**3GPP TSG-RAN WG2 Meeting #112 electronic *draft*R2-2010819**

**Online, November 2nd – 13th 2020**

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| *CR-Form-v11.4* |
| **CHANGE REQUEST** |
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|  | **36.306** | **CR** | **1780**  | **rev** | **3** | **Current version:** | **16.2.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **X** | Core Network |  |

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| ***Title:***  |  Addition of missing RSS and relaxed RRM measurement capabilities for eMTC  |
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| ***Source to WG:*** | Huawei, HiSilicon, Qualcomm Inc., Ericsson  |
| ***Source to TSG:*** | R2 |
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| ***Work item code:*** | LTE\_eMTC5-Core |  | ***Date:*** | 2020-11-10 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)Rel-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
| ***Reason for change:*** | 1. RAN4 related optional UE features without capability signalling, according to R2-2006134, are missing:

1-1 Relaxed RRM measurements * Relaxation of RRM measurements for serving cell for UEs using MWUS for at least low mobility UEs

1-2 RSS-based measurement improvement in RRC\_IDLE * Improved DL RSRP measurement accuracy through use of RSS in RRC\_IDLE

1-3 RSS based measurement in paging MPDCCH narrowband * Measurement of the neighbour cell RSS in the same narrowband as the paging MPDCCH narrowband in RRC\_IDLE
1. In RAN4#96e the WF on RRM performance requirements was approved in R4-2012192 in which the following was agreed:
* RSS based neighbour cell measurement conditions in IDLE and CONNECTED mode
	+ Introduce capability signaling to indicate whether the UE is able to measure on neighbor cell RSS that is in the same NB that UE monitors.

As per latest TS 36.133, additional UE capability to support measurement of the neighbour cell RSS in the same 2-RBs as the serving cell RSS 2-RBs in RRC\_CONNECTED is also needed. |
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| ***Summary of change:*** | 1. Add three new optional features without UE capability signalling in section 6.17
2. Add new UE capability in section 4.3.6.39

**Impact analysis**Impacted functionality:RSS-based measurement and RRM relaxationInter-operability:No interoperability issues, since for (1) there is no need to indicate capability, however for (2) the NW will not be aware of the UE capability and may not be able to optimise accordingly. |
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| ***Consequences if not approved:*** | RAN4 defined optional features and a new RSS capability are missing from the specification. |
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| ***Clauses affected:*** | 4.3.6.39, 4.3.6.39a (new), 6.17.x (new), 6.17.y (new), 6.17.z (new) |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 36.331 CR 4482 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |

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| FIRST CHANGE |

#### 4.3.6.39 *ce-MeasRSS-Dedicated-r16*

This field indicates whether the UE supports improved DL RSRP measurement accuracy through use of RSS in RRC\_CONNECTED, and whether the UE supports measurement of neighbour cell RSS in the same narrowband as the MPDCCH, when the UE is operating in coverage enhancement mode A or B as specified in 36.133 [16]. A UE indicating support of *ce-MeasRSS-Dedicated-r16* shall also support resynchronization signals as defined in 6.8.8.

#### 4.3.6.39a *ce-MeasRSS-DedicatedSameRBs-r16*

This field indicates whether the UE supports improved DL RSRP measurement accuracy through use of RSS in RRC\_CONNECTED, and whether the UE supports measurement of neighbour cell RSS in the same 2-RBs as the serving cell RSS 2-RBs, when the UE is operating in coverage enhancement mode A or B as specified in 36.133 [16]. A UE indicating support of *ce-MeasRSS-Dedicated-r16* shall also support resynchronization signals as defined in 6.8.8. A UE indicating support of *ce-MeasRSS-DedicatedSameRBs-r16* shall not indicate support of *ce-MeasRSS-Dedicated-r16.*

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| NEXT CHANGE |

### 6.17.10 DL channel quality reporting in Msg3

It is optional for UE to support DL channel quality reporting of the serving cell in Msg3, as specified in TS 36.321 [4]. This feature is only applicable if the UE supports *ce-ModeA-r13*.

### 6.17.x Relaxed RRM measurements

It is optional for UE to support relaxation of RRM measurements for serving cell while using WUS, as specified in TS 36.133 [16]. This feature is only applicable if the UE supports *ce-ModeA-r13* and (*wakeUpSignal-r15* or *groupWakeUpSignal-r16* or *wakeUpSignal-TDD-r15* or *groupWakeUpSignalTDD-r16).*

### 6.17.y RSS based measurement improvement

It is optional for UE to support improved DL RSRP measurement accuracy through use of RSS in RRC\_IDLE as specified in TS 36.133 [16]. This feature is only applicable if the UE supports resynchronization signals as defined in 6.8.8.

### 6.17.z RSS based measurement in paging MPDCCH narrowband

It is optional for UE to support measurement of the neighbour cell RSS in the same narrowband as the paging MPDCCH narrowband in RRC\_IDLE as specified in TS 36.133 [16]. This feature is only applicable if the UE supports resynchronization signals as defined in 6.8.8.

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| END |