**3GPP TSG-RAN WG4 Meeting # 98-e R4-2103310**

**Electronic Meeting, Jan. 25 - Feb. 5, 2021**

**Agenda item:** 9.23

**Source:** Moderator (CATT)

**Title:** Email discussion summary for [[98e][122] NR\_LTE\_V2X\_PC5\_combos](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_98_e/Inbox/Drafts/%5B98e%5D%5B122%5D%20NR_LTE_V2X_PC5_combos)

**Document for:** Information

# Introduction

This email discussion summary will discuss the specific request of band combination and associated CRs.

The candidate targets of this email discussion for 1st round and 2nd round:

* 1st round
  + Companies to provide comments on TPs and CRs involved.
  + Assign the corresponding WF after the 1st round discussion if needed.
* 2nd round
  + FFS

# Topic #1: General issues of con-current operation

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| [R4-2100412](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100412.zip) | CATT | TP on V2X\_n41A-n47A coexistence study |
| [R4-2100413](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100413.zip) | CATT | CR for TS 38.101-1, Introduce new band combination of V2X\_n41A-n47A |
| [R4-2100414](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100414.zip) | CATT | CR for TS 38.101-3, Introduce new band combination of V2X\_41A-n47A and V2X\_n41A-47A |
| [R4-2100502](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100502.zip) | CATT | TR 37.875 on band combinations for con-current operation of NR/LTE Uu bands/band combinations and one NR/LTE V2X PC5 band |
| [R4-2101290](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101290.zip) | CATT | Revised WID for V2X band combination |
| [R4-2100617](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100617.zip) | Qualcomm Incorporated | Revision of inter-band V2X con-currency table for V2X\_n39A-n47A and V2X\_n40A-n47A |
| [R4-2100618](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100618.zip) | Qualcomm Incorporated | Revision of inter-band V2X con-currency table for V2X\_39\_n47 and V2X\_40\_n47 |

## Open issues summary

Based on above contributions, the correction on spurious emission protected band for UE co-existence, i.e. [R4-2100617](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100617.zip) and [[R4-2100618](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100617.zip),](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100617.zip) will be treated as a sub-topic. Other CRs and TP regarding newly added band combination will be directly treated in sub-cluase 1.3.2.

### Sub-topic 1-1: spurious emission protected band for UE co-existence

**Issue 1-1-1: spurious emission protected band for UE co-existence**

* Proposals
  + Option 1: Remove band n47 in protected band list for V2X\_n39-n47, V2X\_n40-n47, V2X\_39-n47, V2X\_40-n47 as proposed in CR R4-2100617 and CR R4-2100617.
  + Option 2: Keep the protected band list as it is.
* Recommended WF
  + Need more discussion.

## Companies views’ collection for 1st round

### Open issues

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| **Company** | **Comments** |
| **CATT** | **Issue 1-1-1: spurious emission protected band for UE co-existence**  **Support option 1.** |
| **Qualcomm** | **Issue 1-1-1: Option1. N47 has to be removed from the protected band list as it is a TDD band and the DL and UL frequencies are the same.** |
| **LGE** | **Yes, in previous RAN4 meeting, we removed n47 in the protect band list for n47 V2X operation and V2X\_n71A-n47A UE in TS38.101-1** |
| **Huawei, HiSilicon** | **Issue 1-1-1: Option1.** |

### CRs/TPs comments collection

*Major close-to-finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

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| **CR/TP number** | **Comments collection** |
| [R4-2100412](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100412.zip)  (TP on V2X\_n41A-n47A coexistence study) | **LGE: based on the above comment, TP can updated.** |
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| [R4-2100413](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100413.zip)  (CR for TS 38.101-1, Introduce new band combination of V2X\_n41A-n47A) | **Qualcomm: Table 7.3E.3-3 – the NRB values used for Uu n39,n40 and n41 should be full RB values on 52, 24 and 11 for SCS=15kHz, 30 kHz and 60kHz respectively** |
| **LGE: agree with QC.** |
|  |
| [R4-2100414](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100414.zip)  (CR for TS 38.101-3, Introduce new band combination of V2X\_41A-n47A and V2X\_n41A-47A) | **Qualcomm: Table 7.3E.2.3-3 – the NRB values used for Uu 20, n39, 30 ,n40, 40, n41 and n71 should be full RB values on 52, 24 and 11 for SCS=15kHz, 30 kHz and 60kHz respectively** |
| **LGE: agree with QC.** |
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| [R4-2100502](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100502.zip)  (TR 37.875 on band combinations for con-current operation of NR/LTE Uu bands/band combinations and one NR/LTE V2X PC5 band) |  |
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| [R4-2101290](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101290.zip) (Revised WID for V2X band combination) |  |
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| [R4-2100617](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100617.zip)  (Revision of inter-band V2X con-currency table for V2X\_n39A-n47A and V2X\_n40A-n47A) | CATT: Support this CR. |
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| [R4-2100618](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100618.zip)  (Revision of inter-band V2X con-currency table for V2X\_39\_n47 and V2X\_40\_n47) | CATT: Support this CR. |
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## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |
| **Issue 1-1-1: spurious emission protected band for UE co-existence** | Tentative agreements: **To agree this CR.**   * + **Option 1: Remove band n47 in protected band list for V2X\_n39-n47, V2X\_n40-n47, V2X\_39-n47, V2X\_40-n47 as proposed in CR R4-2100617 and CR R4-2100617.**   Candidate options: **None.**  Recommendations for 2nd round: **No need to discuss this issue in 2nd round.** |
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*Recommendations on WF/LS assignment*

