3GPP TSG-RAN WG2 Meeting #111-e draftR2-2008123

Electronic 17th – 28th August 2020

Agenda Item: 10.3

Source: Session Chair (Ericsson)

Title: draftReport eMTC breakout session

Document for: Approval

**General**

Recording of voice or video at meetings is not used in 3GPP. This applies also to this e-Meeting. At this e-Meeting, no specific actions are taken to prevent the recording of web conferences. Companies that have concerns related to recordings, if any, may express those by email in the main meeting organizational thread [AT111-e][000]

Please see the following Tdocs for e-meeting guidance:

[R2-2006500](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006500.zip) Agenda for RAN2#111-e Chairman agenda

[R2-2008391](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008391.zip) RAN2#111-e Meeting Guidelines ETSI MCC discussion

**Time Schedule**Please refer to the latest schedule in the RAN2 inbox on the public 3GPP servers.

**Access Tools**

*HTTP Upload Tool:*

ETSI IT has created a facility in Inbox and Inbox/Drafts folders on the public 3GPP servers to allow delegates to upload their documents using a web browser (however Internet Explorer is not yet supported). Open your browser and navigate to your chosen folder – for example,

<https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Inbox>

Click the green button to log in using your EOL account. A panel will appear in the upper part of the screen and documents may be dragged and dropped onto this landing pad; this causes them to be uploaded to the folder.

*Secure FTP:*

Those e-delegates who prefer to use FTP-like access to our e-meeting Inbox & Draft folders but are concerned by their usernames and passwords being sent unencrypted over the internet, ETSI IT has fitted the server with FTPS (SSL) so delegates can connect from their favourite FTP client using the address: ftps.3gpp.org. Please enter your username and password when prompted.

**Organizational**

* Incoming LSs are noted by default. Contact companies should flag LSs that need to be replied from this meeting.
* Legacy topics will be treated by email only unless indicated explicitly. Please see the list of offline email discussions below.
* Rel-16 (draft) CRs and text proposals will be handled as part of the email discussion on the corresponding CR(s) or the ASN.1 review email discussion if associated with a RIL#.
* All organizational emails and notes will be shared over the following email discussion throughout both meeting weeks:
* [AT111-e][400][eMTC/NB-IoT] Organizational Emre’s session

Scope:

* Share plans for the e-meeting and make announcements
* Share status of email discussions
* Share meeting minutes and agreements for review and endorsement

Deadline: Friday, August 28th 10:00 UTC

Status: Started

**List and Status of Offline Email Discussions**

NOTE: The official kick off date for these email discussions are Monday August 17th at 7:00 UTC. The rapporteurs can share them on the reflector earlier, however companies are not required to participate before the official kick off date. The deadlines refer to the deadline for providing company comments unless stated otherwise.

* [AT111-e][401][eMTC R16] Early UE Capability Retrieval (Qualcomm)

Status: Closed

Scope: Draft a reply LS to SA2 to inform them about the potential solution to address the 1st concern in the LS and to indicate that it should be up to SA2 to decide whether/how other concerns are addressed.

Intended outcome: Draft reply LS provided in R2-2008231

Deadline: Tuesday 25 1100 UTC.

* [AT111-e][402][NB-IoT/eMTC R15] UP EDT for DRB using RLC AM (Huawei)

Status: Closed

Scope: Progress the discussion and formulate the common understanding.

Intended outcome: Report from the discussion in R2-2008232

Deadline: Tuesday 25 1100 UTC.

* [AT111-e][403][eMTC R16] Clarification on subframe level resource reservation (ZTE)

Status: Extended for 1 week (see below)

Scope: Check with RAN1 whether the intention was to use the definition of subframe bitmap reservation and consider introducing a new parameter.

Intended outcome: Report from the discussion in R2-2008233

Deadline: Tuesday 25 1100 UTC.

