Archived Content

In an effort to keep DHS.gov current, this document has been archived and contains outdated information that may not reflect current policy or programs.

DHS Science and Technology Directorate

Automated Driver and Responder Alert System (ADRAS)

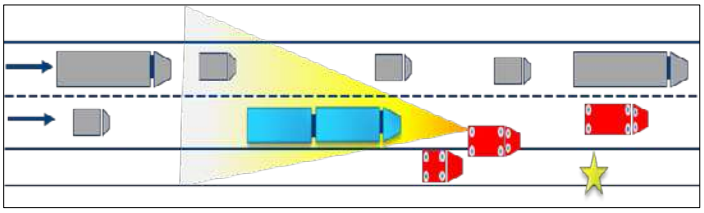
Roadways are inherently dangerous places for first responders

Every year, first responders are killed and severely injured at roadway emergencies when they are struck by vehicles that fail to slow down for or avoid the incident scene. Losses are measured in economic terms as well as the suffering of responders and grief of family members.

ADRAS project description

The U.S. Department of Homeland Security Science and Technology Directorate (S&T) is developing the Automated Driver and Responder Alert System (ADRAS), a holistic system to enhance roadway safety for emergency personnel by alerting drivers as they approach emergency scenes and giving them specific collision avoidance instructions and by proving responders warning of inbound vehicular threats with sufficient lead-time to take protective action.

The project will integrate several existing technologies into a system that can be easily deployed by a single responder at a roadway emergency. ADRAS will provide approaching drivers an early audible warning of an upcoming emergency scene, instructing them to slow down or take other actions, as appropriate, to avoid colliding with emergency personnel or apparatus. If the system detects a vehicle that fails to slow down, the audible message will become more intense and responders' safety vests will illuminate to provide them an initial visual warning of a possible threat and to make them more visible to motorists. If the vehicle continues to pose a threat, ADRAS will make the vests flash and sound a loud warning that can be heard and felt by responders.

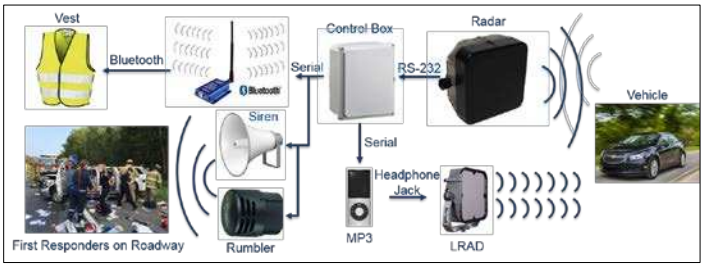


ADRAS Deployment Concept

ADRAS combines driver notification, increased responder conspicuity, and multi-modal warnings to first responders (visual, tactile, and audible) to improve the safety of first responders operating at emergency scenes on roadways.

ADRAS will save lives, prevent devastating injuries, and save money

When fully developed and deployed, ADRAS has the potential to save the lives of police officers, paramedics, firefighters, and traffic safety personnel working on roadways – ensuring that they and their families do not have to suffer unnecessary loss of life or debilitating injury. Additionally, ADRAS will reduce the costs to society – in terms of lost wages and money spent on healthcare.



ADRAS Integration and Communication Concept

Upcoming project milestones

Phase I of the ADRAS Project commenced in July 2016 and is scheduled to last 24 months. Major anticipated milestones for the project include:

- Situational testing of the ADRAS system beginning in August 2018
- Delivery of a functional ADRAS system by September 2018
- Development of a commercialization plan by October 2018

Phase II of the ADRAS Project is proposed but not presently funded. It includes using a vehicle-mounted boom to elevate ADRAS to improve the system's ability to sense and warn approaching vehicles, equipping ADRAS with a 360-degree camera dome, and enhancing overall visibility by lighting the scene with LED lights.

S&T research and development grantee

Research and development of ADRAS is being undertaken under a cooperative agreement by Applied Research Associates, a leading employee-owned science and technology firm headquartered in Albuquerque, New Mexico.