**3GPP TSG RAN WG1 #108-e**

**e-Meeting, May 9th – 20th, 2022**

**Source: RAN1 Chair**

**Title: Incoming LS handling for RAN1#109-e**

**Document for:** **Discussion and Decision**

# Introduction

This document summarizes the contributions submitted to Agenda Item 5 (Incoming Liaison Statements) in RAN1#109-e and identifies a set of LS that needs to be addressed in the email discussion phase of RAN1#109-e.

# Summary

## Incoming LSs “To RAN1”

### *Release 16 - LTE\_NR\_DC\_CA\_enh*

[R1-2203030](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203030.zip) Reply LS on power control for NR-DC RAN4, OPPO, vivo

R1-2203496 Discussion on power control for NR-DC in FR2 vivo

R1-2204965 Discussion on Reply LS from RAN4 on power control for NR-DC Ericsson

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| **Initial assessment** | To be discussed as part of Rel-16 MR DC/CA maintenance under agenda item 7.2.10. As part of the discussion, decide whether further RAN1 action is needed in response to the RAN4 LS. Use separate email thread.Note that there are additional tdocs submitted to 7.2.10 on the same topic. R1-2203187, R1-2203187, R1-2204334. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 16 - NR\_newRAT, TEI16*

[R1-2203043](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203043.zip) LS on BWP operation without bandwidth restriction RAN2, Qualcomm

R1-2203494 Draft Reply LS on BWP operation without bandwidth restriction vivo

R1-2203846 Draft reply LS on BWP operation without bandwidth restriction Samsung

R1-2204272 Discussion on RAN2 LS on BWP operation without bandwidth restriction CMCC

R1-2204331 [Draft] Reply LS on BWP operation without bandwidth restriction ZTE

R1-2204333 Discussion on BWP operation without bandwidth restriction NTT DOCOMO, INC.

R1-2204920 Discussion on BWP operation without bandwidth restriction Huawei, HiSilicon

R1-2204971 Discussion on RAN2 LS on BWP operation without bandwidth restriction Qualcomm Incorporated

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| **Initial assessment** | RAN2 has requested RAN1 input on pre-Release-17 behaviour with regards to BWP operation without bandwidth restrictionResponse needed. To be discussed under agenda item 5. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 16 - NR\_L1enh\_URLLC*

[R1-2203045](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203045.zip) Reply LS on PDCCH Blind Detection in CA RAN2, HiSilicon

R1-2203077 Draft reply LS on PDCCH Blind Detection in CA Huawei, HiSilicon

R1-2203183 [Draft] Reply LS on PDCCH Blind Detection in CA ZTE

R1-2203394 Discussion of RAN2 LS on PDCCH Blind Detection in CA Ericsson

R1-2203488 Draft Reply LS on PDCCH Blind Detection in CA vivo

R1-2203849 Discussion on RAN2 LS on PDCCH Blind Detection in CA Samsung

R1-2204894 Discussion on PDCCH Blind Detection in CA Huawei, HiSilicon

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| **Initial assessment** | RAN2 has requested RAN1 input on UE capability for PDCCH blind detection in CA.Response needed. To be discussed as part of Rel-16 URLLC maintenance under agenda item 7.2.5. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 17 - NR\_SmallData\_INACTIVE*

[R1-2203017](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203017.zip) Reply LS on beam correspondence with SDT in RRC\_INACTIVE RAN4, Huawei

R1-2203767 Discussion on physical layer aspects of small data transmission xiaomi

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| **Initial assessment** | To be taken into account as part of discussions on Rel-17 SDT maintenance in agenda item 8.17. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 17 - NR\_CSIRS\_L3meas*

[R1-2203018](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203018.zip) LS on the applicability of mixed numerology on UE capability maxNumberCSI-RS-RRM-RS-SINR RAN4, Apple

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| **Initial assessment** | To be taken into account as part of discussions on Rel-17 UE features in agenda item 8.16. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| NTT DOCOMO | We think that what RAN4 concluded has no RAN1 impact and RAN2 can update 38.306/822 accordingly as it is a straightforward clarification. Therefore, we think no RAN1 discussion is necessary for this topic. |
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### *Release 17 - NR\_NTN\_solutions*

[R1-2203019](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203019.zip) Reply LS on NTN UL time and frequency synchronization requirements RAN4, Xiaomi

