



# 5GAA TECH DEMOS: BROCHURE

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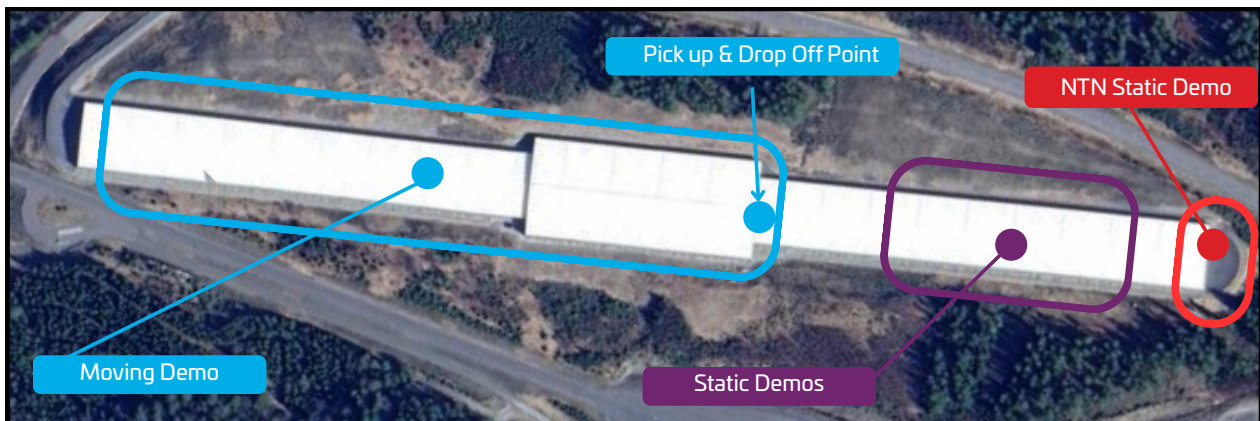
# DRIVING THE FUTURE OF AUTOMOTIVE CONNECTIVITY

## Welcome to the 5GAA Live Technologies Demonstrations at RISE proving ground AstaZero outside Gothenburg!

Welcome to the 5GAA Live Technological Demonstrations in Sweden!

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

- **Satellite Connectivity:** These demos show vehicles staying connected through non-terrestrial networks. From satellite-enabled commercial fleet management to 3GPP-compliant satellite-supported emergency voice calls.
- **Safe & Smart Roads:** These demos highlight real-time safety intelligence, cross-border data exchange, and cloud-enhanced vehicle services.
- **Cooperative Perception:** This demo showcases how cooperative radar significantly enhances situational awareness by merging sensor data from multiple sources.



Demo Location:  
AstaZero Proving Ground  
Göksholmen 1, 504 91 Sandhult,  
Sweden



### Live Tech Demos

Static Demos

NTN Static Demo

Moving Demo

# WHO MADE IT HAPPEN - 5GAA MEMBERS



# PROGRAMME

There will be 13 demonstrations (indoors and outdoors), and this section provides an overview of what will take place on April 23 at RISE proving ground AstaZero outside Gothenburg.



## NON-TERRESTRIAL NETWORK (NTN) DEMONSTRATIONS

### Commercial Fleet Management and Logistics Enabled by Satellite Technology

This demonstration illustrates the backend of an advanced fleet management service for on- and off-road commercial vehicles. It features end-to-end communication via an NB-NTN-enabled Connectivity Control Unit, supported by a single automotive-grade eSIM with both TN and NB-NTN capability, delivering ubiquitous connectivity across terrestrial and satellite networks. This demo highlights how this integrated approach can unlock new services for the growing commercial vehicle ecosystem.



