

State's UAS Center Testing 'Drones' for Broad Application in Ohio

In the not-so distant future, Ohio's cities and farm fields could see "flying robots" surveying everything from public infrastructure and environmental impacts to police and prison operations, crop conditions and deer populations, to name several possible uses of drones or "unmanned aerial systems" (UAS).

The state's bid to become an epicenter of UAS research, development and deployment goes far beyond the Ohio Department of Rehabilitation and Correction's (DRC) proposed pilot project on inmate surveillance. The "blimp in a box" purchased by the state from Drone Aviation Holding Corp. for possible monitoring of Warren Correctional Institution and Lebanon Correctional Institution can store at least 24 hours of high-definition video and features radiation, chemical and thermal infrared sensors and a 10X telephoto zoom. It was tested in June in a demonstration for more than four dozen state officials, including members of the Ohio General Assembly who have gone on record in support of the program in a formal resolution.

The roughly 10' x 15' blimp or "aerostat" purchased by the Ohio Department of Transportation (ODOT), which is coordinating the state's UAS program, is tethered to the ground and more or less stationary, though UAS development is moving quickly to much smaller, self-propelled, multi-directional drones under consideration by the Kasich administration for wide range of public functions in Ohio.

ODOT's Springfield-area UAS Center & Test Complex is spearheading the effort under the leadership of Director Dick Honneywell, former vice president of aerospace for the Dayton Development Coalition and a former director at Wright Patterson's HQ Air Force Materiel Command. UAS Center, a joint project of Ohio and Indiana, is studying drones for applications as diverse as "precision agriculture, project surveying, infrastructure inspection, project monitoring, environmental survey, resource survey, invasive species detection, corrections facility surveillance, police and firefighting ... bridge and roller coaster inspection ... emergency management, road surveying, lost hiker rescues, deer population research," the agency says.

"The Ohio/Indiana UAS Center is the key element in the governors' efforts to expand the UAS industry in Ohio and Indiana, which is among their top economic development priorities," its website states. "The center is formally aligned as a component of the Ohio Department of Transportation (ODOT) with the full support of Ohio and Indiana governmental agencies, including their respective adjutant generals, administrative services departments and economic development organizations as well as the direct attention and oversight of the governors."

Though Ohio was not among the six states selected as federal UAS test sites -- New York, Virginia, Texas, North Dakota, Nevada and Alaska (in partnership with Oregon and Hawaii) -- the Buckeye State is proceeding full-bore with its own UAS program based on existing partnerships with Wright Patterson AFB and NASA.

Honneywell says his center is starting with state, regional and local jurisdictions to explore possible benefits from drones.

"We've made contact across the majority of agencies in Ohio to promote an exchange on UAS capabilities, and to better understand where there are possibilities for matches," he tells Hannah News, noting the effort began with ODOT District 2 in northwest Ohio.

The UAS Center has moved beyond purely governmental interests to forge partnerships with the University of Toledo and other academic and commercial institutions in the state.

"We have relationships across a majority of the universities and several of the community colleges across the state," including Sinclair Community College's UAS program in Dayton, says Honneywell.

He says the state's UAS priorities right now include the surveillance pilot at the Ohio Department of Rehabilitation and Correction (DRC); research in agricultural monitoring at Clark State Community College in Springfield; remote bridge inspection and project planning with ODOT; and natural resource surveys of state recreation areas, beginning with regional metro parks.

The Springfield complex and NASA are also co-hosting the UAS Airspace Operations Challenge at Camp Atterbury, IN in September to identify cutting-edge "sense-and-avoid" technologies that will allow drones to operate unhindered in public airspace. With one of eight entrants from Ohio State University, this year's prize is \$500,000, to be followed at next year's UAS Challenge by a projected \$1 million award.

Honneywell says visions of drone package delivery that surfaced over the previous holiday season will require better sense-and-avoid capabilities -- and clearer legal guidelines.

"The Amazon vision is a good vision," he says. "There is quite a bit of work left at the federal level to be sure the policy and law is in place to allow that to occur."

He says the current research in Ohio is much more "remote" and confined to outlying areas and limited sites.

"The projects we're working on address specific jobs and specific projects and tend not to impinge major population areas," Honneywell says, adding that many experts believe drones could one day have a much larger presence in American society.

"They forecast an environment where UAS's will perform many, many roles to complete jobs more cost-effectively and more safely. I think in a future view, you would expect the technology to take hold," he adds.

"Flying robots have a big future; drones are taking to the sky around the world," says UAS News, a clearinghouse for the UAS industry.

Honneywell says while Ohio did not secure a federal designation, it has more than enough infrastructure and intellectual capital to match and surpass any other state in the nation as a UAS leader.

"It's certainly a priority for my boss," he says of Gov. John Kasich. "The governor's view is that the economic potential of this technology is great. How can we put businesses to work supporting agencies and public needs? It's manufacturing. It's data delivery. It's knowledge engineering. It's consulting services."

More on the UAS Center & Test Complex can be found at www.dot.state.oh.us/Divisions/uas/Pages/default.aspx.