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| **Initial assessment** | To be taken into account as part of discussions on Rel-17 NR NTN maintenance in agenda item 8.4. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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[R1-2203020](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203020.zip) Reply LS on combination of open and closed loop TA control in NTN RAN4, Qualcomm

R1-2204658 Discussion on RAN4 LS on combination of open and closed loop TA control Ericsson

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| **Initial assessment** | To be taken into account as part of discussions on Rel-17 NR NTN maintenance in agenda item 8.4. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 17 - NR\_feMIMO*

[R1-2203021](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203021.zip) ReplyLS on L1-RSRP measurement behaviour when SSBs associated with different PCIs overlap RAN4, vivo

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| **Initial assessment** | To be taken into account as part of discussions on Rel-17 NR MIMO maintenance in agenda item 8.1. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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R1-2205091 LS on further questions on feMIMO RRC parameters RAN2, Ericsson

R1-2205092 [Draft] Reply LS on further questions on feMIMO RRC parameters vivo

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| **Initial assessment** | RAN2 requested further RAN1 input on Rel-17 feMIMO RRC parameters. Response needed. To be discussed as part of Rel-17 NR MIMO maintenance in agenda item 8.1. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| vivo | Regarding this late incoming LS, vivo contribution is available in R1-2205092. |

### *Release 17 - NR\_pos\_enh*

[R1-2203023](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203023.zip) LS reply on condition of PRS measurement outside MG RAN4, vivo

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| **Initial assessment** | To be taken into account as part of discussions on Rel-17 Positioning Enhancement maintenance in agenda item 8.5. |
| **After company comments** | Same as above with modification in red.To be taken into account as part of discussions on Rel-17 Positioning Enhancement maintenance in agenda item 8.5.2.To ZTE: “To be taken into account” does not imply that there needs to be discussion. Companies can consider the LS and if there is no company raising need for discussion, there is no need to have one. |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| Samsung | 8.5.2 is more appropriate place, since the PRS measurement outside MG is for latency improvement.  |
| ZTE | This LS is just for information, we don’t think any discussion is needed in RAN1. |
| CATT | PRS measurement outside MG is for latency enhancement. Suggest discussing it under AI 8.5.2. |

[R1-2203024](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203024.zip) LS on the UE/TRP TEG framework RAN4, CATT

R1-2203408 Discussion on the UE/TRP TEG framework CATT

R1-2203409 Draft reply LS on the UE/TRP TEG framework CATT

R1-2204924 Discussion on UE/TRP TEG framework Huawei, HiSilicon

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| **Initial assessment** | To be discussed as part of Rel-17 Positioning Enhancement maintenance under agenda item 8.5.2. As part of the discussion, decide whether further RAN1 action is needed in response to the RAN4 LS. Use separate email thread. |
| **After company comments** | Same as above with modification in red.To be discussed as part of Rel-17 Positioning Enhancement maintenance under agenda item 8.5.1. As part of the discussion, decide whether further RAN1 action is needed in response to the RAN4 LS. Use separate email thread. |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| Samsung  | TEG is within the discussion of accuracy improvement, so 8.5.1 is more appropriate.  |
| ZTE | We think it should be discussed under agenda item 8.5.1 rather than 8.5.2 as this issue is related to positioning accuracy improvement |
| OPPO | AI 8.5.1 seems more appropriate for the discussion since TEG framework is introduced to improve positioning accuracy |
| CATT | UE/TRP TEG is for accuracy enhancement. Suggest discussing it under AI 8.5.1. |

[R1-2203026](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203026.zip) On applicable number of PFL for the gapless PRS measurement RAN4, Ericsson

R1-2203410 Discussion on applicable number of PFL for the gapless PRS measurement CATT

R1-2203411 Draft reply LS on applicable number of PFL for the gapless PRS measurement CATT

R1-2203490 Draft Reply LS on applicable number of PFL for the gapless PRS measurement vivo

R1-2203617 Draft reply LS on applicable number of PFL for the gapless PRS measurement ZTE

R1-2203847 Draft reply on applicable number of PFL for the gapless PRS measurement Samsung

R1-2204925 Discussion on applicable number of PFLs for the gap-less PRS measurement Huawei, HiSilicon

