5GAA TECH DEMOS: BROCHURE

Sacramento, 5th February 2026

CONTACT

Victoria Bech,
Senior Communications Coordinator

marcom@5gaa.org

TABLE OF CONTENTS

DRIVING THE FUTURE OF AUTOMOTIVE CONNECTIVITY

Welcome to the 5GAA Live Technologies Demonstrations in Sacramento!

5GAA is bringing together top global players — from automakers to telecom giants — for groundbreaking demonstrations of connected vehicle technology, including an exclusive showcase of:

- Live demonstrations of bidirectional voice over NB-IoT and satellite-enabled communications, demonstrating critical and emergency communications for vehicles and IoT devices in remote and challenging environments.
- Real-world demonstrations of connected vehicle safety applications using V2N and SmartRSU edge devices, providing live traffic and hazard alerts.
- Live tolling demonstrations showing secure vehicle-to-roadside communications and automated toll transactions.

WHO MADE IT HAPPEN - 5GAA MEMBERS

Special recognition to our partners:

PROGRAM

There will be 8 demonstrations (indoors and outdoors), and this section provides an overview of what will take place on February 5th in Sacramento.

NON-TERRESTRIAL NETWORK (NTN) DEMONSTRATIONS

Viasat Bi-Directional Voice NTN Demo

This demonstration presents an end-to-end technical architecture enabling Voice over NTN Narrowband IoT (NB-IoT). The demo showcases a live, bidirectional voice call conducted over the air using an NTN NB-IoT network. Attendees will observe real world voice communication performance on NTN NB-IoT. This live call illustrates the feasibility of voice services for use cases such as critical communications, remote operations, and connected devices in challenging coverage environments.

Ready Connect TCU - SatCom capabilities

This demonstration showcases satellite communication (SatCom) capabilities enabled in HARMAN Ready Connect, HARMAN's TCU product suite, leveraging its upgradability. The demo includes emergency communications using the Narrowband Non-Terrestrial Network (NB-NTN) standard to enable critical services ubiquitously, keeping vehicles and people connected even in remote locations.

SAFETY & AWARENESS DEMONSTRATIONS

Ready Aware V2N SaaS system

This demonstration presents a Vehicle-to-Network (V2N) situational awareness software application delivered via the HARMAN Ready Aware SaaS platform. The live demo includes actual traffic signal information and related use cases such as Time-to-Green (TTG), Red Light Assist, and Green Light Optimal Speed Advisory (GLOSA), subject to demo route and timing conditions.

In addition, several road hazard use cases will be simulated (in the absence of actual hazards) along the route, including Work Zone Warning, Weather Alerts, and End of Queue notifications.

To complement the live demonstration, the HARMAN Ready Aware virtual Roadside Unit (vRSU) simulator will be shown, illustrating system capabilities and operational scenarios in a simulated environment.

HARMAN A SAMSUNG COMPANY

MIOVISION

SmartRSU: Integrating camera, AI and V2X to address the essential safety mission

This demonstration showcases a SmartRSU edge device interacting with aftermarket in-vehicle devices to enable collective perception. Using Sensor Data Sharing Messages (SDSM) and the profile defined by 5GAA and under development within SAE standards, the demo illustrates how standardized collective perception can be implemented in real deployments. The SmartRSU integrates camera sensing, AI-based processing, and local message generation within the roadside edge device.

Qualcomm

TOLLING DEMONSTRATIONS

Tolling with Direct C-V2X along with work zone alerts

This demonstration showcases how connected vehicle technology can transform toll collection and roadway safety by enabling real-time communication between infrastructure and vehicles. The demo integrates C-V2X PC5 communications, SAE J3217-compliant tolling messages (TAM, TUM, TUM-ACK), and J2735 safety messages (TIM) to deliver both seamless toll transactions and immediate safety alerts, such as a "Road Works Ahead" notification.

The demonstration scenario begins as a vehicle equipped with a C-V2X On-Board Unit approaches a toll area equipped with a Roadside Unit (RSU). The RSU broadcasts standardized tolling messages that notify the driver of the upcoming toll area, applicable fee, and other relevant tolling information.

As the vehicle passes through, a V2X message containing vehicle ID, timestamp, and transaction data is sent back to the infrastructure, allowing automatic, secure toll processing without relying on transponders, mobile apps, or license-plate systems, significantly improving accuracy and reducing operational costs.

