

Cross Technology Communication (CTC) between DSRC/WAVE and TVWS: From Survey Towards Framework

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Abstract

Cross Technology Communication (CTC) adjoin two or more different radio access technology (RAT) so that they can communicate directly. As vehicular communication has become a part of modern life and many applications like IoT, smart city is incomplete without vehicular network, it has become a research challenge to integrate it with other RAT's. For the scarcity of spectrum and increasing demand on cellular spectrum, unused TVWS spectrum has become an undeniable choice for integrating it with vehicular communication technology, DSRC/WAVE. Several researches on CTC for Wifi, Zigbee, Bluetooth Low Energy (BLE) have been published that operate in the ISM spectrum. This is the first attempt to constitute a framework for CTC of two different spectrums, DSRC/WAVE and TVWS so that the implementation would become feasible.

Keywords: CTC; DSRC; WAVE; TVWS; Vehicular communication; H-CTC; Cross technology communication.