### Emergency Services with Voice over NB-NTN

This demonstration showcases how emergency assistance can be maintained when a vehicle is beyond terrestrial network coverage. In this scenario, a driver experiencing an emergency situation initiates an emergency voice call that is seamlessly handled over a 3GPP-compliant NB-NTN satellite network through an automotive-grade TCU and RF subsystem. The solution enables bi-directional voice with short messaging communication between the driver and the public safety answering point (PSAP) via satellite.

A separate laboratory-based voice and speech quality testing demonstration complements the NB-NTN field demo. The advanced radio communication tester and GNSS simulator emulate the satellite access network and compute the Mean Opinion Score (MOS) of the transmitted voice data using the standard Perceptual Objective Listening Quality Assessment (POLQA). This metric provides a quantifiable and reproducible evaluation of voice quality and the performance of the end-to-end system in the lab.





## SOCIETAL SERVICES DEMONSTRATIONS

### Information Sharing Network utilising Federated Interchange Nodes

This demonstration showcases a federated information-sharing network that enables road authorities and service providers to exchange traffic safety information across national systems. During the bus ride from Gothenburg to the AstaZero proving ground along the RV40 corridor, participants will observe how real-time roadwork data is distributed through Interchange nodes.

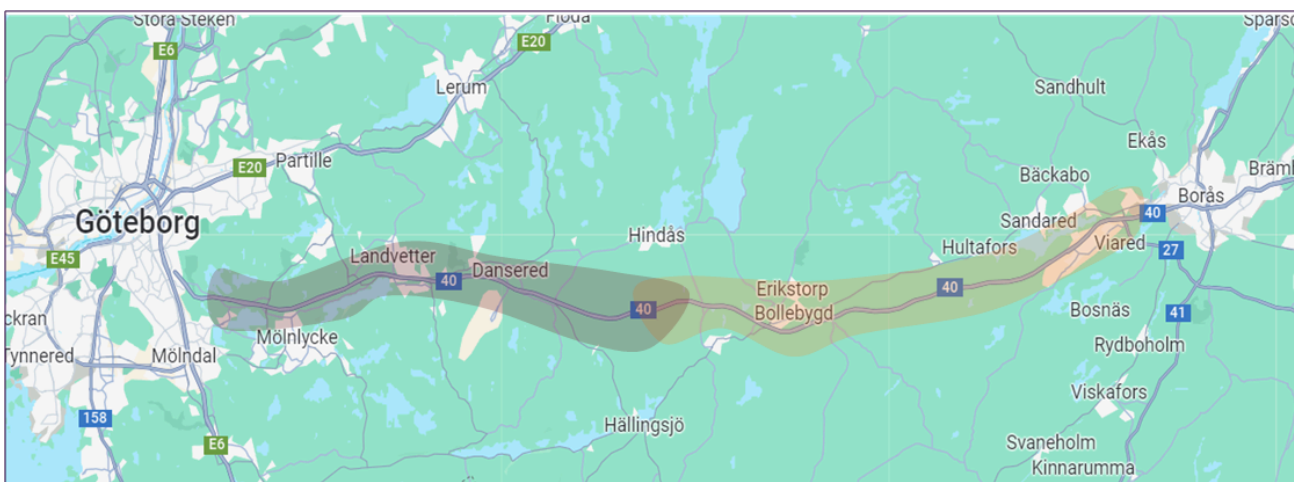
A real roadwork scenario involving a TMA vehicle is used to generate Road Works Warning messages. These messages are transmitted through operational back-end systems used by infrastructure operators and are distributed via the Interchange architecture. The setup demonstrates how information originating from Swedish infrastructure can be shared with connected systems in Norway and Belgium through a federated network of Interchange nodes.

Participants will be able to follow the live data flow through visualisations accessible on screens in the bus or via a web interface on their own devices. The demonstration illustrates how trusted infrastructure data can be exchanged across organisational and national boundaries while maintaining governance, data quality, and interoperability.

