

SwRI demonstrates traffic management to minimize environmental impacts

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As part of Southwest Research Institute's environmental management demonstration at the ITS World Congress in Orlando Oct. 16-20, demonstration vehicles will display instantaneous emissions data to the driver, providing feedback as to how driver behaviors, such as acceleration-braking cycles, affect the environment.

Southwest Research Institute (SwRI) is collecting and communicating real-time vehicle emissions data to demonstrate new concepts in environment-based traffic management as part of a connected vehicle test bed at the 18th World Congress on Intelligent Transport Systems in Orlando, Oct.16-20.

The SwRI Environmental Management System uses connected vehicle technology, specifically vehicle-to-infrastructure communications, to send [emissions](#) data from a demonstration vehicle to a central Advanced Traffic Management System. Using the vehicle emissions data, traffic

management center operators can identify environmental "hot spots" along the roadway and use congestion management techniques to reduce the [environmental impact](#) of traffic.

"The Institute is uniquely positioned to combine expertise with [vehicle emissions](#), intelligent vehicles, connected vehicles and ATMS technologies," said Josh Johnson, manager of Transportation Systems at SwRI. "Using this expertise, SwRI wirelessly sends real-time emissions data directly from a vehicle to a central system, delivering anonymous data packets to an ATMS, which aggregates the information, allowing operators to manage traffic in relationship to the environment."

The demonstration vehicle also displays instantaneous [emissions data](#) to the driver, providing feedback as to how driver behaviors, such as acceleration-braking cycles, affect the environment.

"Vehicles have provided drivers with average fuel efficiency information for a number of years," said Johnson. "We're presenting this information in terms of direct environmental impact, displaying levels of [CO2 emissions](#) to encourage 'green' driving."

"The hope is that our advanced [traffic management](#) systems can not only improve roadway safety and efficiency, but also decrease the environmental impact of traffic as well," Johnson continued. "To take this innovation from demonstration to real-world implementation, we would need to develop best practices and automation tools for using the gathered environmental data to manage traffic."

The Connected [Vehicle](#) Technology Showcase is unique to the ITS World Congress, demonstrating new technology solutions to address major transportation challenges that impact the traveling public and the economy. Vehicle-to-infrastructure demonstrations will use a network of roadside devices installed along key corridors in the Orlando area to

provide an interface between vehicles and a showcase version of Florida's statewide SunGuide® ATMS. SwRI is a key player in the development and continuing improvement of SunGuide, which provides real-time traffic data, travel advisories and information to Florida's drivers.

Provided by Southwest Research Institute

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