* [EXT111-e][403][eMTC R16] Clarification on subframe level resource reservation (ZTE)

Status: Started

Scope: Discuss the remaining open issues

Intended outcome: Agreed CR in R2-2008240

Deadline: 1 week

* [AT111-e][404][eMTC R16] Measurement requirements for eMTC UEs in RRC\_INACTIVE (ZTE)

Status: Closed

Scope: Draft a LS to RAN4 to check if measurement requirements for eMTC UEs in RRC\_INACTIVE need to be specified.

Intended outcome: Draft LS in R2-2008234

Deadline: Tuesday 25 1100 UTC.

* [AT111-e][405][eMTC R16] Corrections to connection to 5GC for eMTC (Qualcomm)

Status: Closed

Scope: Collect feedback from companies and update the CR accordingly

Intended outcome: Agreeable CR in R2-2008235

Deadline: Tuesday 25 1100 UTC.

* [AT111-e][406][eMTC R16] Addition of missing capabilities for eMTC (Huawei)

Status: Closed

Scope: Collect feedback from companies and update the CR accordingly

Intended outcome: Agreeable CR in R2-2008236

Deadline: Tuesday 25 1100 UTC.

# 4 EUTRA corrections Rel-15 and earlier

See Appendix A for reference to Work items, work item codes and WIDs.

Only essential corrections. No documents should be submitted to 4. Please submit to 4.x

## 4.2 eMTC corrections Rel-15 and earlier

*Documents in this agenda item will be handled in a break out session. Common NB-IoT/eMTC parts treated jointly with 4.1. No web conference is planned for this agenda item*

[R2-2007327](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007327.zip) Discussion of UP EDT for DRB using RLC AM Huawei, HiSilicon discussion Rel-15 NB\_IOTenh2-Core, LTE\_eMTC4-Core

* Ericsson wonders what HW has observed in IODT. HW explains that UL grant is given for the UE to provide the report. The other case is sending the poll bit witn no UL grant.
* Ericsson asks whether the default configuration for PUCCH/PUSCH would still be used for such transnmission. HW thinks that would only be for Msg3.
* QC thinks this may be addressed by stating that UE should not be polled in Msg4 when RRC connection is released.

Proposal 1: RAN2 to confirm that the poll bit shall not be set in the RLC PDU carrying RRCConnectionRelease message for UP-EDT.

Proposal 2: RAN2 to confirm that a positive HARQ feedback (HARQ ACK) is an implicit RLC ACK of all the RLC PDUs included in the UP-EDT DL transmission.

Proposal 3: RAN2 to confirm that the poll bit shall be set in the RLC PDU(s) carrying the DL user data for UP-EDT.

Proposal 4: RAN2 to confirm that the poll bit shall be set in the RLC PDU(s) carrying the UL user data for UP-EDT.

Proposal 5: RAN2 to confirm that a RLC STATUS PDU is included in MSG4 for each RLC PDU included in the uplink transmission.

Proposal 6: Proposals 1..3 also apply to MT-EDT.

Proposal 7: Proposals 1..5 also apply to PUR.

* [AT111-e][402][NB-IoT/eMTC R15] UP EDT for DRB using RLC AM (Huawei)

Scope: Progress the discussion.

Intended outcome: Report from the discussion in R2-2008232

Deadline: Tuesday 25 1100 UTC.

[R2-2008232](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008232.zip) Report of [AT111-e][402][NB-IoT/eMTC R15] UP EDT for DRB using RLC AM Huawei, HiSilicon discussion Rel-15 NB\_IOTenh2-Core, LTE\_eMTC4-Core

Potential agreements (all companies but one):

Proposal 2: A positive HARQ feedback (HARQ ACK) is an implicit RLC ACK of all the RLC PDUs included in the UP-EDT DL transmission.

Proposal 3: Follow the legacy RLC procedure for poll bit setting in the RLC PDU(s) carrying the UL user data for UP-EDT.

