

RP-240548 Input on Rel-19 NR Sidelink CA in RAN4

Agenda item 9.1.4.6

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- 3GPP RAN#103
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Motivation

- RAN #103 has received an LS from 5GAA ([RP-240023](#)) stating the automotive interest on the support of CA in NR SL in Rel-19.
- This contribution follows up on the summary ([RP-233920](#)) from RAN#102 of potential RAN4 RF/OTA and Demod/RRM work content for Rel-19
- Item 3.4 summarizes the individually proposed WI scopes for Sidelink and the outcome of the offline discussion:
 1. For sidelink unlicensed enhancement [RAN4]
 - Introduce power class 3 for NR SL-U
 - Introduce SL MIMO and TxD feature for NR SL-U
 - Both power class 5 and power class 3 are considered in SL MIMO and TxD
 - Introduce AMPRs for NS values in band n46, n96, and n102
 - Specify necessary RF and RRM requirements for sidelink unlicensed enhancements if any
 2. For sidelink CA enhancement [RAN4]
 - Introduce intra-band non-contiguous CA in ITS spectrum
 - For intra-band non-contiguous CA, introduce power class 2 and power class 3
 - For intra-band contiguous CA, introduce power class 2
 - Specify necessary RF and RRM requirements for sidelink CA if any inter-band CA (n47 + unlicensed)

Intra-band con-current operation of NR-U and SL-U @ Un-licensed band

3Tx for inter-band SL con-current operation

4Tx for SL

Outcome of offline session:

Focus on non-contiguous CA in ITS band (band 47) and [PC3 for SL-U].

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Proposed objectives

To address automotive demands outlined in [RP-233802](#) and considering the proposed summary for RAN4 Rel-19 Package in [RP-240019](#) a focused RAN4 work item on sidelink is proposed:

- **Work item objectives:**
 - **Support of intra-band non-contiguous CA in band n47, including the Component Carrier (CC) combinations 10MHz + 10MHz and 10MHz + 20MHz, for UE Power Class 2 (26 dBm) and Power Class 3 (23 dBm)**
 - **Introduction of Power Class 2 (26 dBm) for intra-band contiguous sidelink CA in band n47**
- **Background:**
Power Class 2 is important to maintain a sufficient communication range when employing CA.
- **Underlying principle:**
The sidelink enhancements of Rel-19 should support all the sidelink features which have been introduced in Rel-16, Rel-17 and Rel-18.

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Background

- In Europe, the ITS frequency spectrum in band n47 (ITS spectrum) is fragmented due the existing deployment of non-3GPP technologies.
 - Only a few 10MHz carriers (channels) are available and there is on-going regulatory work to allow 20MHz carriers (channels).
- Sidelink CA should enable a flexible use of the few available channels in the ITS band n47.
- Rel-18 contains only a limited subset of CA functionalities (intra-band contiguous CA with PC3)