3GPP TSG-RAN WG4 Meeting # 100-e R4-21xxxxx

Electronic Meeting, Aug. 16-Aug. 27, 2021

**Agenda item:** 5.1.3, 5.1.6, 6.1.2.5, 9.5.4

**Source:** Moderator (ZTE Corporation)

**Title:** Email discussion summary for [99-e][303] NR\_EMC

**Document for:** Information

# Introduction

For the RAN4 [99-e] [303] NR\_EMC, the main topics are about NR UE EMC, NR BS EMC, IAB EMC and NR repeaters EMC. Therefore, the discussions will separate into four parts:

Topic #1: Agenda item 5.1.3: NR UE EMC

Topic #2: Agenda item 5.1.6: NR BS EMC

Topic #3: Agenda item 6.1.2.5: IAB EMC

Topic #4: Agenda item 9.5.4: NR Repeaters EMC

# Topic #1: NR UE EMC (AI: 5.1.3)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2112609**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112609.zip) | Xiaomi | **Observation 1: The EU regulation has defined test signal configurations referring to 3GPP RF test specification.**  **Observation 2: The CCSA regulation has defined specific test configuration for EMC radiated spurious emission and the future work on EN-DC test configuration is also planned.**  **Observation 3: Current TS 38.124 doesn’t give enough information on specific test configurations for EMC tests.**  **Observation 4: Current EMC WID is stable after many round discussion and can solve the concern of regulation.**  **Proposal 1: To agree a WF to fully capture the gap between regulation concern and current UE EMC specification and the urgency of EMC enhancement of Rel-18.** |
| [**R4-2114395**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114395.zip) | Huawei | **Proposal 1**: agree on the MU value for the effective radiated RF power measurements between 12.75GHz and 26 GHz as [6 dB].  **Proposal 2**: limit the correction of the MU value for the effective radiated RF power measurements between 12.75GHz and 26 GHz to the NR UE EMC specification only (due to pending “TBD”). |
| [**R4-2114396**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114396.zip) | Huawei | Cat F Rel-15 Draft CR to TS38.124  ***Reason for changes:***  Rel-15 version of the TS 38.124 still contains a “TBD” for the maximum MU of the Effective radiated RF power measurement between 12.75 GHz and 26 GHz.    In this CR, removal of the TBD for the maximum measurement uncertainty value for measurements of the effective radiated RF power in 12.75 – 26 GHz frequency range is proposed, based on related discussion paper.  ***Summary of change:***  8.2.5: TBD replaced by the appropiate value for the maximum MU of the Effective radiated RF power measurement between 12.75 GHz and 26 GHz. |
| R4-2114397 | Huawei | Mirror CR(Cat A Rel-16) to [R4-2114396](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114396.zip) |
| [**R4-2112768**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112768.zip) | ZTE | **Observation 1:** The value given in the example (i.e. 6GHz to 18GHz) of CISPR 16-4-2[2] for radiated disturbance uncertainty calculation exceeds 5 dB.  **Observation 2:** The example value (i.e. 6GHz to 18GHz)according to the calculation model of the ETSI TR 100 028-1[3] for radiated spurious emission uncertainty is 4.4 dB.  **Proposal:** It is recommended that the maximum uncertainty of the 3GPP EMC standards above 12.75 GHz be 6 dB.  *Moderator note: This Tdoc is under AI 5.1.6, which includes the MU values for above 12.75GHz for both UE EMC and BS EMC.* |

## Open issues summary

In last meeting, the agreed WF R4-2108469 about EMC measurement uncertainty for effective radiated RF power between 12.75 GHz and 26 GHz were approved, in which:

* *Interested companies are encouraged to provide further analysis and motivation for the maximum measurement uncertainty for effective radiated RF power measurements between 12.75 GHz and 26 GHz, considering the following options:*
* *Option 1: 3dB*
* *Option 2: 6 dB*
* *Other options are not precluded. As this topic is related to Rel-15 specification, aim to conclude on this topic during RAN#100-e meeting.*
* *Additionally, applicability analyses of the above MU value for EMC specifications is welcome (initial CR was related to NB BS only).*

