3GPP TSG-RAN WG2 Meeting #109e R2-2001794

Online, 24 February – 6 March 2020

**Agenda item: 7.2.10**

**Source: Huawei (offline email discussion rapporteur)**

**Title: Report of [AT109e][310][** **NBIOT] 5GC open issues in AI 7.2.10 (Huawei)**

**Document for: Report**

# 1 Scope of the offline email discussion

This document contains the summary of the offline email discussion “[AT109e][310][NBIOT] 5GC open issues in AI 7.2.10 ”, as indicated below:

* [AT109e][310][NBIOT] 5GC open issues in AI 7.2.10 (Huawei)

Scope: Progress the open issues and proposals listed in R2-2002015, not already agreed.

Intended outcome: Report.

Deadline: 06-03-2020, 12:00 CET

The proposals from R2-2002015 [1] below were agreed in the first session of RAN2-109e:

|  |
| --- |
| Agreements   * Similar as UP CIoT EPS Optimization, rrc-SuspendIndication in RRCConnectionReject can be supported for UP CIoT 5GS Optimization. No change for specification is needed. * DL channel quality report can be supported for both NB-IoT and eMTC connected to 5GC. * Confirm the working assumption that cause delayTolerantAccess it not applicable to 5GC. * Confirm the working assumption that there is no need for an indication of extended Idle mode DRX support in system information for NB-IoT. * Confirm the working assumption that there is a new IE up-EDT-5GC-r16 in SIB2-BR/SIB2-NB to indicate ng-eNB connected to 5GC supports CP MO-EDT. * Revert the working assumption that the values ‘n’ and ‘m’ for the truncation of the 5G-S-TMSI are signalled per PLMN in SystemInformationBlockType2-NB. * Remove the IE cp-ReestablishmentPLMNList-5GC-r16 in SystemInformationBlockType2-NB. * The existing capability multipleDRB-r13 is also applicable to 5GC * PUR is supported in EPC and 5GC. * Introduce separate indications up-PUR-5GC-r16 and cp-PUR-5GC-r16 in SIB2-BR/SIB2-NB * Introduce separate UE capabilities pur-UP-5GC-r16 and pur-CP-5GC-r16. * Add ab-PerRSRP-r16 parameter (same definition as SIB14-BR) in SIB25-BR. * BL UEs or UEs in CE in RRC\_CONNECTED mode performs access barring check based on the latest UAC parameters acquired prior to entering RRC\_CONNECTED. |

In [1], it was indicated that proposals 1, 2, 3 and 4 in [3] are comments on the NB-IoT and eMTC running CRs and should be discussed in the e-mail discussion in the running CRs. They are not discussed here.

In [1], it was indicated that proposal 8 in [3] and proposals 1, 2 and 3 in [7] should be discussed with ping-pong between CN types in 5GC. They are not discussed here.

In [1], it was indicated that proposals 1 and 2 in [8] should be postponed. They are not discussed here.

The document discusses the other remaining proposals and open issues in [1].

# 2 Discussion

## 2.1 RRC connection re-establishment for CP in NB-IoT

In [2], it is proposed that for 5GC, CP re-establishment is always enabled and there is no need for an indication in system information. This is based on absence of legacy eNB.

**Offline Discussion Point 1: Please provide comment on whether you agree or disagree with the above proposal.**

|  |  |  |
| --- | --- | --- |
| **Company** | **do you agree with the proposal** | **Comments** |
| QC | Yes |  |
| Ericsson | Yes | The comment raised online was related to that there might be eNBs not supporting the Rel-14 feature, and in practice the proposal makes re-establishment support mandatory from NW side. |
| Huawei, HiSilicon | Yes |  |

Conclusion:

All companies agree with the proposal.

Proposal:

**Proposal S1-1**: For 5GC, CP re-establishment is always enabled and there is no need for an indication in system information

## 2.2 Access barring for eMTC

**System information update mechanism for SIB25-BR in 5GC**

In [5], it is proposed that systemInformationBlockType25-BR follows the same system information update mechanism as SIB14-BR and does not affect the value tag.

**Offline Discussion Point 2: Please provide comment on whether you agree or disagree with the above proposal.**

|  |  |  |
| --- | --- | --- |
| **Company** | **Do you agree with the proposal** | **Comments** |
| QC | yes |  |
| Ericsson | Yes |  |
| Huawei, HiSilicon | Yes |  |

Conclusion:

All companies agree with the proposal.

Proposal:

**Proposal S2-1**: systemInformationBlockType25-BR follows the same system information update mechanism as SIB14-BR and does not affect the value tag

**System information update notification for SIB25-BR in 5GC**

In [4], it is proposed that a new parameter uac-ParamModification (similar to eab-ParamModification) is introduced in the Paging message and a new parameter systemInfoModification-UAC (similar to systemInfoModification-eDRX) in introduced in the Direct Indication Information to indicate SIB25-BR modification and scheduling.