This concept enables the scalable deployment of cooperative intelligent transport services by allowing multiple infrastructure operators and service providers to connect to a common information-sharing ecosystem

**RI  
SE**

*Bus ride from Gothenburg to AstaZero proving ground during which the demonstration will take place*



## Real-Time Analysis of Traffic Safety Around Road Work

This demonstration features a TMA truck positioned on the highway and equipped with a radar and camera sensor to monitor the surrounding traffic. The collected data is transmitted to a server and visualised on a dedicated dashboard, where traffic safety indicators are automatically calculated. A live camera feed is also streamed to the dashboard. By combining real-time sensor data with visual feed, operators gain a clear view of on-site conditions and can make informed decisions, such as adjusting the roadwork layout or stopping the operation if safety is compromised.

# RI. SE

## Multi-Jurisdictional Data Federation

Building on the traffic-safety analysis conducted in the previous demos, this demonstration illustrates how these insights can scale across countries through a federated interchange architecture. Monotch demonstrates how Road Works Warning (RWW) data from Norway, Sweden, and Belgium can be shared, validated, and governed across national systems.

During the demonstration, Monotch will address key scaling challenges by showcasing TLEX. It will highlight seamless exchange across multiple jurisdictions, while maintaining data quality in large-scale deployments and cross-border environments. It shows how effective governance of data exchange and responsibilities across a multi-jurisdiction ecosystem works, and how a service provider or OEM can connect to the federated interchange network.



## DFRS @ BMW & Bosch

This demonstration features a TMA truck equipped with advanced sensors that continuously monitor surrounding traffic conditions. The collected data is transmitted in real time to a central backend and the Bosch system, enabling timely in-vehicle warnings for the driver.

Beyond a demonstration setup involving a BMW iX3 "Neue Klasse", this showcase reflects a mature, operational service: Bosch's Safety-Relevant Traffic Information (SRTI). As part of its Road Hazard Services, Bosch already delivers real-time alerts on accidents, stopped vehicles, and road and weather conditions to multiple automotive manufacturers—illustrating how connected safety services are deployable today.



## 5G Connectivity Testing of Vehicles

This demonstration shows how to perform testing, validation and certification of equipment for connectivity as well as end-to-end use cases involving cellular communication using a real cellular network in a portable box. In this demonstration, Ericsson will focus on showing how to set up, execute and automate test cases that require changes of network parameters and behaviour and how to measure the performance of the connected device/vehicle under various network conditions in real time.



## Realtime Cloud-enhanced ADAS: Connected Road-Sign Understanding

This demonstration shows how a standard smart camera, enhanced with cloud-based generative AI, enables advanced road-sign recognition. The system can read complex text features, including optical character recognition of complex text signs and real-time translation of signs in any language.

This connected road-sign understanding demonstrates cloud-enhanced ADAS performance that goes beyond what onboard processing alone can deliver. It also offers flexibility and scalability, allowing continuous feature expansion throughout the product's lifetime.



## Concurrent Multi-Technology V2X operation

The demonstration showcases the expected evolution of V2X in the EU, featuring current reception of 5G-V2X and ITS-G5 messages on a single chipset, enabling seamless and efficient support of ITS services across both channels. An On-Board-Unit (OBU) is connected to simultaneously receive messages from both technologies, as generated by two other OBUs. In parallel, a spectrum analyzer visualizes the RF signals of each technology, while the OBU screen presents detailed real-time message reception statistics.



## Hybrid emergency call device verification

This demonstration highlights how the In-Vehicle System (IVS) triggers an emergency call (eCall) after an accident. The IVS attempts to establish the eCall using 4G/5G technologies, in line with the EU Next Generation eCall (NG eCall) mandate. If NG eCall coverage is unavailable, the system automatically switches to legacy eCall over 2G/3G networks, ensuring service continuity. The demo also verifies correct operation from the physical RF layer through the protocol and end-to-end application layers.



