3GPP TSG RAN Meeting #98-e
Electronic Meeting, December 12 – 16, 2022

RP-223084

Title: On work scope of Rel-18 network energy saving for NR

Agenda item: 9.2.5
Source: Samsung
Document for: Decision

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RAN1 progress

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- **According to study item conclusion, the following RAN1 techniques are expected to be beneficial for network energy savings:**
  1) Adaptation of DTX/DRX
  2) Adaptation/reduction/elimination of common channels/signals in single or multi-carrier operation
  3) Adaptation of spatial elements (recommended)
  4) Transmission power reduction

- **On the other hand, the planned TUs of work item are limited: 1 TU (1Q) and 2 TUs (2Q/3Q) per RAN1 meeting, 7 TUs in total**
- **In addition, the scope of above 2) is still not settled and can diverge**

- **Therefore, we propose to include 1), 3), and 4) as the work item scope**

RAN2/3 progress

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- **RAN2/3 discussed the following mechanisms during the study item phase:**
  - RAN2
    1) **Cell DTX/DRX (feasible from RAN2 perspective)**
    2) **Cell Selection/Reselection enhancement (essential for the backward compatibility)**
    3) SSB-less/SIB-less Cell
    4) NES-aware CHO
    5) UE WUS (Wake-up signal) (but not much discussion in RAN2)
    6) UE's Assistance Information for NES (but not much discussion in RAN2)
  - RAN3
    1) **Paging enhancement**
    2) **Inter-node coordination on cell DTX/DTX and beam activation**
    3) Other candidate techniques are not excluded: e.g. exchanging NES state, increased autonomy for gNB-DU.
- **Even though the study can be considered complete from RAN2 and RAN3 perspective, it might be difficult to cover all the mechanisms above within Rel-18 time frame, and some of items have significant dependency on other WG (e.g. RAN1), so down-scoping seems inevitable.**
- **We propose to include 1) and 2) from RAN2 list, and to include 1) and 2) from RAN3 list as the work item scope.**

Proposal for work item scope

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- Specify adaptation of cell DTX/DRX [RAN1, RAN2]
- Specify adaptation of spatial elements [RAN1]
- Specify adaptation of transmission power of downlink signals and channels [RAN1]
- Specify to support legacy UEs and NES-capable UEs via cell selection/reselection in the presence of NES cells. [RAN2]
- Support of network coordination to enhance paging, e.g. paging in certain SSB instead of all SSBs in one cell. [RAN3]
- Specify information exchange/coordination over network interfaces to support energy saving techniques [RAN3]
- Specify necessary UE and gNB requirements. [RAN4]

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Thank you