3GPP TSG-RAN WG2 Meeting #113bis-e draftR2- 2104303

Electronic meeting, April 12th - 20th, 2021

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 [AT113bis-e][000]

Please see the following Tdocs for e-meeting guidance:

[R2-2102600](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2102600.zip) Agenda for RAN2#113bis-e Chairman agenda

[R2-2100351](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113-e/Docs/R2-2100351.zip) 3GPP TSG RAN WG2 Handbook (01/2021) 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_113bis-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:
* [AT113bis-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: Tuesday, April 20th 18:00 UTC

 Status: Started

**List and Status of Offline Email Discussions**

NOTE: The official kick off date for these email discussions are Monday April 12th 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.

* [AT113bis-e][401][eMTC R16] Paging DRX cycle (ZTE)

Status: Closed

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

Updated scope after online discussion:

* how to capture the intention in Proposal 1, i.e., to conclude on the wording
	+ check whether the change is needed also for Rel-15 and for the WI with the code: LTE\_5GCN\_connect-Core
* how to capture the intention in Proposal 2 for PNB calculation, i.e., to conclude on the wording
	+ check whether a similar change is needed for i\_s and wg calculation
	+ check whether the change is needed also for Rel-15 for i\_s calculation
* check whether RAN2 agrees with the intention to send a LS to RAN3 to indicate that ng-eNB(s), other than the anchor ng-eNB, in the RAN paging area need to know about the UE eDRX cycle value, UE specific DRX cycle value and the RAN paging cycle value to calculate, e.g., PNB, PF, i\_s and wg.
	+ if agreeable a draft LS

      **Intended outcome:** Report in R2-2104388

      **Deadline:** Tuesday, April 20th 8:00 UTC

* [AT113bis-e][402][eMTC R16] Timing of neighbor cell RSS-based measurements (Qualcomm)

Status: Closed

      **Scope:** Check whether there is a need to reply the LS in RAN2 and draft a
potential LS reply assuming that there is sufficient support in principle, i.e.,
so that a draft reply LS would be available if RAN2 agrees to send a reply LS.

Updated scope after online discussion:

 Draft an LS reply based on the comments received

      **Intended outcome:** Draft LS reply in R2-2104389

      **Deadline:** Tuesday, April 20th 8:00 UTC

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

Status: Closed

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

Updated scope after online discussion:

 Draft an LS reply based on the comments received

      **Intended outcome:** Draft LS reply in R2-2104390

      **Deadline:** Tuesday, April 20th 8:00 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

## 4.1 NB-IoT 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 4.2.

## 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.

**7 Rel-16 EUTRA 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.*

7.2.1 General and Stage-2 corrections

*Including incoming LSs*

[R2-2102651](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2102651.zip) LS on timing of neighbor cell RSS-based measurements (R4-2103657; contact: Qualcomm) RAN4 LS in Rel-16 LTE\_eMTC5-Core To:RAN1, RAN2 Cc:-

* Noted

[R2-2102653](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2102653.zip) LS related to RSS based RSRQ for LTE-MTC (R4-2103728; contact: Huawei) RAN4 LS in Rel-16 LTE\_eMTC5-Core To:RAN2 Cc:RAN1

* Noted

7.2.2 Connection to 5GC corrections

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

[R2-2103361](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103361.zip) Discussion on correction for paging DRX cycle determination ZTE Corporation, Sanechips discussion LTE\_eMTC5-Core Late

[R2-2104239](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104239.zip) draft LS to RAN3 to clarify paging DRX cycle ZTE Corporation, Sanechips LS out Rel-16 LTE\_eMTC5-Core To:RAN3 Late

[R2-2104246](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104246.zip) Correction on paging DRX cycle ZTE Corporation, Sanechips CR Rel-16 36.304 16.3.0 0825 - F LTE\_eMTC5-Core Late

* [AT113bis-e][401][eMTC R16] Paging DRX cycle (ZTE)

Status: Started

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

      **Intended outcome:** Report in R2-2104385

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

[R2-2104385](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103361.zip) Report of [AT113bis-e][401][eMTC R16] Paging DRX cycle (ZTE) ZTE Corporation, Sanechips discussion LTE\_eMTC5-Core

Proposal 1: The editorial change of moving the condition “if allocated by upper layers” from the back of parameter the default paging cycle to the back of parameter the UE specific paging cycle can be agreed.

Proposal 1a: This editorial change is also needed for R15 and under the WID LTE\_5GCN\_connect-Core.

* QC supports the proposal but thinks that RRC Inactive is broken from Rel-15 which may lead to non-overlapped POs.
* HW thinks it was intentional that it applies to all, not only to the default paging cycle.
* RAN2 agrees with the intention, but exact wording needs further discussion.

