**3GPP TSG RAN WG1 #111 R1-2212529**

**Toulouse, France, November 14th – 18th, 2022**

Source: NTT DOCOMO, INC.

Title: Session Notes for R17 UE Features 1

Agenda Item: 8.16.1

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

***8.16 Rel-17 UE features***

**8.16.1 UE features topics 1**

*For discussions on Rel-17 UE features for eIIoT & URLLC, RedCap, UE power saving, coverage enhancement, NB-IoT & eMTC, sidelink, MBS, 5G terrestrial broadcast, UL TX switching, SDT.*

[111-R17-UE\_features\_1] To be used for sharing updates on online/offline schedule, details on what is to be discussed in online/offline sessions, tdoc number of the moderator summary for online session, etc – Hiroki (DOCOMO)

**R1-2212525** Summary#1 on UE features for NR coverage enhancement Moderator (NTT DOCOMO, INC.)

**R1-2212526** Summary#1 on UE features for NR MBS Moderator (NTT DOCOMO, INC.)

**Agreement:**

Signaling of FG 33-1 is revised to optional without capability signaling.

**Agreement:**

The reporting type of FG 33-1-1 is per FSPC.

**Agreement:**

Update the components for FG 33-3-3 as following:

* Support TDM between one unicast PDSCH and one group-common PDSCH in a slot.
* Support TDM between M (M>1) TDMed unicast PDSCHs and one group-common PDSCH in a slot per CC
* Support TDM among N (N>1) group-common PDSCHs in a slot per CC
* Support TDM between K (K>1) TDMed unicast PDSCHs and L (L>1) TDMed group-common PDSCHs in a slot per CC
* The UE maximum number of TDMed PDSCH receptions capability in a slot per CC is kept as for Rel-15/Rel-16, i.e., {2/4/7} based on UE FG5-11/5-11a/5-11b.
  + Note:  Group-common PDSCH(s) are counted as unicast PDSCH(s).
  + Note: The max number of (M+1), N, (K+L) are determined based on the numbers reported by FG5-11 and/or FG5-11a and/or FG5-11b.
* ~~Note:~~ up to one broadcast PDSCH is supported in a slot.
* For any two consecutive slots n and n+1, if there are more than 1 broadcast/multicast/unicast PDSCH in either slot, whether to require the minimum time separation between starting time of any two broadcast/multicast/unicast PDSCHs within the duration of these slots is 4 OFDM symbol for 30kHz and 7 OFDM symbol for 60kHz

Add the following in the note for FG 33-3-3:

* Candidate value for component 7: require the minimum time separation time {yes, no}

**Agreement:**

Add a component that “Support of Type-2 HARQ-ACK codebook for multicast on PUSCH/PUCCH with max number X of G-RNTIs” to FG33-2a

Add a note that “the value of X should be common across FG33-2a, 33-3-3a and 33-3-3b if reported” to FG33-2a, 33-3-3a and 33-3-3b

Add a candidate value “1” for value of X for FG33-2a, 33-3-3a and 33-3-3b

**Agreement:**

the reporting type of FG 33-3-5 is per BC

**R1-2212756** Summary#2 on UE features for NR MBS Moderator (NTT DOCOMO, INC.)

**Agreement:**

* Components of FG 33-4 are revised as
  + Component 1(b): ~~One or~~ multiple TB with NACK-only feedback transmitted in PUCCH by transforming into ACK/NACK bits
  + Add a component “One or multiple TB with NACK-only feedback transmitted in PUSCH by transforming into ACK/NACK bits”
  + Add a component “One or multiple TB with NACK-only feedback transmitted in PUCCH by transforming into ACK/NACK bits when multiplexing with other UCI”

**Agreement:**

The feature group name of FG 33-5-1 is revised as “SPS group-common PDSCH for multicast on Pcell”

**Agreement:**

The feature group name of FG 33-5-2 is revised as “Multiple SPS group-common PDSCH configuration on Pcell”.

**Agreement:**

Components of FG 33-5-2 are revised as

* Add a component “The total number of SPS configurations for both multicast and unicast in a cell group is no larger than 32”.

**Agreement:**

Components of FG 33-5-4 are revised as

* Component 3: The total number of SPS configurations for both multicast and unicast is no larger than 8 in a BWP of a serving cell, and activated SPS group-common PDSCH configurations is no larger than M.

**Agreement:**

* Components of FG 33-10 are revised as
  + Component 1: Support~~ed~~ of SP ZP-CSI-RS for group-common PDSCH RE-mapping patterns
  + Component 2: Support~~ed~~ of P ZP-CSI-RS for group-common PDSCH RE-mapping patterns
  + Add a component “Support of AP ZP-CSI-RS for group-common PDSCH RE-mapping patterns”

**Agreement:**

* Components of FG 33-4a are revised as
  + Component 1(a): Up to 4 TBs with NACK-only feedback transmitted in PUCCH by select one PUCCH resource.
  + Add a component “Single TB with NACK-only feedback transmitted in PUCCH”
  + Add a component “up to 4TBs with NACK-only feedback transmitted in PUSCH by transforming into ACK/NACK bits”

**Agreement:**

Add bracket to component 1 of FG33-5-1a as below

1. Support of ACK/NACK based HARQ-ACK feedback, and support of enabling/disabling ACK/NACK based HARQ-ACK feedback configured by RRC signalling for SPS group-common PDSCH without PDCCH scheduling, [SPS group-common PDSCH activation, and SPS release PDCCH]

**R1-2212527** Summary#1 on UE features for RedCap Moderator (NTT DOCOMO, INC.)

R1-2212891 Summary#2 on UE features for NR coverage enhancement Moderator (NTT DOCOMO, INC.)

R1-2212892 Summary#3 on UE features for NR MBS Moderator (NTT DOCOMO, INC.)

R1-2212893 Summary#2 on UE features for RedCap Moderator (NTT DOCOMO, INC.)

R1-2210986 Remaining issues on Rel-17 UE features (MBS) vivo

R1-2211041 Discussion on UE features for topics 1 ZTE

R1-2211069 Remaining issues for UE features topics 1 Nokia, Nokia Shanghai Bell

R1-2211893 Rel-17 UE features topics set #1 Ericsson

R1-2211968 Discussion on remaining issues regarding Rel-17 RAN1 UE features topics 1 NTT DOCOMO, INC.

R1-2212098 Discussion on Rel-17 UE features topic 1 Qualcomm Incorporated

R1-2212268 Views on UE feature Topic 1 MediaTek Inc.

R1-2212472 Remaining issues for UE features topics 1 Huawei, HiSilicon