Simultaneously, a Safety Message (TIM) is triggered and an alert sent instantly to approaching vehicles' in vehicle interfaces.This demo builds on the work performed by the Audi-Indra-Qualcomm in collaboration with Florida's Turnpike Enterprise (FTE) in Suntrax (Florida) as well as the first U.S. operational deployment with North Carolina Turnpike Authority (NCTA), where Indra delivered the first operational V2X Toll + Safety system on a U.S. highway with the collaboration of Cohda Wireless, deploying V2X Toll + Safety technology in two toll zones of the I-485 Express Lanes (with plans to extend coverage through the entire corridor).

Tolling with Network V2X along with work zone alerts

This demonstration showcases Network V2X tolling, along a simulated toll road, with transactions delivered for back-office processing.

Direct C-V2X based tolling demo

This demonstration showcases secure, direct C-V2X tolling using a Valeo L4 Drive4U-equipped vehicle, orchestrated by the Kapsch Connected Tolling platform and secured by Microsec's SCMS service. Upon approaching a toll zone, the vehicle initiates a secure transaction through a PC5-based SAE J3217 exchange with the Kapsch roadside unit, enabling legal, autonomous passage.

IEEE 1609.2.1-protected messages flow between the vehicle and tolling platform, where they are compiled into a complete toll transaction record for commercial processing.

Additionally, the demonstration includes C-V2X based vulnerable road user (VRU) awareness and detection, using Verizon's Hyper Precision Location service (RTK) and the Edge Transportation Exchange (ETX) platform for Ultra low latency SAE J2735 messages. This improves the user experience by anticipating VRU events with smooth braking and acceleration of the L4 vehicle prior to triggering onboard active safety systems, such as automatic emergency braking (AEB).

J3217-based V2X Tolling Demo

This demonstration implements the SAE J3217 V2X tolling message set and associated security mechanisms, delivered as a V2X service. It focuses on standards-based message exchange and secure transaction handling, excluding settlement and back-office operations.

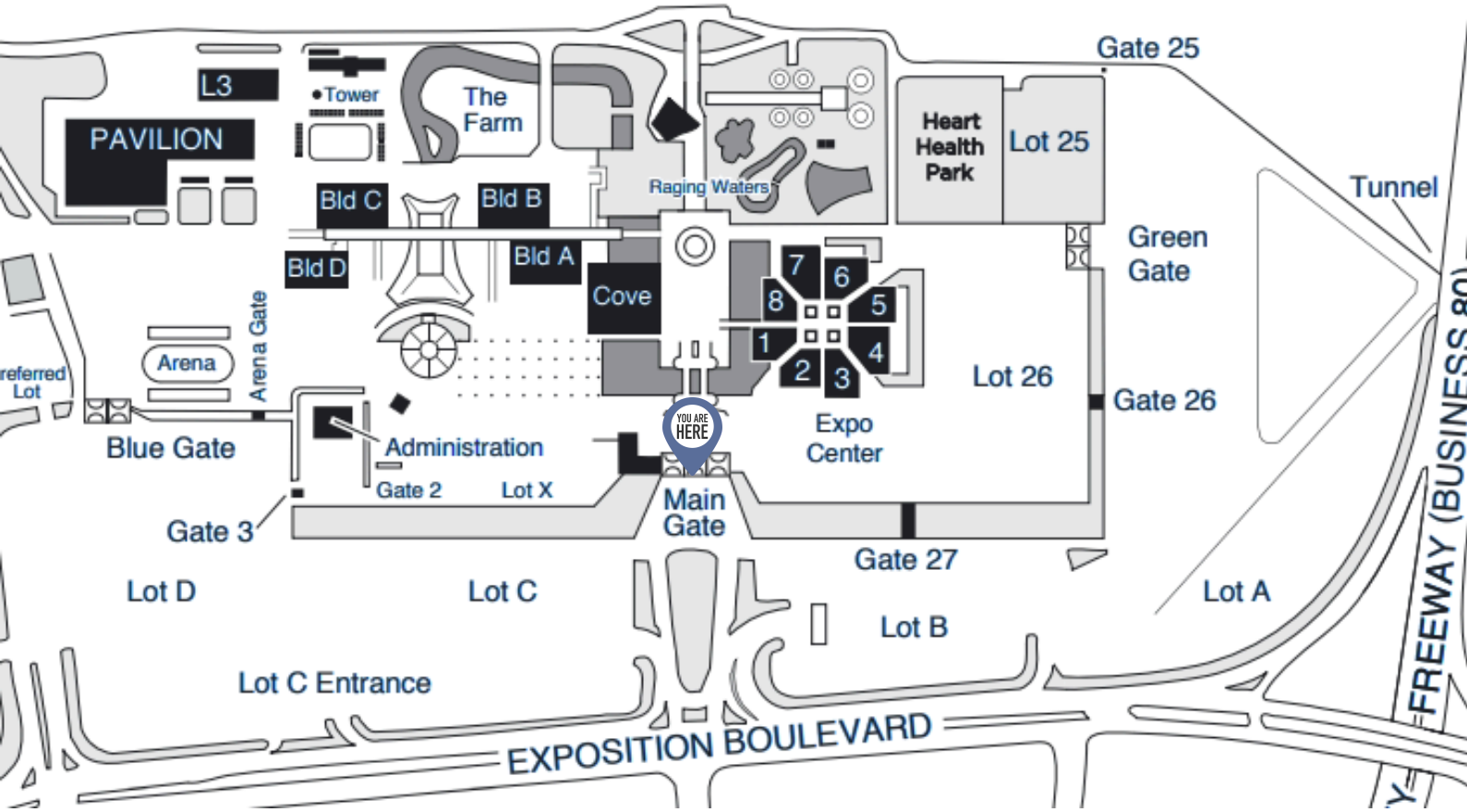
The demo illustrates the end-to-end tolling interaction flow, including Tolling Area Message (TAM) broadcast from the roadside unit (RSU), TAM processing and generation within the on-board unit (OBU), and transmission of the Toll Usage Message acknowledgement (TUM Ack) back to the RSU, demonstrating interoperable and secure V2X tolling operations.

