**3GPP TSG-RAN WG4 Meeting # 107 R4-23XXXXX**

**Incheon, KR, May 22nd – May 26th , 2023**

**Agenda item:** 5.4

**Source:** Moderator (Apple)

**Title:** Topic summary for [107][202] Maintenance\_R17

**Document for:** Information

# Introduction

*Briefly introduce background, the scope of this email discussion (e.g. list of treated agenda items) and provide some guidelines for email discussion if necessary.*

In this section, the following topics are included

* 5.2.6.1/2 Rel-17 NR IIoT/URLLC
* 5.2.7.1/2 Rel-17 NR SDT in INACTIVE state
* 5.2.9.4/5 Rel-17 NR Ext to 71GHz
* 5.2.10.3 Other Rel-17 NR/LTE WIs
* 5.3 RRM related Rel-17 TEI
* Others:
  + Move R4-2308690 from AI 4.4 to AI 5.2.10.3

# Topic #1:Rel-17 NR IIOT/URLLC

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

## Companies’ contributions summary

## Open issues summary

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

### CRs/TPs

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **title** | **company** |
| [**R4-2308758**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308758.zip) | CR for Measurement period requirements | Nokia, Nokia Shanghai Bell |
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# Topic #2: Rel-17 NR SDT in INACTIVE state

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2307193**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307193.zip) | Remaining issues on SDT test cases | Nokia, Nokia Shanghai Bell | Observation 1: The test parameter tables of R17 TS 38.133 sections A.6.2.1 and A.7.2.1 are incomplete.  **Proposal 1: T\_delay\_modeB = 3s for both FR1 and FR2 testing.**  **Proposal 2: T3 = T\_delay\_modeB - W1 - W2. This means 2.36s for FR1 and 2.04s for FR2.**  **Proposal 3: T1 > 2\*measurement period ≈ 1s for FR1 and same for FR2.**  **Proposal 4: T2 = 2\*W1 = 640ms for FR1 and 960ms for FR2.**  **Proposal 5: T4 = 4s for FR1 and same for FR2.**  **Proposal 6: T5 = T3 + W2 + W3 + 2\*CG-SDT resource period = 2.36s + 0.32s + 0.64s + 2\*0.64s = 4.6s for FR1 and 3.24s for FR2.**  **Proposal 7: Change the FR1 CG-SDT resource period to align with FR2 test to 40ms**  **Proposal 8: It is suggested to update the tables of 38.133, tables A.6.2.1.2-2 and A.7.2.1.1.1-2 for T\_delay\_modeB, T1, T2, T3, T4 and T5 as in the paper**   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **Formula** | **FR1** | **FR2** | **Unit** | | **W1** |  | **320** | **480** | **ms** | | **W2** |  | **320** | **480** | **-** | | **W3** |  | **640** | **640** | **-** | | **T\_delay\_modeB** |  | **3000** | **3000** | **-** | | **CG-SDT ressource period** |  | **40** | **40** | **-** | | **T1** | **2xmeasurement period** | **1000** | **1000** | **-** | | **T2** | **2xW1** | **640** | **960** | **-** | | **T3** | **T\_timer\_modeB-W1-W2** | **2360** | **2040** | **-** | | **T4** |  | **4000** | **4000** | **-** | | **T5** | **T3+W2+W3+2xCG-SDT ressource period** | **3400** | **3240** | **-** | | **T1+T2+T3+T4+T5** |  | **11400** | **11240** | **-** | |
| [**R4-2307330**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307330.zip) | On remaining issues for R17 SDT testing | Apple | ***Proposal 1:***  ***For FR1 SDT test, the SMTC periodicity shall be kept as 20ms.***  ***For FR2-1 SDT test, the SMTC periodicity shall be changed to 10ms.***  ***The time interval between TB and TC can be equivalent to W1, where W1=640ms for FR1 and W1=480ms for FR2-1.***  ***Proposal 2:***  ***TE must be W2 before TF for bother FR1 and FR2-1.***  ***Test equipment triggers UL data arrival at UE lower layer at time point TF. After time point TF, test equipment observes whether UE transmits with CG-SDT within 640ms + Z after TF.***   * ***Z=220ms for FR1, i.e., 860ms after TF*** * ***Z=420ms for FR2-1, i.e., 1060ms after TF***   ***Proposal 3: Based on SMTC configuration in proposal 1, time interval between TH and TI is W1, where W1=640ms for FR1 and W1=480ms for FR2-1.***  ***Proposal 4:***  ***Test equipment triggers UL data arrival at UE lower layer at time point TJ. After time point TJ, test equipment observes whether UE transmits with CG-SDT within W3 after TJ.***   * ***W3=860ms for FR1,*** * ***W3=1060ms for FR2-1*** |
| [**R4-2308655**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308655.zip) | Discussion on RRM test cases for SDT | Huawei, HiSilicon | **Proposal 1: Adopt the following setup for the test cases.**   * **DRX cycle: 640ms for FR1 and FR2** * **CG-SDT periodicity: 320ms for FR1 and FR2** * **SMTC periodicity: 20ms for FR1 and 10ms for FR2**   **Proposal 2: Adopt the following time intervals between different time points (TA to TK):**   * **TA to TB: 100ms** * **TB to TC: 640ms for FR1, 480ms for FR2** * **TC to TD: 640ms for FR1, 480ms for FR2** * **TD to TE: 40ms** * **TE to TF: 640ms for FR1, 480ms for FR2** * **TF to TG: 860ms for FR1, 1060ms for FR2** * **TG to TH: 100ms** * **TH to TI: 640ms for FR1, 480ms for FR2** * **TI to TJ: 1360ms for FR1, 520ms for FR2** * **TJ to TK: 860ms for FR1, 1060ms for FR2** |