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| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| **#1** | **TR 37.875, band combinations for con-current operation of NR/LTE Uu bands/band combinations and one NR/LTE V2X PC5 band. Version 0.2.0** | **CATT** |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

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| **CR/TP number** | **CRs/TPs Status update recommendation** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |
| [R4-2100412](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100412.zip) | **To be revised. The revised TP will be further checked in the 2nd round.** |
| [R4-2100413](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100413.zip) | **To be revised. The revised CR will be further checked in the 2nd round.** |
| [R4-2100414](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100414.zip) | **To be revised. The revised CR will be further checked in the 2nd round.** |
| [R4-2100502](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100502.zip)  (TR 37.875) | **To be approved.**  **This TR version 0.1.0 only captures the approved TPs in previous meetings. The TP submitted in this meeting will be captured in the TR version 0.2.0 (Tdoc number to be assigned by chairman).** |
| [R4-2101290](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101290.zip)  (Revised WID) | **For email approval.** |
| [R4-2100617](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100617.zip) | **To be agreed.** |
| R4-2100618 | **To be agreed.** |

## Discussion on 2nd round (if applicable)

In the 2nd round, only one revised TP ([R4-2103199](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100412.zip)) and two revised CR ([R4-2103200](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100413.zip) and [R4-2103201](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100414.zip)) will be treated.

## Companies views’ collection for 2st round

### Open issues

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| **Company** | **Comments** |
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### CRs/TPs comments collection

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| **CR/TP number** | **Comments collection** |
| [R4-2103199](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100412.zip)  (TP on V2X\_n41A-n47A coexistence study) |  |
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| [R4-2103200](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100413.zip)  (CR for TS 38.101-1, Introduce new band combination of V2X\_n41A-n47A) | Qualcomm : In table 6.5E.3.3.1-1 n47 has to be removed from V2X\_n39A-n47A and V2X\_n40A-n47A |
| Same as QC comments to remove n47 in protect band list .  Need to check the cover page to remove unnecessary space in V2X band combinations.  Also need to change WI code as “NR\_LTE\_V2X\_PC5\_combos-Core”. |
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| [R4-2103201](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100414.zip)  (CR for TS 38.101-3, Introduce new band combination of V2X\_41A-n47A and V2X\_n41A-47A) | Qualcomm : In table 6.5E.3.2.2-1 n47 has to be removed from V2X\_39-n47 and V2X\_40-n47  Same as QC comments to remove n47 in protect band list .  Need to change WI code as “NR\_LTE\_V2X\_PC5\_combos-Core”.  In Table 7.3E.2.3-3, LTE UE such as band 20/band 39/ band 40/band 41 shall be use 50RBs not 52 RBs. |
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## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

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| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
| XXX | *Based on 2nd round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |
| [R4-2103199](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100412.zip)  (TP on V2X\_n41A-n47A coexistence study) | **To be approved.** |
| [R4-2103200](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100413.zip)  (CR for TS 38.101-1, Introduce new band combination of V2X\_n41A-n47A) | **To be agreed.** |
| [R4-2103201](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100414.zip)  (CR for TS 38.101-3, Introduce new band combination of V2X\_41A-n47A and V2X\_n41A-47A) | **To be agreed.** |
| R4-2103198  (TR 37.875, band combinations for con-current operation of NR/LTE Uu bands/band combinations and one NR/LTE V2X PC5 band. Version 0.2.0) | **To be email approved.** |
| [R4-2101290](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101290.zip)  (Revised WID for V2X band combination) | **To be email approved.** |