Proposal 6: MT-EDT follows the same rules as MO-EDT w.r.t the DL user data transmission.

Proposal 7: PUR follows the same rules as MO-EDT.

For further discussion

Proposal 1: RAN2 to discuss further the setting of the poll bit in the RLC PDU carrying RRCConnectionRelease message for UP-EDT and whether the eNB can request the UE to send a RLC STATUS.

Proposal 4: RAN2 to discuss further whether to follow the legacy RLC procedure for poll bit setting in the RLC PDU(s) carrying the DL user data for UP-EDT.

Proposal 5: RAN2 to discuss further whether to follow the legacy RLC procedure for the inclusion of RLC STATUS PDU in MSG4 (carrying RRCConnectionRelease) for each POLL in RLC PDU included in the uplink transmission.

Proposal 8: After agreeing the expected behaviour, RAN2 to discuss whether specification updates are needed.

Proposal 9: After agreeing the expected behaviour, RAN2 to discuss whether anything needs to be captured in the chair’s notes.

* The rapporteur proposes to discuss further and come back in the next meeting considering the comments from companies. An email discussion until the next meeting would be good. Ericsson and QC agree.
* [Post111-e][xxx][NBIOT/eMTC R15] UP EDT for DRB using RLC AM (Huawei)

Scope: Continue the discussion

Intended outcome: Report in R2-2008239

Deadline: Next meeting

[R2-2007328](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007328.zip) Clarification to UP-EDT Huawei, HiSilicon CR Rel-15 36.300 15.10.0 1298 - F NB\_IOTenh2-Core, LTE\_eMTC4-Core

[R2-2007329](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007329.zip) Clarification to UP-EDT Huawei, HiSilicon CR Rel-16 36.300 16.2.0 1299 - A NB\_IOTenh2-Core, LTE\_eMTC4-Core

# 7 Rel-16 LTE Work Items

Essential corrections

## 7.2 Additional MTC enhancements for LTE

(LTE\_eMTC5-Core; LTE\_eMTC5-Core; leading WG: RAN1; REL-16; started: Jun 18; Completed: June 20; WID: RP192875;)

Documents in this agenda item will be handled in a break out session.

Some sub-items in 7.2 and 7.3 may be treated jointly.

Email max expectation: 5-6 email threads

### 7.2.1 General and Stage 2 corrections

Including incoming LSs

### 7.2.2 Mobile-terminated MT early data transmission EDT corrections

MT Early Data transmission for MTC and NB-IoT is treated jointly under this AI.

### 7.2.3 Scheduling multiple DL/UL transport blocks corrections

Scheduling multiple DL/UL transport blocks for MTC and NB-IoT is treated jointly under this AI.

### 7.2.4 Coexistence with NR corrections

Coexistence with NR for MTC and NB-IoT is treated jointly under this AI.

[R2-2006858](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006858.zip) Clarification on subframe level resource reservation for eMTC ZTE Corporation, Sanechips CR Rel-16 36.331 16.1.1 4358 - F LTE\_eMTC5-Core

* Huawei thinks subframe reservation bitmap is already available in SIB1 and wonders why it is not possible to use that. It was RAN1’s intention not to introduce subframe bitmap.
* QC thinks it is possible for the eNB to know the UE capabilities, but this is not the case for the common signalling.

* [AT111-e][403][eMTC R16] Clarification on subframe level resource reservation (ZTE)

Scope: Check with RAN1 whether the intention was to use the definition of subframe bitmap reservation and consider introducing a new parameter.

Intended outcome: Report from the discussion in R2-2008233

Deadline: Tuesday 25 1100 UTC.

[R2-2008233](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008233.zip) Report of [AT111-e][403][eMTC R16] Clarification on subframe level resource reservation ZTE Corporation, Sanechips discussion LTE\_eMTC5-Core

* [EXT111-e][403][eMTC R16] Clarification on subframe level resource reservation (ZTE)

Scope: Discuss the remaining open issues

Intended outcome: Agreed CR in R2-2008240

Deadline: 1 week

### 7.2.5 Connection to 5GC corrections

Connection to 5GC for MTC and NB-IoT is treated jointly under this AI.