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## Scalable and Harmonized Cloud Based ITS Solution for Cross-OEM V2X Safety Messages

This demonstration features a JOYNEXT vehicle equipped with a 5G Onboard unit and connected to the Vodafone backend. The Onboard Unit receives relevant Vehicle-to-Infrastructure (V2I) events via the Vodafone backend in ITS-message format and exchanges Vehicle-to-Vehicle (V2V) events with units on-site, providing a visual presentation of all interactions and real-time monitoring.



## Seamless Safety: Hybrid eCall Across 2G-4G

This demonstration presents Anritsu's Hybrid eCall test solution integrated with an LG In-Vehicle System (IVS), enabling comprehensive end-to-end validation of Hybrid eCall functionality in accordance with current regulatory and 3GPP specifications. The solution incorporates the industry's first PSAP simulator with full Hybrid eCall protocol support, allowing realistic emulation of emergency call routing, signalling, and data transmission between the vehicle and emergency response infrastructure.

The demonstration will support eCall communication over LTE (4G), UMTS (3G), and GSM (2G), validating circuit-switched and packet-switched call flows, Minimum Set of Data (MSD) transfer, IMS-based messaging, and fallback procedures within a single, unified architecture.

By combining LG's production-grade IVS implementation with Anritsu's PSAP simulation and cellular test capabilities, the demonstration enables verification of interoperability, network transition behaviour, and standards compliance for next-generation automotive emergency call systems





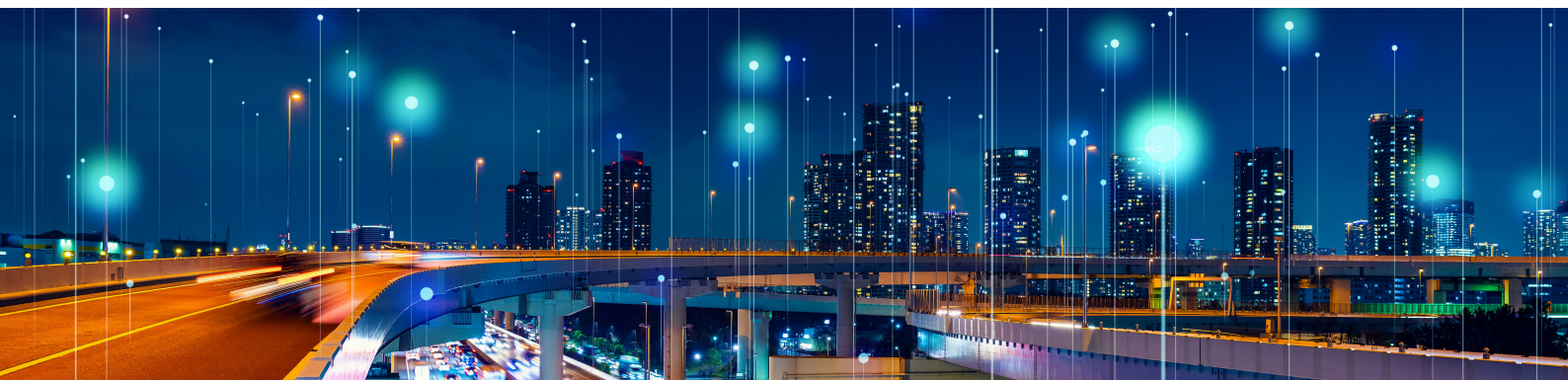
## SENSING & POSITIONING DEMONSTRATIONS

### Cooperative radar networks with out-of-band ICAS

This demonstration demonstrates how radar data streamed over the Vehicle-to-Everything (V2X) side link from different positions can significantly enhance perception. It showcases real-time fusion of stored data, with an interactive visualisation that allows users to select different cooperating radars and immediately see the perception gains.



**BOSCH**



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## **Vodafone**

**Contact information under demand**

# 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.

100+

Members in 2025

10

of the top 15 automakers

8

of the top 10 mobile operators

2

2 top smartphone vendors





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