In [5], it is proposed that a new parameter uac-ParamModification (similar to eab-ParamModification) is introduced in the Paging message and in the Direct Indication Information to indicate SIB25-BR modification and scheduling.

**Offline Discussion Point 3: Do you agree with introducing a notification in Paging message and Direct Indication Information. If yes, please provide comment on the meaning on the indication:**

* option a): same indication (e.g. uac-ParamModification) in paging message and Direct Indication information with similar handling to eab-ParamModification in EPC
* option b): one indication (e.g. uac-ParamModification) in paging message with similar handling to eab-ParamModification in EPC and one indication in Direct Indication information (e.g. systemInfoModification-UAC) with similar handling to systemInfoModification-eDRX in EPC
* option c). Other, please describe

|  |  |  |
| --- | --- | --- |
| **Company** | **Do you agree with introducing notification ?**  **option a, b or c ?** | **Comments** |
| QC | B  (means separate indicators for EPC and 5GC UEs) | The access barring can be enabled in a cell due to access network issues or core network issues. The current indication is sufficient for access control due to access network issues regardless of core network (EPC or 5GC) serving the UE. But if access needs to be controlled due to 5GC then it does not make sense to impact UEs that are served by EPC. Depending on whether UE wants to access EPC or 5GC, UE uses appropriate access barring mechanisms. |
| Ericsson | Introducing notifications is OK  Tend to think a) better | We think a), i.e. in a way re-using existing mechanisms should be fine. |
| Huawei, HiSilicon | a) | a) is reusing the EPS mechanisms for EAB but using separate flags for EPC and 5GC to avoid impacting each other.  we are confused about b). the indications in Paging message and Direct Information are always the same. so we wonder if the proposals is to introduce two new indications: uac-ParamModification and systemInfoModification-eDRX-5GC in both Paging message and Direct Information. If this is the case, then we think the proposed systemInfoModification-eDRX-5GC is not related to access control. |

Conclusion:

Two companies support option a) and one company support option b). However, it is the rapporteur understanding the the later company want option a) plus some other mechanism

Proposals:

**Proposal S2-2**: A new parameter *uac-ParamModification* (similar to *eab-ParamModification*) is introduced in the Paging message and in the Direct Indication Information to indicate SIB25-BR modification and scheduling

**Proposal S2-3**: FFS whether an additional parameter (similar to *systemInfoModification-eDRX*) is also introduced

# 3 Summary

**Conclusions:**

**Potential easy agreements**

**Proposal S1-1**: For 5GC, CP re-establishment is always enabled and there is no need for an indication in system information

**Proposal S2-1**: systemInformationBlockType25-BR follows the same system information update mechanism as SIB14-BR and does not affect the value tag

**Proposal S2-2**: A new parameter *uac-ParamModification* (similar to *eab-ParamModification*) is introduced in the Paging message and in the Direct Indication Information to indicate SIB25-BR modification and scheduling.

**For further discussion**

**Proposal S2-3**: FFS whether an additional parameter (similar to *systemInfoModification-eDRX*) is also introduced.

# 4 List of referenced documents

[1] [R2-2002015](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e\Docs\R2-2002015.zip) Summary of contributions for connection to 5GC (AI 7.2.10) Huawei discussion Rel-16 NB\_IOTenh3-Core, LTE\_eMTC5-Core

[2] [R2-2000647](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109_e/Docs/R2-2000647.zip) Miscellaneous for NB-IoT and eMTC RRC CRs Huawei, HiSilicon discussion Rel-16 NB\_IOTenh3-Core, LTE\_eMTC5-Core

[3] [R2-2000517](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109_e/Docs/R2-2000517.zip)Remaining FFSs for connection to 5GC ZTE Corporation, Sanechips discussion Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core

[4] [R2-2000539](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Inbox/R2-2000539.zip) UAC information change indication for eMTC UE connected to 5GC Qualcomm Incorporated

[5] [R2-2000648](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_109_e/Inbox/R2-2000648.zip) Access barring for eMTC connected to 5GC Huawei, HiSilicon

[6] [R2-2000540](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109_e/Docs/R2-2000540.zip) Email discussion report [108#97] for how to minimize ping-pong between CN types in RRC\_IDLE/RRC\_INACTIVE Qualcomm India Pvt Ltd discussion Rel-16 LTE\_eMTC5-Core, NB\_IOTenh3-Core

[7] [R2-2001014](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109_e/Docs/R2-2001014.zip) UE redirection to a specific CN type and ping-pong behavior Sony Europe B.V. discussion NB\_IOTenh3-Core

[8] [R2-2001478](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_109_e/Docs/R2-2001478.zip) AS RAI and optimization of release in EDT Ericsson discussion LTE\_eMTC5-Core, NB\_IOTenh3-Core Late