of the area.

"The area is rich with space," Estrella said. "It's rich with open field testing opportunities. And it's rich with very smart folks in this field. It's the perfect package for a company like ours."

The proximity to Wright-Patterson Air Force Base is itself a selling point for companies like Estrella's, and arguably the reason why the Miami Valley as a whole has emerged as the state's hub of unmanned aircraft technology.

Companies throughout the area already are involved in developing UAS, including SelectTech GeoSpatial, which has had a manufacturing facility at the Springfield-Beckley Municipal Airport since 2009.

From his new office in the Avetec building looking out toward what was once known as the National Road, Honneywell is eager to spur more commercial business development.

"We're part of the solution," he said.

After 32 years in the Air Force, leading research into power and propulsion at Wright-Patterson, that part of his new role is a welcome change.

His office falls under the Ohio Department of Transportation.

"You don't get to do a lot of economic development in the Air Force," Honneywell said.

Wright-Patt has been the military's center of aircraft innovation since the 1920s, but most of the Air Force's manufacturing, he said, is done in the West and South.

"A lot of the technology started in this region, but we weren't able to capture the manufacturing base out of that," Honneywell said.

Honneywell said he'd like to see the region both develop and manufacture UAS — and it arguably has a birthright to do both.

The Wright brothers aside, the world's first unmanned aerial vehicle was invented and produced in Dayton.

In 1917, Dayton inventor Charles F. Kettering developed the Kettering Aerial Torpedo. Known as the "Bug," it was meant to be used in World War I, but never saw combat.

More of an early guided missile than a UAV, it nonetheless set the stage, with a range of 75 miles. After a predetermined length of time, the Bug's engine would shut off and its wings would release.

The resulting bomb packed 180 pounds worth of explosives.

A reproduction of the Bug has been on display since 1964 at the nearby National Museum of the U.S. Air Force, and it only takes a stroll through the museum to learn that unmanned aerial technology isn't exactly new.

On display are such early military UAVs as the Teledyne-Ryan AQM-91A Compass Arrow, whose radar-absorbing body also constituted proto-stealth technology.

While never used, the Compass Arrow was ready as early as 1971 to fly deep into China — either automatically or manually by someone aboard the cargo plane that launched it — taking reconnaissance photos along the way.

However, it wasn't until the Global War on Terror that the use of UAVs exploded and "drones" became a household word.

Commercial developers envision stripping drones of their weapons and putting them to work at a variety of civilian tasks, including weather monitoring and oil and gas exploration.

"I see it as an opportunity for the region to regain aerospace manufacturing," Honneywell said.

That effort to lure UAS business to Ohio could be made much easier, or that much harder, at year's end, when the FAA designates six sites nationally where unmanned aircraft will be tested.

Those six sites will help develop the safety and privacy parameters needed for full integration of drones into the nation's airspace.

"A lot of folks are waiting to see what happens," Franzen said.

The FAA received 25 applications from 24 states, according to spokesman Les Dorr, and is expected to make its picks by the end of 2013.

"There's an obvious upside to getting the designation," Franzen said.

According to that earlier report by the drone industry, the selection of the test sites will help determine where jobs flow.

Ohio and Indiana applied for a test site jointly. Honeywell, serving at the time as vice president of aerospace at the Dayton Development Coalition, led the application process.

While staffing for the Argus One development program initially will come from partnering companies, World Surveillance Group didn't want to wait to make a move.

"We're moving our products forward," Estrella said. "For the Argus, Springfield was the right place. We never hesitated."

The two-state test complex put forth for FAA consideration encompasses multiple locations, mostly all within the Dayton region, including Springfield-Beckley and the Wilmington Air Park for the takeoff and recovery of unmanned aircraft, along with restricted airspace in southeast Indiana.

Partners in Ohio's endeavor include such R&D powerhouses as the Air Force Research Laboratory at Wright-Patt and NASA Glenn Research Center in Cleveland.

The Ohio-Indiana test complex also includes military airspace southeast of Wilmington and the National Center for Medical Readiness run by Wright State University at a former cement plant in Fairborn.

That plant has been converted into a 52-acre training site dubbed Calamityville for civilian and military first responders.

"The FAA has a very difficult decision," Honeywell said.

The Ohio/Indiana UAS Center will manage the entire range, renting airspace to companies like World Surveillance Group that will want to flight test aircraft.

"We'll be pleased to support any customer to the range," Honeywell said.

Despite the competition — 10 to 12 sites in the running are "very strong," Honeywell said — he's admittedly not worried about losing out to, say, North Dakota, which scored an article last month in Popular Science headlined, "How North Dakota Plans to Become the Drone Capital of America."

Ohio's mix of airspace and research partners, plus its strong supply chain, means "it's going to be tough for other communities to match," Honeywell said.

But at the drone industry's annual trade show last month in Washington, D.C., the state of North Dakota, which likes to tout its \$2 billion state surplus thanks to fracking, was among the event's top sponsors, right alongside the likes of aerospace behemoths Lockheed Martin and Northrop Grumman.

"Everybody's trumpeting their own horn," Franzen said.

The state of Ohio sponsored a booth at the show, and Franzen, for one, attended to both man the booth and work the floor.

"You can probably go to any state, and the folks involved say they've got it wrapped up," said Joel Embry, president of Indiana-based Drone Systems, a company that markets drones.

Embry primarily sells two small quadcopters, the Scout and the SkyRanger, made by a Canadian company, Aeryon Labs.

Priced between \$100,000 and \$150,000 — "They're serious tools," he said, "They'll fly in any weather" — they currently can be used by first responders who apply for special permission from the FAA.

The FAA doesn't yet allow drones to be used by farmers, but Embry also envisions Scouts and SkyRangers at work on farms, flying over fields to spot areas of blight.

That would be in keeping with the drone industry's prediction that agriculture and public safety will be the two biggest markets for UAS, with agriculture emerging as the most dominant by far. Of the \$82.1 billion the UAS industry is calculated to generate by 2025, agriculture alone could generate \$75.6 billion.

From his home base just north of Louisville, Ky., Embry has been watching closely Ohio and Indiana's efforts to win an FAA test site.

"It'd be awfully convenient for us," he said, adding that they could conceivably come flight test their quadcopters for the first time at distances of five, even six miles.

Even if Ohio isn't picked as an FAA test site, the Ohio/Indiana UAS Center in Springfield won't be without UAS to manage. The state has committed 12 full-time positions to the center, Honneywell said, and signed a two-year lease in the Avetec building at a cost of \$70,000.

Regardless of the FAA's decision, the range here will officially open in the spring to unmanned aircraft competing in a NASA contest intended to speed up development of "sense and avoid" technology.

The space agency picked this region to hold its UAS Airspace Operations Challenge.

Using the range's airspace in Indiana, NASA will run intercepts with aircraft of its own, Honneywell said. It will be up to the competing UAS to sense and avoid the air traffic.

"If we're going to integrate UAS into the airspace," he said, "you want to maintain the level of safety we have today."

NASA has put up \$500,000 in prize money for the challenge, which "will bring an army of ideas forward," Honneywell said.

A number of university teams are expected to take part, he said, but there are no guarantees anyone will win the pot of money.

All the while, the center will seek to support new business opportunities throughout the region.

"The commercial opportunity is too great," Honneywell said.