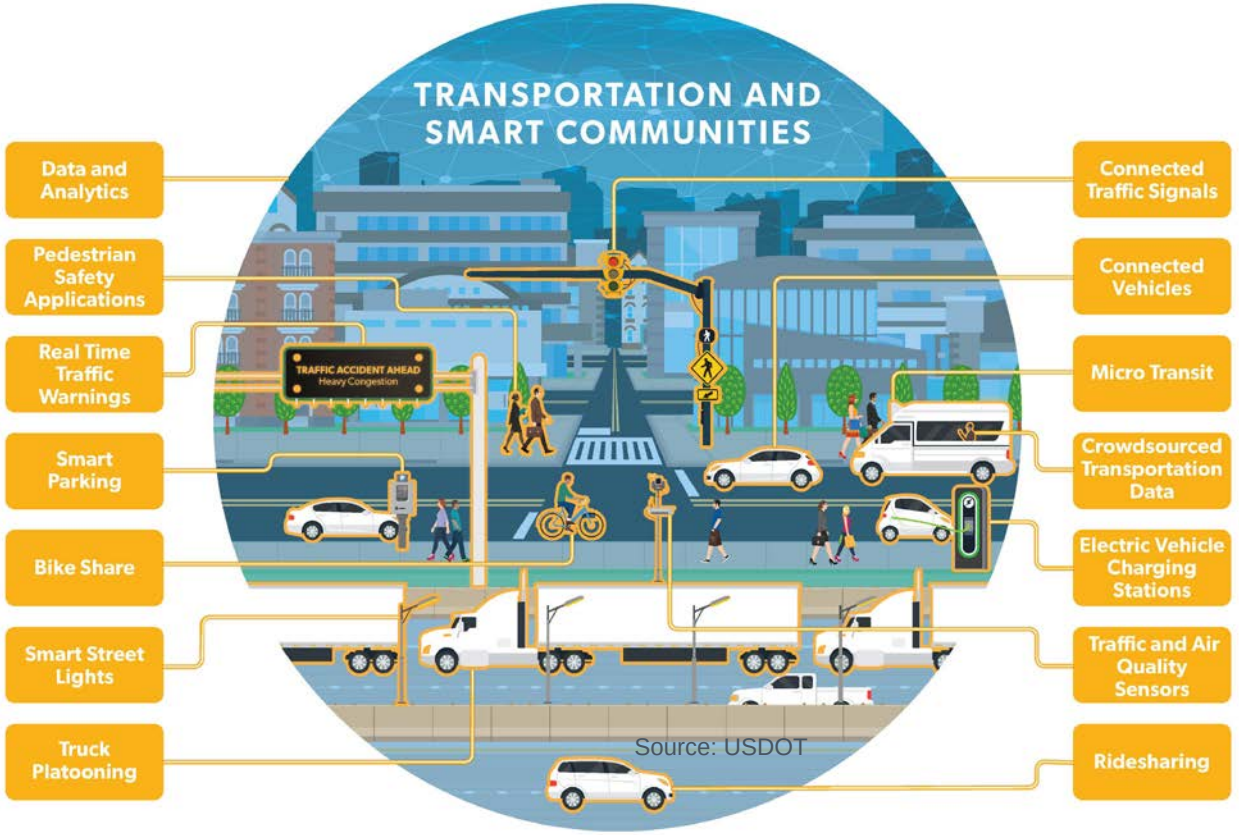
TSAG 2019 Products on I2R and AACN

Infrastructure to Responder (I2R): Improving Responder Safety through the Digital Infrastructure

Connected Infrastructure

- Transportation infrastructure
  - Sensors
  - Cameras
  - Dynamic Message Signs
  - Signals
- Smart Communities
  - Internet of Things
  - GIS Data
  - Utility Networks
- Crowd Sourcing



