CALL FOR SPECIAL SESSION PAPERS **"Future trends for standardization and design of vehicular networks"**

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We invite you to submit your original work to Special Session "Future trends for standardization and design of vehicular networks" at the 26th European Wireless (EW). Link: https://ew2020.european-wireless.org/call-for-special-sessions

Recent evolutions of the automotive industry have enabled the development of Connected and Autonomous Vehicles (CAVs), with the goal to promote increased traffic efficiency and enhanced safety for vehicles and pedestrians. Wireless networks can fully unleash the potential of CAVs by promoting cooperation among vehicles and the fixed infrastructure on roads and highways, and this has motivated the study of different technologies for vehicle-to-infrastructure (V2I) and vehicle-to-vehicle (V2V) communications (also jointly referred to as vehicle-to-everything (V2X) networking). As of today, the two main radio technologies that support V2X communications are 3GPP Cellular-V2X (C-V2X) and IEEE 802.11p. These, however, will not completely fulfill the foreseen challenging requirements (in terms of, e.g., ultra low latency, and ultra high reliability and throughput) of future vehicular services.

This motivates the design and analysis of next-generation V2I and V2V networks, with the introduction of new, more capable technologies. In this regard, the 3GPP and the IEEE are presenting new study items, specifications and standard drafts on future vehicular networks. 3GPP NR-V2X extends the specifications of 3GPP NR to support sidelink communications, and integrates in vehicular networks the flexibility of the NR frame, protocol stack and spectrum usage. Similarly, IEEE 802.11bd targets communications in the usual 5.9 GHz band, but also in the unlicensed mmWave spectrum. The usage of a heterogeneous set of spectrum bands and technologies (sub-6 GHz, mmWaves, VLC) could benefit future connected services, but, at the same time, introduces the need for new research and standardization efforts that range from channel modeling, to the design of the full-protocol stack, with challenges at the physical, MAC, network and transport layers.

This special session aims at collecting original contributions that can advance the state of the art on the design challenges for V2X networks, with a focus on three main areas of interest. First of all, we look forward to submissions that discuss 3GPP and IEEE standardization efforts, as well as of new services, applications, business models and trials of V2X networks. Second, it is of particular interest the analysis and design of channel models, physical layer, beam and/or mobility management, resource allocation, network and transport layer schemes for next-generation V2X, with a focus also on mmWave and VLC communications. Finally, this special session welcomes papers on the application of learning techniques in vehicular scenarios, and on security and privacy concerns for V2X, especially if linked to standard proposals and developments.

Topics of interest for the special session include, but are not limited to:

- IEEE and 3GPP vehicular standards
- New services and applications for connected cars
- Cooperative services in vehicular networks
- Millimeter waves for vehicular networks
- Visible light communication (VLC) for vehicular networks
- Spectrum coexistence and spectrum sharing among V2X technologies
- Channel models for vehicular networks
- Beam management in vehicular networks
- Resource allocation and mobility management in vehicular networks
- Routing and transport protocols in vehicular networks
- Security/trust/privacy in vehicular networks
- Bringing learning to connected cars
- Trials and business models in vehicular networks

The papers of this special session will go through the same rigorous single-blind peer-review process of the main conference. Submitted manuscripts must be original and not be published or under review elsewhere. Papers must not infringe any copyright or third party right. The proceedings of EW 2020 will be published and will be made available on IEEE Xplore.