### Sub-topic 1-1: On LS from CCSA

**Issue 1-1: Whether or not agree a WF to fully capture the gap between regulation concern and current UE EMC specification and the urgency of EMC enhancement of Rel-18?**

* Proposals
  + Yes ([R4-2112609](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112609.zip))
* Recommended WF
  + A WF could be assigned

### Sub-topic 1-2: MU value for the effective radiated RF power measurements

**Issue 1-2-1: Whether or not limit the correction of the MU value between 12.75GHz and 26 GHz to the NR UE EMC specification (i.e. TS38.124) only?**

* Proposals
  + Option 1. Yes
  + Option 2. No. (If No is selected, then the MU value above 26GHz may need to be discussed in future)
* Recommended WF
  + TBA

**Issue 1-2-2: For the MU value between 12.75GHz and 26 GHz for UE EMC**

* Proposals
  + 6dB ([R4-2114395](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114395.zip), [R4-2112768](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112768.zip))
* Recommended WF
  + Agree 6dB MU value

## Companies views’ collection for 1st round

### Open issues

**Issue 1-1: Whether or not agree a WF to fully capture the gap between regulation concern and current UE EMC specification and the urgency of EMC enhancement of Rel-18?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Option 1. Yes  UE test configurations are very complicated. During the EMC test, all possible test configurations and their combinations cannot be enumerated. It is necessary to deeply study the EMC test configuration of UEs. The principle of simplifying the test configuration is to maximize the emission and make the immunity most sensitive. |
| Ericsson | Option 1: Yes |
| Xiaomi | Option 1. We agree with ZTE that to further study the test configuration. For some of the EMC tests whose main focus is on the device reliability, we can at least have some simplification of TCs. |

**Issue 1-2-1: Whether or not limit the correction of the MU value between 12.75GHz and 26 GHz to the NR UE EMC specification (i.e. TS38.124) only?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Option 1: Yes.  It is fine to focus on the MU values under 26GHz, also we think this frequency range is applicable to other EMC specifications, such as TS 38.113 |
| Ericsson | Opåtion 1. Yes. |
| Xiaomi | Option 1. |

**Issue 1-2-2: For the MU value between 12.75GHz and 26 GHz for UE EMC**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Agree 6dB MU value.  The radiated emission measurement system and the radiated spurious measurement system are very complicated, and many factors contribute to the uncertainty. In our view, the 6 dB is an appropriate MU value. |
| Ericsson | Agree with 6 dB value. |

### CRs/TPs comments collection

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

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2114396**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114396.zip)  (Mirror CR: R4-2114397) | ZTE: We are fine with the CR  Ericsson: OK |

## 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.*

**Sub-topic 1-1: On LS from CCSA**

|  |  |
| --- | --- |
|  | **Status summary** |
| **Issue 1-1: Whether or not agree a WF to fully capture the gap between regulation concern and current UE EMC specification and the urgency of EMC enhancement of Rel-18?** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

**Sub-topic 1-2: MU value for the effective radiated RF power measurements**

|  |  |
| --- | --- |
|  | **Status summary** |
| **Issue 1-2-1: Whether or not limit the correction of the MU value between 12.75GHz and 26 GHz to the NR UE EMC specification (i.e. TS38.124) only?** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |
| **Issue 1-2-2: For the MU value between 12.75GHz and 26 GHz for UE EMC** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

