**3GPP TSG-RAN WG4 Meeting # 97-e R4-2017607**

**Electronic Meeting, 2nd – 13th Nov., 2020**

**Agenda item:** 5.4, 6.1.4, 6.2.4, 6.4.4

**Source:** Moderator (Huawei, HiSilicon)

**Title:** Email discussion summary for [97e][313] LTE\_Demod\_Maintenance

**Document for:** Information

# Introduction

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

This email discussion targets for CRs for LTE maintenance and include the following topics:

* Topic #1: LTE maintenance (up to Rel-15)
  + 5.4.1 UE demodulation and CSI requirements
  + 5.4.2 BS demodulation requirements
* Topic #2: 6.1.4 Addition MTC enhancements for LTE (Rel-16)
* Topic #3: 6.2.4 Additional enhancements for NB-IoT (Rel-16)
* Topic #4: 6.4.4 R16 LTE maintenance

The 2nd round email discussion focuses on review on the revised CRs.

# Topic #1: 5.4 LTE maintenance (up to Rel-15)

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

## Companies’ contributions summary

### Contribution list for UE demodulation and CSI requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| **[R4-2015589](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015589.zip)** | CR on cleanup for LTE FeMBMS(Rel-14) | Huawei, HiSilicon | Remove [] for the requirements  Fix numbering error for one section and one table |
| [**R4-2015590**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015590.zip) | CR on cleanup for LTE FeMBMS(Rel-15) | Huawei, HiSilicon | Mirror CR |
| [**R4-2015591**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015591.zip) | CR on cleanup for LTE FeMBMS(Rel-16) | Huawei, HiSilicon | Mirror CR |
| [**R4-2015630**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015630.zip) | CR: Updates to LTE V2X performance requirements | Huawei, HiSilicon | Remove [] for the requirements  Delete test purpose of verification “the maximum number of bits” from section 14.8 PSCCH/PSSCH decoding capability test |
| [**R4-2015835**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015835.zip) | CR: Addition of applicability for MTC UE capable of 64QAM DL | Ericsson | Add note PDSCH demodulation requirements with 64QAM for MTC UE is applicable for MTC UE capable of ce-PDSCH-64QAM.  Resubmit R4-2010463 agreed in RAN4#96-e that was not implemented in TS36.101 V15.12.0, although it was implemented in TS36.101 V16.6.0. |
| **[R4-2015668](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015668.zip)** | CR for 36.101 Cleanup for performance requirements of sTTI (Rel-15) | Huawei, HiSilicon | Remove [] for the requirements |
| **[R4-2015669](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015669.zip)** | CR for 36.101 Cleanup for performance requirements of sTTI (Rel-16) | Huawei, HiSilicon | Mirror CR |

### Contribution list for BS demodulation requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2014944**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014944.zip) | Correction of eLAA FRC table | Nokia, Nokia Shanghai Bell | Corrected FRC numbering error from A18-1/2 to A20-1/2 for eLAA |
| R4-2014945 | Correction of eLAA FRC table | Nokia, Nokia Shanghai Bell | Mirror CR |
| R4-2014946 | Correction of eLAA FRC table | Nokia, Nokia Shanghai Bell | Mirror 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 Nil

*Sub-topic description:*

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

**Issue 1-1: TBA**

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

## Companies views’ collection for 1st round

### Open issues: Nil

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

### CRs comments collection for UE demodulation and CSI requirements

CRs on LTE maintenance for UE demodulation and CSI requirements under agenda item 5.4.1.

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2015589**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015589.zip) | Huawei: The CR# is missing in the coversheet |
| Company B |
|  |
| [**R4-2015590**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015590.zip)  (Cat. A) | Huawei: The CR# is missing in the coversheet |
|  |
|  |
| [**R4-2015591**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015591.zip)  (Cat. A) | Huawei: The CR# is missing in the coversheet |
|  |
|  |
| [**R4-2015630**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015630.zip) |  |
|  |
|  |
| [**R4-2015835**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015835.zip) | Huawei: Fine to the updates |
|  |
|  |
| [**R4-2015668**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015668.zip) | Huawei: The affected specification is TS 36.3521-1 instead of TS 36.521 |
|  |
|  |
| [**R4-2015669**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015669.zip)  (Cat. A) |  |
|  |
|  |

### CRs comments collection for BS demodulation requirements

CRs on LTE maintenance for BS demodulation requirements under agenda item 5.4.2.

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2014944**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014944.zip) | Huawei: Fine to the updates |
| Company B |
|  |
| **R4-2014945**  (Cat. A) |  |
|  |
|  |
| **R4-2014946** (Cat. A) |  |
|  |
|  |

## 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: 5.4 LTE maintenance**  **(up to Rel-15)** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:*  Further review revised CRs in the 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** |
| [R4-2015589](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015589.zip) | to be revised |
| [R4-2015590](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015590.zip) | to be revised |
| [R4-2015591](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015591.zip) | to be revised |
| [R4-2015630](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015630.zip) | agreeable |
| [R4-2015835](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015835.zip) | agreeable |
| [R4-2015668](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015668.zip) | to be revised |
| [R4-2015669](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015669.zip) | to be revised |
| [R4-2014944](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014944.zip) | agreeable |
| R4-2014945 | agreeable |
| R4-2014946 | agreeable |

## Discussion on 2nd round

Company is welcome to share the comments on the revised CRs:

