**3GPP TSG-SA WG1 Meeting #98e S1-221072r4**

**Electronic Meeting, 9 – 19 May 2022** *(revision of S1-21xxxx)*

**Source: China Mobile**

**Title: New SID on service enhancement of Energy Efficiency**

**Document for: Approval**

**Agenda Item: 4**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: Study on Energy Efficiency as a service criteria

Acronym: FS\_EnergyServ

Unique identifier:

Potential target Release: Rel-19

# 1 Impacts

{For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  |  | x  | x  |  |
| No |  |  |  |  | x  |
| Don't know | x | x |  |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a

|  |  |
| --- | --- |
|  | Feature |
|  | Building Block |
|  | Work Task |
| X | Study Item |

## 2.2 Parent Work Item

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| N/A | N/A | N/A | N/A |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 870021 | Study on new aspects of EE for 5G networks | This study considered related topics to those of this study. |
| 810023 | Energy Efficiency of 5G | This study considered related topics to those of this study. |
| 760064 | Study on system and functional aspects of Energy Efficiency in 5G networks | This study considered related topics to those of this study. |
| 710049 | Study on Energy Efficiency Aspects of 3GPP Standards | This study considered related topics to those of this study. |
| 940036 | Study on new aspects of EE for 5G networks Phase 2 | This study considered related topics to those of this study. |
| 940037 | Enhancements of EE for 5G Phase 2 | This study considered related topics to those of this study. |
| 940080  | Study on network energy savings | This study considered related topics to those of this study. |

# 3 Justification

In ETSI, GSMA and 3GPP, there were many reports, studies, specifications related to energy efficiency. And now there are also ongoing R18 studies on energy efficiency in both SA5 and RAN. The existing studies concentrate more on how to satisfy user experience and try to achieve energy efficiency at the same time, which is to achieve energy efficiency within the network, so the requirements, use cases and solutions are basically within the network itself. Verticals and customers have no approach for energy efficiency related information from network.

In 5G and 5G advanced network, beside finding energy efficient solutions as in past, it may be possible to provide information exposure on systematic energy consumption/ level of energy efficiency to vertical customers.

And for low-orbit satellite, energy is usually limited, the limitation of total energy consumption of RAN or 5GC NF on satellite will need to be consider as a prerequisites when considering the communication service.

The studies of SA, SA5 and RAN and especially ongoing work on energy efficiency will be taken into account as the starting point and cooperation of this study in SA1.

# 4 Objective

This study is aiming at identifying use cases, providing gap analysis and defining potential requirements in the following aspects regarding enhancement on energy efficiency of 5G network.

The objectives include:

* + Support information exposure on systematic energy consumption/ level of energy efficiency to vertical customers.
* Other aspects include security, charging and privacy.

# 5 Expected Output and Time scale

|  |
| --- |
| New specifications {One line per specification. Create/delete lines as needed} |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |
| TR |  | Study on Energy Efficiency as a service criteria | SA#98 (Dec 2022) | SA#99 (Mar 2023) | Xiaonan Shi |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
|  |  |  |  |

# 6 Work item Rapporteur(s)

Xiaonan Shi, CMCC, shixiaonan@chinamobile.com

# 7 Work item leadership

SA1

# 8 Aspects that involve other WGs

SA2 for specifications regarding energy efficiency, SA5 for specifications regarding energy efficiency, RAN for specifications regarding energy efficiency.

# 9 Supporting Individual Members

{At least 4 supporting Individual Members are needed. There is an expectation that these companies will provide resources to progress the work. Note that having 4 supporting companies is a necessary but not sufficient condition: the usual TSG approval process by consensus is needed for the WID approval}

|  |
| --- |
| Supporting IM name |
| China Mobile |
| Asia Info |
| CAICT |
| Deutsche Telekom |
| Samsung |
| Futurewei |
| InterDigital |
| Orange |
| Telefonica |
| IIT Bombay |
| SaankhyaLabs |
| LG Electronics |
| Xiaomi |
| China Telecom |
| Qualcomm |
| ZTE |
| vivo |
| KDDI |