

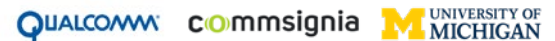
Welcome to 5GAA's Live Showcases of C-V2X Technology, 5GAA is thrilled to introduce you to a live experience at the forefront of vehicle connectivity.

Get ready to experience first-hand ongoing advancements in automotive technology that combine safety, efficiency, and innovation. Our demonstrations are curated to present ready-to-deploy applications that rely on seamless communications, service interoperability for real-time safety enhancements and driving assistance.

Our showcases will take you through real-life scenarios both on-track and on open roads highlighting the capabilities of Cellular Vehicle-to-Everything (C-V2X) direct communications and mobile network communications. From real-time collision warnings to lane merge notifications, curve speed alerts on open roads and Vulnerable Road User protection in urban environment replicas, these demonstrations underscore our commitment to making our roads safer and our journeys more secure.

Join us on this ride to experience the benefits of connected vehicles and see the potential to reduce road fatalities and create a smoother, safer driving experience for all.

Day One Safety Benefits of C-V2X Direct



In this immersive experience, you'll observe the advantages of vehicle connectivity firsthand.

Our vehicle, equipped with an onboard unit (OBU), will demonstrate several safety benefits of C-V2X (Cellular Vehicle-to-Everything) direct communication from day one leveraging Roadside Units (RSUs).

As the vehicle navigates the road, the driver will receive various warning messages, including:

- > Real-time alerts for forward collision and electronic emergency brake lights.
- > Notifications to merge lanes when approaching a construction work zone.
- > Curve speed warnings in open-road environments.

Our technology is primarily focused on critical safety scenarios to reduce road fatalities. It serves as a testament to the possibility of achieving a smooth and secure driving experience for all road users.



Interoperability of VRU protection services via Network Connection

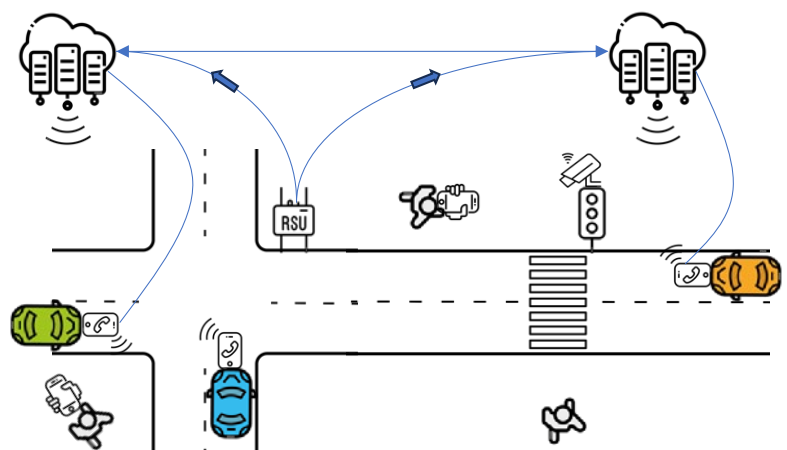


In recent years, members of the 5GAA have collaborated to research, examine, and test potential solutions aimed at improving the safety of Vulnerable Road Users (VRUs).

Our collective efforts will demonstrate the compatibility of various VRU protection services through a live showcase.

During this demonstration, participants will have the opportunity to receive safety messages, such as alerts, which are transmitted to vehicles in advance to alert drivers about the presence of pedestrians nearby. These alerts are delivered efficiently via mobile network communication with minimal latency, thanks to innovative technologies like Multi-access Edge Computing (MEC).

Furthermore, through a "digital twin" with advanced software modeling, participants can witness firsthand how network planning and performance can be estimated. Various network Key Performance Indicators (KPIs) will be closely monitored to ensure optimal performance for VRU safety applications.



Authentication as a Service (AaaS) - static showcase



At the core of Verizon and LG's presentation lies AaaS, a dynamic platform built on industry standards. This platform plays a crucial role in managing the security lifecycle of V2X (Vehicle-to-Everything) communication by offering:

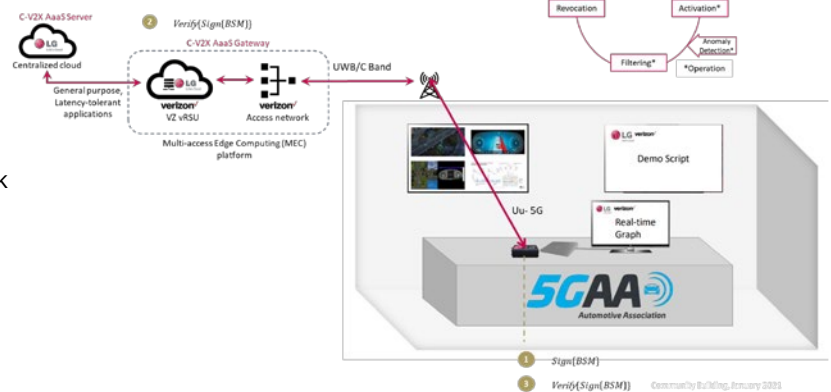
- > Provisioning of new services and information.
- > Operational functions, including activation, detection of misbehavior, safety-enhancement systems, and intelligent filtering.
- > The capability to revoke access in the event of network security threats.

The presentation showcases a V2N2V (Vehicle-to-Network-to-Vehicle) scenario, where Basic Safety Messages are transmitted via the Verizon 5G network from the vehicle to the vRSU (Virtual Roadside Unit), integrated within Verizon's Multi-Access Edge Computing (MEC) infrastructure. These messages are then routed back to the vehicle.

This system protects the confidentiality of your data meeting the end-to-end latency requirements.

LG AaaS (Authentication-as-a-Service)

⇒ Ensuring secure, privacy-preserving V2X communication with MEC



Smart City and Connected Infrastructure using Uu-based Solution



Verizon and HAAS Alert are showcasing a display of "connected safety" digital alerting examples

While the network-connected demonstration vehicle navigates the track, it receives messages from the cloud, which are shown on the infotainment screen well in advance. This gives the driver a foresight window of 15-20 seconds before encountering any possible hazards. Passengers will encounter the following scenarios:

- > An approaching emergency vehicle
- > An upcoming active School Zone
- > An alert for a pedestrian crossing

Smart City Uu-Based Digital Alerting Demo

