

DHS Science and Technology Directorate

Emergency Vehicle Alert for Civilians and Responders

Roadways are becoming more dangerous for first responders and the public

Every year, first responders are injured or killed in collisions with civilian vehicles or other first responders. These statistics are increasing at an alarming rate.

In today's automotive landscape, first responders are often not equipped to adequately notify the public of their presence on the road. This is due to increasingly quiet cabins and the addition of new technology in vehicles.

Lights and sirens have limits on how bright and loud they can be, which can limit how effective they are in noisy, raining, or other obscured environments.

Connecting first responders for safety

The United States Department of Homeland Security (DHS) Science and Technology Directorate (S&T) has funded a project to develop Responder to Vehicle (R2V) and Responder to Responder (R2R) Emergency Vehicle Alerts. The purpose of these alerts will be to provide a way for first responders to supplement their audio and visual emergency alerts with a digital one.

Soon, the public and first responders will be notified of approaching emergency vehicles with digital notifications through their existing in-vehicle navigation systems or a navigation application on their smart phones. This digital notification will alert drivers based on their location, direction of travel and proximity to first responders.

Emergency Vehicle Alert for Civilians and Responders project



Cellular Based, Emergency Vehicle Alert

The Emergency Vehicle Alerts will use Cellular Vehicle-to-Everything (C-V2X) protocols to connect first responders to each other and the public. C-V2X technology can alert responders and civilians at any

distance to provide a safe, proactive alert and enable drivers to have adequate time to prepare for emergency situations and avoid collisions.

This project will leverage the expertise of the First Responders Resource Group (FRRG), a collective of active and retired police, fire and energy management subject matter experts. By working with the FRRG, DHS S&T will make sure that the primary end-users of the technology will have input during its development and design.

New technology will protect our first responders and the public by preventing collisions before they happen

This project will enhance existing technology to provide improved functionality that will allow first responders to customize the alerting distance, allow for use in more vehicle and application navigation systems, integrate with existing hardware in responder vehicles, and provide public safety analytics and insight for customers.



Example of In-Vehicle alert

After these and other features are added to the existing products, this project will commercialize this technology to provide easy access across the first responder community.

Once fully deployed, this system will prevent collisions before they occur by providing clear notice to everyone on the road in a clear, safe manner.

Upcoming project milestones

- Testing new Internet of Things (IoT) devices and Microsoft Deployment Toolkit (MDT) integration
- Automotive integration
- Improved dashboard visualization and analytics tool

PERFORMERS/PARTNERS

HAAS Alert is a Chicago-based public safety startup.



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To learn more about Emergency Vehicle Alert for Civilians and Responders project contact First.Responder@hq.dhs.gov.