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UNH's Project 54 empowers first responders

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Focus and awareness are at the heart of what emergency responders do.

For decades, those responders heading to accidents or crimes had to deal with a host of distractions in their vehicles that are essential nonetheless. Turning on and off lights, answering the radio and tapping information into computers forced many to either pull off the road or risk taking their eyes off the road. But for the past several years, the days of analog operations in cruisers have been drawing to a close in the state, bringing an era that technology developers and emergency responders hope is and will continue to be a safer one.

The University of New Hampshire's Project 54 began in 1999, according to Director Andrew Kun, as an initiative aimed at helping emergency responders cut down on those distractions. Kun's favorite word to describe what Project 54 does is "integration," in the form of putting all the systems traditionally separate in a cruiser or ambulance into a single interface that can be activated by voice or the push of a button on a screen. Law enforcement officials, Project 54 staff, UNH faculty and those who install the project's systems in vehicles gathered for demonstrations on the technology Wednesday behind the team's headquarters at Morse Hall on campus. It showed how the now widespread technology has upgraded the way many departments do business.

After the project's first round of integrated systems for police cruisers came in 2003, the systems flourished, and now Kun estimates more than 1,000 vehicles and 180 communities and agencies statewide use them. Many belong to New Hampshire State Police, and Lt. Mark Liebl with the state police in Concord was among the first to try the technology. More than seven years later, he's a pro and he demonstrated the system's best features in his cruiser by pushing a button on the steering wheel and issuing voice commands.

"Imagine the number of distractions that are in a patrol car. An officer has to be vigilant," he said.

Among the most essential simplifications for Liebl is the ability to simply say a town and be dialed into that town's voice channel. Typically, there are 256 to 512 frequencies emergency responders can operate on, and flipping between them used to be very difficult and dicey while driving at high speeds, he said. "Time is of the essence, and you need to get there," Liebl said. "Otherwise, it's very dangerous."

As state police cover a wide area, he said the ability to use GPS and access coordinates to give to helicopters and ambulances unfamiliar with the area is critical.

 Kun notes UNH is not in the business of selling and mass-producing the technology, so it entered into partnerships with other firms that can integrate the systems commercially. He said the software is free in New Hampshire and the hardware costs less than $1,000 per vehicle, but must be installed by a professional. Chris Gaudreau, a software engineer with 54ward Integrated Solutions, showed off a company car that illustrates how installation of the technology can streamline a vehicle's dashboard, connecting everything from a lock for a rifle or shotgun to the lights.

While the system's hands-free nature has many fans, the voice-activated components aren't even used in Portsmouth, where Lt. Mark Newport said officers simply didn't find as much of a use for it. The rest of the systems developed by Project 54 are in use in all city cruisers, and they've significantly reduced the amount of radio traffic for dispatchers as license information can be obtained from a database. It's also allowed Portsmouth police to work more efficiently, Newport said.

"(Officers) can use their cruisers almost like a portable office," he said. "They have that information right there on their hands, rather than having to get it from dispatch."

It's even a benefit for motorcycle officers. Officer David LoConte of Greenland uses the system on his 2007 Harley Davidson, and can detach the screen from his bike to bring with him, using it remotely to activate lights and sirens on his bike or turn on his radar. It's a more intuitive system and one that allows him to access information on the fly, which he said is a plus. Being able to pull over his bike and work on paperwork via computer is a huge improvement for LoConte, who once did all his reports by typewriter or hand. "Everything's become much simpler and much (more) refined," he said.

New technology on the way

The Project 54 labs hold prototypes and equipment that goes into developing them. There's also half a state police cruiser and another half-car used for a realistic, motion-sickness inducing virtual simulation aimed at demonstrating the difference between conventional systems and Project 54's. It's also where the newest technology the team is working on is held.

Engineer Mark Taipan showed the latest handheld technology being developed with the Dover Police Department's mounted horse patrols. It's a military-grade, drop- and water-resistant Motorola Symbol phone that can scan driver's licenses and vehicle registrations and upload the information to a database. It also allows for voice recording and pictures and features GPS.

Taipan, like Kun, argues that efficiency and safety are the primary drivers for the work. An officer on horseback, bike or on foot writing down license information the traditional way takes more time, leaving less situational awareness, he said, and a scanner allows them to have the information ready to go in seconds.

"We believe these devices will be more than helpful for these officers," he said.

Kun also rattles off features of a new touch screen system for dispatchers that allows them to quickly pull up contacts and access them with the flick of a finger, which is still in development by Project 54. Local fire departments now have the option

of getting a voice-operated system that can help identify chemicals as well.

Kun and Taipan said there is no timeframe for the handheld and touchpad technology to be widely available. For more information, visit http://project54.unh.edu.

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