Source: USDOT

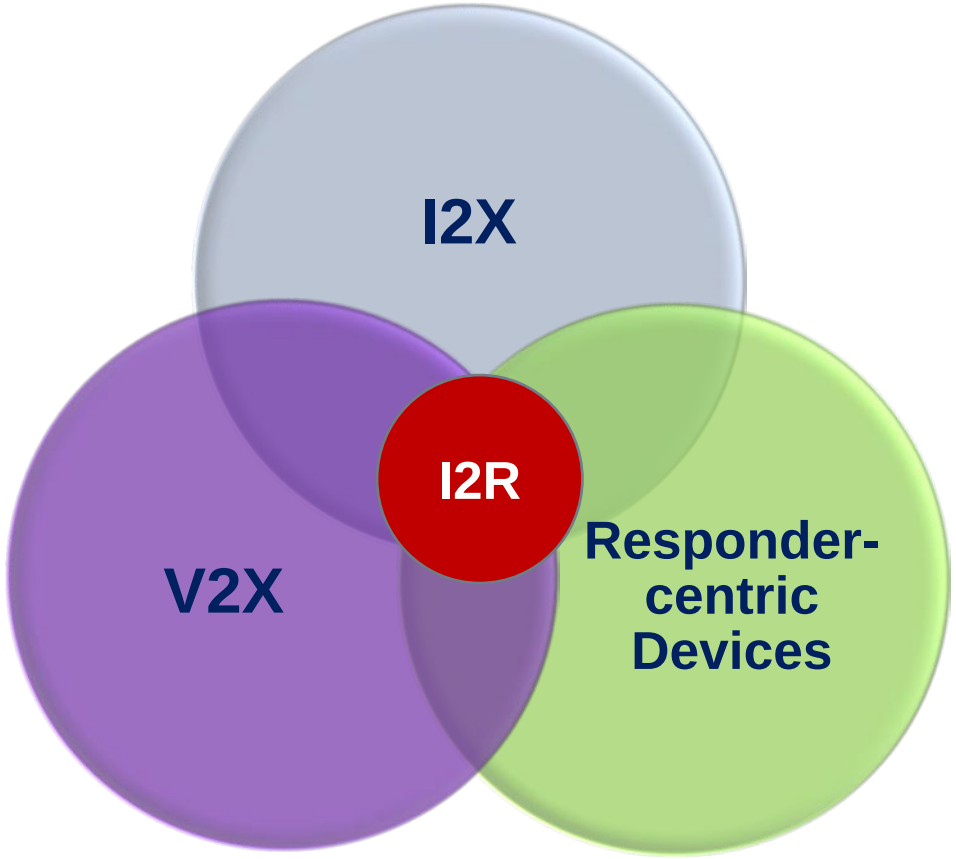
Source: USDOT

Responder-Worn Devices

- Sensors
  - Environmental
  - Medical
  - Motion
- Communication
  - Radio
  - Cell phone
  - Alarm/warning
- Interface
  - Heads-up displays
  - Hands-free

Source: DHS

Infrastructure to Responder (I2R)



What Do We Mean by Digital Infrastructure?

- Infrastructure Systems Interface
- Infrastructure Sensing
- Communications
- Data Collection and Processing
- Analytics
- Mapping
- Organizational and Community Interface

I2R and the Digital Infrastructure

- Connecting responders to information from a wide array of sources
  - Civil infrastructure
  - Vehicles
  - Sensors
  - Geospatial data bases
- I2X provides a basis for I2R
- V2X provides connectivity to response vehicles and between vehicles and responders