## Open issues summary

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

### Sub-topic 2-1: Configuration for the test cases

*Sub-topic description*

*Open issues and candidate options before meeting:*

* Proposals
* DRX cycle:
  + 640ms for FR1 and FR2 (Huawei, apple)
  + 320ms (Nokia)
* CG-SDT periodicity:
  + 320ms for FR1 and FR2 (Huawei)
  + 40ms for FR1 and FR2 (Nokia)
  + 640ms for FR1 and FR2 (Apple)
* SMTC periodicity:
  + 20ms for FR1 and 10ms for FR2 (Huawei, apple)
  + 10ms for FR1 and FR
* Recommended WF
  + TBA

### Sub-topic 2-2: W1

*Moderator: this depends on the agreement in subtopic 2-1, e.g. SMTC periodicity*

* Proposals
  + Option 1: 640ms for FR1 and 480ms for FR2 (Huawei, apple)
  + Option 2: 320ms for FR1 and 480ms for FR2 (Nokia)
* Recommended WF
  + TBA

### Sub-topic 2-3: W2

*Sub-topic description:*

*Open issues and candidate options before meeting:*

* Proposals
  + Option 1: 640ms for FR1 and 480ms for FR2 (Huawei)
  + Option 2: 320ms for FR1 and 480ms for FR2 (Nokia)
* Recommended WF
  + TBA

### Sub-topic 2-4: W3

*Moderator: this depends on the agreement in subtopic 2-1, e.g. CG-SDT periodicity, SMTC periodicity*

* Proposals
  + Option 1: 860ms for FR1 and 1060ms for FR2 (Huawei, apple)
  + Option 2: 320ms for FR1 and 480ms for FR2 (Nokia)
* Recommended WF
  + TBA

### Sub-topic 2-5: Others

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Description automatically generated with medium confidence

* Proposals (Huawei)
  + TA to TB: 100ms
  + TD to TE: 40ms
  + TG to TH:100ms
  + TI to TJ: 130ms for FR1, 520ms for FR2
* Recommended WF
  + TBA

### CRs/TPs

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **title** | **company** |
| [**R4-2307139**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307139.zip) | CR on R17 CG-SDT for FR1 testcase correction | Qualcomm Incorporated |
| [**R4-2307194**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307194.zip) | CR correction of SDT test cases | Nokia, Nokia Shanghai Bell |
| [**R4-2308656**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308656.zip) | CR on SDT RRM test case | Huawei, HiSilicon, Apple |
| [**R4-2309559**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309559.zip) | Formal CR to Rel-17 TS 38.133 on SDT maintenance | MediaTek inc. |

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# Topic #3: Rel-17 NR Ext to 71GHz

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

## Companies’ contributions summary

## Open issues summary

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

### CRs/TPs

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **title** | **company** |
| [**R4-2308304**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308304.zip) | CR on Random access on carrier with CCA in FR2-2 R17 | Huawei, HiSilicon |
| [**R4-2308306**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308306.zip) | CR on test case maintenance for FR2-2 R17 | Huawei, HiSilicon |
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# Topic #4: Other Rel-17 NR/LTE WIs: MR-DC

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

## Companies’ contributions summary

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| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2308817**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308817.zip) | Discussion on remaining issues for Rel-17 MR-DC | Ericsson | **Proposal 1: Tsearch is the time for AGC settling and PSS/SSS detection. For RACH-less activaiton If the target cell is known and TCI state is known Tsearch = 0 ms for both FR1 and FR2.**  **Proposal 2: For RACH-less activation if target cell become unknown, the RACH based activation requirement will be followed.**  **Proposal 3: If Beam failure has been declared or TCI become unknown during SCG activation procedure, the SCG failure procedure shall be followed.**  **Proposal 4: RACH-less activation delay shall maintain the previous agreement as PL-RS monitoring is not required by specification and uncertainty of any 1st UL transmission is already covered in the requirement.** |

## Open issues summary

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

### Sub-topic 4-1

* **Proposals (Ericsson):**
  + Proposal 1: Tsearch is the time for AGC settling and PSS/SSS detection. For RACH-less activaiton If the target cell is known and TCI state is known Tsearch = 0 ms for both FR1 and FR2.
  + Proposal 2: For RACH-less activation if target cell become unknown, the RACH based activation requirement will be followed.
  + Proposal 3: If Beam failure has been declared or TCI become unknown during SCG activation procedure, the SCG failure procedure shall be followed.
  + Proposal 4: RACH-less activation delay shall maintain the previous agreement as PL-RS monitoring is not required by specification and uncertainty of any 1st UL transmission is already covered in the requirement.
* Recommended WF
  + TBA

### CRs/TPs

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **title** | **company** |
| [**R4-2308818**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308818.zip) | CR to 38.133 for rel-17 MRDC remaining issues | Ericsson |
| [**R4-2307711**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307711.zip) | CR on Interruption requirements due to SCG activation/deactivation | vivo |
| [**R4-2308345**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308345.zip) | Clause number update for MRDC | Huawei, HiSilicon |
| [**R4-2308764**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308764.zip) | CR corrections for SCG Activation and Deactivation Delay | Nokia, Nokia Shanghai Bell |
| [**R4-2308766**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308766.zip) | CR correcting TCI state activation command at SCell activation | Nokia, Nokia Shanghai Bell |

