3GPP TSG-RAN WG2 Meeting #111 electronic draftR2-2008127

**Online, August 17th - 28th, 2020**

Agenda Item: 10.7

Source: Session Chair (Huawei)

Title: draft Report NB-IoT 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][000]

Please see the following Tdocs for e-meeting guidance:

R2-2006500 Agenda for RAN2#111-e Chairman agenda Late

**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**

* All organizational emails and notes will be shared over the following email discussion throughout both meeting weeks:
* [AT111-e][300][NBIOT] Organisational (Session Chair)

 Status: Started

 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: August 28 1000 UTC

**List and Status of Offline Email Discussions**

NOTE: The official kick off date for these email discussions is Monday, June 1st 0700 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.

## 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. No web conference is planned for this agenda item

[R2-2006838](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006838.zip) 36331\_R15\_Clarification for NPRACH carrier selection ZTE Corporation, Sanechips, MediaTek Inc CR Rel-15 36.331 15.10.0 4354 - F NB\_IOTenh2-Core

[R2-2006840](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006840.zip) 36331\_R16\_Clarification for NPRACH carrier selection ZTE Corporation, Sanechips, MediaTek Inc CR Rel-16 36.331 16.1.1 4356 - A NB\_IOTenh2-Core

[R2-2007334](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007334.zip) Discussion of WUS last used cell Huawei, HiSilicon discussion Rel-15 NB\_IOTenh2-Core, LTE\_eMTC4-Core

[R2-2007566](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007566.zip) Way forward on WUS usage upon RRC connection release without S1 setup/release Qualcomm Incorporated discussion Rel-15 NB\_IOTenh2-Core

[R2-2007330](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007330.zip) System support for Wake Up Signal Huawei, HiSilicon CR Rel-15 36.300 15.10.0 1264 3 F NB\_IOTenh2-Core, LTE\_eMTC4-Core [R2-2005932](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs/R2-2005932.zip)

[R2-2007331](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007331.zip) System support for Wake Up Signal Huawei, HiSilicon CR Rel-16 36.300 16.2.0 1265 2 F NB\_IOTenh2-Core, LTE\_eMTC4-Core [R2-2005933](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs/R2-2005933.zip)

[R2-2007332](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007332.zip) System support for Wake Up Signal Huawei, HiSilicon CR Rel-15 36.304 15.6.0 0795 2 F NB\_IOTenh2-Core, LTE\_eMTC4-Core [R2-2005934](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs/R2-2005934.zip)

[R2-2007333](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007333.zip) System support for Wake Up Signal Huawei, HiSilicon CR Rel-16 36.304 16.1.0 0796 2 F NB\_IOTenh2-Core, LTE\_eMTC4-Core [R2-2005935](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs/R2-2005935.zip)

## 7.3 Additional enhancements for NB-IoT

(NB\_IOTenh3-Core; leading WG: RAN1; REL-16; started: Jun 18; Completed: June 20; WID: RP-200293)

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

### 7.3.1 General and Stage 2 Corrections

Including incoming LSs etc

[R2-2006506](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006506.zip) LS on RAN1 clarification on MWUS frequency allocation (R1-2004952; contact: Ericsson) RAN1

[R2-2006519](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006519.zip) Reply LS on assistance indication for WUS (R3-204175; contact: Qualcomm) RAN3 LS in Rel-15 NB\_IOTenh3-Core, LTE\_eMTC5-Core To:SA2, RAN2 Cc:CT1

[R2-2007337](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007337.zip) Miscellaneous corrections for Rel-16 NB-IoT Huawei, HiSilicon CR Rel-16 36.331 16.1.1 4380 - F NB\_IOTenh3-Core, LTE\_eMTC5-Core

[R2-2007338](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007338.zip) Miscellaneous corrections to NB-IoT and eMTC Rel-16 enhancements Huawei, HiSilicon CR Rel-16 36.300 16.2.0 1300 - F NB\_IOTenh3-Core, LTE\_eMTC5-Core

### 7.3.2 UE-group wake-up signal (WUS) Corrections

UE group wake Up signal for MTC and NB-IoT is treated jointly under this Agenda Item.

[R2-2007336](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007336.zip) Corrections to GWUS Huawei, HiSilicon CR Rel-16 36.304 16.1.0 0809 - F NB\_IOTenh3-Core, LTE\_eMTC5-Core

[R2-2007567](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007567.zip) Group WUS corrections Qualcomm Incorporated CR Rel-16 36.304 16.1.0 0810 - F NB\_IOTenh3-Core, LTE\_eMTC5-Core

[R2-2007568](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007568.zip) WUS corrections Qualcomm Incorporated CR Rel-16 36.300 16.2.0 1304 - F LTE\_eMTC5-Core

### 7.3.3 Transmission in preconfigured resources corrections

Transmission in preconfigured resources for MTC and NB-IoT is treated jointly under this Agenda Item.