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| **Initial assessment** | RAN4 has requested RAN1 input on applicable number of PFL for the gapless PRS measurement.Response needed. To be discussed as part of Rel-17 Positioning Enhancement maintenance under agenda item 8.5.2. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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[R1-2203028](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203028.zip) Reply LS on latency improvement for PRS measurement with MG RAN4, Huawei

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| **Initial assessment** | To be taken into account as part of discussions on Rel-17 Positioning Enhancement maintenance in agenda item 8.5. |
| **After company comments** | Same as above with modification in red.To be taken into account as part of discussions on Rel-17 Positioning Enhancement maintenance in agenda item 8.5.2.To ZTE: “To be taken into account” does not imply that there needs to be discussion. Companies can consider the LS and if there is no company raising need for discussion, there is no need to have one. |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| Samsung | 8.5.2 is more appropriate place to take care such issue for latency improvement.  |
| ZTE | The LS may impact RAN2, but not RAN1 specification. So RAN1 discussion is not needed in our view.  |
| CATT | PRS measurement outside MG is for latency enhancement. Suggest discussing it under AI 8.5.2. |

[R1-2203040](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203040.zip) Questions concerning the implementation of RAN1 agreements in NRPPa RAN3, Ericsson

R1-2203412 Discussion on questions concerning the implementation of RAN1 agreements in NRPPa CATT

R1-2203413 Draft reply LS on questions concerning the implementation of RAN1 agreements in NRPPa CATT

R1-2203491 Draft Reply LS on questions concerning the implementation of RAN1 agreements in NRPPa vivo

R1-2203615 Draft reply LS on questions of RAN1 agreements in NRPPa ZTE

R1-2203963 Discussion on “Questions concerning the implementation of RAN1 agreements in NRPPa” OPPO

R1-2204929 Draft reply LS on Questions concerning the implementation of RAN1 agreements in NRPPa Huawei, HiSilicon

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| **Initial assessment** | RAN3 has requested further RAN1 input to implement RAN1 agreement on NRPPaResponse needed. To be discussed as part of Rel-17 Positioning Enhancement maintenance under agenda item 8.5. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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[R1-2203022](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203022.zip) LS on lower Rx beam sweeping factor for latency improvement RAN4, Intel

R1-2203406 Discussion on lower Rx beam sweeping factor for latency improvement CATT

R1-2203407 Draft reply LS on lower Rx beam sweeping factor for latency improvement CATT

R1-2203489 Draft Reply LS on lower Rx beam sweeping factor for latency improvement vivo

R1-2203616 Draft reply LS on lower Rx beam sweeping factor ZTE

R1-2203964 Discussion on LS on lower Rx beam sweeping factor for latency improvement OPPO

R1-2204923 Discussion on lower Rx beam sweeping factor Huawei, HiSilicon

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| **Initial assessment** | RAN4 has requested RAN1 input on whether UE needs to be configured by LMF to perform PRS measurements in FR2 with a reduced Rx beam sweeping factor.Response needed. To be discussed as part of Rel-17 Positioning Enhancement maintenance under agenda item 8.5.2. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 17 - NR\_IIOT\_URLLC\_enh*

[R1-2203025](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203025.zip) Reply LS on propagation delay compensation RAN4, Huawei

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| **Initial assessment** | To be taken into account as part of discussions on Rel-17 URLLC and IIoT maintenance in agenda item 8.3.3. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| OPPO | According to RAN4 LS, the DL timing definition in RAN4 spec would be changed as following, where the changes are marked in red. *The downlink timing is defined as the time when the first detected path (in time) of the corresponding downlink frame used by the UE to determine downlink timing**is received from the reference cell at the UE antenna.*The key change here is to clarify the reference point being at UE antenna. However, the downlink frame timing in RAN1 spec, which is relating to TA as defined in 38.211 section 4.3.1 and baseband waveform generation in 38.211 section 5.3, seems to refer to a reference point at baseband (well, at least it has been long-term safe to assume the reference point is at baseband). So our question is whether this LS from RAN4 should lead to a new conceptual refresh of RAN1 understanding about DL frame timing in RAN1 spec. We think the potential discussion of above issue likely goes beyond PDC. However, we are ok to take it in PDC session if the majority is fine.  |

### *Release 17 - NR\_ext\_to\_71GHz*

[R1-2203027](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203027.zip) LS to RAN1 on sensing beam characteristics RAN4, Ericsson

