**3GPP TSG-RAN2 Meeting #113bis-e draftR2-2104387**

**Online, April 12 – 20, 2021**

**Agenda Item: 9.1.4**

**Source: Huawei, HiSilicon**

**Title: Offline 403 - RSRQ measurements when RSS is used**

**Document for: Discussion and decision**

1. Introduction

This document is the summary of the offline email discussion “[AT113bis-e][403][ eMTC R16] RSRQ measurements when RSS is used (Huawei)”, as indicated below:

* [AT113bis-e][403][eMTC R16] RSS based RSRQ (Huawei)

Status: Started

      **Scope:** Check whether RSRQ measurements should be defined for RSS,
collect initial comments and draft an LS reply.

      **Intended outcome:** Report in R2-2104387

      **Deadline:** Thursday 2021-04-15 10:00 UTC

1. Discussion

The options proposed by RAN4 are:

* *Option 1: Remove RSRQ from the cell selection and cell re-selection criterion when a cell is measured using RSS.*
* *Option 2: Define RSRQ for RSS measurements.*

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** | **Option 1 or Option 2?** | **Detailed comments** |
| Qualcomm | Option 1 | RAN1/RAN had already concluded not to support RSRQ with RSS, see R2-2103013.The proposed draft reply LS for option 1 says RAN2 has agree CRs for Option 1 but there are no CRs submitted to this meeting. Therefore, the response in this LS should be modified as follows:“RAN2 have discussed the options listed in the LS from RAN4 and has agreed ~~the attached CR for~~ to implement option 1 (i.e. remove RSRQ ~~has been removed~~ from the cell selection and cell re-selection criterion when a cell is measured using RSS).”  |
| ZTE | Option 2 | We understand that the WID update was to exclude the RSRQ improvement through the use of RSS, not to exclude the RSRQ measurement.According to the following description in TS 36.214 “*E-UTRA Carrier Received Signal Strength Indicator (RSSI), comprises the linear average of the total received power (in [W]) observed only in certain OFDM symbols of measurement subframes*”, we understand the measurement signal density will not increase the RSSI measured value, it may only improve the measurement accuracy. If the Option 1 is selected, the cell selection and/or reselection performance may be impacted and should be re-evaluated. Furthermore, the RAN2 specification may be impacted much (e.g. both the TS 36.304 and TS 36.331 will be impacted). So, RSS based measurement should not deactivate RSRQ based cell selection/reselection criterion.Therefore, we suggest to response the LS with the following points:

|  |
| --- |
| RAN2 has discussed the two options in the LS related to RSS based RSRQ for LTE-MTC. Based on the discussion, RAN2 provide the following understanding: • The Option 1 is not preferred from RAN2’s perspective.• Whether Option 2 is necessary should be decided by RAN1. |

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|  |  |  |
|  |  |  |

1. Conclusion

TBD

1. Reference

[1] [R2-2103491](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103491.zip), RSRQ measurements when RSS is used, Huawei, HiSilicon

[2] [R2-2103013](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103013.zip), Whether to support RSRQ with RSS, Qualcomm Incorporated

[3] [R2-2104182](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104182.zip), Consideration on LS related to RSS based RSRQ for eMTC, ZTE Corporation, Sanechips

Appendix A Draft Reply LS for Option 1

**3GPP TSG-RAN2 Meeting #113bis-e R2-21xxxxx**

**Online, April 12 – 20, 2021**

**Title: [draft] Reply LS related to RSS based RSRQ for LTE-MTC**

**Response to:** R4-2103728

**Release:** Release 16

**Work Item:** LTE\_eMTC5-Core

**Source:** [Huawei – to be] RAN2

**To:** RAN4,

**Cc:** RAN1

**Contact Person:**

**Name:** Brian Martin

**E-mail Address:** brian DOT alexander DOT martin AT huawei DOT com

**Send any reply LS to: 3GPP Liaisons Coordinator,** **mailto:3GPPLiaison@etsi.org**

**Attachments: [Agreed CR]**

**1. Overall Description:**

RAN2 thanks RAN4 for the LS in R4-2103728.

RAN2 have discussed the options listed in the LS and have agreed the attached CR for option 1 (i.e. RSRQ has been removed from the cell selection and cell re-selection criterion when a cell is measured using RSS).

**2. Actions:**

**To RAN4:**

RAN2 kindly asks RAN4 to take the above into account.

**3. Date of Next TSG-RAN2 Meetings:**

TSG-RAN2 Meeting #114-e 19 – 27 May, 2021

TSG-RAN2 Meeting #115-e 16 – 27 Aug, 2021

Appendix B: Draft Reply LS for Option 2

**3GPP TSG-RAN2 Meeting #113bis-e R2-21xxxxx**

**Online, April 12 – 20, 2021**

**Title: [draft] Reply LS related to RSS based RSRQ for LTE-MTC**

**Response to:** R4-2103728

**Release:** Release 16

**Work Item:** LTE\_eMTC5-Core

**Source:** [Huawei – to be] RAN2

**To:** RAN4, RAN1

**Cc:**

**Contact Person:**

**Name:** Brian Martin

**E-mail Address:** brian DOT alexander DOT martin AT huawei DOT com

**Send any reply LS to: 3GPP Liaisons Coordinator,** **mailto:3GPPLiaison@etsi.org**

**Attachments: -**

**1. Overall Description:**

RAN2 thanks RAN4 for the LS in R4-2103728.

RAN2 have discussed the options listed in the LS and have decided that from a RAN2 perspective option 2 is preferred.

**2. Actions:**

**To RAN1, RAN4:**

RAN2 kindly asks RAN1 and RAN4 to take the above into account, and update the specifications accordingly.

**3. Date of Next TSG-RAN2 Meetings:**

TSG-RAN2 Meeting #114-e 19 – 27 May, 2021

TSG-RAN2 Meeting #115-e 16 – 27 Aug, 2021