

Special Ops Community Eyeing New Drone Technology

by John Harper

TAMPA, Fla. — U.S. Special Operations Command is seeking new drone technology as it prepares to face more advanced enemies. Meanwhile, industry is offering solutions to help elite warfighters deal with growing threats.

Unmanned aerial vehicles currently in the fleet are at risk of obsolescence as adversaries enhance their counter-drone capabilities, SOCOM officials said during a panel discussion at the Special Operations Forces Industry Conference in Tampa, Florida, which was hosted by the National Defense Industrial Association.

“Our UAVs are not designed for the kind of threat environments ... [they will face] in the future,” said Lt. Gen. Kenneth Tovo, commander of Army Special Operations Command.

U.S. military drones have operated with near impunity over the past 15 years of war against terrorists and insurgent groups, noted Capt. Keith Davids, deputy commander of Naval Special Warfare Command.

But potential foes are developing weapons — including cyber and electronic warfare tools — that could make them much more vulnerable.



The STIDD DPD System 2 in OM2 mode shown with CP2 Cargo Pod.

“In a contested environment how effective will they be? How survivable will they be?” Davids said. “Frankly, I think some current and certainly future projected capabilities of some of our competitors will render many of our current systems obsolete.”

To address the problem, SOCOM is partnering with the Pentagon’s Strategic Capabilities Office to create a new organization dedicated to advancing drone technology.

The outfit, known as DRONEWERX, was modeled after Special

STIDD’s DPD2, when configured with the complete RNAV2 controlled Precision Navigation and Automation System, provides the benefits of Manned-Unmanned Teaming (MUM-T) operations, where the combined strengths of each capability can be optimized to increase overall situational awareness and navigational accuracy. Using the unmanned element of MUM keeps the manned assets safe and improves overall mission effectiveness.

Operations Command’s SOFWERX initiative, which opened the door to nontraditional partners in industry and academia to do fast prototyping and experimentation.

The goal is “to build a DRONEWERX equivalent to SOFWERX to really get at, how do we leverage this combination of

swarm technology, commercial drone technology, artificial intelligence, machine learning, and actually create near-term combat capability?” James “Hondo” Geurts, SOCOM’s acquisition executive, said at the conference.

Special Operations Command isn’t just interested in UAVs, Geurts said. It wants to explore the full spectrum of unmanned systems and autonomous capabilities including in the undersea domain.

John Green, maritime mobility requirements chief for Naval Special Warfare Command, N84, is helping write capability development documents for unmanned underwater vehicles.

“Fundamentally we are interested in man-portable, expeditionary-size unmanned systems,” he said.

The Navy already has a program of record called Mk 18 Mod 1, a Swordfish UUV based on the REMUS 100, a Kongsberg Maritime product. The service intends to use the Swordfish for mine countermeasure missions. SOCOM has an opportunity to leverage that technology, Green said.

“What we’re interested in is not necessarily finding mines but we’re interested in the form factor,” he said.

The plan is to take existing platforms and modify them to meet Naval Special Warfare Command’s requirements. The autonomous systems are expected to complement and supplement manned systems.

“We can go to where a submarine can’t go,” he said.

However, adversaries are developing anti-access/area denial weapons, and there are locations where SEAL delivery vehicles or shallow water combat submersibles would be vulnerable to enemy attack. In those situations, deploying an unmanned system might be a better option because it wouldn’t put special operators at risk, he said.

Officials have been considering operating concepts for undersea drones.

“The specifics get a little classified,” Green said. “But imagine if you will the same things that an SDV would do where it would stop with the dry submersible and you would send [the UUV] even farther” to search for something and then report back in real time or near real time.

Sensing is one of about half a dozen mission sets that UUVs could perform, he added.

Much like in the air domain, officials see advantages in using smaller systems in the undersea realm.

“We need to keep it expeditionary,” Green said. “We need to leverage all the shrinking down of sensor packages and the better power [technologies] to make our little UUV equivalent to what bigger UUVs used to be.”

STIDD Systems Inc., a Greenport, New York-based company has developed the DPD-M2AV diver propulsion device that can be manned or unmanned.

Although primarily designed for infiltration and exfiltration of combat divers, it could also serve as an ISR platform, said company vice president David Wilberding.

“Any manner of sensors can be put on this,” he said. “You can take the man off and use it as what amounts to an underwater vehicle that’s completely autonomous.”

The submersible is capable of more than five hours of run time and has a range of more than 30 nautical miles. It is equipped with a precision navigation and automation system, and could be programmed to perform a variety of tasks, he said.

“It could preprogram to loiter at any depth, and you could then remotely change mission and say, ‘Go to this depth, that depth, go to this point or that waypoint, engage any particular sensor, collect the information and bring it back out of the harbor,’” Wilberding said.

The platform is also capable of hauling a cargo pod or trailer filled with munitions or other equipment, he noted.

SOCOM officials intend to piggyback off what the Navy is doing with underwater drones. “Service common” capabilities that were developed for the Navy but are applicable to special operations missions are a key area of interest, said John Bailey, chief engineer at program executive office maritime.

Procurement methods could be similar to how the command takes Air Force C-130 aircraft and modifies them, he said.

“The service builds the C-130. We buy it and then fix it” to meet SOF needs, he said. “We will probably wind up with something similar on the UUV side.”

Topics: Robotics and Autonomous Systems, Robotics, Special Operations, Special Operations-Low Intensity Conflict