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# Topic #5: Other Rel-17 NR/LTE WIs: MG enhancement

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

## Companies’ contributions summary

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| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2308452**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308452.zip) | Remaining issues on Rel-17 MG enh | Ericsson | ***Proposal 1: Whether a MO is measured within MG is only determined by the relation with the MG other than the association.***  ***For example, when a MO associated with MG1 and doesn’t need to be measured within gap, and***   * ***the MO is partially overlapping or non-overlapping with the MG1, the MO should be measured outside gap other than within MG1.*** * ***the MO is fully overlapping with the MG1, the MO should be measured within gap.***   ***Proposal 2: RAN4 to clarify the MO should be measured within the associated MG in the following cases,***   * ***When a MO is fully overlapping with the associated MG, or*** * ***When a MO is partially overlapping with the associated MG and fully overlapping with the union of the ConMGs.***   ***Proposal 3: RAN4 to update concurrentMeasGapEUTRA-r17 capability to include the scenario when both E-UTRAN measurement objects and other type of measurements are configured.*** |
| [**R4-2308637**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308637.zip) | Discussion on remaining issues in Rel-17 MGE | Huawei, HiSilicon | **Proposal 1: An MO that can be measured without MG is measured outside MG unless its SMTC is fully overlapping with the union of con-MGs, regardless of if the MO is associated to a MG or not.**  **Proposal 2: For an MO that can be measured without MG, when its SMTC is fully overlapping with the union of con-MGs, the MO is measured within the associated MG.**  **Proposal 3: UE capability *concurrentMeasGapEUTRA-r17* also applies when both LTE MOs are MOs of other RATs are configured.** |
| [**R4-2308731**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308731.zip) | Discussion on remaining issues of R17 MG enhancement | ZTE Corporation | **Proposal 1: For the MO that can be measured outside MG and associated with an MG, the MO is measured within the associated MG only when it needs to be measured with MG. Furthermore, since align with legacy R15/16, no spec impact.**  **Proposal 2: For an MO which needs to be measured within MG, whether the MO can be measured, which only depends on the associated MG, not any relation to the other MG.**  **Proposal 3: The case of MO partially overlapping with the associated MG but fully overlapping with the union of the MG1 and MG2, which does not exist based on the priority rule. No need to further discuss.**  **Proposal 4: For the intra-frequency measurement, when intra-frequency SMTC is partially overlapping with the VIL of NCSG, Kp = 1/(1- (SMTC period /VIRP)), where SMTC period < VIRP.**  **Proposal 5: For the inter-frequency measurement, the current description in 38.133 is fine, no need to revise.** |
| [**R4-2309136**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309136.zip) | RRM maintenance for Rel-17 measurement gaps enhancements | Qualcomm Incorporated | **NCSG**  **Proposal 1: Number of samples for scenario 2 is changed to 8 from 5 for scenario 2.**  **Observation 1: About NW sync assumption, the current NW sync assumption is applied for scenario 1. For scenario 2, if NW can keep the sync assumption for sceanrio2, there will be no spec impact. Otherwise, deriveSSB-indexFromCellinter-r17 flag can be used for NW sync assumption.**  **Concurrent MG**  **Proposal 2: A MO that is associated with a concurrent MG is measured within the associated MG only when it cannot be measured without MG.**  **Proposal 3: A MO is measured within MG when it fully overlaps with (the union of) concurrent MGs and it overlaps with the associated MG.**  **Proposal 4: Support associating E-UTRAN measurement objects to different concurrent MGs. A new UE capability can be considered.** |

## Open issues summary

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

### Sub-topic 5-1: For an MO that can be measured outside MG and associated with an MG

* + Option 1: MO should be measured outside of associated MG when MO is partially or no overlapping with associated MG (Ericsson)
  + Option 2: MO should be measured outside of associated MG when MO is partially or no overlapping with union of co-MG (Huawei, Qualcomm)
  + Option 3: the MO is measured within the associated MG only when it needs to be measured with MG. (ZTE)
    - Moderator: it is not 100% clear to me what it means, e.g. “only when it needs to be measured with MG”. I copy and paste the original wording for discussion.
* Recommended WF
  + TBA

### Sub-topic 5-2: MO fully overlapping with the union of the MG1 and MG2

*Agreement in the last meeting*

***MO fully overlapping with the union of the MG1 and MG2***

* *Wayforward* 
  + *the MO should be measured within the associated MG in the following cases,*
    - *When a MO is fully overlapping with the associated MG, or*
    - *FFS: When a MO is partially overlapping with the associated MG and fully overlapping with the union of the ConMGs.*
  + *Whether to clarify this in spec is FFS*

Proposals: the MO should be measured within either associated MG or other conMG when a MO is partially overlapping with the associated MG and fully overlapping with the union of the ConMGs.

