**3GPP TSG-RAN WG4 Meeting #97-e R4-201xxxx**

Electronic Meeting, 2-13 Nov., 2020

**Agenda item:** 12.9.1, 12.9.2

**Source:** Moderator (MediaTek inc.)

**Title:** Email discussion summary for [97e][233] NR\_UE\_pow\_sav\_enh

**Document for:** Information

# Introduction

This document is the email discussion summary for the following topics covered

* Topic 1: General and work plan (AI 12.9.1)
* Topic 2: Feasibility and performance impact of relaxing UE measurements for RLM and/or BFD (AI 12.9.2)

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

* 1st round: Decide on the scope, priority, options and tentative agreement to be discussed in the 2nd round. Conclude issues with strict consensus, if any.
* 2nd round: Conclude the issues identified in the 1st round.

# Topic #1: General and work plan (12.9.1)

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

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2014366**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014366.zip) | MediaTek inc. | **Proposal 1: RAN4 to endorse the RRM work plan for R17 UE powers saving enhancements as presented in this contribution.**   * **Note: If R17 timeline suggested in [3] is agreed in RAN Plenary #90 e-meeting, there will add one more meeting for study phase and two more meeting for work phase.** |
| *Moderator’s note:* [*R4-2014367*](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014367.zip) *(MTK) and* [*R4-2014534*](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014534.zip) *(Vivo, MTK) has been moved to AI 12.9.2 for evaluation assumption discussion.* | | |

## 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 Work plan

**Issue 1-1-1: Work plan**

* Background:
  + RRM work plan for R17 UE powers saving enhancements is proposed. ([R4-2014366](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014366.zip))
* Proposals
  + Option 1: RAN4 to endorse the RRM work plan for R17 UE powers saving enhancements as presented in [R4-2014366](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014366.zip). (MTK)
* Recommended WF:
  + Companies are encouraged to provide views in 1st round.
  + Rapporteur to provide revised Work plan in 2nd round.

## Companies views’ collection for 1st round

### Open issues

**Issue 1-1-1: Work plan**

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| **Company** | **Comments** |
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### CRs/TPs comments collection

*Moderator’s note: No CRs/TPs in this topic.*

## 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.*

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|  | **Status summary** |
| **Issue 1-1-1** |  |

*Recommendations on WF/LS assignment*

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

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

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| **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*

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| **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: Feasibility and performance impact of relaxing UE measurements for RLM and/or BFD (AI 12.9.2)

