Workshop on ICT based Collision Avoidance for VRUs (ICT4VRU)

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According to the latest report from the World Health Organization (WHO), 26% of all road traffic deaths worldwide (about 350,000) involve Vulnerable Road Users (VRUs) like pedestrians and bicyclists. Cooperative collision avoidance aims at protecting VRUs by assuming that they are able to communicate their position with nearby cars by using mobile devices. In this approach, vehicles and VRUs exchange information, like their respective movement vectors for detecting whether a collision is possible or not. Mobile devices offer a wide range of sensors, which enable the recognition of specific contexts of VRUs, like for example whether a pedestrian runs towards an intersection or crosses a curb. Those contexts indicate unsafe VRU movements and can be used to improve collision avoidance in terms of collision detection performance, position accuracy, energy efficiency and more. This workshop aims at addressing these and similar challenges for Information and Communication Technologies (ICT) in Car2VRU related scenarios.

Topics of interest included:

- Car2VRU architectures, applications, and use cases

- Car2X, Car2VRU (Car2P Car2B) communications

- Analysis of latency, overhead, and message frequencies for Car2VRU communication

- Machine learning and context modelling for pedestrians and bicyclists

- Localization, GNSS improvements

- Ultra-Reliable and Low-Latency Communications (URLLC)

- Mobile Edge Computing (MEC)

We received in total nine submissions. After a rigorous review process (3 independent reviews per paper), we accepted seven papers (5 full-paper, 2 extended abstracts) for presentation at the workshop.

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