Proposal 2: For UE in RRC\_INACTIVE, to separately describe DRX cycle T determination for the following three cases: eDRX cycle is not configured, eDRX cycle with 512 radio frames is configured, eDRX cycle is configured and the value is not 512 radio frames.

* RAN2 agrees with the intention, but exact wording needs further discussion.

Proposal 2a: For each of above cases, to separately describe DRX cycle T determination for PF calculation and for PNB, i\_s and wg calculation. The legacy description is still applicable to DRX cycle T determination for PF calculation. But for PNB, i\_s and wg calculation, the DRX cycle T determination should follow RRC\_IDLE mode rule.

Proposal 3: For R15 UE in RRC\_INACTIVE, to separately describe DRX cycle T determination for PF calculation and for i\_s calculation. The legacy description is still applicable to DRX cycle T determination for PF calculation. But for i\_s calculation, the DRX cycle T determination should follow RRC\_IDLE mode rule.

Proposal 4: Send LS to RAN3 to indicate that other ng-eNB(s) (except the anchor ng-eNB) in the RAN paging area needs the information about the UE eDRX cycle, possible UE specific DRX cycle and the used RAN paging cycle. If not, other ng-eNB(s) cannot calculate the correct value for PNB, PF, i\_s and wg and paging would be failed.

* Continue the discussion in offline [401] with the scope below:
* how to capture the intention in Proposal 1, i.e., to conclude on the wording
	+ check whether the change is needed also for Rel-15 and for the WI with the code: LTE\_5GCN\_connect-Core
* how to capture the intention in Proposal 2 for PNB calculation, i.e., to conclude on the wording
	+ check whether a similar change is needed for i\_s and wg calculation
	+ check whether the change is needed also for Rel-15 for i\_s calculation
* check whether RAN2 agrees with the intention to send a LS to RAN3 to indicate that ng-eNB(s), other than the anchor ng-eNB, in the RAN paging area need to know about the UE eDRX cycle value, UE specific DRX cycle value and the RAN paging cycle value to calculate, e.g., PNB, PF, i\_s and wg.
	+ if agreeable a draft LS
* The outcome can be provided in R2-2104388. The deadline is extended to Tuesday, April 20th 8:00 UTC
* [AT113bis-e][401][eMTC R16] Paging DRX cycle (ZTE)

Status: Started

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

Updated scope after online discussion:

* how to capture the intention in Proposal 1, i.e., to conclude on the wording
	+ check whether the change is needed also for Rel-15 and for the WI with the code: LTE\_5GCN\_connect-Core
* how to capture the intention in Proposal 2 for PNB calculation, i.e., to conclude on the wording
	+ check whether a similar change is needed for i\_s and wg calculation
	+ check whether the change is needed also for Rel-15 for i\_s calculation
* check whether RAN2 agrees with the intention to send a LS to RAN3 to indicate that ng-eNB(s), other than the anchor ng-eNB, in the RAN paging area need to know about the UE eDRX cycle value, UE specific DRX cycle value and the RAN paging cycle value to calculate, e.g., PNB, PF, i\_s and wg.
	+ if agreeable a draft LS

      **Intended outcome:** Report in R2-2104388

      **Deadline:** Tuesday, April 20th 8:00 UTC

[R2-2104388](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104388.zip) Suggestions for agreeable stage-2 proposals ZTE Corporation, Sanechips discussion LTE\_eMTC5-Core

Proposal 1: The case that extended DRX value of 512 radio frames is configured by upper layers according to 7.3 (both in RRC\_IDLE and RRC\_INACTIVE) is a special case of eDRX and it should be handled accordingly in RRC\_INACTIVE.

* QC thinks this is not correctly captured in the specifications. RAN paging cycle can be 1024 radio frames, but there is no PTW for this case.
* Huawei thinks there is PTW in idle mode for 1024 radio frames, but not for 512 radio frames. Ericsson agrees.
* Huawei wonders if we can confirm that this proposal is for RRC Inactive case when eDRX value is 512 radio frames.
* Working assumption: The case that extended DRX value of 512 radio frames is configured by upper layers should be handled in RRC\_INACTIVE.

Proposal 2: RAN2 discuss the impacts when RAN paging cycle is absent in air interface configuration. And further discuss whether this parameter needs to be always present by implementation if issue is identified.

Proposal 3: The CR in [R2-2104246] is postponed to next meeting, with consideration on whether R15 CR to eLTE/NR is needed.

Proposal 4: One-week discussion for LS to RAN3.

