A global cross-industry association shaping the future global standards for C-V2X use in connected and autonomous vehicles

Markus Dillinger
5GAA Secretary, Executive Committee Member
WHAT IS 5GAA

Automotive Association
5GAA connects the telecom industry and vehicle manufacturers to work closely together for developing end-to-end solutions for future mobility and transportation services.

**AUTOMOTIVE INDUSTRY**
Vehicle Platform, Hardware and Software Solutions

**TELECOMMUNICATIONS**
Connectivity and Networking Systems, Devices and Technologies

End to end solutions for intelligent transportation, mobility systems and smart cities
5G Automotive Association (5GAA)

**September 2016**

- “Audi, BMW Group, Daimler AG are teaming with Ericsson, Huawei, Intel, Nokia, and Qualcomm to create the 5G Automotive Association (5GAA), which will help develop, test, and promote 5G standards”

- “Scope of the alliance is focused on bringing connectivity solutions to market addressing technical, business, and regulatory challenges”

**End 2017**

- More than 60 member companies
  - demonstrates the success of the 5GAA as a global, cross-industry organisation
5GAA Organizational Structure

- **BOARD**
  - EXECUTIVE COMMITTEE

- **GENERAL ASSEMBLY**

- **WG1**
  - Use Cases and Technical Requirements

- **WG2**
  - System Architecture and Solution Development

- **WG3**
  - Evaluation, Testbeds and Pilots

- **WG4**
  - Standards and Spectrum

- **WG5**
  - Business Models and Go-To-Market Strategies
V2X (Vehicle to Everything)

Comprehensive vehicle and traffic safety

Accelerates autonomous driving

Allows vehicles to communicate with each other (V2V) and the wider transport ecosystem (V2P, V2I, V2N)
Why Cellular V2X (C-V2X)?

C-V2X is a unified technology platform including both:

- Short range direct communications (LTE-V2X PC5)
- Long range cellular network communications (LTE-V2X Uu)
Timeline for deployment of C-V2X (V2V/V2I)

C-V2X standardized in 3GPP Revision 14 (June 2017)
C-V2X commercial chipsets (R14) available in 2018
In-vehicle commercial deployment (i.e. type-approved vehicles) at the latest by 2021 globally

- **H1/2017**: Chipsets for tests
- **H2/2017**: Inter-operability tests
- **H1/2018**: Commercial availability of Mode 4 chips
- **H2/2018**:
- **2019**:
- **2020**:
- **2021 ff**:

**C-V2X (R14) chipsets from various vendors**
**Integration, Validation and Testing with OEMs (EU, China, US)**
**Testing of traffic infrastructure (EU, China, US)**

**5.9 GHz Spectrum Target Availability**
- **EU spectrum, China (Test spectrum)**
- **EU**: 2021 Start of vehicle deployment
- **US (spectrum for deployment)**

C-V2X standardized in 3GPP Revision 14 (June 2017)
C-V2X commercial chipsets (R14) available in 2018

In-vehicle commercial deployment (i.e. type-approved vehicles) at the latest by 2021 globally
Worldwide C-V2X Trials

- **France**: ConVeX (A9)
- **Germany**: RACC track MWC 2017, Car2X (A9), Mobilfunk (A9), V2V C-V2X radio performance tests Michigan, USA
- **Spain**: DT (A9) (Spain), RACC track MWC 2017
- **UK**: UK CITE
- **China**: 5G and cellular communication showcase trials
- **Korea**: 5G-CM (A9)
- **UK**: MEC pilot project, ICV pilot projects
- **Germany**: Car2X Wuzhen, Mobilfunk (A9), Germany
C-V2X and its evolution to 5G V2X will foster synergies between the automotive industry and other verticals which are moving to 5G.
Thank you!

For more information please contact:
5gaa-liaison@5gaa.org