**3GPP TSG-RAN WG4 Meeting #94-e R4-20xxxxx**

**Electronic Meeting, Feb.24th – Mar.6th 2020**

**Agenda item:** 7.11.2

**Source:** Moderator（Huawei）

**Title:** Email discussion summary for RAN4#94e\_#7\_LTE\_IOTenh3

**Document for:** Information

# Introduction

The scope of this email discussion is to discuss the contributions submitted at agenda 7.11.2 on coexistence between NB-IoT and NR.

The target of 1st round is to finalize the TPs for TR 37.824, reach agreement on TDD configuration for test spec and collect the comments for CR 37.141 and 38.141-1 (it might be possible to agree on the CR in the 1st round).

The target of 2nd round is to finalize the CR to 37.141 and 38.141-1 if it cannot be closed at 1st round.

# Topic #1: TR update and corrections

## Companies’ contributions summary

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| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [R4-2000670](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000670.zip) | Nokia, Nokia Shanghai Bell, ZTE | This contribution provides a TP to update TR 37.824 to use the current NR TDD UE specific dedicated configuration defined in Annex E.0A of TS 37.141 for testing NB-IoT operation in NR in-band. |
| [R4-2000699](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000699.zip) | Futurewei | Draft TR 37.824 v 0.4.0 |
| [R4-2000700](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000700.zip) | Futurewei | This contribution provides text proposal editorial corrections for the section 4 Background of TR 37.824 |
| [R4-2000875](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000875.zip) | CHTTL, T-mobile USA, Dish | This contribution proposes to remove this sentence ““NB-IoT should not be considered for operating in NR guard band for 15 kHz SCS” and improve the wording in section 5. |

## Open issues summary

There is one issue on TDD configuration which need a decision for drafting CR. For the TPs detailed proposal or wording we can directly go to sub clause 1.3.2 for comments collection

### Sub-topic 1-1: TDD configuration

TR 37.824 contains a NR TDD UE specific dedicated configuration to align with the NB-IoT TDD configuration in the tests. On the other hand, it has been identified that there is already a very similar NR TDD UE specific dedicated configuration defined in Annex E.0A of TS 37.141 for NR TDD in part of BC3 CS16/17 BS transmitter tests, which can also be used for testing NB-IoT operation in NR in-band.

* Proposals
  + Option 1: the NR UL/DL configuration is aligned with E-UTRA TDD uplink/downlink configuration #1 and special subframe #8, which is currently captured in TR 37.824
  + Option 2: the NR UL/DL configuration is aligned with E-UTRA TDD uplink/downlink configuration #1 and special subframe #7, which can be reused from existing TS 37.141
* Recommended WF
  + Option 2

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments on TDD configuration options** |
| Nokia, ZTE | [R4-2000670](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000670.zip) propose Option 2 |
| Huawei | Ok with option 2 |
| Ericsson | Ok with option 2 as well |

### CRs/TPs comments collection

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| --- | --- |
| **CR/TP number** | **Comments collection** |
| [R4-2000670](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000670.zip) | Ericsson: Ok, just an editorial comment: delete unused columns in table 5.5.3-1 |
| Nokia reply: the unused column should be deleted by editor when the TP is implemented, if it is deleted in the TP itself, then there is no change mark. |
| Huawei: Ok |
| [R4-2000699](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000699.zip) | Ericsson: Ok |
| Huawei: Ok |
|  |
| [R4-2000700](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000700.zip) | Ericsson: ok, but we found another mistake: the WI number (RP-1907573) is not correct. Could you fix it in this TP as well? |
| Huawei: Ok |
|  |
| [R4-2000875](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000875.zip) | Ericsson: Ok |
| Huawei: 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.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Recommendations on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

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

|  |  |
| --- | --- |
| **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”* |

## Discussion on 2nd round (if applicable)

## 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*

|  |  |
| --- | --- |
| **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”* |

# Topic #2: CR to 38.104

## Companies’ contributions summary

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| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2000671 | Nokia, Nokia Shanghai Bell | Correct the identified errors.  1) Correct the typo in clause 6.2.2.  2) Clarify the requirement only apply for NB-IoT operation in NR in-band and correct the typo in clause 6.3.4.  3) Remove the term ‘NR and NR with NB-IoT’ which is redundant and not used in TS 38.141-1.  4) Correct the typo in clause 7.2.2.  5) Propagate the corrected interference levels of the NR receiver dynamic range requirement to NB-IoT in clause 7.3.2.  6) Correct the typo in clause 7.6.3.  7) Correct the wanted signal mean power levels of the NR ICS requirement for MR and LA BS in clause 7.8.2 to align with those specified in TS 36.104 for NB-IoT. |

## Companies views’ collection for 1st round

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2000671  Correction CR to 38.104 | Ericsson: Ok |
| Huawei: 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.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Suggestion on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

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

|  |  |
| --- | --- |
| **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”* |

## Discussion on 2nd round (if applicable)

## 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*

|  |  |
| --- | --- |
| **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”* |

# Topic #3: CR to TS 38.141-1

## Companies’ contributions summary

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| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2000672**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000672.zip) | Nokia, Nokia Shanghai Bell | The big CR to introduce support of NB-IoT operation in NR channel bandwidth into 38.141-1. |
| **[R4-2000816](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000816.zip)** | Huawei, HiSilicon | Proposal 1: modify existing TC to support NB-IoT operation in NR in-band.  Proposal 2: text proposal for modifying NRTC1 and NRTC3 is proposed.  Moderator: Proposal 1 is adopted in the big CR and we can focus on finalizing the CR. |

## Companies views’ collection for 1st round

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [R4-2000672](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000672.zip)  CR to 38.141-1 | Ericsson: See commented CR “Reviewed\_Ericsson\_R4-2000672” in draft. |
| Nokia reply: Include in ‘Reviewed\_Ericsson\_Nokia\_R4-2000672” in draft. |
| Huawei: See comments to CR “Reviewed\_Huawei\_ZTE\_Ericsson\_Nokia\_R4-2000672” |
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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.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Recommendations on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

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

|  |  |
| --- | --- |
| **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”* |

## Discussion on 2nd round (if applicable)

## 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*

|  |  |
| --- | --- |
| **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”* |

# Topic #4: CR to 37.141

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2000970 | ZTE Corporation | The big CR to introduce support of NB-IoT operation in NR channel bandwidth into TS37.141 |
| R4-2000817 | Huawei, HiSilicon | Proposal 1: modify existing TC to support NB-IoT operation in NR in-band.  Proposal 2: text proposal for modifying TC21 is proposed in clause 2  Moderator: Proposal 1 is adopted in the big CR and we can focus on finalizing the CR. |

## Companies views’ collection for 1st round

### 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** |
| R4-2000970  CR to 37.141 | Ericsson: See commented CR “Reviewed\_Ericsson\_R4-2000970” in draft. |
| Nokia: Based on old version of TS 37.141; wording should be further aligned with TS 38.141-1 after discussion this week. |
| Huawei: See comments to CR “Reviewed\_Huawei\_ZTE\_Ericsson\_R4-2000970 CR to 37.141” |
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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.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Recommendations on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

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

|  |  |
| --- | --- |
| **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”* |

## Discussion on 2nd round (if applicable)

## 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*

|  |  |
| --- | --- |
| **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”* |