* Postponed

7.2.3 Other corrections

*Including corrections related to Mobile-terminated early data transmission (MT-EDT), Scheduling multiple DL/UL transport blocks, Quality report in Msg3, MPDCCH performance improvement using CRS, Improvements for non-BL UEs, Stand-alone deployment, Mobility enhancements, coexistence with NR and MTC specific topics. Corrections related to mobile-terminated early data transmission, scheduling multiple DL/UL transport blocks and coexistence with NR are treated jointly for MTC and NB-IoT under this AI.*

[R2-2103012](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103012.zip) Draft reply LS on timing of neighbor cell RSS-based measurements Qualcomm Incorporated LS out Rel-16 LTE\_eMTC5-Core To:RAN4, RAN1

* [AT113bis-e][402][eMTC R16] Timing of neighbor cell RSS-based measurements (Qualcomm)

Status: Started

      **Scope:** Check whether there is a need to reply the LS in RAN2 and draft a
potential LS reply assuming that there is sufficient support in principle, i.e.,
so that a draft reply LS would be available if RAN2 agrees to send a reply LS.

      **Intended outcome:** Report in R2-2104386

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

[R2-2104386](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104386.zip) [AT113bis-e][402][eMTC R16] Timing of neighbor cell RSS-based measurements Qualcomm Incorporated discussion Rel-16 LTE\_eMTC5-Core

Proposal 1 RAN2 to discuss whether to respond to this LS from RAN4.

Proposal 2 If RAN2 decides to send a response LS from RAN4, then RAN2 discuss how to respond.

* HW agrees that RAN1 should reply, but there may be some aspects, e.g., reading neighbour cell SFN, that RAN2 can reply. ZTE thinks there is no need to reply in RAN2. QC agrees with HW that it would be good to reply. Sequans agrees with QC and HW.
* We aim to reply the LS from RAN2 standpoint.
* Continue the discussion in offline [402] to draft an LS reply. The draft LS can be provided in R2-2104389. The deadline is extended to Tuesday, April 20th 8:00 UTC
* [AT113bis-e][402][eMTC R16] Timing of neighbor cell RSS-based measurements (Qualcomm)

Status: Started

      **Scope:** Check whether there is a need to reply the LS in RAN2 and draft a
potential LS reply assuming that there is sufficient support in principle, i.e.,
so that a draft reply LS would be available if RAN2 agrees to send a reply LS.

Updated scope after online discussion:

 Draft an LS reply based on the comments received

      **Intended outcome:** Draft LS reply in R2-2104389

      **Deadline:** Tuesday, April 20th 8:00 UTC

[R2-2104389](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104389.zip) [Draft] Reply LS on timing of neighbor cell RSS-based measurements Qualcomm Incorporated LS out Rel-16 LTE\_eMTC5-Core To:RAN4, RAN1

* Replace “provide the follow feedback from RAN2” with “provide the following feedback from RAN2”
* The LS is approved in R2-2104391 unseen with the change above.

[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 discussion Rel-16 LTE\_eMTC5-Core

[R2-2103491](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103491.zip) RSRQ measurements when RSS is used Huawei, HiSilicon discussion Rel-16 LTE\_eMTC5-Core

[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 discussion Rel-16 LTE\_eMTC5-Core

* [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

[R2-2104387](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104387.zip) Offline 403 - RSRQ measurements when RSS is used Huawei, HiSilicon discussion Rel-16 LTE\_eMTC5-Core

Proposal 1: Indicate in the LS that option 1 is not preferred from RAN2 perspective.

* HW suggests providing a reasoning in the LS along with the indication that Option 1 is not preferred. QC thinks there is no need to mention why Option 1 is preferred.
* QC thinks it would be better to state that Option 2 is preferred if that is the intention. HW thinks we would need to state a reasoning. Sequans agrees with HW.
* RAN2 will send a reply LS indicating that Option 1 is not preferred from RAN2 standpoint since RAN2 thinks it may have an impact on cell (re)-selection performance and behaviour, but it is up to RAN1 and RAN4 to decide.
* Continue the discussion in offline [403] to draft an LS reply. The draft LS can be provided in R2-2104390. The deadline is extended to Tuesday, April 20th 8:00 UTC
* [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.

Updated scope after online discussion:

 Draft an LS reply based on the comments received

      **Intended outcome:** Draft LS reply in R2-2104390

      **Deadline:** Tuesday, April 20th 8:00 UTC

[R2-210439](http://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104390.zip)0 [draft] Reply LS related to RSS based RSRQ for LTE-MTC Huawei, HiSilicon LS out Rel-16 LTE\_eMTC5-Core To:RAN4, RAN1

* Replace “RA4 to decide” with “RAN4 to decide.”
* The LS is approved in R2-2104392 unseen with the change above.