**3GPP TSG RAN WG1 #100bis-e R1-20xxxxx**

e-Meeting, April 20th – 30th, 2020

Source: NTT DOCOMO, INC.

Title: Summary on Email discussion [100b-e-LTE-UEFeatures-NBIoT-01]

Agenda Item: 6.2.5.2

**Document for:** **Discussion and Decision**

# **Introduction**

This contribution summarizes the following email discussion in AI 6.2.5.2 regarding UE features for additional enhancements for NB-IoT.

[100b-e-LTE-UEFeatures-NBIoT-01] Email discussion/approval on feature group structure for additional enhancements for NB-IoT (20th-24th April) – Hiroki (DCM)

* Confirm to keep FG2-1/3/6~16

# **Confirmation of feature groups**

In [1], there are following feature groups for additional enhancements for NB-IoT.

* 2-1 UE-group wake-up signal (Group WUS) with a wake-up time before the first associated PO (without group resource alternation)
* [2-2] UE-group WUS with a wake-up time before the first associated PO (with group resource alternation)
* 2-3 Transmission in preconfigured UL resources (PUR) (with potential UE-specific cyclic shift for DMRS)
* [2-4] PUR with serving cell RSRP for TA validation
* 2-5 PUR with L1 ACK
* 2-6 Multi-TB scheduling for unicast in DL with a single DCI (Interleaved transmission)
* 2-7 Multi-TB scheduling for unicast in DL with a single DCI (Non-interleaved transmission)
* 2-8 Multi-TB scheduling for unicast in UL with a single DCI (Interleaved transmission)
* 2-9 Multi-TB scheduling for unicast in UL with a single DCI (Non-interleaved transmission)
* 2-10 Multi-TB scheduling for unicast in DL in a single DCI (HARQ bundling for HARQ-ACK feedback to interleaved transmission)
* 2-11 Multi-TB scheduling for SC-MTCH
* 2-12 Resource reservation
  + DL resource reservation with subframe-level, slot-level and symbol-level granularity of NB-IoT non-anchor carriers.
* 2-13 Resource reservation
  + UL resource reservation with subframe-level, slot-level and symbol(s)-level granularity of NB-IoT non-anchor carriers.
* 2-14 Quality report in Msg3 for non-anchor access
* 2-15 Quality report in connected mode
* 2-16 NRS on a non-anchor carrier for paging

## 2.1 Discussion 1

**The proposal is to confirm that FG2-1/3/6~16 are kept.**

**Companies are encouraged to provide views if there is a concern or comment on the proposal.**

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| Company | Comment |
| Ericsson | We are fine with the proposal, with the understanding that 2-2, 2-4, 2-5, 2-12 and 2-13 are discussed separately in another email discussion, and with the understanding that this first review round only concerns which FGs should be present in the feature list, not the contents of the fields (prerequisites, optionality, etc.). |
| QC | Agree with the proposal |
| ZTE,Sanechips | FG 2-5 (PUR with L1 ACK) needs further discussion , similar to eMTC.  In our view it is better to be a component of FG 2-3. |
| Moderator | Same as eMTC, I’d like to clarify that the proposal is about which FGs should be present in the features list, and detailed description can be discussed even after confirming that the FG is present.  FG2-5 is under the discussion in other email discussion, and the proposal does not include it.  In that sense, there should be no problem on this proposal since there is no concern on confirming listed FGs in the proposal so far. |

# **Conclusion**

TBD

# **References**

[1] R1-2001485 RAN1 UE features list for Rel-16 LTE after RAN1#100-E Moderator (AT&T, NTT DOCOMO, INC.)

[2] R1-2001858 Discussion on UE features for additional enhancements for NB-IoT ZTE

[3] R1-2002182 UE features for NB-IoT　 Qualcomm Incorporated

[4] R1-2002511 On the RAN1 UE feature list for Rel-16 NB-IoT　 Ericsson

[5] R1-2002605 Rel-16 UE features for NB-IoT　 Huawei, HiSilicon