**3GPP TSG-SA5 Meeting #154 *S5-24XXXX***

Changsha, China, 15 - 19 April 2024

**Source: Rel-17 Discussion paper on TS 28.541 Inconsistencies in slice SLA attribute energyEfficiency**

**Title: Nokia**

**Document for: Discussion and Endorsement**

**Agenda Item: 6.3.9**

# 1 Decision/action requested

***The group is requested to discuss and endorse the proposal in this pCR.***

# 2 References

[1] 3GPP TS 28.541 Management and orchestration; 5G Network Resource Model (NRM); Stage 2 and stage 3.

[2] GSMA NG.116 - Generic Network Slice Template Version 6.0.

# 3 Rationale

GST in GSMA NG.116 [2] specifies Energy Efficiency requirement in clause 3.4.7. This attribute describes whether the network slice supports the energy efficiency KPI, with allowed values as “Not Supported” and “Supported”.

This GSMA attribute is represented TS 28.541 [2] in attribute energyEfficiency of ServiceProfile (see clause 6.3.3 of TS 28.541 [2]). Attribute energyEfficiency is defined to be of type EnergyEfficiency (defined in clause 6.3.30 of TS 28.541 [2]).

An attribute energyEfficiency has been defined for Top, CN and RAN slice profiles in TopSliceSubnetProfile, CNSliceSubnetProfile, RANSliceSubnetProfile (defined in TS 28.541 [2]).

**Observation #1:** Data type EnergyEfficiency defined in TS 28.541[2] refers to clause 3.4.7 of GSMA NG.116 [1]. But the attributes of this data type do not match the attributes specified in clause 3.4.7 of GSMA G.116 [1], i.e., there is no attribute with allowed values as “Not Supported” and “Supported”. Hence, attribute energyEfficiency and data type EnergyEfficiency do not represent the attributes specified in clause 3.4.7 of GSMA NG.116 [1].

**Observation #2:** The type of attribute “EnergyEfficiency.performance” is defined as an ENUM, with which the consumer would not be able to provide any meaningful SLA for energy efficiency. There are no related requirements that describe this attribute. The OpenAPI SS based stage 3 defines this attribute as EEPerfReq data type, while this attribute is not defined in Netconf/YANG SS.

**Observation #3:** The inconsistency exists in Rel-17 and Rel-18 of TS 28.541 [2]. Hence corrections are needed in Rel-17 and Rel-18.

There are two possible options to fix the issues identified here, and are described below:

**Option #1:**

Recommendation #1: Update clause 6.3.30.1 and 6.4.1 of TS 28.541 [1] to remove the reference to clause 3.4.7 of GSMA NG.116. Update Annex O of TS 28.541 [1] to remove reference to energyEfficiency attribute.

Recommendation #2: Update stage 2 descriptions in TS 28.541[1] to

* Add new clauses to define data types EEPerfReq, EmbbEEPerfReq, UrllcEEPerfReq, MIoTEEPerfReq
* Update the data type for the following attributes as described below:
  + EnergyEfficiency.performance as type EEPerfReq
  + CNSliceSubnetProfile.energyEfficiency and RANSliceSubnetProfile.energyEfficiency as type EnergyEfficiency.

Recommendation #3: Update stage 3 solutions.

**Option #2:**

Recommendation #1: Align clause 6.3.30.1 and 6.4.1 of TS 28.541 [1] with clause 3.4.7 of GSMA NG.116, by updating the following:

* Remove attribute “performance” from data type EnergyEfficiency in clause 6.3.30.1, and corresponding definition in clause 6.4.1
* Add attribute “support” to data type EnergyEfficiency in clause 6.3.30.1 and attribute definition in clause 6.4.1.
* Update type for attributes CNSliceSubnetProfile.energyEfficiency and RANSliceSubnetProfile.energyEfficiency as type EnergyEfficiency in clause 6.4.1.

Recommendation #2: Update stage 3 solutions.

# 4 Detailed proposal

The group is requested to discuss and endorse the way forward for the correction of the identified issues in Rel-17 and Rel-18 of TS 28.541 [2].