R1-2204116 Discussion on LS from RAN4 on directional LBT Ericsson

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| **Initial assessment** | To be discussed as part of Rel-17 NR\_ext\_to\_71GHz maintenance under agenda item 8.2.4. As part of the discussion, decide whether further RAN1 action is needed in response to the RAN4 LS. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 17 - NR\_cov\_enh*

[R1-2203029](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203029.zip) Reply LS on Length of Maximum duration for TDD RAN4, China Telecom

R1-2204966 Discussion and Draft Reply to LS on Length of Maximum Duration Ericsson

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| **Initial assessment** | To be taken into account as part of discussions on Rel-17 Coverage Enhancement maintenance in agenda item 8.8. |
| **After company comments** | Same as above with modification in red.To be taken into account as part of discussions on Rel-17 Coverage Enhancement maintenance in agenda item 8.8. Also consider R1-2204966. |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| Ericsson | Agree to take R1-2203029 in AI 8.8. Also, R1-2204966 (which is listed in ‘Others’ under AI 5 in the chair notes) discusses potential problems with the RAN4 understanding in R1-2203029 and related difficulties for RAN4 testing of TDD UEs with small capabilities for maximum duration, proposing a response. So, we’d suggest that R1-2204966 be taken in AI 8.8 together with R1-2203029. |

### *Release 17 - NR\_redcap*

[R1-2203046](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203046.zip) LS on introduction of an offset to transmit CD-SSB and NCD-SSB at different times RAN2, Ericsson

R1-2203120 On introduction of an offset to transmit CD-SSB and NCD-SSB at different times Ericsson

R1-2203495 Draft Reply LS on introduction of an offset to transmit CD-SSB and NCD-SSB at different times vivo

R1-2203590 Discussion on NCD-SSB offset ZTE, Sanechips

R1-2204271 Discussion on RAN2 LS on introduction of an offset to transmit CD-SSB and NCD-SSB at different times CMCC

R1-2204434 Discussion on LS on introduction of an offset to transmit CD-SSB and NCD-SSB at different times NEC

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| **Initial assessment** | RAN2 has requested RAN1 input on whether CD-SSB and NCD-SSB(s) may be transmitted at different times by configuring an offset.Response needed. To be discussed as part of Rel-17 RedCap maintenance under agenda item 8.6.1. Use separate email thread. |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| Nordic | The issue of offset has been already discussed in last meeting, see [R1-2202532](file:///C%3A%5C3gpp%5CMeetings%5CTSGR1%5CTSGR1_108-e%5CDocs%5CR1-2202532.zip) FL summary #5 on reduced maximum UE bandwidth for RedCap Moderator (Ericsson) **High Priority Proposal 4-1-1d:*** **A RedCap UE supports existing applicable mandatory feature(s) that are based on SSB using NCD-SSB (including NCD-SSB based measurements) as mandatory feature(s) in an RRC-configured DL BWP that does not include CD-SSB.**
* **A UE is not required to handle more than one SSB in a same BWP and a RedCap UE also mandatory support time offset between CD-SSB and NCD-SSB.**

There was no support for 2nd bullet in RAN1#108, not sure why situation would be different in RAN1#109. We do not think it is necessary to re-discuss the issue again in RAN1. Moreover, such offset is not essential for the feature.Instead in AI 5 we should reply the following: *From RAN1 perspective it is feasible to support offset between CD and NCD SSB burst, but there is no consensus in RAN1 to support such offset nor there is consensus that such offset is needed*.  |
| Qualcomm | We don’t think the RAN2 LS needs to be discussed in RAN1#109 meeting due to the following reasons:1. The intention of the RAN2 LS is unclear to RAN1.
	1. If the RAN2 LS is a late reply to the RAN1 LS on NCD-SSB configurations (R1-210600, which was sent after RAN1#106b meeting), RAN2 should state it clearly in their LS to RAN4 and RAN1.
	2. Otherwise, RAN2 should explain their motivations to introduce such an offset, and why it is necessary to trigger the RAN1 discussion.
2. Given the limited RAN1 TUs assigned to R17 maintenance and the very limited responses to the RAN2 LS, we believe RAN1 should focus on solving remaining issues with higher priority at this meeting, such as UE complexity reduction and UE features for R17 RedCap.
3. Since the RAN2 LS was sent to RAN4 as well, RAN1 can wait for the discussion/decision of RAN4 as well as RAN2’s clarification, before assessing the RAN1 impacts (if any) of such time offset.
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### *Release 17 - NR\_SL\_enh*