[R2-2006859](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006859.zip) Measurement requirement for eMTC UE in RRC\_INACTIVE state ZTE Corporation, Sanechips discussion LTE\_eMTC5-Core

Proposal 1: Apply the requirements defined for Category M1/M2 without eDRX configuration in RRC\_IDLE state mobility as the requirements for Category M1/M2 in RRC\_INACTIVE state.

Proposal 1a: send LS to RAN4 to notify the RAN2 specification sate and request to define the Cell Re-selection Requirements for UE category M1/M2 in RRC\_INACTIVE state.

* HW thinks RAN2 spec is complete, but something may be missing in RAN4 specs which should be brought up in that WG.
* QC wonders if there is anything that needs to be specified from RAN4 standpoint considering what has been captured today. HW explains that a link seems to be missing to the existing requirements. For eLTE no new requirements were defined in RAN4, it was rather captured that all existing requirements for LTE applies. It might be missed that RRC\_INACTIVE state has been introduced.
* [AT111-e][404][eMTC R16] Measurement requirements for eMTC UEs in RRC\_INACTIVE (ZTE)

Scope: Draft a LS to RAN4 to check if measurement requirements for eMTC UEs in RRC\_INACTIVE need to be specified.

Intended outcome: Draft LS in R2-2008234

Deadline: Tuesday 25 1100 UTC.

[R2-2008234](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008234.zip) LS to RAN4 on measurement requirement for eMTC UE in RRC\_INACTIVE ZTE Corporation, Sanechips LS out LTE\_eMTC5-Core To:RAN4

* **The LS is approved in** [**R2-2008234**](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008234.zip)**.**

[R2-2006860](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006860.zip) Draft LS to RAN4 on measurement requirement for eMTC UE in RRC\_INACTIVE state ZTE Corporation, Sanechips LS out LTE\_eMTC5-Core To:RAN4

[R2-2007341](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007341.zip) Corrections to connection to 5GC for eMTC Huawei, HiSilicon CR Rel-16 36.331 16.1.0 4381 - F LTE\_eMTC5-Core

* QC thinks there is a need to formulate the following text which seems to be not clear: “if the UE is a BL UE or UE in CE connected to 5GC:”
* [AT111-e][405][eMTC R16] Corrections to connection to 5GC for eMTC (Qualcomm)

Scope: Collect feedback from companies and update the CR accordingly

Intended outcome: Agreeable CR in R2-2008235

Deadline: Tuesday 25 1100 UTC.

[R2-2008235](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008235.zip) Corrections to connection to 5GC for eMTC Qualcomm Inc., Huawei, HiSilicon CR Rel-16 36.331 16.1.0 4434 - F LTE\_eMTC5-Core, TEI16

* Remove “odilerollinger@yHi pe” in ASN.1 script.
* Update cover page to replace “The ASN.1 change in *RRCConnectionRelease* message is non-backward-compatible.” with the text RAN2 chair has suggested on the reflector.
* CR is agreed in R2-2008237 unseen with the changes above.

### 7.2.6 Other MTC specific corrections

Including corrections related to Quality report in Msg3, MPDCCH performance improvement using CRS, Improvements for non-BL UEs, Stand-alone deployment, Mobility enhancements.

