**3GPP TSG-RAN WG4 Meeting # 97e R4-200XXXX**

**Electronic Meeting, 2 – 13 Nov, 2020**

**Agenda item:** 7.1.5

**Source:** Moderator (ZTE Corporation)

**Title:** Email discussion summary for [97e][306] NR\_unlic\_RF\_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:
* NR-U conformance testing requirements;
* Identify the impacted spec due to introduction of NR-U ;
* 2nd round: TBA

# Topic #1: NR-U conformance testing requirements

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2015383 | Nokia, Nokia Shanghai Bell | Draft CR to TS 37.107 With NR-U intorduction for perfromance part |
| R4-2015384 | Nokia, Nokia Shanghai Bell | Discussion on NR-U BS RF conformance tests  ***Proposal 1: It is proposed to split responsibility for drafting big CRs to given BS test specification between interested companies.***  ***Proposal 2: Companies responsible for drafting big CRs should provide changes required to specification for RAN4#98-e meeting.***  ***Proposal 3: Companies are encouraged to provide their views on above mentioned test requirements and test tolerances to be applicable up to 7125 MHz.*** |
| R4-2016126 | ZTE Corporation | CR to TS 38.141-1: introduction of NR-U into TS 38.141-1 |

## 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

*Sub-topic description:*

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

*Measurement uncertainty for n46 and n96 is not included in TS 38.141-1 /2 spec, the existing measurement uncertainty is only applied for licensed operation, NR-U is not considered in Rel-15. In Rel-16, n46 and n96 should be taken into account from both unlicensed operation and frequency range up to 7125MHz.*

**Issue 1-1:** Measurement uncertainty for n46 and n96;

* Proposals
  + Option 1: extend the existing upper frequency 6GHz in TS 38.141-1/2 to 7125MHz;
  + Option 2: follow the LAA measurement uncertainty for n46 and TBD for n96;
  + Option 3: TBD for both n46 and n96
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Nokia | Issue 1-1: We support option 2. For band n46 we should reuse NR measurement uncertainties up to 6 GHz, that clearly cover full range of band n46. For band n96 there is a need to evaluate MU’s and TT’s case by case to confirm where extension to 7.125 GHz is possible and where other values are needed.  Sub topic 1-2:  ….  Others: |
| ZTE | Issue 1-1:To Nokia, option 2 is not aligned with your proposal. LAA uncertainty is different from NR |
| Ericsson | Issue 1-1: If we are to agree the R4-2016126 then the following note:    We would like to have further checking on the impact of adding “and unlicensed spectrum” change. However Option 2 is a good starting point as it gives time to check on n96 TT impact. |
| Huawei | Option 3, The existing MU was made under the assumption of testing BS designed for licensed spectrum; for unlicensed spectrum the MU may differ, which require further study. |
| Nokia | To ZTE: Our earlier comment was not fully correct, thanks for pointing it out. It is true that LAA MU’s and TT’s are different from NR, and we support option 2 to reuse LAA MU/TT for band n46, and TBD for n96. |

### 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** |
| R4-2015383 | Company A |
| Company B |
|  |
| R4-2016126 | Nokia: We think it is too early to agree CR to 38.141-1 specification on the first meeting on BS conformance part. Still BS core spec 38.104 requires updates, that are expected during this meeting, that should be taken into account. On top of that there are many missing details in this CR. |
| ZTE: can Nokia clarify more on missing details. |
| Nokia to ZTE: For example MU/TT, issues that are not finalized in core spec with TBDs, brackets, Medium Range BS etc. |

## 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: MU/TT for n46 and n96*  *Option 1: ZTE*  *Option 2: Ericsson, Nokia*  *Option 3: Huawei,ZTE*  *Recommendations for 2nd round:*  *Further discussion at the second 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: Impacted spec and Work split

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2015384 | Nokia, Nokia Shanghai Bell | Discussion on NR-U BS RF conformance tests  ***Proposal 1: It is proposed to split responsibility for drafting big CRs to given BS test specification between interested companies.***  ***Proposal 2: Companies responsible for drafting big CRs should provide changes required to specification for RAN4#98-e meeting.***  ***Proposal 3: Companies are encouraged to provide their views on above mentioned test requirements and test tolerances to be applicable up to 7125 MHz.*** |

## 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 identify the potential impacted spec and try to agree on the measurement uncertainty. In the 2nd round, we could further discuss the work split among companies.*

**Issue 2-1: Impacted spec**

* Impacted spec:
  + TS 38.141-1
  + TS 38.141-2
  + TS 37.107
  + TS 36.141
  + TS 37.141
  + TS 37.105
  + TS 37.145-1
  + TS37.145-2
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Nokia | Sub topic 2-1: We support splitting the CR drafting workload and are happy to contribute on number of CRs. We propose to draft WF to capture agreements from this meeting on CR split.  Sub topic 2-2:  ….  Others: |
| Ericsson | Sub topic 2-1: We support the work splitting for CR drafting. We would like to volunteer for the radiated specifications TS 38.141-2 for drafting. For AAS spec (37.145) there is no impact since AAS does not support LAA/NR-U, or have I missed something? |
| Huawei | Agree on the impacted specs. we can take some of the spec work on drafting big CRs |

### 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** |
| XXX | Company A |
| Company B |
|  |
| YYY | 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:*  *Agree to have work split on draft CRs among companies*  *Candidate options:*  *Recommendations for 2nd round:* |

*Suggestion on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 | WF on work plan and working split for NR-U BS conformance testing | ZTE |

### 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”* |