[R1-2203042](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203042.zip) LS to RAN1 on the inter-UE coordination mechanism RAN2, vivo

R1-2203356 About LS on Inter-UE coordination from RAN2 ZTE, Sanechips

R1-2203414 Draft reply LS on the inter-UE coordination mechanism CATT, GOHIGH

R1-2203493 Draft reply LS on the inter-UE coordination mechanism vivo

R1-2203709 Discussion on LS to RAN1 on the inter-UE coordination mechanism LG Electronics

R1-2203768 [Draft] Reply LS on the inter-UE coordination mechanism xiaomi

R1-2203848 Draft Reply LS to RAN1 on the inter-UE coordination mechanism Samsung

R1-2203969 Discussion on the LS from RAN2 on the inter-UE coordination mechanism OPPO

R1-2203970 Draft reply on LS from RAN2 on the inter-UE coordination mechanism OPPO

R1-2204734 [Draft] Reply LS to the RAN2 LS on the inter-UE coordination mechanism Ericsson

R1-2204735 Discussion on the LS from RAN2 on the inter-UE coordination mechanism Ericsson

R1-2204899 Discussion on LS from RAN2 on the inter-UE coordination mechanism Huawei, HiSilicon

R1-2204968 Draft Reply LS to RAN2 on the inter-UE coordination mechanism Qualcomm Incorporated

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| **Initial assessment** | RAN2 has requested RAN1 input on inter-UE coordination mechanism.Response needed. To be discussed as part of Rel-17 Sidelink maintenance under agenda item 8.11.2. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 17 - NR\_MBS*

[R1-2203044](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203044.zip) LS on HARQ process for MCCH and Broadcast MTCH(s) RAN2, Samsung

R1-2203245 [Draft] Reply LS on HARQ process for MCCH and Broadcast MTCH(s) ZTE

R1-2203299 Discussion on LS on HARQ process for MCCH and Broadcast MTCH(s) Spreadtrum Communications

R1-2203492 Draft reply LS on HARQ process for MCCH and Broadcast MTCH(s) vivo

R1-2203766 Draft reply to LS on HARQ process for MCCH and Broadcast MTCH(s) xiaomi

R1-2203976 Discussion on the LS from RAN2 on HARQ process for MCCH and Broadcast MTCH(s) OPPO

R1-2203977 Draft reply on LS from RAN2 on HARQ process for MCCH and Broadcast MTCH(s) OPPO

R1-2204270 Discussion on RAN2 LS on HARQ process for MCCH and Broadcast MTCH(s) CMCC

R1-2204927 Discussion on HARQ process for MCCH and broadcast MTCH(s) Huawei, HiSilicon

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| **Initial assessment** | RAN2 has requested RAN1 input on HARQ process for MCCH and Broadcast MTCH(s).Response needed. To be discussed as part of Rel-17 MBS maintenance under agenda item 8.12.2. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 17 - UE features*

R1-2205090 Reply LS on updated Rel-17 RAN1 UE features list for NR RAN2, Intel

R1-2205093 [Draft] Reply LS on updated Rel-17 RAN1 UE features list for NR

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| **Initial assessment** | RAN2 has requested RAN1 input on updated Rel-17 RAN1 UE features list for NR.Response needed. To be discussed as part of Rel-17 UE features discussions under agenda item 8.16. Use separate email thread. |
| **After company comments** | Same as aboveTo Nokia: The submitted tdoc can be considered as part of the email discussion for this LS. Please announce the share tdoc# under the relevant email thread. |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| Nokia, NSB | As this LS was only sent on Friday last week from RAN2 and received only on Monday in RAN1 there was no time to allocate a Tdoc# and prepare a Tdoc. We would like to submit a late contribution related to this LS. Based on the initial assessment, we will be asking for the Tdoc# for AI 8.16 and submitting a Tdoc still within this week.Update: Nokia Tdoc uploaded to Inbox as R1-2205114 |
| vivo | Regarding this late incoming LS, vivo contribution is available in R1-2205093. |

