When smart cars get street smart

Chris Warner, Executive Editor

In recent years, there's been a lot of buzz about automotive infotainment systems — features that are built into recent model cars that can offer anything from satellite navigation, DVD players, internet access and more. This has led to concern from regulators about driver inattention and its impact on safety. As more infotainment features are added to vehicles, any legislative action to ensure safety would seem like closing the barn door after the animals got out.

It's easy to forget, however, that car manufacturers and researchers are indeed working to enhance automotive safety. ECN associate editor Kasey Panetta recently wrote about Automatic Emergency Braking Systems (AEBS) (bit.ly/PcoOAu [1]) and Mercedes' Belt Bag strap (bit.ly/On032z [2]), while Anthony Le of Winbond Electronics has provided an overview of Advanced Driver Assistance System (ADAS) (bit.ly/NU4lSg [3]). Now comes word of a new year-long, $22 million smart-car testing program being conducted by the University of Michigan Transportation Institute (UMTRI) and led by the U.S. Department of Transportation. The goal is to "see how well wireless communication technology works in the real world."

The UMTRI will install 3,000 wireless devices and several cameras on 3,000 cars, trucks, buses, traffic lights, and other road signals in the city of Ann Arbor, Michigan. By wirelessly conveying vehicle data to other vehicles and between vehicles and infrastructure, drivers will be alerted — via an audio or visual cue inside the cabin — to potential accidents or hazards that other connected vehicles encounter that may require immediate attention.

The data collected will be available to the transportation industry to help develop new initiatives for safety, mobility, and environmental sustainability, and the U.S. DOT will study the data for regulatory and policy decisions, although there are no immediate plans for rules requiring wireless safety devices in cars.

All this promising technology of course brings some potential drawbacks. Regular readers of this column may expect me to warn against over-legislation and abuse of data by law enforcement, and both are likely. Also, too many alerts and stimuli may

create white noise for the driver, which combined with the wealth of safety features going into automobiles, will lead to complacency issues.

Still, this initiative, along with those safety technologies mentioned earlier, signal a coming wave of societal benefits thanks to the way cars can interact with their surroundings. First, the technology is in place to help drivers respond to — and even act on behalf of the driver in — potential crash situations. Beyond individual driver safety, fewer accidents theoretically should reduce traffic tie-ups along with their associated environmental and economic costs. According to The Texas Transportation Institute's (TTI) 2011 edition Urban Mobility Report, based on U.S. traffic congestion data for 2010 and prior years, commuter delays cost more than $100 billion, or nearly $750 for every commuter in the United States. Says UMTRI Director Peter Sweatman, "Connected vehicle technology has the ability to address as much as 80 percent of crashes of unimpaired drivers and greatly reduce carbon emissions."

And in challenging economic times when local and state government budgets are tight and there's little political will for infrastructure improvements and mass transit initiatives, vehicle-to-infrastructure communications may well guide officials to direct limited funds and resources to potential roadway improvements where they're needed most.

There's much to gain when intelligent vehicles share information wirelessly, not just in saved lives, but also increased productivity, efficiency, and a cleaner environment. And when the auto industry, academia and government work together toward such laudable goals, it's just plain smart.

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