## Discussion on 2nd round (if applicable)

# Topic #2: NR BS EMC (AI: 5.1.6)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2112768**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112768.zip) | ZTE | **Observation 1:** The value given in the example (i.e. 6GHz to 18GHz) of CISPR 16-4-2[2] for radiated disturbance uncertainty calculation exceeds 5 dB.  **Observation 2:** The example value (i.e. 6GHz to 18GHz)according to the calculation model of the ETSI TR 100 028-1[3] for radiated spurious emission uncertainty is 4.4 dB.  **Proposal:** It is recommended that the maximum uncertainty of the 3GPP EMC standards above 12.75 GHz be 6 dB.  *Moderator note: This Tdoc is under AI 5.1.6, which includes the MU values for above 12.75GHz for both UE EMC and BS EMC.* |
| **R4-2112770** | ZTE Corporation | Cat F Rel-15 CR for TS38.113, based on [R4-2112768](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112768.zip)  ***Reason for change:***  There is no requirement for the uncertainty of radiation emission above 12.75 GHz.  The radiated emission measures up to 5th harmonic, which may exceed 26 GHz. The highest frequency of TS38.124 radiation emission test is 26 GHz.  ***Summary of change:***  Add the uncertainty of radiation emission above 12.75 GHz.  The highest measurement frequency of radiated emission is limited to 26 GHz. |
| R4-2112772 | ZTE Corporation | Mirror CR (Cat A Rel-15 CR for TS38.113) to R4-2112770 |
| **R4-2113187** | Ericsson | Cat F Rel-15 CR for TS38.113  ***Reason for change:***  Clarification in the definition of spatial exclusion  ***Summary of change:***  This Draft Cat. F updates the definition of spatial exclusion for Release 15. |
| R4-2113188 | Ericsson | Cat F Rel-15 CR for TS38.113, based on [R4-2110077](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109646.zip) |

## Open issues summary

In last meeting, the agreed WF R4-2108469 about EMC measurement uncertainty for effective radiated RF power between 12.75 GHz and 26 GHz were approved, in which:

* *Interested companies are encouraged to provide further analysis and motivation for the maximum measurement uncertainty for effective radiated RF power measurements between 12.75 GHz and 26 GHz, considering the following options:*
* *Option 1: 3dB*
* *Option 2: 6 dB*
* *Other options are not precluded. As this topic is related to Rel-15 specification, aim to conclude on this topic during RAN#100-e meeting.*
* *Additionally, applicability analyses of the above MU value for EMC specifications is welcome (initial CR was related to NB BS only).*

### Sub-topic 2-1: MU value for the effective radiated RF power measurements

**Issue 2-1: For the MU value between 12.75GHz and 26 GHz for BS EMC**

* Proposals
  + 6dB ([R4-2112768](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112768.zip))
* Recommended WF
  + Agree 6dB MU value.

## Companies views’ collection for 1st round

### Open issues

**Issue 2-1: For the MU value between 12.75GHz and 26 GHz for BS EMC**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Agree 6dB MU value. Same as Issue 1-2-2. |
| Ericsson | Agree with 6dB as MU value. |

### CRs/TPs comments collection

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

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| **R4-2112770**  (Mirror CR: R4-2114397) | Company A:  Company B: |
| **R4-2113187**  (Mirror CR: R4-2113188) | ZTE: Some editorial modifications are needed.  Ericsson: Thanks. We would appreciate to get your proposed modifications. |

## 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.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Issue 2-1: For the MU value between 12.75GHz and 26 GHz for BS EMC** | *Tentative agreements:*    *Candidate options:*  *Recommendations for 2nd round:* |

