5GAA Automotive Association

5GAA Progress Update

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5G Automotive Association, **pioneering digital transformation** in the **automotive industry**

Learn more at WWW.5GAA.ORG

Driving Connected Mobility Forward

5GAA bridges the automotive and telecommunication industries in order to address society's connected mobility and road safety needs with applications such as automated driving, ubiquitous access to services, integration into intelligent transportation and traffic management

AUTOMOTIVE INDUSTRY

Vehicle Platform, Hardware and Software Solutions

TELECOMMUNICATIONS

Connectivity and Networking Systems, Devices and Technologies

5GAA unites today 134 members from around the world working together on all aspects of C-V2X including technology, standards, spectrum, policy, regulations, testing, security, business models and go-to-market

5GAA Members: 134

5GAA Organisational Structure

AT&T, Audi, BMW, 中国移动 China Mobile, DAIMLER, DENSO, ERICSSON, Ford, GEELY, HUAWEI, intel, JAGUAR, LAND ROVER, NOKIA, docomo, QUALCOMM, SAIC 上汽集团 SAIC MOTOR, SAMSUNG, vodafone

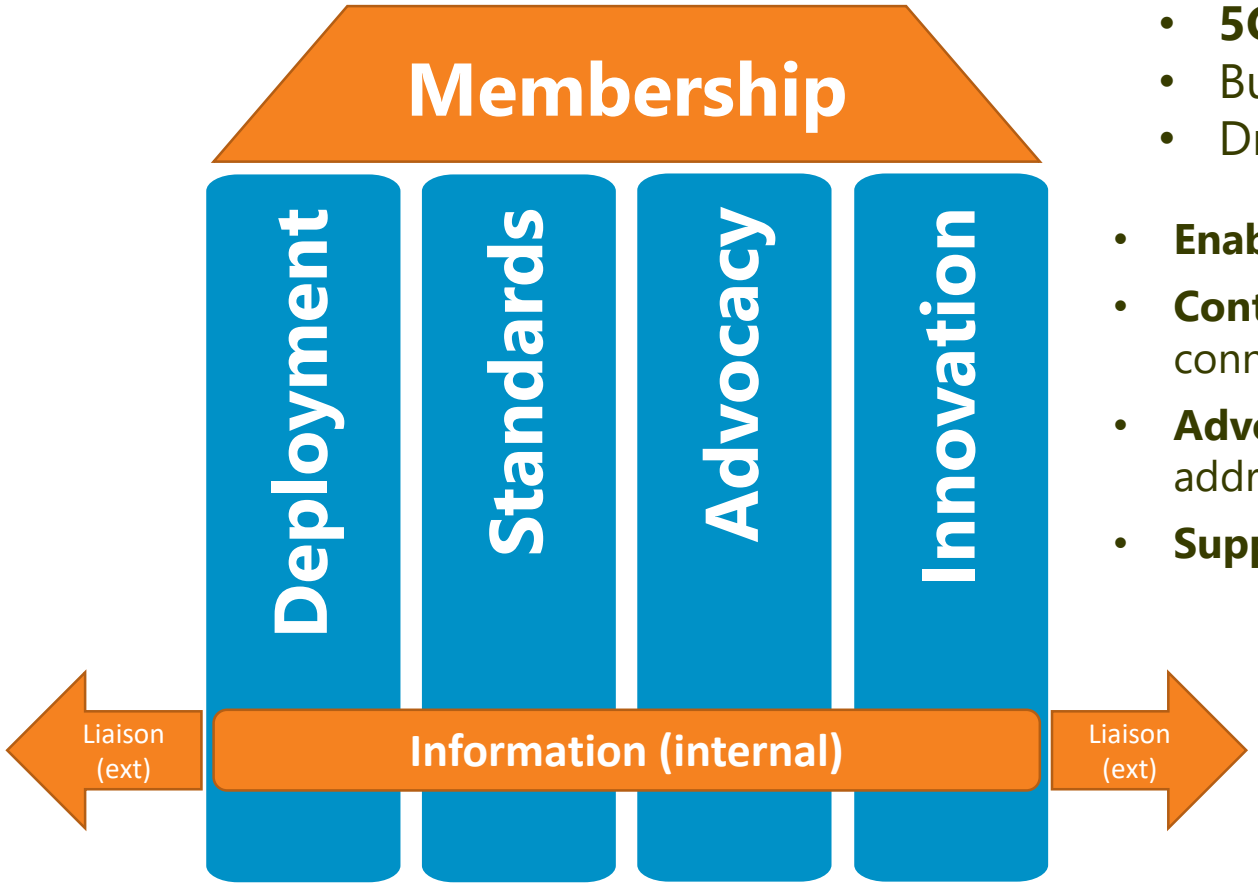
BOARD

EXECUTIVE COMMITTEE

GENERAL ASSEMBLY

WG1	WG2	WG3	WG4	WG5	WG6	WG7
Use Cases and Technical Requirements	System Architecture and Solution Development	Evaluation, Testbeds and Pilots	Standards and Spectrum	Business Models and Go-To-Market Strategies	Regulatory and Public Affairs	Security and Privacy

5GAA Strategic Pillars



Overarching principle: Membership Value

- **5GAA brings value and opportunities to 5GAA members**
- Build a representative membership & impactful partnerships
- Drive active and enriching member engagement

- **Enabling Deployment:** lift barriers and accelerate time-to-market
- **Contributing to Standards:** plan pre-standardization of automotive connectivity with a multi-release perspective
- **Advocating to policy makers and thought leaders:** pro-actively addresses threats and opportunities in line with priorities and positions.
- **Supporting innovation:** leverage innovative solutions together.

