

INTEGRATED VEHICLE-BASED SAFETY SYSTEMS



Overview:

The National Highway Traffic Safety Administration has led the Integrated Vehicle-Based Safety Systems program (IVBSS), a five-year cooperative research effort to enhance the safety of both passenger vehicles and heavy trucks.

IVBSS is designed to combine several in-vehicle crash warning subsystems into a single, integrated concept that includes the following warning technologies:

- forward collision
- lane departure
- lane change, and
- curve speed

Phase I

Integrated System Design and Development
Verification Tests



Phase II

Vehicle Builds
Field Tests/Data Collection
Data Analysis
Final reports



Final Reports

CONTRACT NAME	STATUS	DATE
0-787	0.0	
0-790	0.0	
0-791	0.0	
0-820	0.0	

Volpe Center images

Program Team:

U.S. Department of Transportation:

National Highway Traffic Safety Administration
Federal Motor Carrier Safety Administration
Research and Innovative Technology Administration
Intelligent Transportation Systems
Joint Program Office
John A. Volpe National Transportation
Systems Center

National Institute of Standards and Technology
University of Michigan Transportation Research Institute
Visteon Corporation
Eaton Corporation
Honda R&D Americas
Takata Corporation
International Truck and Engine
Battelle Memorial Institute
Michigan DOT
Con-way Freight

Additional information can be found at the IVBSS program website:
<http://www.nhtsa.gov/Research/Crash+Avoidance/Integrated+Vehicle-Based+Safety+Systems+%28IVBSS%29>

Final reports are available online at: <http://www.nhtsa.gov/Research/Crash+Avoidance/Program+Documentation>



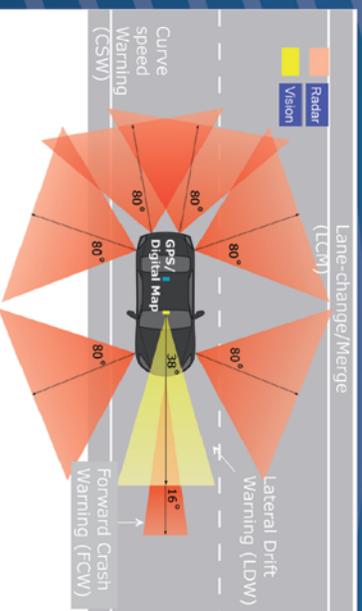
Integrated Vehicle-Based Safety System (IVBSS)

Light Vehicle Field Test:

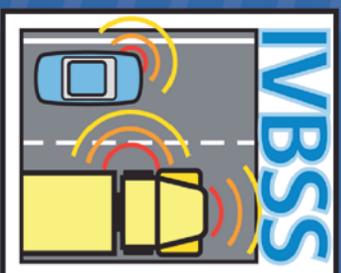
- 108 drivers
- 40 days per driver
- 12 days baseline
- 28 days treatment
- 219,000 miles



Light Vehicle Integration



Light Vehicle Sensor Coverage



4 Types of Warnings:

- Forward Collision Warning: Helps prevent rear-end collisions
- Curve Speed Warning: Alerts drivers of sharp curves
- Lane Change Warning: Alerts drivers of vehicles in blind spots
- Drift Warning: Helps drivers stay in their lane

Data Types:

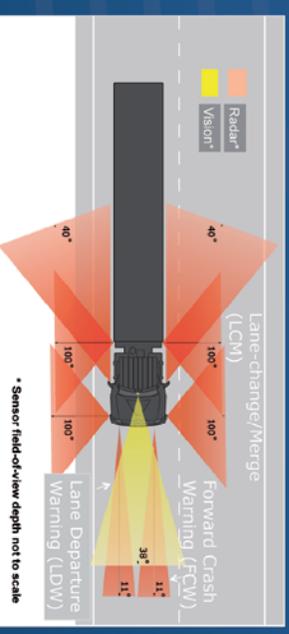
- Over 200 channels of numerical data
- Vehicle dynamics
- Road geometry
- Radar
- Lane tracking
- 5 channels of video

Heavy Truck Field Test:

- 18 commercial truck drivers
- 8 pick-up and delivery drivers (daytime routes)
- 10 line-haul drivers (night routes)
- 10 months
- 2 months baseline
- 8 months treatment
- 671,000 miles



Heavy Truck Integration



Heavy Truck Sensor Coverage