3GPP TSG-RAN WG2 Meeting #113 bis electronic draftR2-2104307

Online, April 12 – April 20, 2021

Agenda Item: 10.7

Source: Session Chair (Huawei)

Title: draft Report NB-IoT breakout session

Document for: Approval

## General

Please see the following TDocs for e-meeting guidance:

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

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

## List and Status of Offline Email Discussions

The deadlines refer to the deadline for providing company comments unless stated otherwise.

* [AT113bis-e][300][NBIOT] Organisational (Session Chair)

 **Scope:** Comments to session notes. Kick-off and management of email discussions for NB-IoT session. Coordination issues. Other organisational issues and announcements.

 **Intended outcome:** Approval of Report from NB-IoT session.

 **Deadline:** Apr 20 1100 UTC

## 9.1 NB-IoT and eMTC enhancements

(NB\_IOTenh4\_LTE\_eMTC6-Core; leading WG: RAN1; REL-17; WID: RP-201306)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

Email max expectation: 4 threads

### 9.1.1 Organizational

[R2-2104042](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104042.zip) Work plan of Rel-17 enhancements for NB-IoT and LTE-MTC Ericsson, Huawei Work Plan NB\_IOTenh4\_LTE\_eMTC6-Core

* ZTE wonders whether soft buffer sizes can be discussed now or wait until October.
* ZTE thinks running CR at the next meeting may be aggressive. Ericsson thinks it depends on how the discussion goes, the deadlines have been extended so it may be OK to start later.
* Qualcomm thinks even for previous meetings the work plan may not be accurate any more.
* Ericsson thinks the work plan was provided mainly to include RAN4 related aspects.
* noted

### 9.1.2 NB-IoT neighbor cell measurements and corresponding measurement triggering before RLF

[R2-2103014](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103014.zip) Condition for NB-IoT connected mode neighbour cell measurement Qualcomm Incorporated discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2103191](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103191.zip) Signalling procedure for connected mode measurements support for reestablishment time reduction Nokia, Nokia Shanghai Bells discussion Rel-17

[R2-2103241](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103241.zip) Further discussion on the corresponding measurement before RLF Spreadtrum Communications discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2103320](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103320.zip) RAN2 aspects of measurement in connected mode ZTE Corporation, Sanechips discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core [R2-2100324](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113-e/Docs/R2-2100324.zip)

[R2-2103394](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103394.zip) Neighbor cell measurements triggering before RLF Lenovo, Motorola Mobility discussion Rel-17

[R2-2103486](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103486.zip) Neighbour cell measurements in RRC\_CONNECTED Huawei, HiSilicon discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2103925](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103925.zip) Discussion on Fast RLF Recovery procedures in NB-IoT Ericsson discussion

### 9.1.3 NB-IoT carrier selection based on the coverage level, and associated carrier specific configuration

Including outcome of [Post113-e][351][NBIOT/eMTC R17] Paging carrier selection (Huawei).

[R2-2103487](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103487.zip) Summary of [Post113-e][351][NBIOT R17] Paging carrier selection Huawei report Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

* Sequans thinks it depends on company opinion about use-case, whether stationary or mobile UEs are the main use-case.
* ZTE Thinks option 1 is flexible to handle both cases.
* QC thinks p2 is a reasonable assumption to make. Maybe it is too early for p1 until we understand the usage. Ericsson agree, and think the solution should be simple.
* Huawei thinks the UE will be on one or the other carrier based on coverage, so from this point of view the power level is the simplest way for UE to measure.
* Nokia thinks both mobile and stationary case should be covered, and Rmax and repetitions should be considered
* Huawei thinks this is for stationary UE because it doesn’t make sense to use cell specific information for another cell, and we need to avoid paging in multiple carriers on multiple cells.

[R2-2103015](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103015.zip) Determining paging carrier suitability Qualcomm Incorporated discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

* Ericsson think we could use this paper as a starting point to compare the options.
* Ericsson thinks the most important things to understand are how the UE decides the coverage level changed, and how the NW sets the reference
* [AT113bis-e][301][NBIOT/eMTC R17] NB-IoT Carrier Selection (Qualcomm)

 Scope: Use [R2-2103015](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103015.zip) as a starting point.

* + - How options 1 and 2 work in the 2 cases – same cell, cell change.
		- Metrics needed from UE.

 Intended outcome: Report in R2-2104450

 Deadline: Monday 19 April 1200 CET

[R2-2103176](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103176.zip) Carrier selection enhancement MediaTek Inc. discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2103927](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103927.zip) Comparing solution for NB-IoT paging carrier selection Ericsson discussion

[R2-2103192](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103192.zip) Further analysis on paging carrier selection options Nokia, Nokia Shanghai Bells discussion Rel-17

[R2-2103242](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103242.zip) Further discussion on enhanced paging carrier selection and NPRACH carrier selection Spreadtrum Communications discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2103321](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103321.zip) Details of CEL-based paging carrier selection ZTE Corporation, Sanechips discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core [R2-2100326](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113-e/Docs/R2-2100326.zip)

### 9.1.4 Other

Includes WI objectives led by other WGs.

Including Summary of AI 9.1.4 (TBD).

[R2-2103926](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103926.zip) Support of 16-QAM for unicast in UL and DL in NB-IoT Ericsson discussion

[R2-2103488](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103488.zip) Discussion on 16-QAM for NB-IoT Huawei, HiSilicon discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2103365](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103365.zip) Consideration on supporting 16QAM for NB-IoT ZTE Corporation, Sanechips discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2103364](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103364.zip) Consideration on supporting 14 HARQ for eMTC ZTE Corporation, Sanechips discussion NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2103489](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103489.zip) Support of 14 HARQ Processes in DL, for HD-FDD Cat M1 UEs Huawei, HiSilicon discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2103490](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_113bis-e/Docs/R2-2103490.zip) Support of DL TBS of 1736 bits for HD-FDD Cat. M1 UEs Huawei, HiSilicon discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core