- **Information (internal):** regularly inform members about 5GAA activities around the association pillars
- **Liaison (external):** position 5GAA around strategic ecosystem of external organizations contributing to the 5 pillars.

5GAA Vision

“Connected mobility for people, vehicles and transport infrastructure”

5GAA Priority Areas

Digital Roads

Engage with road operators to **fully integrate the road infrastructure**

Trust

Implement state-of-the-art **security and privacy** by design in the V2X ecosystem

Vulnerable Road Users

Enable **smart devices** to deliver services protecting pedestrians, cyclists, …

Interoperable, deployable & secure

5GAA Automotive Association

Connected mobility for people, vehicles and transport infrastructure

end-to-end connectivity solutions

Mobile Networks

Build upon **cellular network deployments** to fast track new mobility services

Precise Positioning

Foster advanced **positioning solutions** for all road users

Flexible Service Architectures

Leverage **distributed cloud and edge computing** capabilities

Interoperable Ecosystem

Satisfy **business needs** for interoperation between devices and services across ecosystem partners

Sustained Technology Evolution

Accelerate evolution of cellular technologies towards **5G V2X**

5GAA is a contribution driven association

Current Work Items per Working Group

WG1 Use Cases and Technical Requirements

- Use Cases Maintenance and x-WI Convergence

WG2 System Architecture and Solution Development

- **[Completed]** Enhanced E2E Network Slicing and Predictive QoS (eNESQO)
- V2X System Application Layer Reference Architecture (V2XSRA)
- High accuracy positioning for C-V2X (V2XHAP)
- Distributed Antenna Systems (DAS)

WG3 Evaluation, Testbeds and Pilots

- Implementation of interoperability tests for C-V2X Plugfests
- Identification of Amendments to ETSI Test Specifications for use of LTE-V2X as the Access Layer Technology
- WID Vehicular Antenna Test Methodology

WG4 Standards and Spectrum

- Spectrum needs study for basic safety (v1) and for eV2X (v2)
  - Safety Use Cases (LTE-V2X)
  - Advanced Use Cases (NR V2X)
- Deployment Profile for C-ITS Services Using Cellular Infrastructure
- CEPT TF: RSCOM 5.9 GHz mandate to CEPT/ETSI

WG5 Business Models and Go-To-Market Strategies

- Pre-Study on Tolling Application with C-V2X (PC5)
- Identification of Mechanisms to Expedite MNO Networks Expansion and Fulfil Automotive Requirements (NetExp)
- Analysis of V2X deployment cost of 11p RSU vs C-V2X (Uu/PC5)

WG7 Security and Privacy

- **[Completed]** Efficient Security Provisioning System White Paper
- Impact of Privacy regulations on C-V2X
- V2V Root Management in China
- EU Regional V2X regulation alignment with ESPS

Current Cross - Working Group Work Items (xWIs)

- XWI 1 Accelerate definition of C-V2X based on 5G New Radio or future LTE enhancements (Rel16 NR-V2X) (phase2)
- XWI 2 MEC technology to support automotive services (MEC4AUTO)
- XWI 3 Vulnerable Road Users protection using cellular communications (VRU)
- XWI 4 Safety Treatment in Connected Automated Driving Functions (STiCAD)
- XWI 5 Requirements and architecture for Tele-Operated Driving (ToD)
- XWI 6 C-V2X Roadmap : Use Cases and Spectrum
- XWI 7 V2X Network Reselection Improvements (NRI)
- XWI 8 Global C-V2X NCAP Exploration and Coordination

5GAA Working Groups publications

Title	Publication
White Paper on C-V2X Use Cases: Methodology, Examples and Service Level Requirements	July 2019
5GAA comments for ETC national standard in China	September 2019
5GAA reply to BEREC public consultation – Impact of 5G on Regulation	October 2019
Position paper 5GAA environmental benefits of CCAM	November 2019
White Paper on Making 5G Proactive and Predictive for the Automotive Industry	November 2019
5GAA- ETSI first C-V2X Plugtests	December 2019
C-ITS Communication System Profiles	February 2020
Recommended LTE-V2X Related Amendments to ETSI ITS Test Specifications	February 2020

5GAA Partnerships

Memoranda of Understanding with authorities

MINISTRO
PER L'INNOVAZIONE
TECNOLOGICA
E LA DIGITALIZZAZIONE

DGT
Dirección General
de Tráfico

VAS
Elektroniskie
sakari

5GAA
Automotive Association

bast
Federal Highway Research Institute

CITTA' DI TORINO

Ministry of Infrastructure
and Water Management

5GAA Strategic Partnerships