



safety

mobility

productivity



Intelligent intersection systems can save lives and prevent injuries by helping drivers avoid crashes.



Cooperative Intersection Collision Avoidance Systems

A Major ITS Initiative

Saving Lives and Preventing Injuries

Each year intersection-related crashes take a heavy toll on lives, productivity, and the economy. In 2003 alone, 8,569 people died and more than 1.4 million suffered injuries as a result of intersection-related crashes. Intelligent intersection systems offer a significant opportunity to improve safety by enhancing driver decision-making at intersections that will help drivers avoid crashes.

Intersection collision avoidance systems use both vehicle-based and infrastructure-based technologies to help drivers approaching an intersection understand the state of activities within that intersection. Cooperative intersection collision avoidance systems (CICAS) have the potential to warn drivers about likely violations of traffic control devices and to help them maneuver through cross traffic. Eventually, CICAS may also inform other drivers (i.e., potential victims) about impending violations as well as identify pedestrians and cyclists within an intersection.

CICAS consists of:

- Vehicle-based technologies and systems—sensors, processors, and driver interfaces within each vehicle
- Infrastructure-based technologies and systems—roadside sensors and processors to detect vehicles and identify hazards and signal systems, messaging signs, and/or other interfaces to communicate various warnings to drivers
- Communications systems—dedicated short-range communications (DSRC) to communicate warnings and data between the infrastructure and equipped vehicles

Understanding Safety Benefits and User Acceptance

The CICAS initiative builds on research and operational tests previously conducted under the US DOT's Intelligent Vehicle Initiative. It is being closely coordinated with the Vehicle Infrastructure Integration and the Intelligent Vehicle-Based Safety Systems initiatives. The CICAS initiative working group is being formed from partnerships with automotive manufacturers, State and local departments of transportation, and university research centers throughout America.

Through additional research, system integration activities, and demonstrations, the CICAS initiative will produce a system prototype that addresses both control violations and gap acceptance crash problems. The initiative will culminate in a series of coordinated field operational tests to help achieve a solid understanding of safety benefits and user acceptance.

For more information about this US DOT initiative:

www.its.dot.gov/cicas

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