* + Option 1: Yes but the MO is measured only within the associated MG (Qualcomm Ericsson)
  + Option 2: MO can only be measured in the associated MG, not other conMG. There is no case MO partially overlaps with associated MG but fully overlaps with the union of conMG (ZTE).
* Recommended WF
  + TBA

### Sub-topic 5-3: E-UTRAN measurement with conMG

*Agreement in the last meeting*

***Issue 2-3: E-UTRAN measurement with con-MGs***

* *Way forward* 
  + *FFS whether all E-UTRAN measurement objects are expected to be associated with a single concurrent gap pattern or not when both E-UTRAN measurement objects and other type of measurements are configured*
    - *Option 1: Yes.*
    - *Option 2: No.*
    - *Option 3: Up to UE capability (e.g. concurrentMeasGapEUTRA-r17)*
    - *For UE supporting the capability, different LTE MOs can be associated with multiple MGs.*
    - *For UE not supporting the capability, all LTE MOs can be associated with only a single MG.*

Proposals: whether all E-UTRAN measurement objects are expected to be associated with a single concurrent gap pattern or not when both E-UTRAN measurement objects and other type of measurements are configured

* + Option 1: RAN4 to update concurrentMeasGapEUTRA-r17 capability to include the scenario when both E-UTRAN measurement objects and other type of measurements are configured. (Ericsson, Huawei)
  + Option 1a: Support associating E-UTRAN measurement objects to different concurrent MGs. A new UE capability can be considered. (Qualcomm)
* Recommended WF
  + TBA

### Sub-topic 5-4: Other proposals

* Proposal (Qualcomm): Number of samples for scenario 2 is changed to 8 from 5 for scenario 2.
  + For inter-frequency without MG (cl. 9.3.9), define separate NW sync assumption and number of samples for
    - Scenario 1, where inter-frequency SSB is within UE active BWP, and
    - Scenario 2, where UE indicates ‘nogap-noncsg’ for the inter-frequency
* Proposal (ZTE): For the intra-frequency measurement, when intra-frequency SMTC is partially overlapping with the VIL of NCSG, Kp = 1/(1- (SMTC period /VIRP)), where SMTC period < VIRP.

### CRs/TPs

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| **CR/TP number** | **title** | **company** |
| [**R4-2308115**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308115.zip) | CR on NR inter frequency measurements | vivo |
| [**R4-2308453**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308453.zip) | CR on ConMGs’ association | Ericsson, Mediatek inc. |
| [**R4-2308458**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308458.zip) | CR on concurrent gaps in Rel-17 | OPPO |
| [**R4-2308509**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308509.zip) | Maintenance core part CR on of MG enh R17 | MediaTek inc. |
| [**R4-2308638**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308638.zip) | CR on NCSG related requirements | Huawei, HiSilicon |
| [**R4-2308640**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308640.zip) | CR on concurrent MG related requirements | Huawei, HiSilicon |

# Topic #6: Other Rel-17 NR/LTE WIs: On RRC\_IDLE requirement

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2308455**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308455.zip) | Remaining issues on IDLE mode | Ericsson | ***Proposal 1: If the UE in RRC\_IDLE has not found any new suitable cell based on searches and measurements in FR2, the time requirement for UE to search any new suitable cell is***  ***Option 1:***  ***T= max(10s, )***  ***where:***  ***is the SMTC period of the nth FR2 carrier.***  ***L1 is the number of NR FR2 carriers.***  ***K1 is the measurement samples, which is FFS.***  ***N1 is the Rx beam sweeping number.***  ***Option 2:***  ***T= max (10s, K1\*N1\*DRX cycles),***  ***where,***  ***K1 is the measurement samples, which is*** |
| [**R4-2308760**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308760.zip) | Discussion on suitable cell search in Idle mode | Nokia, Nokia Shanghai Bell | 1. Common configuration in idle mode does not include a detailed neighbour cell list.   UE shall search regardless of the measurement rules currently limiting UE measurement activities.  The UE may search for up to 10s seconds.  The UE shall perform a search using the configured inter-frequency and inter-RAT carriers indicated in the system information.  NR FR1 and LTE carrier searches can be performed within the existing 10 second requirement.  In some NR FR2 scenarios the UE may not be able to search all configured NR FR2 carriers within 10s.  There is no requirement that the UE shall search all configured carriers. The requirement is that the UE shall search for up to 10s.  It does not seem reasonable to define an extremely long extended search time as general requirement to cover one very specific configuration.  Hence, in general we propose following:   1. Do not change the existing fixed 10 second search limit before UE shall initiate cell selection.   However, if the group see that there is a need to also cover requirements for the very extreme FR2 configuration option, any new requirements will then need to account the more detailed NR FR2 conditions and to ensure relaxation is allowed for those scenarios only.  For the purpose of illustration, we have provided such proposal in a CR [11] |
|  |  |  |  |
|  |  |  |  |

## Open issues summary

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

### Sub-topic 6-1: On RRC\_IDLE requirement

* Proposal
* Option 1 (Ericsson):

***Proposal 1: If the UE in RRC\_IDLE has not found any new suitable cell based on searches and measurements in FR2, the time requirement for UE to search any new suitable cell is***

***Option 1:***

***T= max(10s, )***

***where:***

***is the SMTC period of the nth FR2 carrier.***

***L1 is the number of NR FR2 carriers.***

***K1 is the measurement samples, which is FFS.***

***N1 is the Rx beam sweeping number.***

***Option 2:***

***T= max (10s, K1\*N1\*DRX cycles),***

***where,***

***K1 is the measurement samples, which is FFS.***

***N1 is the Rx beam sweeping number***.

Option 2 (Nokia): Do not change the existing fixed 10 second search limit before UE shall initiate cell selection.