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| **R4-2017452 (from R4-2015589)** |  |
|  |
| **R4-2017455 (from R4-2015668)** |  |
|  |

## Summary on 2nd round

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

|  |  |
| --- | --- |
| **CR number** | **T-doc Status update recommendation** |
| R4-2017452 (Cat.F) | Agreeable |
| R4-2017453 (Cat.A) | Agreeable |
| R4-2017454 (Cat.A) | Agreeable |
| R4-2017656 (Cat.A) | Agreeable |
| R4-2017657 (Cat.A) | Agreeable |
| R4-2017455 (Cat. F) | Agreeable |
| R4-2017456 (Cat.A) | Agreeable |

# Topic #2: Additional MTC enhancements for LTE (Rel-16)

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2015836**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015836.zip) | Clean up of enhanced MPDCCH demodulation requirements | Ericsson | Remove [] from the requirements |
| [**R4-2015837**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015837.zip) | Clean up of CSI-RS based PMI reporting test for non-BL UEs | Ericsson | Remove [] from the requirements  Fix typos  Add applicability rule of Rel-16 PMI reporting test for non-BL UEs. |

## 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 Nil

*Sub-topic description:*

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

**Issue 2-1: TBA**

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

## Companies views’ collection for 1st round

### Open issues Nil

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

### CRs comments collection

*CRs comments collection for additional MTC enhancements for LTE (Rel-16) under agenda item 6.1.4*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2015836**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015836.zip) | Company A |
| Company B |
|  |
| [**R4-2015837**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015837.zip) | Huawei: There are some typos on the writing of the applicability rule: ‘applicabile’ to ‘applicable’, and ‘ehnahcement’ to ‘enhancement’. |
| Ericsson: For Huawei, thanks for your pointing out the typos. We would like to fix it in the revision. |
| Nokia: We have similar comment. Also “supporting” and “coverage” are misspelled. |

## 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#2: Additional MTC enhancements for LTE (Rel-16)** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:*  Further review revised CRs in the 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** |
| [R4-2015836](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015836.zip) | agreeable |
| [R4-2015837](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015837.zip) | to be revised |

## Discussion on 2nd round

Company is welcome to share comments on the revised CRs:

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| **R4-2017458 (from R4-2015837)** |  |
|  |
|  |

## 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 number** | **T-doc Status update recommendation** |
| R4-2017458 | Agreeable |

# Topic #3: Additional enhancements for NB-IoT (Rel-16)

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| **[R4-2015631](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015631.zip)** | CR: Cleanup for NPDSCH performance requirements for muti-TB interleaved transmission in TS 36.101 | Huawei, HiSilicon | Removal of square brackets for requirements |
| [**R4-2015632**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015632.zip) | CR: Addition of NPUSCH format 1 performance requirements for multi-TB interleaved transmission in TS 36.104 | Huawei, HiSilicon | Re-add the performance requirements part for NPUSCH format 1 with multi-TB interleaved transmission agreed in R4-2012600 that was not implemented in latest TS 36.104 version 16.7.0. |
| [**R4-2015633**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015633.zip) | CR: Cleanup for NPUSCH format1 conformance testing for multi-TB interleaved transmission in TS 36.141 | Huawei, HiSilicon | Removal of square brackets for requirements |

## 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 Nil

*Sub-topic description:*

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

**Issue 2-1: TBA**

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

## Companies views’ collection for 1st round

### Open issues Nil

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

### CRs comments collection

*CRs comments collection for additional enhancements for NB-IoT (Rel-16) under agenda item 6.2.4.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2015631**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015631.zip) | Intel Suggest fixing also the following wording typo: from “This requirements” to “These requirements” |
| Company B |
|  |
| [**R4-2015632**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015632.zip) | Company A |
| Company B |
|  |
| [**R4-2015633**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015633.zip) |  |
|  |
|  |

## 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#3: Additional enhancements for NB-IoT (Rel-16)** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:*  Further review revised CRs in the 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** |
| [R4-2015631](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015631.zip) | to be revised |
| [R4-2015632](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015632.zip) | agreeable |
| [R4-2015633](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015633.zip) | agreeable |

## Discussion on 2nd round

Company is welcome to share the comments on the revised CRs:

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| **R4-2017457 (from** **R4-2015631)** |  |
|  |
|  |

## 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** |
| R4-2017457 | Agreeable |

# Topic #4: R16 LTE maintenance

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| **[R4-2015613](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015613.zip)** | CR on cleanup for LTE-based 5G terrestrial broadcast | Huawei, HiSilicon | Removal of square brackets for requirements |

## 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 Nil

*Sub-topic description:*

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

**Issue 2-1: TBA**

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

## Companies views’ collection for 1st round

### Open issues Nil

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

### CRs comments collection

*CRs comments collection for Rel-16 LTE maintenance under agenda item 6.4.4.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2015613**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015613.zip) | CR# and Tdoc# are missing |
| 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#4: R16 LTE maintenance** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:*  Further review revised CRs in the 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** |
| [R4-2015613](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015613.zip) | to be revised |

## Discussion on 2nd round

Company is welcome to share the comments on the revised CRs:

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| **R4-2017459 (from R4-2015613)** |  |
|  |
|  |

## Summary on 2nd round

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

|  |  |
| --- | --- |
| **CR number** | **T-doc Status update recommendation** |
| R4-2017459 | Agreeable |