3GPP TSG-RAN WG2 Meeting #116-e R2-21xxxxx

Online, 1 - 11 November 2021

**Agenda item: 7.2**

**Source: Huawei**

**Title: [AT116-e][402][eMTC R15R16] RSS-based RSRQ measurements (Huawei)**

**Document for: Report**

# 1 Scope of the offline discussion

This is the offline email discussion “[AT116-e][402][eMTC R16] RSS-based RSRQ measurements (Huawei)”, as indicated below:

* **[AT116-e][402][eMTC R16] RSS based RSRQ measurements (Huawei)**

Status: Started

      **Scope:** Check whether the intention is agreeable and there is sufficient support
in principle; collect initial comments regarding the wording etc..

      **Intended outcome:** Report in R2-2111407

      **Deadline:** Wednesday 2021-11-03 12:00 UTC

# 2 Offline discussion

This offline discusses the documents below:

[R2-2109366](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2109366.zip) Reply LS on RSS-based RSRQ (R4-2115425; contact: Huawei) RAN4 LS in Rel-16 LTE\_eMTC5-Core To:RAN2, RAN1

[R2-2111208](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2111208.zip) Removal of RSS based RSRQ measurements Huawei, HiSilicon CR Rel-16 36.304 16.5.0 0835 - F LTE\_eMTC5-Core

The intention is to check whether the intention of the CR is agreeable and whether there are comments on the actual proposed changes.

Companies are requested to provide comments in the table below (one row for each new comment to better keep track of the discussion – please don’t edit the previous comments).

|  |  |  |
| --- | --- | --- |
| **Company** | **Do you agree with the intent of the change?** | **Detailed comments** |
| Qualcomm | Yes | Intent of the CR is ok but some re-wording is necessary to make it more readable. A draft CR with the revised wording uploaded to drafts folder. |
| ZTE | No | We realize the CR only takes into account the idle mode measurement, but no consideration on connected mode measurement.In the RAN4 Reply LS[[R2-2109366](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2109366.zip)], it is only described that “RAN4 has concluded to not introduce RSS based RSRQ for LTE-MTC in Rel-16”, we are still unclear whether legacy RSRQ measurement can be performed. If legacy RSRQ measurement can not be performed when RSS-based measurement is activated, it will contradict with the following highlight parts in existing TS 36.331 and TS 36.133 specifications. In TS 36.331, **the *rsrqResult* is a mandatory IE** in *MeasResults*. If RSRQ measurement can not be performed when RSS-based measurement is activated, UE cannot set the ***rsrqResult* IE** properly:

|  |
| --- |
| MeasResults ::= SEQUENCE { measId MeasId, measResultPCell SEQUENCE { rsrpResult RSRP-Range, rsrqResult RSRQ-Range },。。。} |

In TS 36.133, there is high level description that UE shall be able to perform RSRP and RSRQ measurements as follows:

|  |
| --- |
| 8.13.2.1 E-UTRAN intra frequency measurements by UE category M1 with CE mode AThe UE shall be able to identify new intra-frequency cells and perform RSRP and RSRQ measurements of identified intra-frequency cells without an explicit intra-frequency neighbour cell list containing physical layer cell identities. During the RRC\_CONNECTED state the UE shall continuously measure identified intra frequency cells and additionally search for and identify new intra frequency cells. The UE is allowed to perform RSRP measurements based on RSS signals provided UE is configured with *rss-ConfigCarrierInfo* [2] and following conditions are met:.......................................8.13.3.1 E-UTRAN intra frequency measurements by UE category M1 with CE mode BThe UE shall be able to identify new intra-frequency cells and perform RSRP and RSRQ measurements of identified intra-frequency cells without an explicit intra-frequency neighbour cell list containing physical layer cell identities. During the RRC\_CONNECTED state the UE shall continuously measure identified intra frequency cells and additionally search for and identify new intra frequency cells. The UE is allowed to perform RSRP measurements based on RSS signals provided UE is configured with *rss-ConfigCarrierInfo* [2] and following conditions are met:................................................... |

Per our understanding, if companies have the understanding that legacy RSRQ measurement cannot be performed and can agree with this CR for 36.304, we may also need to correspondingly update the above highlight parts in TS 36.331 (maybe NBC) and TS 36.133. Otherwise, if companies understand the RAN4 LS doesn’t imply that the legacy RSRQ measurement cannot be performed, from RAN2 perspective, we may not need to update any specification, e.g., neither TS 36.304 nor TS 36.331/TS 36.133 need to be updated.Anyway, we’d better to double check with RAN4 on whether legacy RSRQ measurement can be performed when RSS-based measurement is activated. We may further notify RAN4 that if it cannot be performed, TS 36.331 specification may need to be updated with NBC. |
| Sequans | Yes | We don’t think there is an ambiguity in the RAN4 LS. We may not like the inconsistency in behavior for UEs using and not using RSS-based measurements, but we don’t think that changing legacy behavior is called for. If companies think changing legacy behavior is preferable, we must discuss this online.We support the changes proposed by QC, except the first one, which seems to introduce some ambiguity to what exactly the parenthesis apply. We are fine with either leaving the original correction as is or splitting the sentence into two as was done in the next section  |

Conclusion:

Two companies agree with the intention of the CR and propose some rewording for readability.

One company disagrees with the intention of the CR and the interpretation of the LS, the company also argues that corresponding changes are needed in RRC and that they will non-backward compatible.

Rapporteur thinks that the RRC changes may be done in a BC by just clarifying that the rsrq-Result is set to any value by the value and ignored by the network whne RSS-based measurements is configured.

**Proposal 1:** The intention of the CR in [R2-2111208](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2111208.zip) is agreed, wording needs to be further discussed

**Proposal 2:** RAN2 to agree that a corresponding CR on RRC is needed.

# 3 Conclusion

 Based on the offline discussion, the following proposals are made:

**Proposal 1:** The intention of the CR in [R2-2111208](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2111208.zip) is agreed, wording needs to be further discussed.

**Proposal 2:** RAN2 to agree that a corresponding CR on RRC is needed.

# 4 Participants

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| --- | --- | --- |
| **Company** | **Name** | **e-mail address** |
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