### CRs/TPs

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **title** | **company** |
| [**R4-2308761**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308761.zip) | CR Correction for suitable cell search in Idle mode | Nokia, Nokia Shanghai Bell |

# Topic #7: Other Rel-17 NR/LTE WIs: Positioning

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2308460**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308460.zip) | Discussion on maintenance Rel-17 positioning | OPPO | **Proposal 1: Gap patterns #24 and #25 could be configured as per FR type provided UE supports *independentGapConfigPRS-r17*.**  **Proposal 2: Positioning frequency layers in FR1 should be measured within FR1 gap, and positioning frequency layers in FR2 should be measured within FR2 gap.**  **Proposal 3: If concurrent gaps are configured,**   * **All positioning frequency layers are associated with only one of the measurement gaps, or** * **All positioning frequency layers in each FR are associated with only one of the per FR measurement gaps in the same FR.** |
| [**R4-2308652**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308652.zip) | Updated simulation results for PRS-RSRPP | Huawei, HiSilicon |  |
| [**R4-2308797**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308797.zip) | Remaining issues related to PRS-RSRPP accuracy requirement | Ericsson | **Proposal 1**: Reuse PRS-RSRP RF calibration margin of 2.5dB to define absolute accuracy requirement for PRS-RSRPP in FR1 for both Nsample = 4 and Nsample = 1.  **Proposal 2**: Reuse PRS-RSRP RF calibration margin of 4dB to define absolute accuracy requirement for PRS-RSRPP in FR2 for both Nsample = 4 and Nsample = 1.  **Proposal 3**: Values proposed in Table 1 is used to define accuracy requirement for 1 sample PRS-RSRPP accuracy in FR1 and FR2 when SINR = 0dB.  Table 1. 1 sample PRS-RSRPP accuracy (without RF calibration margin) in FR1 and FR2 for SINR = 0dB.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **FR** | **SCS (kHz)** | **PRS BW (PRBs)** | **5% [0dB]** | **95% [0dB]** | | FR1 | 15 | 52 | -0,44 | 0,47 | | 104 | -0,35 | 0,35 | | 30 | 48 | -0,37 | 0,38 | | 132 | -0,23 | 0,19 | | 60 | 64 | -0,85 | 0,23 | | 132 | -0,84 | 0,15 | | FR2 | 60 | 64 | -0,85 | 0,23 | | 132 | -0,84 | 0,15 | | 120 | 64 | -2,44 | 0,09 | | 128 | -2,4 | 0,06 | |

## Open issues summary

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

### Sub-topic 7-1: MG related proposal

* Proposal (OPPO):

**Proposal 1: Gap patterns #24 and #25 could be configured as per FR type provided UE supports *independentGapConfigPRS-r17*.**

**Proposal 2: Positioning frequency layers in FR1 should be measured within FR1 gap, and positioning frequency layers in FR2 should be measured within FR2 gap.**

**Proposal 3: If concurrent gaps are configured,**

* **All positioning frequency layers are associated with only one of the measurement gaps, or**
* **All positioning frequency layers in each FR are associated with only one of the per FR measurement gaps in the same FR.**
* Recommended WF
  + TBA

### Sub-topic 7-2: PRS-RSRP accuracy

* Proposal (Ericsson):
* **Proposal 1**: Reuse PRS-RSRP RF calibration margin of 2.5dB to define absolute accuracy requirement for PRS-RSRPP in FR1 for both Nsample = 4 and Nsample = 1.
* **Proposal 2**: Reuse PRS-RSRP RF calibration margin of 4dB to define absolute accuracy requirement for PRS-RSRPP in FR2 for both Nsample = 4 and Nsample = 1.
* **Proposal 3**: Values proposed in Table 1 is used to define accuracy requirement for 1 sample PRS-RSRPP accuracy in FR1 and FR2 when SINR = 0dB.
* Table 1. 1 sample PRS-RSRPP accuracy (without RF calibration margin) in FR1 and FR2 for SINR = 0dB.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **FR** | **SCS (kHz)** | **PRS BW (PRBs)** | **5% [0dB]** | **95% [0dB]** |
| FR1 | 15 | 52 | -0,44 | 0,47 |
| 104 | -0,35 | 0,35 |
| 30 | 48 | -0,37 | 0,38 |
| 132 | -0,23 | 0,19 |
| 60 | 64 | -0,85 | 0,23 |
| 132 | -0,84 | 0,15 |
| FR2 | 60 | 64 | -0,85 | 0,23 |
| 132 | -0,84 | 0,15 |
| 120 | 64 | -2,44 | 0,09 |
| 128 | -2,4 | 0,06 |

* Recommended WF
  + TBA

### CRs/TPs

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **title** | **company** |
| [**R4-2307422**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307422.zip) | CR on TS 38.171 requirements for relative signal power levels of BDS | CATT, CAICT, CENC |
| [**R4-2307423**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307423.zip) | CR on TS 36.171 requirements for relative signal power levels of BDS | CATT, CAICT, CENC |
| [**R4-2307424**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307424.zip) | CR on R17 positioning performance requirements | CATT |
| [**R4-2308648**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308648.zip) | CR on PRS measurement requirements for INACTIVE | Huawei, HiSilicon |
| [**R4-2308650**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308650.zip) | CR on measurement requirements for TEG | Huawei, HiSilicon |
| [**R4-2308653**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308653.zip) | CR on accuracy requirements for Rel-17 positioning | Huawei, HiSilicon |
| [**R4-2308798**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308798.zip) | CR to 38.133 Corrections to PRS-RSRPP measurement accuracy requirements | Ericsson |
| [**R4-2308800**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308800.zip) | CR to 38.133 Corrections to positioning measurement core requirements | Ericsson |
| [**R4-2309140**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309140.zip) | CR to TS 38.133: Supplement the requirement applicability of UE Rx-Tx time difference measurement accuracy requirements | ZTE |
| [**R4-2309141**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309141.zip) | CR to TS 38.133: Supplement the requirements applicability of UE Rx-Tx time difference measurement reporting | ZTE |
| [**R4-2309143**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309143.zip) | CR to TS 38.133: Modification of the value of Nsample | ZTE |
| [**R4-2309232**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309232.zip) | CR to TS 38.133: Supplement the impact of the measurement period(RSTD, PRS-RSRP, UE Rx-Tx) in general aspects of gapless measurement | ZTE |
|  |  |  |

