



# 5G Initiative – “5G Roadmap” Working Group

## Proposal for Contribution

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# Heterogeneous V2X networks

- **Connected & automated vehicles need V2X communications**
  - IEEE developed IEEE802.11p/1609 standards
    - Led by automotive industry
  - 3GPP has released 1<sup>st</sup> version of Cellular V2X (LTE-V) under release 14
    - Led by telecoms industry
    - Includes with and without cellular coverage
- **Opportunities & need to develop heterogeneous V2X networking solutions for connected and automated vehicles**
  - Need: short to long-term
  - Embrace variety of technologies and transmission medium (e.g. also VLC)
  - (Not only) data offloading: high reliability, low latency, deterministic & high bandwidth for cooperative driving and sensing
    - Exploiting opportunistically 'diversity' offered by different technologies (even for redundancy)
- **Standardization**
  - Need for interworking solutions: IEEE has a unique opportunity to take the lead
  - IEEE should offer the automotive industry an evolution roadmap for IEEE802.11p/1609 standards