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

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2014219**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014219.zip) | Apple | ***Observation:*** *Overlapping RLM-RS configuration with DRX on duration by network can use UE power saving*  ***Observation:*** *Roughly 11% to 13% power saving gain is observed with 2x relaxation. Roughly 16% to 20% power saving gain is observed when 4x relaxation is used.*  **Proposal 1: RLM/BFD relaxation should be studied for short DRX cycles. R16 RRM relaxation criterion can be used as a starting point.** |
| [**R4-2014367**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014367.zip) | MediaTek inc. | *Observation 1: UE power saving gain will be more significant if the evaluation period can be extended and scaled up to 8 times*  *Observation 2: Delta SINR can be used to justify whether the Rel-17 method has the same performance as the Rel-15 method*  *Proposal 1: RAN4 to prioritize the extended evaluation period method for RLM/BFD measurement relaxation*  *Proposal 2: RAN4 to discuss the evaluation methodology for RLM/BFD measurement relaxation and determine SLS assumption and performance metric in RAN4#97e meeting*  ***Proposal 3: RAN4 to adopt the IMT 2020 setting specified in TS37.910 as the SLS assumption to evaluate the extended evaluation period impact on RLM/BFD performance***  *Proposal 4: RAN4 to study the relaxation method based on UE power saving gain with the setting in TR38.840 and LS R1-2007419*  *Proposal 5: RAN4 to apply delta SINR as one of the performance statistic to evaluate the RLM/BFD performance impact, where delta SINR is the difference between the averaged SINR sampled with Rel-15 baseline UE behavior and Rel-17 relaxed UE behavior*  *Proposal 6: RAN4 to determine the confidence level applied in the evaluation of delta SINR*  *P****roposal 7: RAN4 to collect the SLS evaluation results and determine the scaling factor that UE can apply under different UE mobility and serving cell SINR in RAN4#98e*** |
| [**R4-2014428**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014428.zip) | CATT | Proposal #1: RAN4 should investigate how to relax on RLM/BFD measurement. The basic idea is that UE can achieve power saving gain by increasing measurement period which can be done by adding new relaxation factor on RLM/BFD measurement.  Proposal #2: RAN4 should investigate on the relaxation condition.   1. RLM-RS is based on SSB or CSI-RS or both?   RLM-RS types for relaxation shall be further studied and decided in RAN4.   1. How to determine relaxation factor?   Option 1: to simplify UE implementation, define the fixed value for all conditions.  Option 2: allow for different values for different conditions.  Option 2 is preferred.  If option 2 is chosen, the different value of relaxation factor should be determined based on simulation assuming different conditions of:   1. RLM-RS 2. UE speed 3. DRX cycle (no DRX/short/long) 4. Periodicity of SSB or CSI-RS resource 5. N (RX beam for FR2) 6. P (scale factor with consideration of overlap with measurement gap and/or SMTC window)   Proposal #3: For different pairs of IS/OOS BLER values, whether to use the same value of relaxation factor. RAN4 needs to study on it. |
| [**R4-2014534**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014534.zip) | vivo, MediaTek | *Moderator’s note: assumptions for system level simulation and for power consumption are proposed in this Tdoc.* |
| [**R4-2014535**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014535.zip) | vivo | Observation 1 : when PDCCH WUS is configured, RLM/BFD measurement take a great portion of the total power consumption.  Observation 2: To optimise the case where data packet arrives with interval of around 100ms to 200ms, relaxation of RLM/BFD may further achieve power saving gain on top of R16 power saving techniques. If PDCCH WUS is configured and relaxing RLM-RS measurement from 1x to 5x,15 ~ 27% additional gain can be achieved  Observation 3: By default, RLM/BFD RSs are different from the RSs that used for RRM, and UE is required to perform unnecessary measurement and filtering on these RSs for RLM/BFD.  Observation 4: If UE movement is less than 3km/h, initial results based on the given evaluation assumption show that there is room for RLM relaxation.  **Proposal 1: Based on system level evaluations, it is feasible to relax RLM/BFD at least in FR1 if the following conditions are met:**   * **The measured SINR is above one additional threshold (e.g. SINR > 2dB), and** * **The low mobility criterion is met.**   **Proposal 2: R16 criterion for low mobility can be considered as a reference.**  **Proposal 3: The RSs for RLM/BFD, especially the periodicity/bandwidth of these RSs and the relation to RSs for RRM, need careful consideration in R17 RLM/BFD relaxation.** |