## Discussion on 2nd round (if applicable)

# Topic #3: IAB EMC (AI: 6.1.2.5)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2112739**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112739.zip) | ZTE Corporation | Cat F CR to TS 38.175: IAB test configurations  ***Reason for change:***  The IAB conformance specifications TS 38.176-1 and TS 38.176-2 are not referenced.  The test configurations for IAB need to be added.  Some editorial errors in clause 8 and clause 9.  ***Summary of change:***  Add TS 38.176-1 and TS 38.176-2 into the references.  Add test configurations for IAB EMC test conditions.  Correct the editorial errors in clause 8 and clause 9. |
| [**R4-2113189**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113189.zip) | Ericsson | Cat F CR to TS 38.175 on IAB EMC performance requirements  ***Reason for change:***  Introduction of performance requirements in IAB EMC specification is required to complete the EMC IAB standard.  ***Summary of change:***  This draft CR introduces performance requirements in IAB EMC specification TS 38.175. |
| [**R4-2114408**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114408.zip) | Huawei | Cat F draft CR to TS 38.175 further extension of spatial exclusion considerations for EMC RI test for IAB, Rel-16  ***Reason for change:***  Based on previous discussions, it was found that the text on the spatial exclusion application for the RI test of the IAB node may not be clear enough. Therefore, more clarifications were provided, together with the examples figures (in order not to limit any IAB implementations).  ***Summary of change:***  Text on the spatial exclusion extended to improve readability of the spatial exclusion applications for IAB.  Missing definition added. |

## Open issues summary

N/A

## Companies views’ collection for 1st round

### CRs/TPs comments collection

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

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2112739**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112739.zip) | Company A:  Company B: |
| [**R4-2113189**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113189.zip) | ZTE: We also submit a CR (R4-2112739) which already includes these contents . We suggest to meger R4-2113189 into R4-2112739.  Ericsson: Merging and co-signing the contributions is OK. |
| [**R4-2114408**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114408.zip) | ZTE: It’s OK to add the definition about “spatial exclusion zone”. The figure numbers(Figure 9.2.2-1 and Figure 9.2.2-2) should be clearly mentioned in the above description.  Ericsson: OK with the proposal. Important to see whether some alignment with the BS spec needs to be done. |

## 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.*

## Discussion on 2nd round (if applicable)

# Topic #4: NR Repeaters EMC (AI: 9.5.4)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2112841**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112841.zip) | ZTE Corporation | TP for the specification TS38.114, including clauses 7, 8(excluding 8.1, 8.2.1) and 9 (excluding 9.2.1) |
| R4-2112864 | ZTE Corporation | *Moderator note: For email approval* |
| [**R4-2113190**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113190.zip) | Ericsson | TP for the specification TS38.114, including clause 8 (excluding 8.1, 8.2) |
| [**R4-2113191**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113191.zip) | Ericsson | TP for the specification TS38.114, including clause 9 |
| [**R4-2114563**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114563.zip) | Huawei | TP for the specification TS38.114, including almost all the clauses except subclause 4.5 NR repeaters test configurations |

## Open issues summary

In last meeting, the WF R4-2108479 was approved, where:

* For the time being, only focus core requirement for TDD and FDD NR repeater EMC.
* The following EMC requirements are referred to CISPR or IEC specifications and can be applied to NR FDD/TDD repeaters
* Radiated emission(ancillary equipment), conducted emission (including DC power input/output port, AC mains power input/output port, Telecommunication port) , Harmonic current emissions(AC mains input port), Voltage fluctuations and flicker (AC mains input port)
* RF electromagnetic field (80 MHz to 6000 MHz), conducted immunity (0.15 MHz - 80 MHz), ESD, EFT, Voltage dips, surges
* For “exclusion bands” requirements, it is premature to decide, pending on the repeater RF discussion
* Other than the requirments in previous slide, other requirements (such as radiated emission requirement) for NR TDD repeaters are pending on the repeater RF discussion, more discussions are needed for TDD NR repeaters
* Other than the requirments in previous slide, other requirements (such as radiated emission requirement) for NR FDD repeaters use TS 36.113 and TS 38.113 as a starting point
* Issue 4-2-2: For test conditions, performance assessment and performance criteria, whether or not TS 36.113/TS38.113 can be directly reused for NR repeaters especially for TDD?