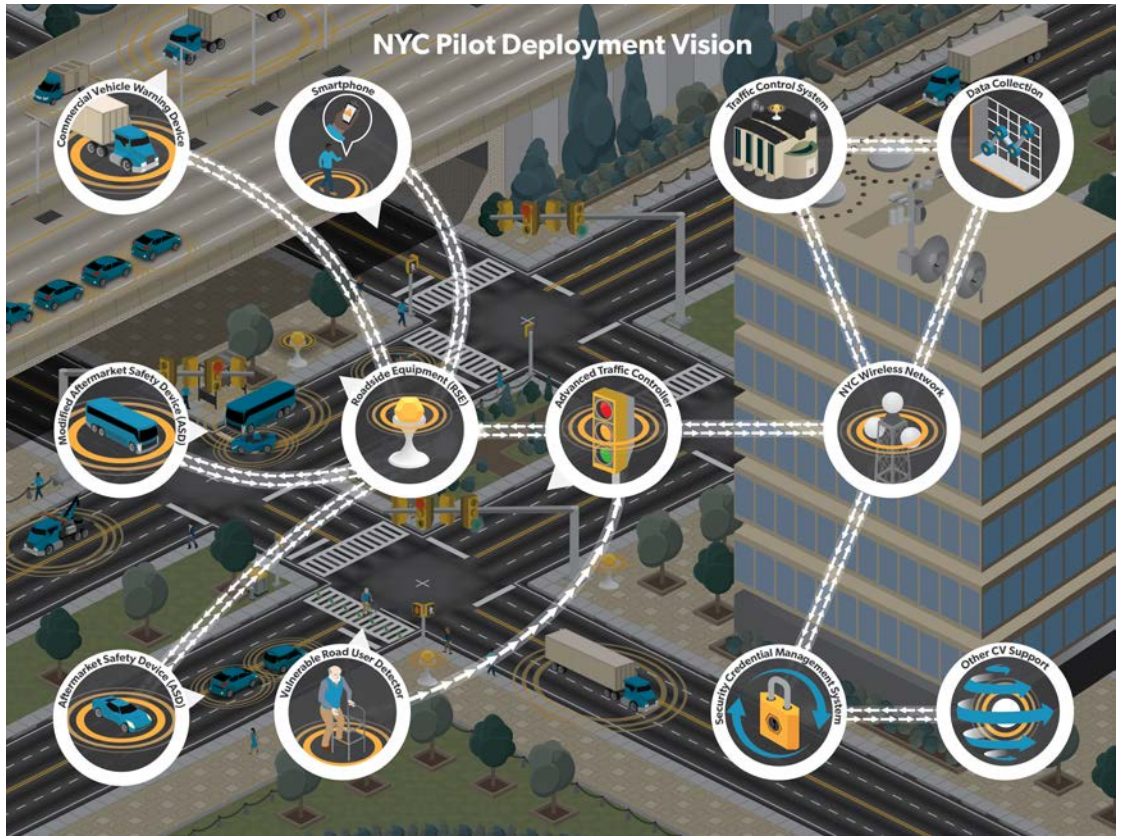
Data Sources

- 911 Centers
- Sensors
- Vehicle Data
- Infrastructure Systems
- Video Feeds
- Geospatial Data
- Cloud-based Data and Analytics

Photo Source: Mansfield Fire Dept

Research and Development Needs

- Hardware
- Data Integration
- User Needs
- User Interface



Source: USDOT

Advanced Automatic Collision Notification (AACN): Improving Patient Outcomes and Saving Lives

AACN Overview

- Sends crash data from vehicle to emergency responders
- Information may include:
  - Location of crash
  - Airbag deployment
  - Crash severity
  - Multiple impacts

Evolution of ACN/AACN

- Automatic Crash Notification (ACN)
  - Basic vehicle crash information (airbag deployment and location)
  - Calls go to call taker in telematic service provider (TSP) center
  - TSP call taker verbally notifies PSAP
- Advanced Automatic Crash Notification (AACN)
  - Includes additional information from vehicle sensors
  - Information transmitted to TSP or directly to PSAP

Benefits of AACN

- Faster and more accurate identification of crashes and crash location through GPS
- Early public safety answering point (PSAP) notification when unwitnessed and unresponsive patients
- Improved response resource allocation
- Faster field triage and injury severity prediction
- Enhanced information and predictive algorithms save lives
- Right care at right facility at right time saves lives, improves patient outcomes, and provides healthcare savings