### *Release 18 - FS\_XRM*

[R1-2203219](file:///D%3A%5C%5CDocuments%5C%5C3GPP%20documents%5C%5CRAN1%5C%5CTSGR1_109-e%5C%5CDocs%5C%5CR1-2203219.zip) LS on UE Power Saving for XR and Media Services SA2, Nokia

R1-2203395 Discussion of SA2 LS on UE Power Saving for XR and Media Services Ericsson

R1-2203487 Discussion on UE Power Saving for XR and Media Services vivo

R1-2203591 Discussion on UE power saving for XR and media services ZTE, Sanechips

R1-2203592 Draft reply LS on UE power saving for XR and media services ZTE, Sanechips

R1-2204126 Discussion on LS on UE Power Saving for XR and Media Services InterDigital, Inc.

R1-2204926 Discussion on LS from SA2 on UE Power Saving for XR and Media Services Huawei, HiSilicon

R1-2204969 Draft reply LS on UE Power Saving for XR and Media Services Qualcomm Incorporated

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| **Initial assessment** | SA2 has requested RAN1 input on which type of information will be useful for the RAN from CN for power saving enhancements for XR applications.Response needed. To be discussed as part of Rel-18 XR discussions under agenda item 9.11.1. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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### *Release 18 - FS\_5MBS\_Ph2*

[R1-2203218](file:///D%3A%5C%5CDocuments%5C%5C3GPP%20documents%5C%5CRAN1%5C%5CTSGR1_109-e%5C%5CDocs%5C%5CR1-2203218.zip) UE capabilities for MBS SA2, Qualcomm

R1-2203246 [Draft] Reply UE capabilities for MBS ZTE

R1-2203497 Draft Reply LS on MBS UE capabilities vivo

R1-2204273 Discussion on SA2 LS on UE capabilities for MBS CMCC

R1-2204928 Discussion on UE capabilities for receiving MBS broadcast Huawei, HiSilicon

R1-2204970 Discussion on SA2 LS on UE capabilities of NR MBS broadcast reception Qualcomm Incorporated

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| **Initial assessment** | SA2 has requested RAN1 input on SA2’s Rel-18 work on MBS enhancements study.Response needed. To be discussed under agenda item 5. Use separate email thread. |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
| ZTE | This LS is also related to Redcap. The fundamental issue is whether Redcap UE can support MBS or not, this has to be clarified first. We would suggest to discuss this fundamental issue in the Redcap UE feature session first and discuss the response for this LS later on. |

## LSs “CC: RAN1”

### *LSs for which company tdocs have been submitted*

**Release 15 - NR\_newRAT**

[R1-2203038](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203038.zip) Reply LS on configuration of p-MaxEUTRA and p-NR-FR1 RAN4, Huawei

R1-2203098 Draft reply LS on configuration of p-MaxEUTRA and p-NR-FR1 Huawei, HiSilicon

R1-2204880 On configuration of p-MaxEUTRA and p-NR-FR1 Nokia, Nokia Shanghai Bell

R1-2204967 Draft reply LS on configuration of p-MaxEUTRA and p-NR-FR1 Qualcomm Incorporated

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| **Initial assessment** | To be discussed under agenda item 5. As part of the discussion, decide whether further RAN1 action is needed in response to the RAN4 LS. Use separate email thread. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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**Release 16 - 5G\_V2X\_NRSL**

[R1-2203048](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203048.zip) Reply LS on Pemax for NR-V2X RAN2, Huawei, CATT

R1-2204732 [Draft] LS on PEMAX for NR-V2X Ericsson

R1-2204733 Discussion on LS on PEMAX for NR-V2X Ericsson

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| **Initial assessment** | RAN1 input to RAN4 on Issue 2 (in R1-2200866) has already been provided in R1-2202816.No further discussion needed. |
| **After company comments** | Same as above |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
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**Release 17 - NR\_redcap**

[R1-2203039](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203039.zip) LS on FR2 RedCap UE RAN4, Ericsson

R1-2204921 Discussion on LS from RAN4 on FR2 RedCap UE Huawei, HiSilicon

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| **Initial assessment** | Not clear if further RAN1 action is necessary. Companies are invited to share their views. |
| **After company comments** | No action required from RAN1 in RAN1#109-e. |
| **Company name** | **Provide comments below** |
| Nokia, NSB | We are not categorically against having an email discussion on the topic, but there doesn’t seem to be any reason for any RAN1 discussion. * The incoming LS has no action to RAN1.
* The agreements made by RAN4 do not have any impact to RAN1.