In addition to showing J3217-based messaging and security operations, the demo will feature a smartphone-based tolling application for users and a backend system for tolling operators. The application serves as a catalyst, enabling operators to seamlessly adopt and utilize V2X tolling systems.

CONTACTS

5GAA	**Victoria Bech,** Senior Communications Coordinator Email: marcom@5gaa.org
Audi AG	**Brad Stertz**, Director, External Affairs Email: brad.stertz@audi.com
Autocrypt	**Esther Jeohn**, Marketing Director Email: esther@autocrypt.io
BMW Group	**Olaf Eckart**, Senior Expert Cooperations R&D, Industry Customers Email: olaf.eckart@bmw.de
Ettifos	**Jane Lee,** Global Business Development Manager Email: jane.lee@ettifos.com
HARMAN	**Jessica Sader**, Communications Manager Email: jessica.Sader@harman.com
Microsec	**Peter Lorinczy**, Technical Solutions Lead Email: info@v2x-pki.com
Qualcomm	**Sunni Tweet**, Staff Manager, Marketing Email: stweet@qti.qualcomm.com
Valeo	Contact information under demand
Verizon	**Matthew Conte**, Corporate Communications Email: matthew.conte@verizon.com
Viasat	**Richard Jones,** Communications Manager Email: richard.jones@viasat.com

CAL EXPO: MAP & DIRECTIONS



YOU ARE HERE Main Gate, 1600 Exposition Blvd, Sacramento, CA 95815

Directions

CONNECTED MOBILITY FOR PEOPLE, VEHICLES, AND TRANSPORT INFRASTRUCTURE

The 5G Automotive Association (5GAA) is a global coalition of automotive, technology and telecommunications companies driving the deployment of smarter, safer, and more sustainable mobility and transportation services.

5GAA actively promotes the adoption of C-V2X (or cellular vehicle-to-everything) as the critical technology to deliver full connectivity and be a disruptive force in the automotive market.

Quickly evolving in Europe, the US, China and Japan, C-V2X is already revolutionising the mobility ecosystem and how drivers interact with the world.

It provides real-time, highly reliable, and actionable information flows to improve the overall transport experience for vehicles, road users, and the surrounding infrastructure.

110+
Members in 2025

10
of the top 15 automakers

8
of the top 10 mobile operators

2
2 top smartphone vendors

CONTACT

marcom@5gaa.org

WEBSITE

www.5gaa.org

ADDRESS

Neumarkter Str. 21
81673, Munich, Germany