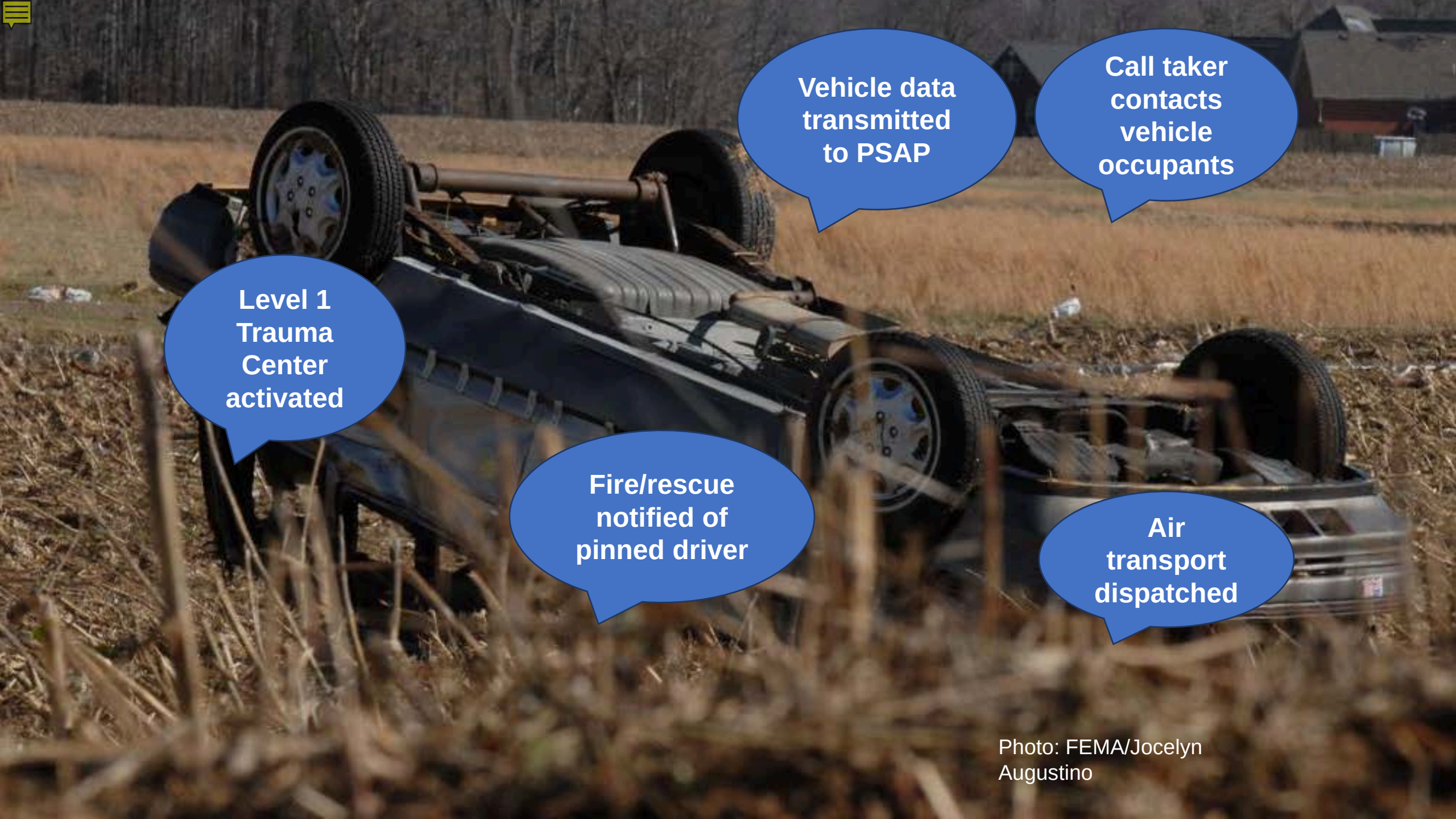


Photo: FEMA/Jocelyn Augustino

Evolution of AACN with NG 911

- NG-AACN
  - Uses NextGen 9-1-1
  - Transmits voice and data at the same time
  - Supports video from in-vehicle or responder camera
  - Allows data to be displayed to PSAP call taker
  - Call taker able to request updated vehicle data