Thus it would seem that there is for RAN1 to discuss the LS or confirm that there are no impacts to RAN1 when no one is suggesting any RAN1 impacts.  |
| vivo | Fine with no dedicate discussion on this, since the RAN1 impact is not clear.  |
| Spreadtrum | Further RAN1 discussion seems not to be needed. On one hand, the agreements in the LS do not have impact on RAN1; on the other hand, LS reply from RAN1 is not required in the LS. |
| FUTUREWEI | The RAN4 decision for FR2 conflicts with the WID and the current RedCap design. We submitted a paper to RAN2 [R2-2204619](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204619.zip) on the RAN4 LS, outlining options RAN2 could take (i.e., reject, accept for FR2, keep FR2 aligned with WID). However, we are not against discussing in RAN1 if others feel there is a concern on UE features OR if an opinion from RAN1 (e,g, no consensus in RAN1 to support new FR2 UE types at this stage, consensus to recommend accepting for FR2, etc.) would help expedite resolution. |
| New H3C | There is no any motivation for RAN1 to discuss this LS because of no any action for RAN1. |
| ZTE, Sanechips | RAN1 may need to check whether the capabilities based on Rx or MIMO layers are appropriate for FR2 but not appropriate for FR1. For example, the support of RANK>=2. However, this issue could be discussed in UE feature discussion. |
| Huawei, HiSilicon | No dedicated email thread is fine with us. However, the LS from RAN4 seems to include content that is clearly against RAN1 conclusion on related UE capability. We remind that if RAN2 needs input from RAN1 to clarify/confirm anything per the LS then it would be from next meeting which would have late ASN.1 impact and we do not prefer. Thus, we assume that there won’t be such need for RAN1 to further evaluate this LS in future, with the understanding of UE capability same as that expressed in our contribution. |
| Ericsson | We do not see a need for a RAN1 reply to this LS. There is no RAN1 action and no RAN1 impact. Note that RAN1#108-e made a conclusion that “It is up to RAN4 whether/how to report UE Rx structure for FR2”. |
| Qualcomm | We share the same view as many companies above. We don’t think there is any reason for RAN1 to discuss the RAN4 LS at this meeting.  |
| NTT DOCOMO | It was agreed as conclusion at the UE feature discussion in RAN1 that it is up to RAN4 whether/how to report UE Rx structure for FR2, thus we believe RAN1 discussion is not necessary. |
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**Release 18 - FS\_5TRS\_URLLC**

[R1-2203015](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203015.zip) LS on RAN feedback for low latency SA2, Huawei

R1-2203393 Discussion of SA2 LS on RAN feedback for Low Latency Ericsson

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| **Initial assessment** | Not clear if further RAN1 action is necessary. Companies are invited to share their views. |
| **After company comments** | No action required from RAN1 in RAN1#109-e. |
| **Company name** | **Provide comments below** |
| Nokia, NSB | WE don’t see the need for RAN1 to discuss the LS as it is to RAN2, CC to RAN1 and RAN3. There is no action to RAN1 and the discussion and the response can be left to RAN2 to take care. |
| Spreadtrum | Share the sane view with NOKIA |
| New H3C | There is no any motivation for RAN1 to discuss this LS and this LS should be handled by RAN2. |
| ZTE | The first two questions are about TDD cycle and SPS/CG periodicity, respectively. RAN2 can answer the questions from RRC signaling perspective. The last question is about the coordination between physical resource and the QoS flow. It should be discussed by RAN2. So we think RAN2 can handle all the questions very well. Especially, RAN2 can provide a better answer for the last question in the LS. We don’t see the need to discuss this LS in RAN1.  |
| Ericsson | We think the first question in LS (copied below) should be answered according to RAN1 specification TS 38.213 section 11.1, including the dynamic indication of slot format. “1) What are the possible values for the periodicity of the TDD cycle that RAN can support? This question is related to Problem 1.”It is true that the action items are to RAN2. Thus we are fine to let RAN2 reply, with each company’s RAN1 delegate informally support RAN2. |
| CATT | It is not necessary for RAN1 to discuss the LS as it is to RAN2. |

### *LSs for which company tdocs have NOT been submitted*

The following incoming LSs are noted without further email discussions in RAN1#109-e.