| [**R4-2014654**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014654.zip) | Xiaomi | **Observation 1: The periodicity measurement for RLM/BFD is an important factor on UE power consuming.**  **Proposal 1: Low mobility scenario and at-cell-center scenario could be considered as two possible scenarios for RLM/BFD measurement relaxation.**  **Proposal 2: The relaxation mechanism defined in Rel-16 NR Power saving can be considered as starting point for Rel-17 RLM/BFD measurement relaxation.**  **Proposal 3: Reducing the number of candidate beams when UE fulfilled relaxed criteria can be a feasible way to reduce power consuming.** |
| [**R4-2014797**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014797.zip) | OPPO | **Proposal 1: Consider relaxation of evaluation period for UE measurements for RLM and/or BFD in Rel17 power saving enhancement.**  **Proposal 2: Evaluate the scaling factor of RLM/BFD measurement relaxation based on UE speed and SINR level in RAN4.** |
| [**R4-2015199**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015199.zip) | Nokia Solutions & Networks (I) | 1. The achievable UE power saving and system performance impact may be studied by assuming extended evaluation period for RLM and BFD for low mobility UE with short DRX periodicity/cycle. 2. Rel-15 requirements already allow relaxation by the factor 1.5 for RLM and BFD with DRX cycle ≤ 320ms. 3. Study the UE power saving gain *and* system impact by defining a set of relaxation factors to be studied for SSB and CSI-RS based RLM and BFD evaluation period. 4. It should be clarified in the simulation assumptions, whether the relaxation factors to be studied are to be added *on top* of the current 1.5 relaxation factor for RLM and BFD, or to *replace* the factor 1.5. 5. There might be a delay in RLF triggering or initiation of the beam recovery process in case of relaxed RLM/BFD measurements. 6. Study the impact of longer RLM/BFD evaluation period compared to the Rel-15 evaluation period taking into account the following evaluation metrics:  * **UE power saving gain from relaxed RLM measurement requirements** * **UE power saving gain from relaxed BFD measurement requirements** * **System impact from increased latency in RLF triggering (for RLM)** * **System impact from increased latency in beam failure detection and the initiation of beam recovery procedure (for BFD)**  1. In UE connected mode, the UE is performing RRM measurements on at least the serving cell in addition to RLM and BFD measurements, which may have an impact on the power saving gain of RLM/BFD measurement relaxation. 2. Include RLM, BFD and RRM measurements in the evaluation of UE power saving impact due to relaxation of RLM/BFD measurements. 3. Use VoIP traffic model as in TR 38.840 with the parameters listed in Table 1 to simulate the traffic in the UE power saving evaluation. 4. RAN4 should also discuss how to take into account the following in the simulation study: CSI-reporting, WUS, scheduling assumptions and TTI bundling. 5. Use the power consumption model from TR 38.840 for power saving evaluations. |
| [**R4-2015485**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015485.zip) | Huawei, HiSilicon | *Moderator’s note: This Tdoc mentioned as follows,*  In summary, at the study phase of the WI, we need to align the parameters, model and metrics to valuate UE power saving gain. The cases in Figure 1 and Figure 2 are provided as an example. Other configuration like L1-RSPR, L3 measurement is suggested to be considered as well. |
| [**R4-2016150**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2016150.zip) | Ericsson | * **Proposal #1:** RAN4 to discuss and agree on one of the following options:   + Option 1: Low mobility scenario under which the UE is allowed to relax the RLM/BM requirements is determined by the network.   + Option 2: Low mobility scenario under which the UE is allowed to relax the RLM/BM requirements is determined by the UE.   + Option 3: Low mobility scenario under which the UE is allowed to relax the RLM/BM requirements is determined by both the network and UE. * **Proposal #2:** The UE while performing relaxed RLM upon detecting certain number of out-of-sync indications or upon triggering T310 reverts to the normal RLM operation (i.e. without relaxation). . * **Proposal #3:** The UE while performing relaxed BM upon beam failure detection reverts to the normal BM operation (i.e. without relaxation). * **Proposal #4:** RAN4 to further discuss use of a scaling factor for defining the relaxed RLM/BM evaluation period and indication intervals. * **Proposal #5:** RAN4 to further discuss the relaxation of BM when not all serving cells in intra-band CA/DC meets relaxation criteria. * **Proposal #6:** RAN4 to discuss the impact of RLM/BM relaxation on PDCCH monitoring. |