[R2-2006792](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006792.zip) Early UE capability retrieval enhancements for eMTC connecetd to 5GC Qualcomm Inc, Sierra Wireless, Thales, Telus, ZTE Corporation, TurkCell discussion Rel-16 LTE\_eMTC5-Core [R2-2004841](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2004841.zip)

[R2-2007695](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007695.zip) RRC CR for early UE capability retrieval for eMTC connected to 5GC Qualcomm Inc,Sierra Wireless, Thales, Telus, ZTE Corporation,TurkCell CR Rel-16 36.331 16.1.1 4400 - F LTE\_eMTC5-Core

[R2-2007894](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007894.zip) [Draft] Reply LS on early UE capability retrieval for eMTC Qualcomm Inc LS out Rel-16 LTE\_eMTC5-Core To:SA2 Cc:CT1, RAN3

* Huawei thinks this can not be considered as a correction and Rel-16 is closed. Ericsson and Nokia agree.
* QC thinks this should be a Rel-16 feature regardless of treated as a correction or TEI16.
* Thales thinks it would be useful to introduce this feature considering the support from device vendors.
* ZTE thinks it would be better to consider this in this release to avoid a complicated solution.
* QC thinks RAN2 needs to send a reply to SA2. Huawei thinks this is not the case as no reply is expected.
* Ericsson thinks the reply is not necessarily needed unless RAN2 intends to introduce the feature. The use case is in case the UE does not support security activation and that seems to be not the case for eMTC UEs.
* QC thinks the impact to other groups are not significant as the actual work to be done is in RAN2.
* Nokia thinks that SA2 already raised concerns regarding this issue.
* Huawei thinks the gain may be quite insignificant considering the complexity that the feature introduces. There seems to be no eMTC UEs that support only CP solution.
* SW thinks it would be beneficial to introduce the feature.
* RAN2 intends to send a reply LS to SA2 to indicate that there seems to be a potential solution to address the 1st concern from RAN2 standpoint, however it should be up to SA2 to decide whether/how other concerns are addressed.
* [AT111-e][401][eMTC R16] Early UE Capability Retrieval (Qualcomm)

Scope: Draft a reply LS to SA2 to inform them about the potential solution to address the 1st concern in the LS and to indicate that it should be up to SA2 to decide whether/how other concerns are addressed.

Intended outcome: Draft reply LS provided in R2-2008231

Deadline: Tuesday 25 1100 UTC.

[R2-2008231](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008231.zip) [Draft] Reply LS on early UE capability retrieval for eMTC Qualcomm Inc LS out Rel-16 LTE\_eMTC5-Core To:SA2 Cc:CT1, RAN3

* RAN2 understands that for NB-IoT UE using CP optimization, except for RRC connection reestablishment in CP, there are no additional checks performed by MME/AMF before responding to capability retrieval request by (ng-)eNB after reception of Msg3.
* Several companies in RAN2 understand that any coordination required for configuring common values of truncated identity can be resolved by configuration or O&M of ng-eNBs. Other companies have concern with this statement.
* Remove “Regarding above concerns, RAN2 understands for NB-IoT UE using CP optimization, except for RRC connection reestablishment in CP, there are no additional checks performed by MME/AMF before responding to capability retrieval request by (ng-)eNB after reception of Msg3. Additionally, several companies in RAN2 understand that any coordination required for configuring common values of truncated identity can be resolved by proper configuration or implementation of ng-eNBs.”
* Remove “However,”
* Remove “Therefore, RAN2 respectfully asks SA2 to take above response into consideration.”
* **The LS is approved in** [**R2-2008238**](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008238.zip) **with the changes above.**

### 7.2.7 MTC UE capabilities corrections

[R2-2007340](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007340.zip) Addition of missing capabilities for eMTC R16 Huawei, HiSilicon CR Rel-16 36.306 16.1.0 1780 - F LTE\_eMTC5-Core

* [AT111-e][406][eMTC R16] Addition of missing capabilities for eMTC (Huawei)

Scope: Collect feedback from companies and update the CR accordingly

Intended outcome: Agreeable CR in R2-2008236

Deadline: Tuesday 25 1100 UTC.

[R2-2008236](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008236.zip) Addition of missing capabilities for eMTC R16 Huawei, HiSilicon CR Rel-16 36.306 16.1.0 1780 1 F LTE\_eMTC5-Core

* Postponed