**3GPP TSG-RAN WG2 Meeting #116 electronic draftR2-2111297**

Online, November, 2021

Agenda Item: 10.7

Source: Session Chair (Interdigital)

Title: <draft> Report NB-IoT breakout session

Document for: Approval

## General

Please see the following TDocs for e-meeting guidance:

R2-2109300 Agenda for RAN2#116-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.

* [AT116-e][300][NBIOT/eMTC] Organisational Brian’s Session (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:** EOM

* [AT116-e][301][NBIOT R15R16] NB-IoT minor corrections (Huawei)

 **Scope:** Agreement of CRs in [R2-2110471](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110471.zip) and [R2-2110472](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110472.zip).

 **Intended outcome:** Phase 1: Poll for support and comments with report in R2-2111391. Phase 2: Agreed CRs (TBD).

 **Deadline:** Phase 1: Wed 3 Nov, 1200 UTC, Phase 2: TBD depending on comments.

* [AT116-e][302][NBIOT R16] Random access on multiCarrier in NB-IoT (CMCC)

 **Scope:** Discuss issues in [R2-2110240](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110240.zip). Agreement of CRs in [R2-2110241](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110241.zip) and R2-2110762.

 **Intended outcome:** Phase 1: Poll for support and comments with report in R2-2111392. Phase 2: Agreed CRs (TBD)

 **Deadline:** Phase 1: Wed 3 Nov, 1200 UTC, Phase 2: TBD depending on comments.

## 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.

[R2-2110471](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110471.zip) Correction to NB-IoT measurements Huawei, HiSilicon CR Rel-16 36.300 16.6.0 1348 - F NB\_IOT-Core, TEI16

* [AT116-e][301][NBIOT R15R16] NB-IoT minor corrections (Huawei)

 **Scope:** Agreement of CRs in [R2-2110471](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110471.zip) and [R2-2110472](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110472.zip).

 **Intended outcome:** Phase 1: Poll for support and comments with report in R2-2111391. Phase 2: Agreed CRs (TBD).

 **Deadline:** Phase 1: Wed 3 Nov, 1200 UTC, Phase 2: TBD depending on comments.

## 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.

* [AT116-e][302][NBIOT R16] Random access on multiCarrier in NB-IoT (CMCC)

 **Scope:** Discuss issues in [R2-2110240](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110240.zip). Agreement of CRs in [R2-2110241](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110241.zip) and R2-2110762.

 **Intended outcome:** Phase 1: Poll for support and comments with report in R2-2111392. Phase 2: Agreed CRs (TBD)

 **Deadline:** Phase 1: Wed 3 Nov, 1200 UTC, Phase 2: TBD depending on comments.

[R2-2110240](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110240.zip) Discussion on the issue for Random Access on multicarrier for NB-IoT CMCC discussion

[R2-2110241](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110241.zip) Solving the issue for random access on multiCarrier in NB-IoT CMCC draftCR Rel-16 36.331 16.6.0 B NB\_IOTenh3-Core

[R2-2110472](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110472.zip) Correction to DL Multi-TB scheduling in NB-IoT Huawei, HiSilicon CR Rel-16 36.331 16.6.0 4734 - F NB\_IOTenh3-Core

R2-2110762 Solving the issue for random access on multiCarrier in NB-IoT CMCC draftCR Rel-16 36.321 16.6.0 F NB\_IOTenh3-Core Late

## 9.1 NB-IoT and eMTC enhancements

(NB\_IOTenh4\_LTE\_eMTC6-Core; leading WG: RAN1; REL-17; WID: RP-211340)

Time budget: 1 TU

Tdoc Limitation: 4 tdocs

Email max expectation: 4 threads

### 9.1.1 Organizational

Including outcome of [Post115-e][304][NBIOT/eMTC R17] 36.300 running CR (Huawei)

Including outcome of [Post115-e][305][NBIOT/eMTC R17] 36.331 running CR (Qualcomm)

[R2-2110477](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110477.zip) Running CR: Introduction of Rel-17 enhancements for NB-IoT and eMTC Huawei draftCR Rel-17 36.300 16.6.0 B NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2110692](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110692.zip) [Running CR] Introduction of NB-IoT/eMTC Enhancements Qualcomm Incorporated draftCR Rel-17 36.331 16.6.0 NB\_IOTenh4\_LTE\_eMTC6-Core

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

Including outcome of [Post115-e][301][NBIOT/eMTC R17] RLF measurements (Huawei)

Contributions invited on open issues not covered by email discussion

[R2-2110476](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110476.zip) Summary of [301] RLF measurements (Huawei) Huawei report Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2109913](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2109913.zip) Discussion on connected mode measurement in NB-IoT Ericsson discussion Rel-17

[R2-2110109](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110109.zip) Remaining FFSs on RLF measurements ZTE Corporation, Sanechips discussion NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2110147](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110147.zip) Network assistance for Re-establishment enhancement Nokia, Nokia Shanghai Bells discussion Rel-17

[R2-2110474](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110474.zip) Relaxed monitoring in RRC connected mode Huawei, HiSilicon discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2110693](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110693.zip) Consideration on open issues for neighbour cell measurement in RRC connected state Qualcomm Incorporated discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

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

Including outcome of [Post115-e][302] [NBIOT/eMTC R17] carrier selection (Ericsson)

Contributions invited on open issues not covered by email discussion

[R2-2109911](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2109911.zip) Report of email discussion [302] [NBIOT/eMTC R17] Carrier Selection Ericsson discussion Rel-17 Late

[R2-2109912](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2109912.zip) Analysis of Rmax based solution and carrier-based solution Ericsson discussion Rel-17

[R2-2110110](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110110.zip) Option1c for CEL-based paging carrier selection ZTE Corporation, Sanechips discussion NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2110148](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110148.zip) Paging strategy impacts for coverage based paging carrier selection Nokia, Nokia Shanghai Bells discussion Rel-17

[R2-2110149](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110149.zip) Network configuration for paging carrier selection based on coverage level Nokia, Nokia Shanghai Bells discussion Rel-17

[R2-2110191](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110191.zip) Further discussion on enhanced paging carrier selection NEC Corporation discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core R2-2107391

[R2-2110475](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110475.zip) Discussion on coverage based paging carrier Huawei, HiSilicon discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2110694](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110694.zip) Further consideration on open issues for coverage-based paging carrier selection Qualcomm Incorporated discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2110695](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110695.zip) Signalling for coverage-based paging carrier selection Qualcomm Incorporated discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

[R2-2111113](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2111113.zip) Discussion on details of paging carrier selection options MediaTek Inc. discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core

### 9.1.4 Other

Includes WI objectives led by other WGs.

[R2-2109914](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2109914.zip) Support of 16-QAM for unicast in UL and DL in NB-IoT Ericsson discussion Rel-17

[R2-2110111](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110111.zip) Remaining FFSs on 16QAM for NB-IoT ZTE Corporation, Sanechips discussion NB\_IOTenh4\_LTE\_eMTC6-Core R2-2107764

[R2-2110112](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110112.zip) Remaining FFSs on 1736bits TBS for eMTC ZTE Corporation, Sanechips discussion NB\_IOTenh4\_LTE\_eMTC6-Core R2-2107763

[R2-2110473](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110473.zip) L2 buffer size calculations for eMTC and NB-IoT enhancements Huawei, HiSilicon discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6-Core R2-2107431

[R2-2110800](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_116-e/Docs/R2-2110800.zip) On remaining issues of 16QAM Nokia Solutions & Networks (I) discussion Rel-17 NB\_IOTenh4\_LTE\_eMTC6