## 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 Evaluation assumption and factors

**Issue 2-1-1: Evaluation assumption for system level simulation**

* Background:
  + System level simulation assumptions for mobility impact analysis from RLM/BFD relaxation is proposed. (R4-2014534)
* Proposals
  + Option 1: RAN4 to approve the system level assumption proposed in section 2 in R4-2014534 (Vivo, MTK)
* Recommended WF:
  + Companies’ views will be collected in 1st round discussion.
  + Responsible company could revise evaluation assumption for 2nd round discussion, based on views collected in 1st round.
  + Strive to approve the evaluation assumption in this meeting.

**Issue 2-1-2: Evaluation assumption for power consumption**

* Background:
  + Evaluation assumption for power consumption model is proposed. (R4-2014534, R4-2015199, R4-2014367).
* Proposals
  + Option 1:
    - RAN4 to study the relaxation method based on UE power saving gain with the setting in TR38.840 and LS R1-2007419 (MTK Proposal 4)
    - RAN4 to approve the evaluation assumption proposed in section 3 in R4-2014534 (Vivo/ MTK)
  + Option 1a:
    - Use VoIP traffic model as in TR 38.840 with the parameters listed in Table 1 to simulate the traffic in the UE power saving evaluation. (Nokia Proposal 4)
    - Use the power consumption model from TR 38.840 for power saving evaluations. (Nokia Proposal 5)
* Recommended WF:
  + Companies’ views will be collected in 1st round discussion.
  + Responsible company could revise evaluation assumption for 2nd round discussion, based on views collected in 1st round.
  + Strive to approve the evaluation assumption in this meeting.

**Issue 2-1-3: From configuration perspective, factors to be studied and evaluated for RLM/BFD relaxation**

* Background:
  + Companies proposed factors, from configuration perspective, to be studied and evaluated for RLM/BFD measurements relaxation. (R4-2014219 Apple, R4-2014428 CATT, R4-2014534 vivo).
* Proposals:
  + Option 1: DRX cycle (no DRX/short/long) (CATT Proposal 2, Apple Proposal 1)
  + Option 2: RS configurations, including
    - 2a: RLM/BFD-RS types (CATT Proposal 2)
    - 2b: Periodicity of SSB or CSI-RS resource (CATT Proposal 2, Vivo Proposal 3)
    - 2c: BW of RLM/BFD-RS types (Vivo Proposal 3)
    - 2d: the relation to RSs for RRM (Vivo Proposal 3)
  + Option 3: N factor (# of RX beams for FR2) (CATT Proposal 2)
  + Option 4: P (scale factor with consideration of overlap with measurement gap and/or SMTC window) (CATT Proposal 2)
  + Option 5: different pairs of IS/OOS BLER values (CATT Proposal 3)
* Recommended WF:
  + Trying to down select with ≤ [3] factors for evaluation setting, to control system-level simulation load. Companies are encouraged to provide views on the factors.

**Issue 2-1-4: From channel perspective, factors to be studied and evaluated for RLM/BFD relaxation**

* Background:
  + Companies proposed factors, from channel perspective, to be studied and evaluated for RLM/BFD measurements relaxation. (R4-2014367 MTK, R4-2014428 CATT, R4-2014797 OPPO).
* Proposals:
  + Option 1: Serving cell's SINR level (Oppo Proposal 2, MTK Proposal 7)
  + Option 2: UE mobility (CATT Proposal 2, Oppo Proposal 2, MTK Proposal 7)
* Recommended WF:
  + Need more discussion, companies are encouraged to provide views.

### Sub-topic 2-2 Evaluation metrics

**Issue 2-2-1: Evaluation metrics, power saving aspects**

* Background:
  + Companies proposed the UE power saving gain from the relaxed RLM and BFD measurement should be studied and to be considered as evaluation metrics (Proposal 1 & 2 in R4-2015199, Nokia).
  + It is also mentioned the UE is performing RRM measurements on at least the serving cell in addition to RLM and BFD measurements, which may have an impact on the power saving gain of RLM/BFD measurement relaxation. (Proposal 3 in R4-2015199, Nokia).
* Proposals:
  + Option 1: Study the UE power saving gain from the relaxed RLM/BFD measurement requirements, compared to the Rel-15 evaluation period. (Nokia, 1st part of Proposal 1 & Proposal 2)
  + Option 1a: Include RLM, BFD and RRM measurements in the evaluation of UE power saving impact due to relaxation of RLM/BFD measurements. (Nokia Proposal 3)
* Recommended WF:
  + Are Option 1 and Option 1a agreeable?

