3GPP SA WG5 Meeting #140e S5-216359rev5

Electronic Meeting, 15 - 24 Nov 2021 (revision of S5-yyxxxx)

**Source: EUTC, Samsung, BMWi, Vodafone, Orange, Novamint, Telefonica**

**Title: New SID on Network and Service Operations for Energy Utilities**

**Document for: Approval**

**Agenda Item: 6.2**

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: Feasibility Study on Network and Service Operations for Energy Utilities

Acronym: FS\_NSOEV

Unique identifier: TBD

{A number to be provided by MCC at the plenary}

Potential target Release: *Rel-18*

# 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** |  |
| No | **x** | **x** |  |  | **x** |
| Don't know |  |  | **x** |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

|  |  |
| --- | --- |
|  | 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) |
| SEI | S1 | 920039 | Smart Energy and Infrastructure |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 910026 | Study on network slice management capability exposure | This study is relevant and shall be considered as the basis for further study of exposure of performance and other OAM information in the FS\_NSOEV study.  |

# 3 Justification

Energy utilities are an important ‘vertical industry’ for 3GPP. This sector uses telecommunications for diverse purposes in their networks. Energy utility service provider’s communication infrastructure use intensifies over time, as greater stability, integration and efficiency is possible by means of ‘smart energy services’. These services can use any communication system (e.g. fixed, fiber optic, dedicated microwave transmission, etc.). In all cases, the communication must be highly available as energy services have to be as reliable as possible (for business and regulatory reasons.) In order to rely on telecommunication services for these highly available smart energy services, the telecommunication system needs to provide sufficient information to energy utilities to meet their demanding operational requirements.

Another reason that energy utilities are an important sector for 3GPP is that telecommunications network operations themselves require energy. The relationship is bi-directional: MNOs require energy services, and energy utilities require communication services. This implies a particular risk to both systems, especially in the event of an energy outage.

The stage 1 feature ‘Smart Energy Infrastructure’ includes service requirements for specific standardized capabilities that allow a Utility operator to obtain information from a mobile network operator’s network, and to share information with the mobile network operator. This information all serves to improve the realized availability of energy system services. The energy utility service provider needs information regarding outages and performance degradation of the communication system, as it may be possible for the energy utility service provider to reactively or even proactively establish and use an alternative means of communication. Changes in the configuration of the network may also impact the energy utility service provider. Finally, the energy utility service provider can share information with the MNO in order to facilitate rapid diagnosis and recovery from performance problems and energy supply interruptions.

# 4 Objective

The objectives of this study item include:

- Study the output of the SA1 service requirements (as a result of the SEI work item) to identify the potential stage 1 use cases and requirements regarding exposure of management capabilities to external energy utility service providers. Specifically, there are three functional areas to develop:

i. Study how MNOs can provide standardized monitoring information corresponding to network performance problems to Energy Utility mobile telecommunication customers.

Motivation: This information will enable the Utility to proactively identify and respond to problems (e.g. to determine when to initiate a back-up communication service) and thereby achieve higher availability.

ii. Study how Energy Utility customers of MNOs can provide standardized reports of network performance problems to MNOs.

Motivation: This information will enable MNOs to leverage extensive performance information known to the customer in their own processes. It will potentially improve response time to resolve a communication system performance incident, as currently this information is not delivered in any standard manner.

iii. Study how Energy Utility service providers and MNOs can exchange information in a standardized format related to an energy service interruption and how to resolve it.

Motivation: Mobile telecommunications require energy, so will also suffer an outage when the energy system is interrupted. Currently disaster recovery plans are ‘static’ and data exchanged is not standards based. The Utility knows when and where recovery will occur and when communications are critically important for recovery. The MNO knows their uninterruptable power supply resources and the possibility of availability of the communication system to enable Energy system recovery.

NOTE: All three objectives above (i, ii and iii) will consider the study and conclusions of FS\_NCSE as the basis for continuing study.

- Conduct an analysis to determine gaps in existing specifications and studies based on the identified requirements (see bullet 1).

- Identify the roles involved in the above use cases, and identify the interactions between them in detail – in terms of information exchanged and expected outcomes.

Propose mechanisms needed for specifying and handling the management capabilities and services identified above.

- Derive recommendations for a normative work item.

NOTE: The charging aspects of smart energy management are out of scope of this SID.

# 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 |
| Internal TR | 28.XXX | Feasibility Study on Smart Energy Management | TSG 97 | TSG 98 | Ashutosh Kaushik <ashutosh19.k@samsung.com  |
|  |  |  |  |  |  |

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

# 6 Work item Rapporteur(s)

Erik Guttman <erik.guttman@samsung.com>, Samsung;

# 7 Work item leadership

SA5

# 8 Aspects that involve other WGs

None.

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| EUTC |
| Samsung |
| BMWi |
| Vodafone |
| Orange |
| Novamint |
| Telefonica |