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# Topic #8: Other Rel-17 NR/LTE WIs:RRM enhancement

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

## Companies’ contributions summary

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| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2307359**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307359.zip) | Maintenance on PUCCH SCell activation delay | Nokia, Nokia Shanghai Bell | **Proposal 1: 1 sample is enough for PL-RS evaluation in PUCCH SCell activation delay requirement, i.e. X=1.**  **Proposal 2: The parallel processing of PL-RS measurement and DL CSI-RS reception/processing shall be also applied to the valid TA case.**  **Proposal 3: Agree on the changes in the CR R4-2307360 to address above issues.** |
| [**R4-2309584**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309584.zip) | Remaining issues on PUCCH SCell activation | Ericsson | 1. When PL-RS of target PUCCH SCell is known, the X=2 is considered. This value is applicable only for PUCCH SCell activation scenario and other cases, X value is 5. |
|  |  |  |  |

## Open issues summary

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

### Sub-topic 8-1: PL-RS evaluation

* On X1
  + **Option 1: X=1 (Nokia)**
  + **Option 2: X=2 for known PUCCH SCell. X=5 for other cases (Ericsson)**

### Sub-topic 8-1: Other issue

* **Proposal (Nokia): The parallel processing of PL-RS measurement and DL CSI-RS reception/processing shall be also applied to the valid TA case.**
* Recommended WF
  + TBA

### CRs/TPs

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **title** | **company** |
| [**R4-2307360**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307360.zip) | 38.133 CR on PUCCH SCell activation delay requirement | Nokia, Nokia Shanghai Bell |
| [**R4-2307880**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307880.zip) | CR on SRS antenna port switching requirements 36.133 | MediaTek inc. |
| [**R4-2308309**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308309.zip) | CR on PUCCH SCell activation requirements R17 | Huawei, HiSilicon |
| [**R4-2309585**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309585.zip) | Maintenance CR on SCell activation/deactivation with PUCCH | Ericsson |

# Topic #9: Other Rel-17 NR/LTE WIs: NR-U

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2309227**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309227.zip) | Discussions on eDRX based measurements for NR | Ericsson | * **Observation 1:** LTE RRM specification (TS 36.133) lacks requirements for inter-RAT NR cell subject to CCA when the UE is configured with eDRX on the serving cell. * **Proposal 1:** For UE configured with eDRX in LTE cell, RAN4 defines requirements for measurements on inter-RAT NR cell subject to CCA as shown in Table 1 in 4.2.2.5.7 in TS 36.133. |
|  |  |  |  |
|  |  |  |  |

## Open issues summary

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

### Sub-topic 9-1:

* **Proposal (Ericsson):** For UE configured with eDRX in LTE cell, RAN4 defines requirements for measurements on inter-RAT NR cell subject to CCA as shown in Table 1 in 4.2.2.5.7 in TS 36.133.

### CRs/TPs

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **title** | **company** |
| [**R4-2309228**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309228.zip) | Inter-RAT NR cell reselection requiremetns under eDRX for NR-U and NR | Ericsson |
|  |  |  |

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# Topic #10: Other Rel-17 NR/LTE WIs: Others

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2308308**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308308.zip) | Discussion on maintenance for R17 RRM enhancement | Huawei, HiSilicon | **Observation 1: In legacy multiple SCell activation requirements as specified in section 8.3.7, it is always assumed that Cell search is not needed for an FR2 to-be-activated SCell.**  **Observation 2: Only sharing of cell search among FR1 Cells are considered in legacy requirements.**  **Observation 3: The sharing of cell search between FR1 and FR2 PUCCH SCell are not considered in existing requirements.**  **Proposal 1: Update the requirements for PUCCH SCell activation with multiple SCells as follows:**   |  | | --- | | Tdelay\_multiple\_SCells\_PUCCH\_SCell = Tactivation\_time\_multiple\_scells + max ((TFirst\_available\_CSI + TCSI\_processing), (T1+T2+T3), Tmeas) + TCSI\_reporting\_after  Where:  - If the to-be-activated FR2 PUCCH SCell is unknown without active serving cell(s) or known to-be-activated non-PUCCH SCell (s) on the same band, Tactivation\_time\_multiple\_scells ­ is the SCell activation delay in milliseconds for FR2 PUCCH SCell equal to Tactivation\_time + TFR1\_N1,  - Tactivation\_time is specified in section 8.3.2, and  - TFR1\_N1 is the maximum value of TFirstSSB\_MAX\_multiple\_scells + TSMTC\_MAX\_multiple\_scells+Trs\*N1 for SCells counted in N1 as defined in 8.3.7.  - Otherwise, Tactivation\_time\_multiple\_scells is the target SCell activation delay in millisecond in multiple SCell activation scenario as specified in section 8.3.7. | |
| [**R4-2308697**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308697.zip) | Discussion on maintaining issues for RLM/BFD relaxation requirements | Huawei, HiSilicon | ***Observation 1: According to the definition in section 3.6.1 in TS38.133, the active time period due to some timers are running in DRX mode is still considered as “no DRX is used”, which means “no DRX is used” is not equivalent to the non-DRX mode.***  ***Proposal 1: For RLM/BFD relaxation requirements, the conditions for DRX cycle applicability need to be updated and can be defined as follow:***  ***- No DRX is configured or DRX cycle is longer than 80ms*** |
|  |  |  |  |

