**3GPP TSG-RAN WG4 Meeting # 98e R4-200XXXX**

**Electronic Meeting, 25 Jan – 5 Feb, 2021**

**Agenda item:** 7.1.3, 7.1.4

**Source:** Moderator (ZTE Corporation)

**Title:** Email discussion summary for [98e][304] NR\_unlic\_BSRF\_Conformance

**Document for:** Information

# Introduction

*Briefly introduce background, the scope of this email discussion and provide some guidelines for email discussion if necessary.*

*List of candidate target of email discussion for 1st round and 2nd round*

* 1st round:
* Maintenance for NR-U core requirement ;
* NR-U performance testing
* 2nd round: TBA

# Topic #1: maintenance for 36.104,37.104,37.105

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2101972 | ZTE Corporation | CR to TS 36.104: corrections of NR-U BS RF requirements |
| R4-2101973 | ZTE Corporation | Cat A CR |
| R4-2101974 | ZTE Corporation | CR to TS 37.104: corrections of NR-U BS RF requirements |
| R4-2101975 | ZTE Corporation | Cat A CR |
| R4-2101976 | ZTE Corporation | CR to TS 37.105: corrections of NR-U BS RF requirements |
| R4-2101977 | ZTE Corporation | Cat A CR |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 1-1 **R4-2101972**

*Sub-topic description:*

*Open issues and candidate options before e-meeting:*

**Issue 1-1:** Note for Tx co-location requirements of n96 in Table 6.6.4.4.1-2 and Table 6.6.4.4.1-3

* Proposals
  + Option 1: remove the Note for n96 in Table Table 6.6.4.4.1-2 and Table 6.6.4.4.1-3 since the note is only applicable for bands overlapping with bands of co-located BS, however band n96 is not overlapping with B46.
  + Option 2: other
* Recommended WF
  + TBA

**Issue 1-2:** co-location blocking requirements in Table 7.6.2.1-2 and Table 7.6.2.1-3

* Proposals
  + Option 1: remove the NOTE \*\* for n46 and n96 since in-band NB-IoT is not supported for NR-U
  + Option 2: other
* Recommended WF
  + Option 1

### Sub-topic 1-2 **R4-2101974**

*Sub-topic description:*

*Open issues and candidate options before e-meeting:*

**Issue 2-1:** Note for Tx co-location requirements of n96 in Table 6.6.1.4.1-1

* Proposals
  + Option 1: update the Note in last row of Table 6.6.1.4.1-1 since the note is only applicable for bands overlapping with bands of co-located BS, however band n96 is not overlapping with B46.
  + Option 2: other
* Recommended WF
  + TBA

**Issue 2-2:** co-location blocking requirements in Table 7.5.2-1.

* Proposals
  + Option 1: remove the NOTE \*\* for n46 and n96 since in-band NB-IoT is not supported for NR-U
  + Option 2: other
* Recommended WF
  + Option 1

### Sub-topic 1-3 **R4-2101976**

*Sub-topic description:*

*Open issues and candidate options before e-meeting:*

**Issue 3-1:** Note for Tx co-location requirements of n96 in Table .

;

* Proposals
  + Option 1: add the Notes for band 46 and n96 in section 9.7.6.3.4.2 and 9.7.6.3.4.2 which is missing.
  + Option 2: other
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | Sub topic 1-1:  Sub topic 1-2:  ….  Others: |

### 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.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2101972 | Company A |
| Company B |
|  |
| R4-2101974 | Company A |
| Company B |
|  |
| R4-2101976 | Company A |
| Company B |
|  |

## 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: maintenance for TS 38.104 Tx requirements

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2101978 | ZTE Corporation | CR to TS 38.104: corrections of NR-U BS Tx requirements |
| R4-2101979 | ZTE Corporation | Cat A CR |
| R4-2102835 | Nokia, Nokia Shanghai Bell | CR to TS 38.104 corrections to NR-U BS RF Tx requirements |
| R4-2102836 | Nokia, Nokia Shanghai Bell | Cat A CR |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 2-1

*Sub-topic description:*

*Open issues and candidate options before e-meeting:*

**Issue 2-1:** remove the undefined notes in section 6.6.4.2A [R4-2101978]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

**Issue 2-2:** add the MR for n96 which is missing in section 6.6.4.2.4A [R4-2101978]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

**Issue 2-3:** Add -13dBm/MHz for 12.75GHz-26GHz in Table 6.6.5.2.1-1; [R4-2101978,R4-2102835]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

