



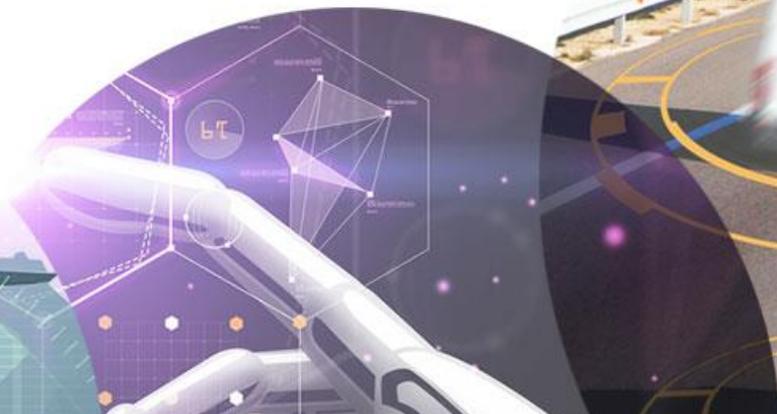
5GAA MRP input to 3GPP Stage-1 workshop on IMT-2030 Use Cases

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3GPP Stage 1 Workshop on IMT2030 Use Cases

Rotterdam, NL
08 - 10 May 2024





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5GAA Roadmap and Status of 5G deployment

- 5GAA is continuously evolving the automotive use cases' roadmap, which is also aligned to 3GPP technology evolution. [1]
- Current 5GAA roadmap is expanding use cases and requirements up to 2032. [2]
- 5GAA members are working hard to deploy 5G-V2X via fields trials, enhancements of regional regulations, active contributions to standardization activities and V2X profiles. [3-4]
- 5GAA assessed the feasibility of the automotive roadmap use cases using 5G/5G-Advanced, notes that evolution towards 6G should continue to consider automotive requirements.
- Numerous existing use cases stand to benefit from improved radio performance and/or the introduction of new functionalities in 6G, e.g., trust, ubiquity, sensing, etc.

Automotive consideration for evolution to IMT-2030

- The adoption of new communication technologies in the automotive industry is a longer process compared to smartphone/consumer devices, therefore 6G should build on 5G/5G-Advanced capabilities for automotive requirements in an evolutionary way.
- From an automotive perspective, 6G should enable enhanced existing and new services in a cost-effective and environmentally friendly manner considering, e.g., hardware reuse and leveraging 5G with full continuity of services for network and direct communications.
- 5GAA has identified requirements and use cases that might benefit from communication systems beyond 5G including the work in the 5G and beyond white paper [6] and other activities.

General requirements for cellular systems beyond 2030:

Ubiquitous connectivity is key for most automotive use cases

5GAA would like to reiterate the following priorities for the automotive industry:

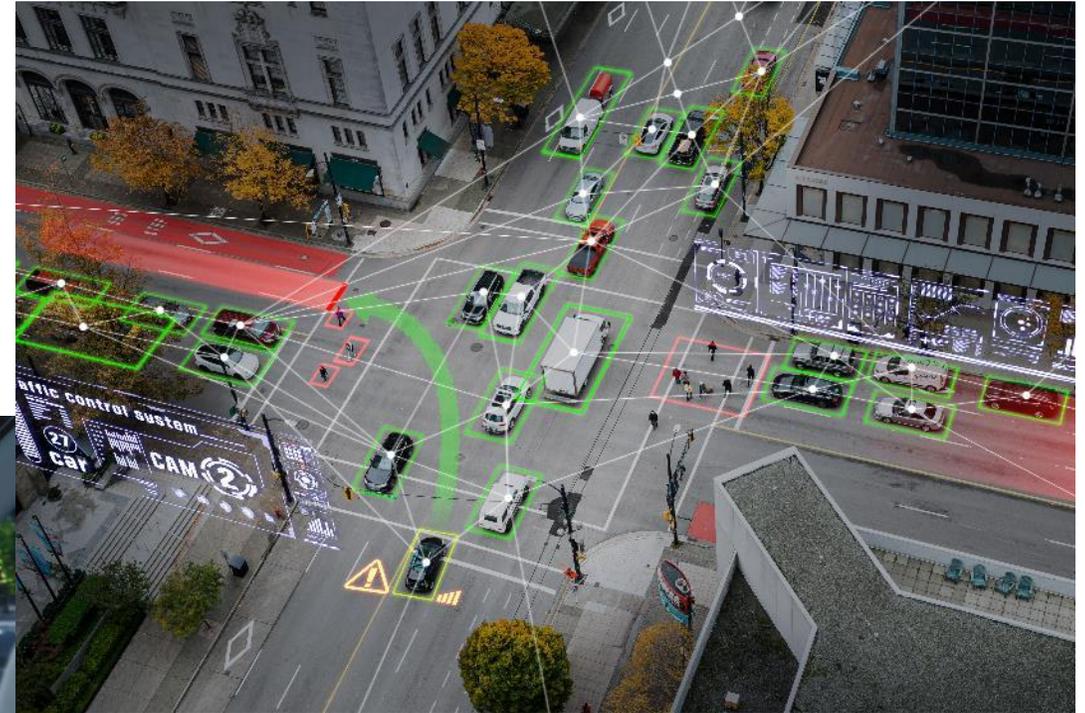
- Secure, reliable, resilient, low-latency, high-mobility communication for safety, advanced driving and remote vehicle services,
- Enhanced communications for immersive multimedia and infotainment applications/services in vehicles,
- VRU protection by improved location information availability of UEs (below 1m),
- Sustainability of mobile communications to enable a carbon-friendly society for travel and communications.

In addition, 5GAA anticipates benefits from the following potential capabilities:

- Enable functional-critical automated driving services through dependable and trustworthy communications,
- Improve connectivity and service continuity by combined use of TN and NTN and other means,
- Improve sensing capabilities of communication devices (such as ISAC).

Representative Clusters of Automotive Use cases

- Real-time environmental modeling
- Intelligent automated driving systems
- Enhanced in-vehicle experiences



References

- [1] 5GAA, White Paper, A visionary roadmap for advanced driving use cases, connectivity technologies, and radio spectrum needs, November 2022, available at <https://5gaa.org/content/uploads/2023/01/5gaa-white-paper-roadmap.pdf>
- [2] *ibid.* planned update in Q4 2024
- [3] RP-231538, “LS on 5GAA Input to 3GPP RAN Rel-19 Workshop,” source 5GAA, TSG RAN#101, September 2023, Bangalore, India.
- [4] RP-232734, “LS on SL Deployment Progress for SL evolution discussions in Rel-19”, source 5GAA, TSG RAN#102, December 2023, Edinburgh, Scotland.
- [5] 5GAA, White Paper, MNO Network Expansion Mechanisms to Fulfill Connected Vehicle Requirements, Version 1, June 2020, available at https://5gaa.org/content/uploads/2020/06/5GAA_B-200044_WI-NetExp-White-Paper.pdf
- [6] 5GAA, White Paper, Evolution of Vehicular Communication Systems Beyond 5G, August 2023, available at <https://5gaa.org/content/uploads/2023/08/5gaa-a-220058-5geb-wp-v11-clean.pdf>



Thank you

5G Automotive Association

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