**3GPP TSG RAN WG2 #112-e R2-20xxxxx**

**Online, 2nd – 13th November, 2020**

**Title:** LS on Paging Enhancement

**Response to:**

**Release:** Release 17

**Work Item:** NR\_UE\_pow\_sav\_enh-Core

**Source:** MediaTek, RAN2

**To:** RAN1

**Cc:**

**Contact Person:**

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**Attachments:** None

**1. Overall Description:**

In RAN2#112-e, RAN2 discussed UE grouping for paging enhancement in Rel-17 UE power saving WI. RAN2 confirmed that UE grouping is considered as a candidate of paging enhancements for UE power saving. Regarding paging for UE subgroups, RAN2 has discussed and considered the following methods:

* Paging indication for UE subgroups using paging DCI:
	+ In paging DCI, network indicates whether each subgroup of UEs needs to monitor the corresponding paging PDSCH.
	+ Legacy UEs ignore the subgroup indications and monitors PO as usual.
* Paging early indication (PEI) / wake-up signal (WUS) for UE subgroups:
	+ Network transmits PEI/WUS before paging occasion. The indication applies to a subgroup of UEs. Rel-17 UEs need not monitor PO in case of negative indication received in PEI/WUS.
	+ Legacy UEs monitor PO as usual and do not have to monitor for any indication to be received in PEI/WUS.
* Cross-slot Scheduling
	+ Paging DCI is sent in UE’s assigned PO, and the corresponding paging message is sent one or several slots later.

Notice that these methods are not mutually exclusive.

From RAN2 perspective, the following methods are de-prioritized:

* P-RNTI based paging subgrouping ~~discrimination~~ i~~s deprioritized from RAN2 perspective~~
* Paging for UE subgroups using different time/frequency resources

**2. Actions:**

**To RAN1:**

RAN2 respectfully asks RAN1 to provide their recommended solution for paging indication/scheduling, and information on the feasibility and limitations of carrying subgroup information with the recommended solution.

**3. Date of Next RAN1 Meetings:**

TSG-RAN WG2 Meeting 113-e 25 January – 05 February 2021 Online

TSG-RAN WG1 Meeting 113bis-e 12 – 20 April 2021 Online