**Issue 2-4:** Update the note for n46 and n96 in Table 6.6.5.2.3-1 and 6.6.5.2.4-1; [R4-2101978,R4-2102835]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

**Issue 2-5:** Modification to ACLR tables description to capture excluding band n46 and n96 that have own tables; [R4-R4-2102835]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

**Issue 2-6:** Editorial Correction of Note 6 in table 5.4.3.3-1; [R4-2102835, R4-2101968]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | Sub topic 2-1:  Sub topic 2-2:  ….  Others: |

### 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.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2101978 | Company A |
| Company B |
|  |
| R4-2102835 | Company A |
| Company B |
|  |

## 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: maintenance for TS 38.104 Rx requirements

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2101980 | ZTE Corporation | CR to TS 38.104: corrections of NR-U BS Rx requirements |
| R4-2101981 | ZTE Corporation | Cat A CR |
| R4-2102837 | Nokia, Nokia Shanghai Bell | CR to TS 38.104 corrections to NR-U BS RF Rx requirements |
| R4-2102838 | Nokia, Nokia Shanghai Bell | Cat A CR |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 3-1

*Sub-topic description:*

*Open issues and candidate options before e-meeting:*

**Issue 3-1:** Correction and addition of text in section 7.2.2,7.3.2,7.4.1,7.7.2 reference sensitivity with description of requirements for all bands and only for bands n46 and n96 [R4-2102837]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

**Issue 3-2:** update the note for table 7.4.1.2-1a [R4-2101980]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA
  + TBA

**Issue 3-4:** .update the note for table7.4.2.2-1b [R4-2101980]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

**Issue 3-5:** .update the note for table 7.5.2-1a [R4-2101980]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

**Issue 3-6:** .add general intermodulation requirements for n46 and n96. [R4-2101980]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

**Issue 3-7:** .update the requirements in table 7.8.2-3c. [R4-2101980]

* Proposals
  + Option 1: agree
  + Option 2: disagree
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | Sub topic 2-1:  Sub topic 2-2:  ….  Others: |

### 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.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2101980 | Company A |
| Company B |
|  |
| R4-2102837 | Company A |
| Company B |
|  |

## 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: NR-U BS conformance testing

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2101982 | ZTE Corporation | CR to TS 38.141-1: introduction of NR-U BS |
| R4-2101983 | ZTE Corporation | Cat A CR |
| R4-2101566 | Nokia, Nokia Shanghai Bell | On NR-U measurement uncertainties for BS conformance tests |
| R4-2102444 | Nokia, Nokia Shanghai Bell | Draft CR to 37.141: Introduction of NR-U co-existence requirements |
| R4-2101567 | Nokia, Nokia Shanghai Bell | Draft CR to TS 37.107 With NR-U intorduction for performance part |
| R4-2101733 | Ericsson | TS 37.145-2: Tx spurious limits for co-existence and co-location with of NR-based access to unlicensed spectrum (NR-U) |
| R4-2101734 | Ericsson | Cat A |
| R4-2101735 | Ericsson | TS 38.141-2: Tx spurious limits for co-existence and co-location with of NR-based access to unlicensed spectrum (NR-U) |
| R4-2101736 | Ericsson | Cat A |
| R4-2102144 | Ericsson | TS 37.145-2: Rx blocking limits for co-existence and co-location with of NR-based access to unlicensed spectrum (NR-U) |
| R4-2102145 | Ericsson | Cat A |

## Open issues summary

*Before e-Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 2-1

*Sub-topic description:*

*Open issues and candidate options before e-meeting:*

*In the 1st round, companies are encouraged to discuss the MU and TT and then further discuss how to draft CR based on consensus if reached in 1st round.*

**Issue 3-1: MU and TT for n46 and n96**

* Proposals
  + Option 1: propose to extend NR upper frequency from 6GHz to 7.125GHz; [ZTE, R4-2101982]
  + Option 2: reuse LAA MU requirements for n46 and n96; [Nokia, R4-2101566]
  + Option 3: other
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | Sub topic 2-1:  Sub topic 2-2:  ….  Others: |

### 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.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2102444 | Company A |
| Company B |
|  |
| R4-2101567 | Company A |
| Company B |
|  |
| R4-2101733 | Company A |
| Company B |
|  |
| R4-2101735 | Company A |
| Company B |
|  |
| R4-2102144 | Company A |
| Company B |
|  |

## 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”* |