



Infotainment

RWS-210433

Volkswagen AG

Input to 3GPP Rel-18 WS

NR-V2X sidelink enhancements

Agenda item 4.2: Non-eMBB-driven Functional Evolution

NR-V2X sidelink enhancements

Intra-band carrier aggregation (multi-carrier) in FR1

Motivation:

The available ITS frequency spectrum for C-V2X direct communication is small. In the US, as one example, the spectrum in the 5.9GHz band has been reduced to 30MHz. The current assumption is that this small spectrum is to be shared by LTE-V2X and NR-V2X but yet with an unknown channel assignment. It might happen that the available spectrum for NR-V2X becomes fragmented by a LTE carrier.

To enhance throughput and reliability in the 5.9GHz band, higher sidelink carrier bandwidths could be realized by non-contiguous intra-band carrier aggregation (multi-carrier) of the NR-V2X sidelink.

Proposed Rel-18 work:

Mechanisms to enable non-contiguous intra-band carrier aggregation for the NR-V2X sidelink should be provided within the 5.9GHz ITS band.

Implication to existing NR sidelink releases:

No implications seen.

NR-V2X sidelink enhancements

Inter-band carrier aggregation (multi-carrier) in FR1

Motivation:

The available ITS frequency spectrum for C-V2X direct communication is small. In FR1 two frequency bands are defined for sidelink operation (n38 + n47). To enhance throughput and reliability both frequency bands could be utilized by inter-band carrier aggregation.

Proposed Rel-18 work:

Mechanisms to enable inter-band carrier aggregation for the NR-V2X sidelink within FR1 should be provided.

Implication to existing NR sidelink releases:

No implications seen.