Option 1: Yes, can be directly reused for both NR FDD and TDD repeaters EMC

Option 2: No, can be directly reused for NR FDD repeaters EMC, but not for NR TDD repeaters EMC

Option 3: No, It is premature to decide, pending on the repeater RF discussion, more discussions are needed for TDD NR repeaters.

Recommended WF： Option 3

* Issue 4-2-3: If EMC requirements (core and performance) are the same for all the repeater classes for both FDD and TDD repeaters, namely WA, MR, LA and home class?

Option 1: Yes

Option 2: No

Option 3: It is premature to decide, pending on the repeater RF discussion, especially for performance.

Recommended WF： Option 3.

In addition, Skeleton for TS 38.114V0.0.1 was approved in [R4-2109916](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109916.zip)

### Sub-topic 4-1

**Issue 4-1-1: Whether or not capture the contents for clause 4 (i.e. test condition) into TS38.114 for NR repeaters EMC in this meeting?**

* Proposals
  + Option 1: Yes, as proposed by [R4-2114563](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114563.zip)
  + Option 2: No, it is premature to decide the contents, pending on the repeater RF discussion
* Recommended WF
  + TBA

**Issue 4-1-2: Whether or not capture the contents for clause 5 (i.e. Performance assessment) into TS38.114 for NR repeaters EMC in this meeting?**

* Proposals
  + Option 1: Yes, as proposed by [R4-2114563](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114563.zip)
  + Option 2: No, it is premature to decide the contents, pending on the repeater RF discussion
* Recommended WF
  + TBA

**Issue 4-1-3: Whether or not capture the contents for clause 6 (i.e. Performance criteria) into TS38.114 for NR repeaters EMC in this meeting?**

* Proposals
  + Option 1: Yes, as proposed by [R4-2114563](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114563.zip)
  + Option 2: No, it is premature to decide the contents, pending on the repeater RF discussion
* Recommended WF
  + TBA

**Issue 4-1-4: Whether or not capture the contents for the test configuration sub-clauses (sub-clauses 8.1 and 9.1) into TS38.114 for NR repeaters EMC in this meeting?**

* Proposals
  + Option 1:Yes, as proposed by [R4-2114563](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114563.zip) (only for sub-clauses 8.1) and R4-2113191 (only for sub-clauses 9.1)
  + Option 2: No, it is premature to decide the contents, pending on the repeater RF discussion
* Recommended WF
  + TBA

**Issue 4-1-5: Whether or not capture the contents for the test configuration sub-clause 8.2.1 (i.e. Radiated emission, NR repeaters) into TS38.114 for NR repeaters EMC in this meeting?**

* Proposals
  + Option 1: Yes, as proposed by [R4-2114563](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114563.zip)
  + Option 2: No, it is premature to decide the contents, pending on the repeater RF discussion
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

**Issue 4-1-1: Whether or not capture the contents for clause 4 (i.e. test condition) into TS38.114 for NR repeaters EMC in this meeting?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Option 2: No.  It is premuture to decide now, the EMC test conditions for NR repeaters are pending on the RF discussion. |
| Ericsson | Option 2: No  It is better to wait for RF input and se how this might impact the test conditions for NR repeaters. |
| Nokia | Option 2. |

**Issue 4-1-2: Whether or not capture the contents for clause 5 (i.e. Performance assessment) into TS38.114 for NR repeaters EMC in this meeting?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Option 2: No.  It is premuture to decide now, the performance assessment for NR repeaters are pending on the RF discussion. the performance assessment metric is under discussion in repeaters RF section, it seems the gain metric may only apply for FDD repeaters, but for TDD repeaters, gain metric may not applicable. Anyway, we can wait for the consensus of RF section. |
| Ericsson | Option 2: No |
| Nokia | Option 2. |

