Nationwide deployment of a communications infrastructure on the roadways and in all production vehicles could improve transportation and the quality of American life in ways not imagined a generation ago.

Vehicle Infrastructure Integration (VII)

A Major ITS Initiative

Crash Prevention and Congestion Relief Through Vehicle-to-Vehicle and Vehicle-to-Roadside Communication

About half of the 43,000 deaths that occur each year on U.S. highways result from vehicles leaving the road or traveling unsafely through intersections. Traffic delays continue to increase, wasting more than a 40-hour workweek for peak-time travelers. A significant reduction in these numbers could be achieved through coordinated development of a nationwide wireless communication infrastructure that would allow communication between vehicles and between the vehicle and the roadside.

The VII vision is that every car manufactured in the U.S. would be equipped with a communications device and a GPS unit so that data could be exchanged with a nationwide, instrumented roadway system. Realization of this vision could mean a significant reduction in highway fatalities, while at the same time offering dramatic improvements in transportation mobility.

The VII initiative will build on the availability of advanced vehicle safety systems developed under the Intelligent Vehicle Initiative (IVI) and on the results of related research and operational tests. The fundamental building blocks of the VII concept are coordinated deployments of communication technologies:

- In all vehicles by the automotive industry
- On all major U.S. roadways by the transportation public sector

Implementing Strategies to Save Lives and Relieve Traffic Congestion

Secure data transmitted from the roadside to the vehicle could warn a driver that it is not safe to enter an intersection or that the vehicle is dangerously close to running off the road. Vehicles serving as data collectors could anonymously transmit traffic and road condition information from every major road within the transportation network, giving transportation agencies the information needed to take action to relieve traffic congestion.

Protection of privacy is paramount. The intent is that general data collected by the public sector would be anonymous and used only for safety purposes and for efficient management of transportation operations. It is expected that this technology will facilitate a number of uses that drivers may choose such as electronic toll collection or telematics services for which some private information might be required. For those services, the intent is that the owner or driver would have to "opt in" and give permission for that information to be shared.

A VII consortium has been established to determine feasibility of widespread deployment and to establish an implementation strategy. Current membership includes US DOT, AASHTO, ten State DOTs and several light vehicle manufacturers.

For more information about this US DOT initiative:
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