## Open issues summary

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

### Sub-topic 10-1: PUCCH SCell activation with multiple SCells

**Proposal (Huawei): Update the requirements for PUCCH SCell activation with multiple SCells as follows:**

|  |
| --- |
| Tdelay\_multiple\_SCells\_PUCCH\_SCell = Tactivation\_time\_multiple\_scells + max ((TFirst\_available\_CSI + TCSI\_processing), (T1+T2+T3), Tmeas) + TCSI\_reporting\_after  Where:  - If the to-be-activated FR2 PUCCH SCell is unknown without active serving cell(s) or known to-be-activated non-PUCCH SCell (s) on the same band, Tactivation\_time\_multiple\_scells ­ is the SCell activation delay in milliseconds for FR2 PUCCH SCell equal to Tactivation\_time + TFR1\_N1,  - Tactivation\_time is specified in section 8.3.2, and  - TFR1\_N1 is the maximum value of TFirstSSB\_MAX\_multiple\_scells + TSMTC\_MAX\_multiple\_scells+Trs\*N1 for SCells counted in N1 as defined in 8.3.7.  - Otherwise, Tactivation\_time\_multiple\_scells is the target SCell activation delay in millisecond in multiple SCell activation scenario as specified in section 8.3.7. |

### Sub-topic 10-2: RLM/BFD relaxation requirements

Proposal (Huawei): For RLM/BFD relaxation requirements, the conditions for DRX cycle applicability need to be updated and can be defined as follow:

- No DRX is configured or DRX cycle is longer than 80ms

### CRs/TPs

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| **CR/TP number** | **title** | **company** |
| [**R4-2308781**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308781.zip) | CR correcting RRM DCCA SCell activation and deactivation test case | Nokia, Nokia Shanghai Bell |
| [**R4-2307910**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307910.zip) | CR on test cases for HST FR1 | Ericsson |
| [**R4-2308040**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308040.zip) | CR to TR 38.854 on HST FR2 RA-Based Timing Adjustment | Nokia, Nokia Shanghai Bell |
| [**R4-2308041**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308041.zip) | CR to TR 38.854 on Throughput Performance in HST FR2 Scenarios | Nokia, Nokia Shanghai Bell |
| [**R4-2308343**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308343.zip) | Correction on Nserv for FR2 HST | Huawei, HiSilicon |
| [**R4-2308915**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308915.zip) | CR on L1-SINR and SS-SINR measurement accuracy requirements for R17 FR2 HST | Samsung |
| [**R4-2307910**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307910.zip) | CR on test cases for HST FR1 | Ericsson |
| [**R4-2308115**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308115.zip) | CR on NR inter frequency measurements | vivo |
| [**R4-2308698**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308698.zip) | CR on maintaining RLM/BFD relaxation requirements R17 | Huawei, HiSilicon, MediaTek inc. |
| [**R4-2308690**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308690.zip) | CR on correction to interruption requirements for inter-band CA R17 | Huawei, HiSilicon |

# Topic #11: Rel-17 TEI

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2307331**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307331.zip) | On inter-RAT NR-U measurement with LTE eDRX | Apple | ***Proposal 1:***  ***For a LTE UE to perform inter-RAT NR cell measurement with CCA and with eDRX≥10.24s, the following criteria shall be considered when design the PTW window in the requirement:***   * ***The extension shall not exceed the upper limit threshold (Mm,max, Md,max, or Me,max), and*** * ***The extension of measurement/evaluation period due to CCA shall be limited in the single PTW window***   ***Proposal 2:***  ***For a LTE UE to perform inter-RAT NR cell measurement with CCA and with eDRX≥10.24s, the lower bound of PTW window shall be derived based on .***  ***Note: is the legacy inter-RAT NR cell evaluation period without any extension due to CCA, as same as in Table 4.2.2.5.6-3.***  And corresponding test proposal is as below,   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | eDRX\_IDLE cycle length [s] | DRX cycle length [s] | PTW length [s] (number of 1.28s periods) | Tdetect,NR\_Inter\_CCA [s] (number of DRX cycles Note 4) | Tmeasure,NR\_Inter\_CCA [s] (number of DRX cycles Note 4) | Tevaluate,NR\_Inter\_CCA [s] (number of DRX cycles Note 4) | | | 5.12 | - | - | 5.12x([23]+ Md)  {[23]+ Md} | 5.12 \*(1+Mm) {1+ Mm } | 5.12\*(2+ Me) {2+ Me } | | 10.24 ≤ eDRX\_IDLE cycle length ≤2621.44 | 0.32 | ≥11.52 (9) | (23+Md) | 0.32 x (1.5+ Mm)) {1.5+ Mm } | 0.32 x (2\*1.5+ Me) {3+ Me} | | 0.64 | ≥11.52(9) | 0.64 x (1+ Mm) {1+ Mm } | 0.64 x (2+ Me) {2+ Me } | | 1.28 | ≥12.8 (10) | 1.28 x (1+ Mm) {1+ Mm } | 1.28 x (2+ Me) {2+ Me } | | 2.56 | ≥25.6 (20) | 2.56 x (1+ Mm) {1+ Mm } | 2.56 x (2+ Me) {2+ Me } | | Note 1: Md, Mm, Me are the number of DRX cycles each with at least one SMTC occasion not available at the UE during the Tdetect,NR\_Inter\_CCA,, **Tmeasure,NR\_Inter\_CCA**and **Tevaluate,NR\_Inter\_CCA**, respectively. Mm,max, Md,max and Me,max are the maximum values of Mm, Md and Me, respectively.  Note 2: Mm ≤ Mm,max, where: Mm,max = [16] for DRX cycle = 0.32 seconds, Mm,max = [8] for DRX cycle = 0.64 seconds, Mm,max = [4] for DRX cycle = 1.28 seconds, Mm,max = [4] for DRX cycle = 2.56 seconds,  Note 3: Md ≤ Md,max, where: Md,max = [4] \* Mm,max,  Note 4: Me ≤ Me,max, where: Me,max = [2] \* Mm,max,  Note 5:the lower bound of PTW window shall be derived based on . is the legacy inter-RAT NR cell evaluation period, as defined in Table 4.2.2.5.6-3. | | | | | | |
| [**R4-2307352**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307352.zip) | Discussion on updates for R17 per-FR gap capability | Apple | ***Proposal 1: 38.133 should be updated in light of new R17 UE capability “independentGapConfig-maxCC-r17.”***  ***Proposal 2: It is proposed to provide clarification in clause 3.6 “Applicability of requirements in this specification version.”*** |
| [**R4-2309580**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309580.zip) | List of R17 FR1/LTE+FR2 test cases in annex A | Ericsson | 1. RAN4 to confirm that, FeMIMO WI may not have test cases not specified due to testability issue. 2. Following test cases are identified for testability issue as part of the FeRRM WI.  * FR1+FR2 NR-DC to FR1+FR2 NR-DC * NR-SA FR1 to EN-DC with FR2 PSCell * EN-DC with FR1 PSCell to EN-DC with FR2 PSCell * TC for PUCCH SCell activation and deactivation delay requirements of FR2 known cell with FR1 PCell * TC for PUCCH SCell activation and deactivation delay requirements of FR2 unknown cell with FR1 PCell * TC for PUCCH SCell activation and deactivation delay requirements of FR2 known cell with FR1 PSCell * TC for PUCCH SCell activation and deactivation delay requirements of FR2 unknown cell with FR1 PSCell  1. Following test cases are identified for testability issue as part of the further enhancements for LTE NRDC WI.  * A.5.5.3.X2 Fast SCell Activation and deactivation of SCell in FR2 in inter-band * A.5.5.X1.Y1 E-UTRAN – NR FR2 interruptions during measurements on deactivated NR PSCell  1. RAN4 to further identify the list of test cases for other WI which are identified as non-testable due to OTA testing issue. |

