Wearable Technology for Connected Responders

PURPOSE

Integration of wearable technology with Connected Vehicle technology can provide additional data collection points for information exchange and provide mechanisms for communicating information to the emergency responder within the vehicle and while outside the vehicle.

BENEFIT

Wearable technology allows emergency responders to receive mission-related information while allowing the responder to work in a hands-free environment and collecting a wide variety of mission-related information, which can be transmitted in real time to other responders and command centers or be viewed forensically at a future date.

USE CASE

An emergency responder is checking on crash victims on the scene of a multi-vehicle crash with injuries, occupying two lanes of a four lane highway. The responder is carrying a land mobile radio and wearing a smart watch that broadcasts his location as he moves through the crash scene on foot. Using V2P technology the system detects that an approaching vehicle may encroach upon the crash scene with a high probability for a secondary collision.. The CV system sends an audible alert to the emergency responder via his land mobile radio system and an audible and sensory alert via his smart watch. In the event that the responder is struck despite taking evasive action, data from an accelerometer, gyroscope (determining if the responder is "down"), impact-sensing clothing, and bio/physical monitoring is gathered and transmitted to other responding personnel as they near the scene.

Peter Gene @flickr.com

CASE STUDY

While there has been no specific integration between wearable and CV technologies for emergency responders, there have been recent tests and studies of wearable technologies for the responder community. The 2015 Urban Shield exercise in Northern California, which teamed law enforcement tactical teams with firefighters and EMS, was the platform for testing a new wearable smart gateway. The gateway provided capability for real-time video streaming and personal health diagnostics.

Intel: The Wearable Smart Gateway*: Revolutionary Wearable Tech for First Responders (January 2016)

FOR MORE INFORMATION

Transportation Safety Advancement Group (TSAG): www.tsag-its.org; Intelligent Transportation Systems Joint Program Office: www.its.dot.gov; ITS America: itsamerica.org

Players: All Responders and Public

Priority: Medium to High

Integration: Wearable technologies within the Emergency Responder domain can be integrated with Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) to provide additional information to responders, including critical alerts and warnings, and to provide awareness of responder health and status to other responders and command centers.

Public Safety Wearable Technology in Use Today

Land mobile radios
Cell phones
Smart phones
Pagers (Fire and EMS community)
Smart watches
Body-worn cameras
Personal GPS devices
Officer/firefighter in distress

Public Safety Wearable Technologies for Use in Future

Bio/physical status monitoring clothing and devices

Impact-detection clothing

Accelerometers and gyroscopes

Smart glasses

Wearable sensors (environmental, gunshot detection, etc.)

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