Connected and Automated Vehicles

- AACN should be fully integrated with CAV
  - Vehicle telemetry and connectivity exist
  - Critical safety function with less reliance on driver responsibility
  - Minor cost with significant public safety benefit

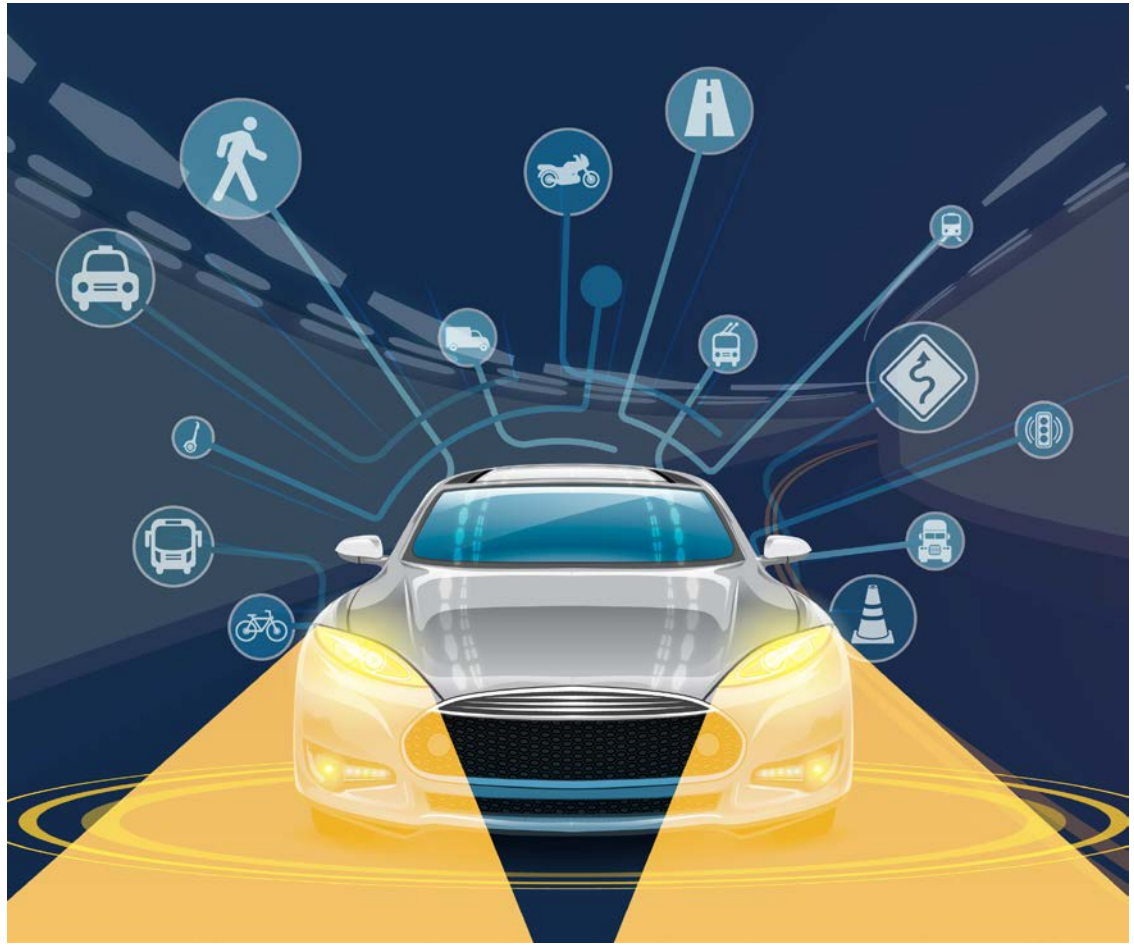


Photo: USDOT

Recommended Next Steps

- Federal investment in deployment of NG 9-1-1
- AACN included in CAV standards
- AACN in New Car Assessment Program (NCAP)
- Pilot project to test and develop AACN protocols
- Support modification of response protocols
- Advance understanding of AACN through information campaign

More on I2R and AACN

- Whitepapers and webinar recordings available on the TSAG website:

www.tsag-its.org/products