## Open issues summary

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

### Sub-topic 11-1: inter-RAT NR-U measurement with LTE eDRX

Proposal 1 (Apple):

For a LTE UE to perform inter-RAT NR cell measurement with CCA and with eDRX≥10.24s, the following criteria shall be considered when design the PTW window in the requirement:

* The extension shall not exceed the upper limit threshold (Mm,max, Md,max, or Me,max), and
* The extension of measurement/evaluation period due to CCA shall be limited in the single PTW window

Proposal 2 (Apple):

For a LTE UE to perform inter-RAT NR cell measurement with CCA and with eDRX≥10.24s, the lower bound of PTW window shall be derived based on .

Note: is the legacy inter-RAT NR cell evaluation period without any extension due to CCA, as same as in Table 4.2.2.5.6-3.

### Sub-topic 11-2: Spec update for R17 per-FR gap capability

Proposal 1(Apple): 38.133 should be updated in light of new R17 UE capability “independentGapConfig-maxCC-r17.”

Proposal 2(Apple): It is proposed to provide clarification in clause 3.6 “Applicability of requirements in this specification version.”

### Sub-topic 11-3: R17 FR1/LTE+FR2 test

1. (Ericsson) RAN4 to confirm that, FeMIMO WI may not have test cases not specified due to testability issue.
2. (Ericsson) Following test cases are identified for testability issue as part of the FeRRM WI.

* FR1+FR2 NR-DC to FR1+FR2 NR-DC
* NR-SA FR1 to EN-DC with FR2 PSCell
* EN-DC with FR1 PSCell to EN-DC with FR2 PSCell
* TC for PUCCH SCell activation and deactivation delay requirements of FR2 known cell with FR1 PCell
* TC for PUCCH SCell activation and deactivation delay requirements of FR2 unknown cell with FR1 PCell
* TC for PUCCH SCell activation and deactivation delay requirements of FR2 known cell with FR1 PSCell
* TC for PUCCH SCell activation and deactivation delay requirements of FR2 unknown cell with FR1 PSCell

1. (Ericsson) Following test cases are identified for testability issue as part of the further enhancements for LTE NRDC WI.

* A.5.5.3.X2 Fast SCell Activation and deactivation of SCell in FR2 in inter-band
* A.5.5.X1.Y1 E-UTRAN – NR FR2 interruptions during measurements on deactivated NR PSCell

1. (Ericsson) RAN4 to further identify the list of test cases for other WI which are identified as non-testable due to OTA testing issue.

CRs/TPs

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **title** | **company** |
| [**R4-2307353**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307353.zip) | CR on updates for R17 per-FR gap capability | Apple |
| [**R4-2307667**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2307667.zip) | On requirements for inter-band non-collocated EN-DC with overlapping DL bands (R17) | Apple |
| [**R4-2308027**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308027.zip) | CR on UE capability when deriveSSB-IndexFromCellInter is configured | CMCC |
| [**R4-2308207**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308207.zip) | CR on eDRX requriements | MediaTek inc. |
| [**R4-2309108**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309108.zip) | 38.133 corrections to interruptions at SCell addition/release | Nokia, Nokia Shanghai Bell |