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Mississippi State's CAVS Center helps Starkville police go high-tech with drones

MSU's Dr. Daniel Carruth and Dr. Cindy Bethel, test the new Parrot AR Drone, as Starkville Police Department Lieutenant Mark Ballard observes. The drone, developed at MSU's CAVS Center, will be used by the SPD's SWAT team when testing is completed. Photo by: Micah Green/Dispatch Staff

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The Starkville Police Department may soon be the envy of every law enforcement agency across the state. Thanks to a close partnership with Mississippi State University, the SPD will soon have three different state of the art robotics at its fingertips.

The SPD has been working with the Center for Advanced Vehicular Systems for the past several years in a mutually beneficially relationship for both departments. The CAVS program is able to test cutting edge technology on the officers and, in turn, SPD has unparalleled access to robotics equipment like the Parrot AR Drone, the MMP 30, and the Husky A200, all three of which are currently being tested at the university.

Lt. Mark Ballard, the team leader for SPD's SWAT team, and MSU's Dr. Daniel Carruth and Dr. Cindy Bethel have been working closely together in recent months in order to get their newest project off the ground, literally. The Parrot AR Drone is the newest robot ready to join the ranks at the SPD.

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The drone is a tele-operated quad-rotating helocopter that, once deemed operational for the SPD, will join the SWAT team on their missions.

The drone is equipped with a camera and has the capability to become autonomous, or unmanned, once testing and programming are complete. The drone will then accompany the SWAT team on its missions, flying ahead of them into dangerous situations and serving as another team member, reporting in live time a visual description of what lies ahead.

Even with the state of the art advances, Dr. Bethel describes the drone as "expandable and affordable" for the police department. With an outer body made of lightweight Styrofoam, the Parrot AR Drone currently sells on Amazon for less than $300.

The Parrot AR Drone is also ingrained with a flock mentality, meaning that other drones will follow the lead drone. Once testing and programming are complete, the SPD will have access to three drones.

The drone is one of three new robotics devices that the university is testing for uses in tactical situations. In addition to the flying robot, the MMP 30 and the Husky are ground based, tank-like robots that give the operator an undeniable advantage.

The Husky is an unmanned ground vehicle that is tele-operated with the option of being autonomous. Weighing around 100 lbs, the Husky has a maximum speed of 2.3 miles per hour and can handle all weather climates. It is also equipped with a night vision camera.

The MMP 30 is a smaller, quieter version of the Husky that is faster and lower to the ground. Also equipped with a night vision camera, the MMP 30 can connect to a 3D camera and is perfect for uses in what Ballard describes as "fatal funnels."

Ballard explained that often times when a SWAT team has to enter a building in search of a suspect, they encounter "fatal funnels", or hallways where it is near impossible to round a corner and approach a suspect without putting a law enforcement officer at risk. With the MMP 30, that risk is decidedly lowered as the robot provides reconnaissance capability and can also serve as a distraction device. Without the MMP 30, SWAT team members were forced to round a corner with their shields and a mirror stick to determine a suspect's location. With the MMP 30 having real time video, Ballard says the robot takes away the unknown.

Both the MMP 30 and the Husky are manufactured by Clearpath Robotics and can cost up to $12,000 and $18,000 respectively.

Ballard praised the efforts of the CAVS program and calls the robots a "true force multiplier." He says the CAVS program provides the university "total access to the tactical component from a research standpoint" and gives SPD " a new way of looking at what we do from an academic standpoint."

All three robots are either funded through grants or internal university money through the Bagley College of Engineering Funds. They are provided at no cost to the police department.

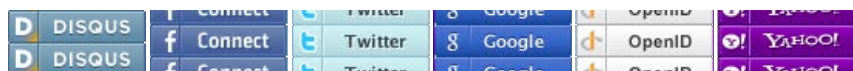printer friendly version | back to top