**Issue 2-2-2: Evaluation metrics, system impact aspects**

* Background:
  + To study the system impact of relaxed RLM/BFD measurement, companies proposed evaluation metrics. (R4-2015199, R4-2014367, R4-2016150).
* Proposals:
  + Option 1: RAN4 to apply delta SINR as one of the performance statistic to evaluate the RLM/BFD performance impact, where delta SINR is the difference between the averaged SINR sampled with Rel-15 baseline UE behavior and Rel-17 relaxed UE behavior (MTK Proposal 5)
    - RAN4 to determine the confidence level applied in the evaluation of delta SINR (MTK Proposal 6)
  + Option 2: Study the system impact of relaxed RLM/BFD measurements, taking in to account the following evaluation metrics: (2nd part of Nokia Proposal 2)
    - increased latency in RLF triggering (for RLM)
    - increased latency in beam failure detection and the initiation of beam recovery procedure (for BFD)
  + Option 3: RAN4 to discuss the impact of RLM/BM relaxation on PDCCH monitoring. (Ericsson Proposal 6)
* Recommended WF:
  + Need more discussion, companies are encouraged to provide views. Note that the options are not necessary to be mutually exclusive.

### Sub-topic 2-3 Relaxation Methodology

**Issue 2-3-1: Scheme of RLM/BFD measurements relaxation**

* Background:
  + Companies proposed schemes for relaxing RLM/BFD measurements. (R4-2014367 MTK, R4-2014428 CATT, R4-2014534 vivo, R4-2014654 Xiaomi, R4-2014797 OPPO, R4-2016150 Ericsson).
* Proposals:
  + Option 1: Extending evaluation period of RLM/BFD measurement (CATT Proposal 1; OPPO Proposal 1; MTK Proposal 1; Xiaomi Proposal 2)
  + Option 1a: RAN4 to further discuss use of a scaling factor for defining the relaxed RLM/BM evaluation period and indication intervals. (Ericsson Proposal 4)
  + Option 2: Reducing the number of candidate beams when UE fulfilled relaxed criteria can be a feasible way to reduce power consuming. (Xiaomi Proposal 3)
* Recommended WF:
  + Is Option 1 agreeable?

**Issue 2-3-2: Criteria which the UE is allowed to relax the RLM/BM requirements**

* Background:
  + Companies proposed criteria which the UE is allowed to relax the RLM/BM requirements. (R4-2014219 Apple, R4-2014534 vivo, R4-2014654 Xiaomi).
* Proposals:
  + Option 1: UE mobility
    - 1a: Low mobility criteria, e.g. R16 RRM relaxation criterion can be used as a starting point. (Apple Proposal 1, Vivo Proposal 2, Xiaomi Proposal 1)
  + Option 2: Serving cell’s quality (e.g. RSRP, SINR)
    - 2a: at-cell-center criteria, e.g. R16 RRM relaxation criterion can be used as a starting point. (Apple Proposal 1, Xiaomi Proposal 1)
    - 2b: the measured SINR is above one additional threshold (e.g. SINR > 2dB). (Vivo Proposal 1).
* Recommended WF:
  + Need more discussion, companies are encouraged to provide views. Note that the options are not necessary to be mutually exclusive.

