

3GPP TSG RAN Rel-19 workshop

RWS-230062

Taipei, June 15 - 16, 2023

Agenda Item: 5

Source: vivo

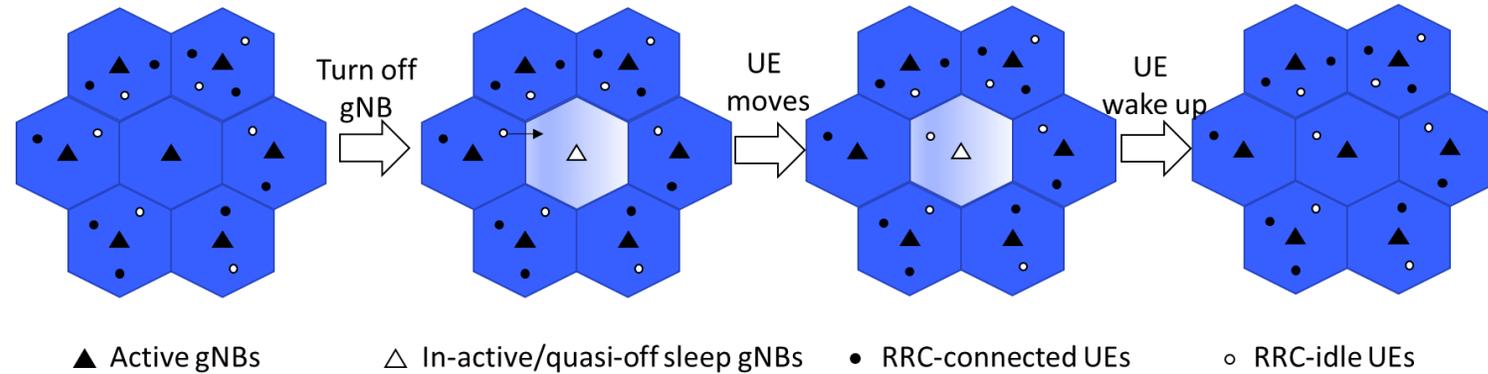
Title: Views on NR network energy saving in Rel-19

Document for: Discussion

Observations from Rel-18 SID and WID

- Following techniques are beneficial for network energy saving based on SID outcome
 - Time domain:
 - Technique A-3-1/A-5-2: On demand SSB/SIB1 by UE WUS
 - Technique A-4: Cell DTX/DRX enhancement
 - Specification of Cell DTX/DRX mechanism will be done in Rel-18 WI
 - Frequency domain:
 - Techniques A-5-1/B-1-1: SSB-less and/or SIB1-less operation in single or multi-carrier scenarios
 - Specification of SSB-less Scell operation will be done in Rel-18 WI
 - Spatial domain:
 - Technique C-1: Dynamic adaptation of spatial elements (single TRP and multi TRP)
 - Specification of dynamic adaptation of spatial elements in single-TRP case will be done in Rel-18 WI
 - Power domain:
 - Technique D-1: Dynamic adaptation of power domain
 - Specification of dynamic adaptation of power domain will be done in Rel-18 WI

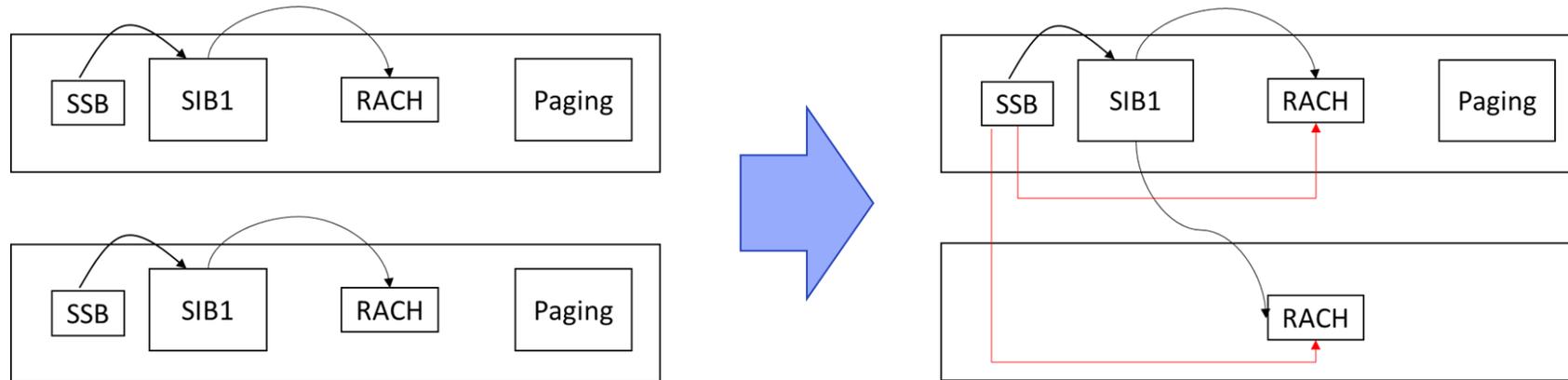
- On-demand SSB/SIB1 by UE WUS is the only technique in time domain that is proved beneficial in Rel-18 SI phase but not specified in Rel-18 WI phase



- Support to specify on-demand SSB/SIB1 by UE WUS for RRC_idle/inactive/connected UEs in Rel-19 WI, including
 - Design of wake up signal (WUS)
 - Procedures related to WUS
 - Conditions for triggering WUS transmission
 - UE behavior/procedures after transmitting WUS
- Proposal: Specify support of on demand SSB/SIB1 by UE WUS in Rel-19 NES WI.**

- In Rel-18, CSI reporting with multiple spatial adaptation patterns within one report configuration for single TRP case is specified and the enhancement for multi-TRP case is not considered.
- Dynamic spatial adaptation is identified as beneficial based on outcome from Rel-18 SI.
- Support to specify support of dynamic spatial adaptation for multi-TRP case, including
 - Extend CSI reporting framework specified in Rel-18 to multi-TRP case
 - UE behavior enhancement due to dynamic adaptation of TRPs
 - E.g. PDCCH monitoring, mTRP-based scheduling and etc.
- **Proposal: Specify support of dynamic spatial adaptation for multi-TRP case in Rel-19 NES WI.**

- SIB-less cell operation is beneficial for network energy saving based on SI outcome
 - Motivation: further reduce common message overhead without impacting RACH capacity
 - Detail: UE obtains system information for anchor carrier and necessary system information for non-anchor SIB-less carriers in anchor carrier only. Then a UE may perform random access/data transmission/data reception in one or more of anchor carrier or non-anchor carriers.



- Support to specify SIB-less cell in multi-carrier scenario in Rel-19 WI, including
 - Anchor carrier carrying SIB for non-anchor (SIB-less) carriers
 - RACH carrier selection
- **Proposal: Specify support of SIB-less cell operation in multi-carrier scenario in Rel-19 NES WI.**

THANK YOU.

谢谢。