**Release 16 - 5G\_V2X\_NRSL**

[R1-2203047](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203047.zip) Reply LS on Signalling of PC2 V2X intra-band concurrent operation RAN2, Xiaomi

**Release 17 - 5G\_eLCS\_ph2**

[R1-2203014](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203014.zip) Response LS on determination of location estimates in local co-ordinates SA2, Ericsson

**Release 17 - NR\_MG\_enh**

[R1-2203033](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203033.zip) LS on collision handling of concurrent MGs RAN4, MediaTek inc.

[R1-2203034](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203034.zip) LS on R17 MG enhancement - NCSG RAN4, Apple

**Release 17 - NR\_redcap**

[R1-2203035](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203035.zip) Reply LS on UE capabilities for RedCap from RRM perspective RAN4, Ericsson

**Release 17 - NR\_UE\_pow\_sav\_enh**

[R1-2203036](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203036.zip) Reply LS to RAN2 on RLM/BFD relaxation for ePowSav RAN4, vivo

[R1-2203041](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203041.zip) Reply LS on paging subgrouping and PEI RAN3, ZTE

**Release 17 - NR\_RF\_FR2\_req\_enh2**

[R1-2203037](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203037.zip) LS to RAN2 on UL gap in FR2 RF enhancement RAN4, Apple

**Release 17 - NR\_MG\_enh, LTE\_NR\_MUSIM, NR\_pos\_enh, NR\_NTN\_solutions**

[R1-2203050](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203050.zip) LS on coordination of R17 gap features RAN2, MediaTek

**Release 17 - UE features**

[R1-2203031](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203031.zip) LS on Rel-17 RAN4 UE feature list for NR RAN4, CMCC

[R1-2203032](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203032.zip) LS on Rel-17 RAN4 UE feature list for NR RAN4, CMCC

**Release 17 - NR\_RRM\_enh2**

[R1-2203049](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203049.zip) Reply LS on interruption for PUCCH Scell activation in invalid TA case RAN2, CATT

**Release 17 - LTE\_NR\_DC\_enh2**

[R1-2203051](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203051.zip) LS on TCI state indication RAN2, MediaTek

**Release 18 - FS\_XRM**

[R1-2203016](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203016.zip) LS on QoS support with PDU Set granularity SA2, Intel

**Others**

[R1-2203052](file:///D%3A%5CDocuments%5C3GPP%20documents%5CRAN1%5CTSGR1_109-e%5CDocs%5CR1-2203052.zip) LS on presentation of EUWENA and involvement in 3GPP on Non Public Network EUWENA (European Users Wireless Enterprise Network Association

## Other issues from previous meetings

**Release 17 - LTE\_NR\_DC\_enh2 (from RAN1#108-e)**

R1-2203101 Remaining issues on beam information of PUCCH SCell in PUCCH SCell activation procedure Huawei, HiSilicon

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| **Initial assessment** | Follow up of email discussion [108-e-AI5-LS-05].To be discussed under agenda item 5. As part of the discussion, decide whether further RAN1 action is needed.  |
| **After company comments** | Same as above with revision in red.Follow up of email discussion [108-e-AI5-LS-05].To be discussed under agenda item 5. As part of the discussion, decide whether further RAN1 action is needed. Use separate email thread. |
| **Company name** | **Provide comments below if there are different views from the moderator or if there’s anything else to share.** |
|  |  |

## Company tdocs submitted to agenda item 5 without WI/SI code(s)

R1-2204035 Discussion of BWP operation without bandwidth restriction Ericsson

R1-2204195 Draft reply LS on inter-UE coordination mechanism Apple

R1-2204445 Discussion on LS on HARQ process for MCCH and Broadcast MTCH(s) Spreadtrum Communications

Withdrawn

R1-2204716 Discussion on RAN2 LS on HARQ process for MCCH and Broadcast MTCH MediaTek Inc.

R1-2204956 Views on UE capabilities for MBS Ericsson

R1-2204966 Discussion and Draft Reply to LS on Length of Maximum Duration Ericsson

# Conclusions

All incoming LSs are noted. The following incoming LSs will be further discussed for possible RAN1 action in RAN1#109-e.

* TBD