**Issue 4-1-3: Whether or not capture the contents for clause 6 (i.e. Performance criteria) into TS38.114 for NR repeaters EMC in this meeting?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Option 2: No.  It is premuture to decide now, the performance criteria for NR repeaters are pending on the RF discussion. |
| Ericsson | Option 2: No  However, in this case we do propose to use the text submitted by Huawei as baseline for the upcoming discussion. We can take parts of it, and update it based on the evolution of the RF discussion. A WF can be a good first step. |
| Nokia | Option 2. |

**Issue 4-1-4: Whether or not capture the contents for the test configuration sub-clauses (sub-clauses 8.1 and 9.1) into TS38.114 for NR repeaters EMC in this meeting?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Option 2: No.  It is premuture to decide now, the test configurations for NR repeaters are pending on the RF discussion. |
| Ericsson | Option 1; Yes taking into account that some of the sections in chapters 8 and 9 are technology agnostic. ZTE and Ericsson have provided input for the same sections. |
| ZTE | To Ericsson: Our TP doesn’t include the sub-clause 8.1 and 9.1, since we think how to build the communication link are unclear for now(i.e. gain, or throughput or power), which pending on the RF outcomes. Therefore we suggest to postpone to include sub-clause 8.1 and 9.1 to the TS in this meeting. |
| Nokia | Option 2. |

**Issue 4-1-5: Whether or not capture the contents for the test configuration sub-clause 8.2.1 (i.e. Radiated emission, NR repeaters) into TS38.114 for NR repeaters EMC in this meeting?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Option 2: No.  It is premuture to decide now, the description about ΔfOBUE for NR repeaters are pending on the RF discussion. |
| Ericsson | Option 2: No  This topic might be impacted by the decisions made in the RF discussion. |
| Nokia | Option 2. |

### 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.*

*Moderator note 1: As announced by the vice chairman, several TPs provided in Repeater EMC AI, Work split on TS/TR drafting need to be provided and endorsed before proceeding the TPs; the issues on draft TPs can discussed, meanwhile the decision on these TPs will be postponed until work split provided.*

*Moderator note 2: Since different companies’ TP capture different clauses, i.e. 1 company provide a TP to TS including almost all the clauses except for subclause 4.5, and 1 company provide a TP to TS including clause 1, 2, 7, 8, 9 , while the other company provide a TP to TS including clause 8, 9. Moderator recommend that the work split on TS/TR could be done after 1st round discussion depending on the discussion of above issues, i.e. whether or not some of the clauses need to be captured into TS38.114 in this meeting considering the approved WF R4-2108479. However, if there are no consensus on the above issues, for sake of the progress, moderator recommend only focus on clauses 1, 2, 7, 8(excluding 8.1, 8.2.1) and 9 (excluding 9.2.1) in this meeting (also work split could be done for these clauses).*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2112841**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112841.zip) | **Nokia: First discuss on TS work split plan among different companies based on the agreed skeleton.** |
| [**R4-2113190**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113190.zip) | **Nokia: The same comment as above** |
| [**R4-2113191**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113191.zip) | **Nokia: The same comment as above** |
| [**R4-2114563**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114563.zip) | **Nokia: The same comment as above** |

## 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.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Issue 4-1-1: Whether or not capture the contents for clause 4 (i.e. test condition) into TS38.114 for NR repeaters EMC in this meeting?** | *Tentative agreements:*    *Candidate options:*  *Recommendations for 2nd round:* |
| **Issue 4-1-2: Whether or not capture the contents for clause 5 (i.e. Performance assessment) into TS38.114 for NR repeaters EMC in this meeting?** | *Tentative agreements:*    *Candidate options:*  *Recommendations for 2nd round:* |
| **Issue 4-1-3: Whether or not capture the contents for clause 6 (i.e. Performance criteria) into TS38.114 for NR repeaters EMC in this meeting?** | *Tentative agreements:*    *Candidate options:*  *Recommendations for 2nd round:* |
| **Issue 4-1-4: Whether or not capture the contents for the test configuration sub-clauses (sub-clauses 8.1 and 9.1) into TS38.114 for NR repeaters EMC in this meeting?** | *Tentative agreements:*    *Candidate options:*  *Recommendations for 2nd round:* |
| **Issue 4-1-5: Whether or not capture the contents for the test configuration sub-clause 8.2.1 (i.e. Radiated emission, NR repeaters) into TS38.114 for NR repeaters EMC in this meeting?** | *Tentative agreements:*    *Candidate options:*  *Recommendations for 2nd round:* |

