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Connected Vehicle Technology Challenge Winners

The U.S. Department of Transportation's (DOT's) Research and Innovative Technology Administration (RITA) today announced six winners of a national competition seeking ideas for using wireless technology to enable vehicles to communicate with each other. The winning ideas may be incorporated into ongoing research on using technology to improve vehicle safety and transportation operations.

"Innovative thinking and advanced technology have become the keys to improving safety and efficiency on our roads and highways," U.S. Transportation Secretary Ray LaHood said. "The winners of this competition have given us ideas that will help build the transportation system of the 21st century."

"The winning entries show the depth of creativity and knowledge among the American people. I congratulate the winners for their commitment to making transportation safer, greener, and easier," said RITA Administrator Peter Appel.

Entries in the Connected Vehicle Technology Challenge had to be based on an innovative use for dedicated short-range communications (DSRC), a wireless technology similar to WiFi. A DOT panel selected five entries, while the sixth winning entry received the most votes from registrants on the competition website, connectedvehicle.challenge.gov.

The following are the winning submissions:

- **Matthew Henchey and Tejswaroop Geetla, University of Buffalo, *Emergency Response Application of DSRC Technology*.** A real-time accident awareness system that accelerates emergency response and assists with traffic management. Vehicles in a six-car pileup automatically inform emergency responders and traffic management centers.
- **Norio Komoda, Jennifer Smoker, and Ariko Komoda, Sakura Associates, *Connected Vehicle Proactive Driving*.** A driver guidance system that collects and uses accident locations and types to help drivers choose safer routes. A driver is alerted to an upcoming intersection with frequent rear-end accidents and has the option of choosing an alternate route.
- **Venkatesan Ekambaram, Kannan Ramchandran and Raja Sengupta, University of California Berkeley, *Robust GPS: Enhancing Accuracy and Security Using DSRC*.** Using DSRC signals on board vehicles to improve weakened positioning information and to correct illegally "jammed" Global Positioning System (GPS)

signals.. This enables DSRC-equipped vehicles to automatically correct the GPS positioning of other similarly equipped vehicles.

- **Doug Lundquist, University of Illinois Chicago, *Pollution Credit Trading in Vehicle Ad Hoc Networks*.** An automated system for trading pollution credits among vehicles in which the level of pollution allowed per vehicle is capped and credits are given to less-polluting vehicles. A low emissions vehicle can accumulate credits that it automatically sells to a higher emissions vehicle.
- **Michael Todd, Jay Farrell and Matthew Barth, University of California Riverside, *Using DSRC Signals for Improving Vehicle Position Estimates*.** A position-estimating system that blends inputs from GPS and DSRC links to roadways to improve location measurements. A GPS-equipped vehicle would be able to determine its location to within one meter by communicating with devices embedded in the roads.
- *Selected by voters:* **Lee Tupper, Rahul Amin, Fan Yang and Parth Bhavsar, Clemson University, *Integrated Intelligent Transportation Platform*.** A system that enables a vehicle to help with trip and day scheduling, from choosing a route to reserving a parking space.

DSRC is the basis for DOT-funded research in which a system of connected vehicles communicate safety messages, such as alerts about imminent crash situations or roadway hazards, with each other as well as surroundings, such as traffic signals and work zones. DOT's National Highway Traffic Safety Administration (NHTSA) said in an October 2010 [report](#) that wireless vehicle-to-vehicle and vehicle-to-infrastructure communications can potentially address 81 percent of all unimpaired vehicle crashes.

“Advanced vehicle safety technologies hold the promise of significantly reducing traffic fatalities and injuries,” said NHTSA Administrator David Strickland. “As NHTSA continues to evaluate the potential for these systems, we’re pleased to see so many bright and creative minds working on ways to move traffic safety into the 21st century.”

The selected participants will be honored speakers at a special session at the 18th World Congress on Intelligent Transportation Systems. A representative from each selected team will receive paid registration, transportation, meals, and accommodations for the Intelligent Transportation Systems World Congress, which will be held in Orlando, Fla., on Oct. 16-20.

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