

Network Energy Efficiency in Rel-18

RAN Rel-18 Workshop

28th June – 2nd July 2021

RWS-210118

Nokia, Nokia Shanghai Bell

Network energy efficiency

Essential for both environmental sustainability and OpEx reduction

Background

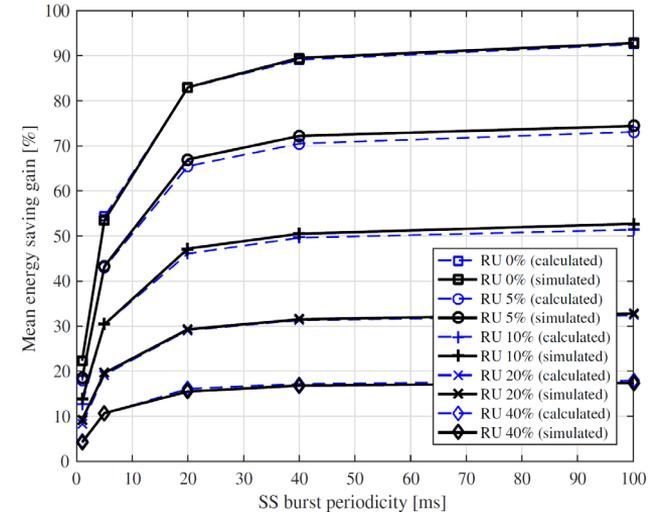
- UE energy efficiency has been handled in isolation in Rel-16 & 17
- BS and system energy modelling has been handled in ETSI
- SA and SA5 have carried out extensive studies

Rel-18 considerations

- Network energy efficiency should be a criterion for selection of solutions across Rel-18 features
- Examples:
 - Proposals for UE energy efficiency are sometimes detrimental to network energy efficiency
 - Enhancements to features such as Small Data Transmission (SDT), CA/DC, UAVs can all benefit network energy efficiency
 - Mobility enhancement or AI/ML SON items should include consideration of e.g. registration areas optimised for energy efficiency

Fundamental NR RAN design supports efficient network sleep modes

- The greatest gains are seen by avoiding short periodicities
- Longer periodicities give diminishing gains



P. Lähdekorpi, M. Hronec, P. Jolma and J. Moilanen, "Energy efficiency of 5G mobile networks with base station sleep modes," 2017 IEEE Conference on Standards for Communications and Networking (CSCN), 2017, pp. 163-168

Network energy efficiency considerations should be an integral part of all relevant Rel-18 WIs

NOKIA