Commemorating the 20th Anniversary of the National Automated Highway Systems Consortium Demo ‘97 in San Diego

Richard Bishop, Kevin Dopart and Steven Shladover
Section 6054(b) of Intermodal Surface Transportation Efficiency Act of 1991:

“The Secretary shall develop an automated highway and vehicle prototype from which future fully automated intelligent vehicle-highway systems can be developed. Such development shall include research in human factors to ensure the success of the man-machine relationship. The goal of this program is to have the first fully automated roadway or an automated test track in operation by 1997.”
Team formed to compete for FHWA cooperative agreement to deliver the AHS program ($200 M from 1994-2002, with 20% cost share)

- General Motors
- Delphi Automotive (Delco Electronics)
- Hughes Aircraft
- Lockheed-Martin
- Bechtel
- Parsons-Brinckerhoff
- Carnegie-Mellon University
- University of California PATH Program
- California Department of Transportation
Post-Demo Roadmap Toward Deployment
Demo ’97 Sites in San Diego

- On I-15 HOV lanes in San Diego and adjacent Miramar College campus (exhibits and mini-demos)
- August 7-10, 1997
Demo Scenarios

• NAHSC Core Team Demos:
  – Free Agent Multi-Platform Demo (CMU, GM, Delphi, Hughes, Houston Metro) – 2 buses + 2 cars
  – Platooning Demo (PATH, GM, Delphi, Hughes) – 8 cars

• Associate Demos:
  – Toyota – 2 cars
  – Honda – 2 cars
  – Ohio State University – 2 cars
  – Eaton-Vorad – 1 truck (warning) + target car
  – Caltrans/U.C. Davis AHMCT – 2 maintenance vehicles
Free Agent, Multi-Platform Scenario
Control Transition Scenario (Honda)
Evolutionary Scenario (Toyota)
Alternative Technology Scenario

(Ohio State University)

**THE VISION**

The vision envisions the Ohio State vehicles providing a seamless to the state’s revenue and the highway. In this scenario, vehicles are connected to the highway, allowing for real-time traffic data and queue detection to determine the priority of other vehicles. The vehicles are operated autonomously using a variety of traffic sensors, including infrared and mm-wave sensors, and provide extra control for improved safety.

**THE SCENARIO**

In the "no" scenario, the vehicles are connected to the highway, allowing for real-time traffic data and queue detection to determine the priority of other vehicles. The vehicles are operated autonomously using a variety of traffic sensors, including infrared and mm-wave sensors, and provide extra control for improved safety.

**THE BRAINS**

What makes the system work in the "no" scenario is the ability to manage traffic congestion. By analyzing the traffic patterns, the system can predict and adjust the flow of traffic, ensuring smooth and efficient movement of vehicles.

**THE STRIPE**

The solar stripe system, developed at Ohio State University, is a non-intrusive approach to traffic management. It uses solar panels to capture sunlight and convert it into electrical energy, which is then used to power the vehicles. This system can be integrated into existing road infrastructure without significantly altering the road surface.
Eaton-VORAD Warning Demo
Caltrans/UC Davis AHMCT Program
Highway Maintenance Demo
VIP Visitors and Media Attention
Demo ‘97 Statistics

- 21 vehicles drove over 8,000 automated miles
- Visitors:
  - Exhibit - 3500
  - Mini-Demo riders: 3100
  - On-road demo riders - 2850
- Media coverage:
  - ABC, CBS, NBC, CNN, MSNBC, PBS television coverage
  - NPR All Things Considered
  - International coverage in 12 countries on 5 continents
  - Total of 120 media outlets represented
Celebration at the End
For more information...

NAHSC technical reports and Demo ‘97 information are posted online at:

http://www.path.berkeley.edu/publications/national-automated-highway-systems-consortium