

## 4. 付録 (APPENDIX)

### 4.1 走行支援システム研究開発

(Cooperation Intersection Collision Avoidance Systems (CICAS))

: U. S. A.



# Cooperative Intersection Collision Avoidance Systems (CICAS)



## U.S. - Japan ITS Workshop

Mike Schagrin  
US Department of Transportation  
November 9, 2005

## The Problem

- Every year at intersections:
  - 9510 **FATALITIES**
  - 1,391,000 **INJURIES**
  - 2,558,000 **CRASHES**



## What is CICAS?

---

- A system of vehicle and infrastructure components working collectively (via DSRC communications) to detect and avoid potential cross-path crashes at intersections
- Crash avoidance is performed through driver warnings and other vehicle and infrastructure countermeasures



## CICAS Program Goals

---

- To develop and demonstrate cooperative intersection collision avoidance systems
- To assess the value and acceptance of cooperative collision avoidance systems
- To develop and provide tools to support industry deployments



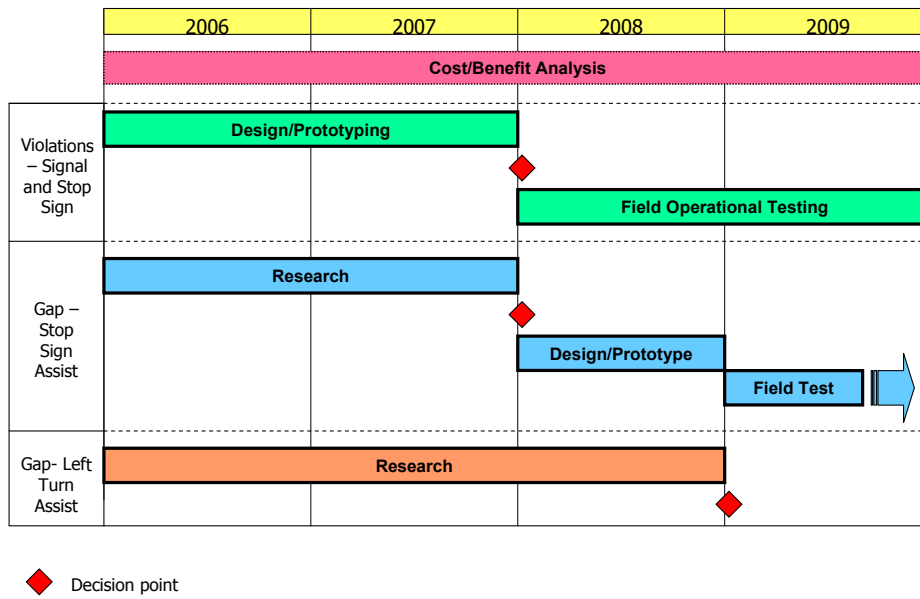
## CICAS Partners Public / Private/Academia



## CICAS Crossing Path Scenarios

- Violation preemption
  - Signal
  - Stop sign
- Safe gap assessment
  - Stop sign assist
  - Left turn assist

