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ITN-5VC

INTEGRATED TELEMATICS FOR NEXT GENERATION 5G VEHICULAR COMMUNICATIONS

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Our Vision

ITN-5VC aims to investigate the key problems of the integration of multi-band multi-antenna communications, including mmWave, with radar heads and other wireless sensors into the same telematics unit, so that transmission chains and radiation systems were efficiently reused in a cost-efficient manner while delivering the required performance. Multiple antenna deployment, joint operation and performance of the resulting automotive solution will be investigated by 11 Early Stage Researchers (ESRs) working with top industrial manufacturers and academia in Europe.

Goals

- Design an optimum multi-antenna deployment for enhanced performance of the new hyper connected car concept.
- Integrate Cellular-assisted Vehicular to Anything (C-V2X) protocols with autonomous driving sensor systems.
- Adapt signalling (RRC) and MAC protocols on IoT specific 5G NR chipsets.
- Explore new hardware solutions for radar and SoC integration and configure the new design of the car electronics.

The consortium



Partner Organizations

APWAVES Fivecomm casa systems



Impact

ITN-5VC provides 396 person-months of high quality interdisciplinary and crosssector research training for a new generation of scientists, who will benefit directly from the entrepreneurial and creative environment created by the network and deliver impact at a European level. It will produce a critical mass of highly-skilled professionals, who are advantaged by their international and intersector mobility.

Extended Impact

- Develop EU capacity and skills to advance mmW antenna design, channel modelling, understanding of fundamental limits of 5G V2X and integration of communications with on-board car sensors in autonomous driving.
- Integrate mmW antennas and 5G V2X communication systems to bring safety to a new dimension in the hyper connected car of the future.
- Create a new concept of telematics unit that could simplify the electronics in the car.
- Increase EU competitiveness in 5G/B5G V2X
- Develop lasting academic and industry collaboration which ensures interdisciplinary and cross-sector research training programmes.
- Create new and exciting career prospects for the fellows