**3GPP TSG-RAN WG3 #109-e R3-204722**

**17 – 28 August 2020**

Title: [DRAFT] Reply LS on system support for WUS

Response to: LS on system support for WUS (R2-2005985/R3-204614)

Release: Release 15

Work Item: NB\_IOTenh3-Core, LTE\_eMTC5-Core

Source: Qualcomm Incorporated [to be RAN3]

To: SA2, RAN2

Cc:

**Contact Person:**

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**Send any reply LS to: 3GPP Liaisons Coordinator,** [**mailto:3GPPLiaison@etsi.org**](mailto:3GPPLiaison@etsi.org)

Attachments: None

**1. Overall Description:**

RAN3 would like to thank RAN2 for the reply LS on system support for WUS. RAN3 understands that RAN2 identified a potential problem scenario where a UE could be unreachable for a period if it remains in the same cell, after a release occurs and the S1 connection was not established. RAN3 also thinks that other scenarios (e.g. reset) could lead to a similar result. The common characteristic of these scenarios seems to be the following:

* eNB sends *RRCConnectionRelease* to UE
* There is no associated UE Context Release procedure in S1AP

RAN3 has identified one MME overload scenario (i.e. MME overload for CP CIoT) where the associated condition requires receiving mg5, and therefore RAN3 confirms that the described problem can occur. RAN3 does not expect the scenario to be frequent.

RAN3 has also identified several possible solutions within the RAN, i.e.:

* eNB disables WUS for a period after above event (i.e. SIB WUS indicator is not broadcast)
* eNB uses WUS for all WUS-supporting UEs for a period after above event
* eNB adds indicator in *RRCConnectionRelease* so that UE changes behaviour

The first two options have impact on gNB behaviour and can be realized by implementation.. Besides, both carry some inefficiencies, since they either use WUS unnecessarily, or remove WUS for a period and lead to SI update twice. The inefficiency depends partly on how often the above events might happen in a network, how many UEs are involved, and also for how long the eNB should maintain the modified behaviour (which is related to the maximum periodic TAU timer).

The third option would modify only the behaviour of the affected UE and is therefore likely to be more efficient. However it is up to RAN2 to evaluate this change.

In conclusion, RAN3 confirms the scenario and thinks that at least some solutions are available as described. Since the identified solutions have no impacts on RAN3 specifications, RAN3 would like to suggest that a final decision on this matter can be made by RAN2.

**2. Actions:**

**To RAN WG2, SA WG2.**

**ACTION:** RAN3 kindly asks RAN2 and SA2 to take the above information into account.

**3. Date of Next RAN3 Meetings:**

RAN3#110-e TBD (November 2020) Electronic meeting