# CICAS Roadmap

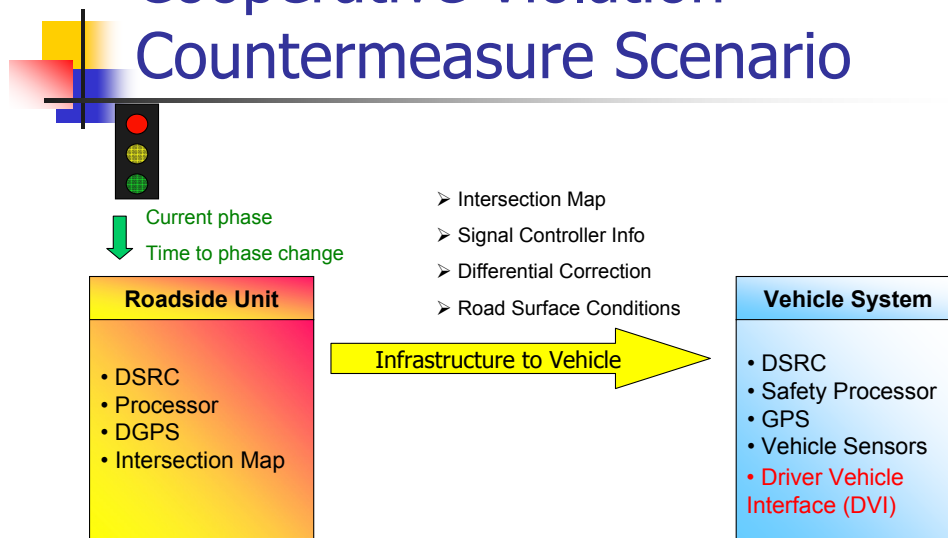


## CICAS Concepts

# Cooperative Violation Countermeasure Concepts

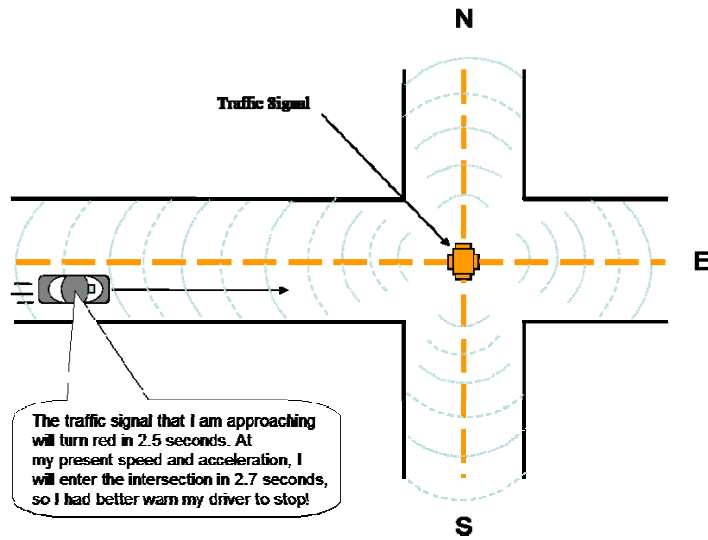
- The basic capability is for the vehicle to provide stop sign and traffic signal violation warnings
- The intersection could provide an infrastructure based countermeasure (e.g., adjust signal timing) resulting from the vehicle sending a warning notification
- The vehicle could exert some type of vehicular control countermeasure

# Cooperative Violation Countermeasure Scenario

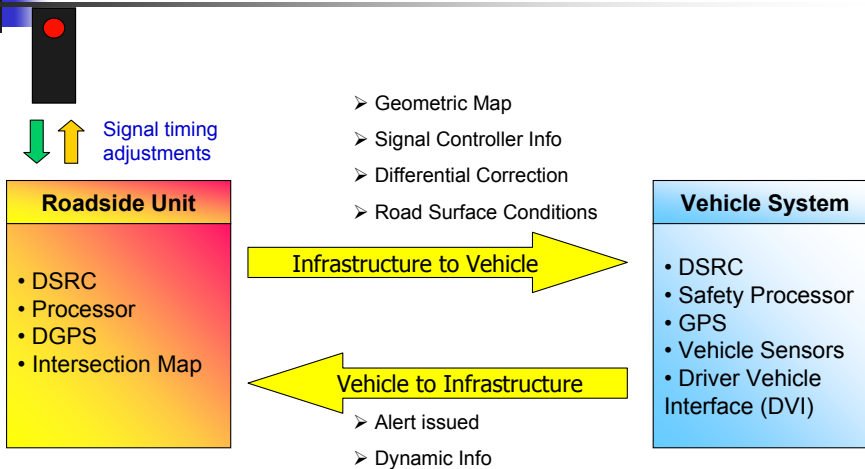


## Signal Violation Warning: Vehicle Approaching

Example Scenario



## Cooperative Violation Countermeasure Scenario

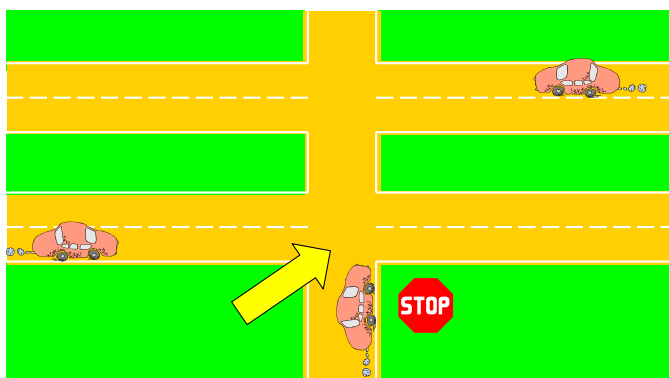




## Things We'll Learn About

- Wireless Communication (DSRC)
- Human Factors
  - DVI
  - Warning timing
  - User acceptance
- Traffic Control Interface
- Threat Assessment Algorithms
- Positioning

## Stop Sign Gap Assistance

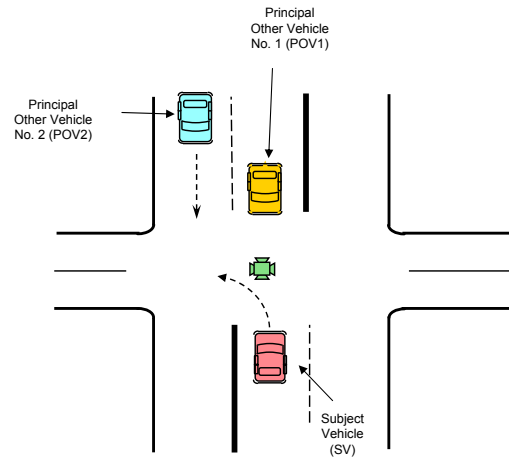


Assist stopped driver in determining insufficient gap to enter or cross

### Possibilities:

- Alert of approaching vehicles
- Inform of size of gap
- Warn of insufficient gap
- Advise against unsafe actions

# Left Turn Assist



Thank You

Questions?