## Discussion on 2nd round (if applicable)

*Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled ”Recommendations for Tdocs”.*

# Recommendations for Tdocs

## 1st round

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| <....> | <....> |  |
|  |  |  |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-210xxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| [**R4-2112609**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112609.zip) | on LS from CCSA on UE EMC | Xiaomi |  |  |
| [**R4-2114395**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114395.zip) | Discussion on the MU value for the effective radiated RF power measurements between 12.75GHz and 26 GHz | Huawei |  |  |
| [**R4-2114396**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114396.zip) | Draft CR to TS38.124: MU value for the effective radiated RF power between 12.75GHz and 26 GHz, Rel-15 | Huawei |  |  |
| R4-2114397 | Draft CR to TS38.124: MU value for the effective radiated RF power between 12.75GHz and 26 GHz, Rel-16 | Huawei |  |  |
| [**R4-2112768**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112768.zip) | Discuss on EMC measurement uncertainty for radiated emission | ZTE Corporation |  |  |
| [**R4-2112770**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112770.zip) | CR to TS 38.113: Radiated emission measurement uncertainty(R15) | ZTE Corporation |  | *(Moderator note: As announced by vice chairman, these two CRs and revisions if any will be endorsed instead of agreed if agreeable.* |
| R4-2112772 | CR to TS 38.113: Radiated emission measurement uncertainty(R16) | ZTE Corporation |  |
| [**R4-2113187**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113187.zip) | CR to TS 38.113 on Spatial Exclusion description, Release 15 | Ericsson |  |  |
| R4-2113188 | CR to TS 38.113 on Spatial Exclusion description, Release 16 | Ericsson |  |  |
| [**R4-2112739**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112739.zip) | CR to TS 38.175: IAB test configurations | ZTE Corporation |  |  |
| [**R4-2113189**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113189.zip) | CR to TS 38.175 on IAB EMC performance requirements | Ericsson |  |  |
| [**R4-2114408**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114408.zip) | Draft CR to TS 38.175: further extension of spatial exclusion considerations for EMC RI test for IAB, Rel-16 | Huawei |  |  |
| [**R4-2112841**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112841.zip) | TP to TS38.114: NR repeaters EMC Core requirements | ZTE Corporation |  |  |
| R4-2112864 | 3GPP TS 38.114 v0.1.0 | ZTE Corporation | *Moderator note:*  *For email approval* |  |
| [**R4-2113190**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113190.zip) | TPs to TS 38.114 on RF Repeater EMC section 8 (Emission) | Ericsson |  |  |
| [**R4-2113191**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113191.zip) | TPs to TS 38.114 on RF Repeater EMC section 9 (Immunity) | Ericsson |  |  |
| [**R4-2114563**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114563.zip) | TP to TR 38.114: EMC requirements for NR repeater | Huawei |  |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics incl. existing and new tdocs.
2. For the Recommendation column please include one of the following:
   1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
   2. Other documents: Agreeable, Revised, Noted
3. For new LS documents, please include information on To/Cc WGs in the comments column
4. Do not include hyper-links in the documents

## 2nd round

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-210xxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| R4-210xxxx | WF on … | YYY | Agreeable, Revised, Noted |  |
| R4-210xxxx | LS on … | ZZZ | Agreeable, Revised, Noted |  |
|  |  |  |  |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics.
2. For the Recommendation column please include one of the following:
   1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
   2. Other documents: Agreeable, Revised, Noted
3. Do not include hyper-links in the documents