HARQ feedback for PUR response

[R2-2006846](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006846.zip) HARQ feedback for PUR response ZTE Corporation, Sanechips discussion NB\_IOTenh3-Core

[R2-2007398](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007398.zip) TA validation check for HARQ feeback to PUR response LG Electronics UK discussion Rel-16

[R2-2007739](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007739.zip) HARQ feedback in RRC\_IDLE ASUSTeK discussion Rel-16 36.321 NB\_IOTenh3-Core

Others

[R2-2006842](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006842.zip) Starting legacy TA timer for PUR fallback ZTE Corporation, Sanechips discussion NB\_IOTenh3-Core

[R2-2007339](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007339.zip) Discussion on carrier configuration for PUR Huawei, HiSilicon discussion Rel-16 NB\_IOTenh3-Core

[R2-2007738](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007738.zip) Impact on D-PUR TA timer due to reconfiguration of PUR periodicity and offset ASUSTeK discussion Rel-16 NB\_IOTenh3-Core

36.300

[R2-2007901](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007901.zip) CR for starting legacy TA timer for PUR fallback ZTE Corporation, Sanechips CR Rel-16 36.300 16.2.0 1310 - F NB\_IOTenh3-Core

[R2-2006980](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006980.zip) Addition of PUR RNTI in E-UTRA related UE identities Qualcomm Inc CR Rel-16 36.300 16.2.0 1297 - F LTE\_eMTC5-Core, NB\_IOTenh3-Core

36.321

[R2-2006848](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006848.zip) Correction on discarding PUR-RNTI ZTE Corporation, Sanechips CR Rel-16 36.321 16.1.0 1489 - F NB\_IOTenh3-Core

[R2-2007365](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007365.zip) Correction to discard of PUR-RNTI Ericsson CR Rel-16 36.321 16.1.0 1494 - F LTE\_eMTC5-Core, NB\_IOTenh3-Core

[R2-2007987](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007987.zip) CR for HARQ feedback for PUR response ZTE Corporation, Sanechips CR Rel-16 36.321 16.1.0 1503 - F NB\_IOTenh3-Core

[R2-2006849](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006849.zip) Other corrections on 36321 for PUR ZTE Corporation, Sanechips CR Rel-16 36.321 16.1.0 1490 - F NB\_IOTenh3-Core

### 7.3.4 Other NB-IoT Specific corrections

NB-IoT specific topics

[R2-2006851](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006851.zip) Minor corrections on 36304 for NB-IoT ZTE Corporation, Sanechips CR Rel-16 36.304 16.1.0 0804 - F NB\_IOTenh3-Core

[R2-2007335](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007335.zip) Correction to NB-IoT supported functionality in idle mode Huawei, HiSilicon CR Rel-16 36.304 16.1.0 0808 - F NB\_IOTenh3-Core

### 7.3.5 NB-IoT UE capabilities corrections

## 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: 2 tdocs

Email max expectation: 2 threads

Focus on two objectives only, initial discussions to understand the context, scope, potential solution proposals.

### 9.1.1 Organizational

[R2-2007696](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007696.zip) Work plan of Rel-17 enhancements for NB-IoT and LTE-MTC Ericsson, Huawei Work Plan NB\_IOTenh4\_LTE\_eMTC6-Core

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

[R2-2006833](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006833.zip) Reducing time taken for reestablishment procedures in NB-IOT Ericsson discussion Rel-17

[R2-2006834](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006834.zip) Cell measurement in connected mode for NB-IoT ZTE Corporation, Sanechips discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2007342](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007342.zip) Discussion on RLF enhancements Huawei, HiSilicon discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2007472](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007472.zip) Neighbor cell measurements triggering before RLF Lenovo, Motorola Mobility discussion Rel-17

[R2-2007569](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007569.zip) Connected mode neighbor cell measurement in NB-IoT Qualcomm Incorporated discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2007619](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007619.zip) Clarification on Agenda Item – 9.1.2 THALES discussion Rel-17

[R2-2007951](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007951.zip) Measurement before radio link failure Shanghai Chen Si Electronics discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2008097](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2008097.zip) Analysis on Re-establishment time reduction Nokia, Nokia Shanghai Bell discussion NB\_IOTenh4\_LTE\_eMTC6-Core Late

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

[R2-2006832](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006832.zip) NB-IoT carrier selection and configuration based on coverage level Ericsson discussion Rel-17

[R2-2006835](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2006835.zip) Enhancements on multi carrier configuration and selection ZTE Corporation, Sanechips discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2007343](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007343.zip) Use cases and scenarios of carrier specific configuration Huawei, HiSilicon discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2007354](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007354.zip) Analysis on carrier selection options Nokia, Nokia Shanghai Bell discussion Rel-17

[R2-2007570](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007570.zip) Support for NB-IoT carrier selection based on the coverage level Qualcomm Incorporated discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2007957](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_111-e/Docs/R2-2007957.zip) Carrier selection enhancement Shanghai Chen Si Electronics discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core