**Issue 2-3-3: Network or UE to determine if the criteria for relaxation is fulfilled**

* Background:
  + Companies proposed to discuss the criteria which the UE is allowed to relax the RLM/BM requirements is determined by the network and/or UE. (Proposal 1 in R4-2016150 Ericsson).
* Proposals:
  + Option 1: Low mobility scenario under which the UE is allowed to relax the RLM/BM requirements is determined by the network.
  + Option 2: Low mobility scenario under which the UE is allowed to relax the RLM/BM requirements is determined by the UE.
  + Option 3: Low mobility scenario under which the UE is allowed to relax the RLM/BM requirements is determined by both the network and UE.
* Recommended WF:
  + Need more discussion, companies are encouraged to provide views.

### Sub-topic 2-4 Other Aspects

**Issue 2-4-1: Reverting to the normal RLM operation**

* Background:
  + Companies proposed reverting to the normal RLM operation (i.e. without relaxation) upon detecting certain number of out-of-sync indications or upon triggering T310. (Proposal 2 in R4-2016150 Ericsson)
* Proposals:
  + Option 1: The UE while performing relaxed RLM upon detecting certain number of out-of-sync indications or upon triggering T310 reverts to the normal RLM operation (i.e. without relaxation).
* Recommended WF:
  + Agree on Option 1.

**Issue 2-4-2: Reverting to the normal BM operation**

* Background:
  + Companies proposed reverting to the normal BM operation (i.e. without relaxation) upon beam failure detection. (Proposal 3 in R4-2016150 Ericsson)
* Proposals:
  + Option 1: The UE while performing relaxed BM upon beam failure detection reverts to the normal BM operation (i.e. without relaxation).
* Recommended WF:
  + Need more discussion, companies are encouraged to provide views.

**Issue 2-4-3: Relaxation of BM when not all serving cells in intra-band CA/DC meets relaxation criteria**

* Background:
  + Companies proposed to discuss the relaxation of BM when not all serving cells in intra-band CA/DC meets relaxation criteria. (Proposal 5 in R4-2016150 Ericsson)
* Proposals:
  + Option 1: RAN4 to further discuss the relaxation of BM when not all serving cells in intra-band CA/DC meets relaxation criteria.
* Recommended WF:
  + Need more discussion, companies are encouraged to provide views.

## Companies views’ collection for 1st round

### Open issues

**Issue 2-1-1: Evaluation assumption for system level simulation**

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| **Company** | **Comments** |
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**Issue 2-1-2: Evaluation assumption for power consumption**

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| **Company** | **Comments** |
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**Issue 2-1-3: From configuration perspective, factors to be studied and evaluated for RLM/BFD relaxation**

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| **Company** | **Comments** |
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**Issue 2-1-4: From channel perspective, factors to be studied and evaluated for RLM/BFD relaxation**

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| **Company** | **Comments** |
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**Issue 2-2-1: Evaluation metrics, power saving aspects**

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| **Company** | **Comments** |
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**Issue 2-2-2: Evaluation metrics, system impact aspects**

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| **Company** | **Comments** |
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**Issue 2-3-1: Scheme of RLM/BFD measurements relaxation**

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| **Company** | **Comments** |
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**Issue 2-3-2: Criteria which the UE is allowed to relax the RLM/BM requirements**

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| **Company** | **Comments** |
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**Issue 2-3-3: Network or UE to determine if the criteria for relaxation is fulfilled**

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| **Company** | **Comments** |
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**Issue 2-4-1: Reverting to the normal RLM operation**

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| **Company** | **Comments** |
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**Issue 2-4-2: Reverting to the normal BM operation**

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| **Company** | **Comments** |
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**Issue 2-4-3: Relaxation of BM when not all serving cells in intra-band CA/DC meets relaxation criteria**

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| **Company** | **Comments** |
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### CRs/TPs comments collection

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| **CR/TP number** | **Comments collection** |
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## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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|  | **Status summary** |
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*Recommendations on WF/LS assignment*

Moderator: this WF is to capture all agreements and remaining open issues of this Email thread

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

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

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| **CR/TP number** | **CRs/TPs Status update recommendation** |
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## Discussion on 2nd round (if applicable)

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| Company A |  |
| Company B |  |

## 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*

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| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
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