**3GPP TSG-WG SA2 Meeting #160 *S2-2313547***

**Chicago, U.S., November 13 – 17, 2023 (revision of S2-2313278 of 12634 of 10500)**

**Source: China Mobile, Vivo, CATT, NEC, Nokia, Nokia Shanghai Bell, SKT, InterDigital**

**Title: New key issue: 5GS adjustment/optimization for network energy saving**

**Document for: Approval**

**Agenda Item: 19.4**

**Work Item / Release: FS\_EnergySys / Rel-19**

*Abstract of the contribution: Propose a key issue about WT#3: Network adjustment/optimization for network energy saving.*

# 1 Discussion

This paper is to propose a new key issue according to the WT#3 of FS\_EnergySys.

The FS\_ EnergySys objectives for WT#3:

- WT #3. Study 5GS enhancements (e.g., energy usage adjustment for NF from CN aspect, energy saving related decision making, NF selection leveraging NF energy states) for network energy saving including 5GC(NFs) and NG-RAN interactions, analytics, etc. Impacts on the UE are not ruled out e. g., for scenarios specified in TR 22.882 by SA1 EnergyServ.

# 2 Proposal

It is proposed to include the below changes into TR 23.700-66 v0.1.0.

#

*FIRST CHANGE (all the text is new)*

## 5.X Key Issue #X: 5GS enhancements for network energy saving and efficiency

### 5.X.1 Description

This key issue is to study 5GS enhancement for network energy saving and efficiency. The following aspects should be studied:

* What, if any, energy related information (e.g. per QoS flow/PDU session/UE/NF) is required and how it collected to support 5GS enhancements
* Whether and how to enhance the existing operations and procedures (e.g. to adjust the QoS within an SLA agreement, or to transmit the data flows in lower bandwidth) to satisfy the energy saving and energy efficiency requirement.
* Whether and how to enhance the NF selection/re-selection related functionalities considering energy saving and energy efficiency based on e.g., NF energy states, analytics , and energy related information;
* Whether and how to enhance network analytics to support making decisions for network energy saving and network energy efficiency, what type of analytics are needed and what are the potential resulting actions can be taken by the consumers, specifying the input/output information. Furthermore, whether and how to support energy efficient analytics generation and exposure, including ML model provisioning and the corresponding data collection.
* For each solution, what, if any, energy related information (e.g. per QoS flow/PDU session/UE/NF) is required and how it is collected

NOTE: Any potential enhancement impacting the NG-RAN will require coordination with RAN WGs.

*End of CHANGE*