**3GPP TSG-SA5 Meeting #157 *S5-246114d1***

Hyderabad, India, 14 - 18 October 2024

**Source: Huawei**

**Title: Update potential solution of EE KPIs evaluated from network availability performance dimension**

**Document for: Approval**

**Agenda Item: 6.19.20**

# 1 Decision/action requested

***The group is asked to discuss and agree on the proposal.***

# 2 References

[1] 3GPP TR 28.880 v1.0.1: Study on energy efficiency and energy saving aspects of 5G networks and services

# 3 Rationale

This contribution proposes to update potential solution of EE KPIs evaluated from network availability performance dimension in TR 28.880 [1].

# 4 Detailed proposal

This document proposes the following changes in TR 28.880 [1].

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| **1st Change** |

#### 5.6.3.2 Potential solution #2: <EE KPIs evaluated for a network from availability dimension>

##### 5.6.3.2.1 Introduction

As defined in TS 28.310 [12], EE is the ratio between performance and energy consumption. In this potential solution, new EE KPIs are considered in terms of availability performance aspect for a network.

##### 5.6.3.2.2 Description

Availability KPIs exist as follows

* Cell Availability
* Radio access network availability

The proposed performance dimension of new EE KPIs, i.e. the numerator part of the formula of new EE KPIs, are evaluated from availability performance dimension for a network as reflected by some existing KPIs in TS 28.554 [2], see Table 5.6.3.1.2-1.

Table 5.6.3.2.2-1: Network availability performance dimension from which new EE KPIs are evaluated

|  |  |  |  |
| --- | --- | --- | --- |
| Performance dimension to evaluate EE KPIs | Performance part of new EE KPIs | Reference to the clause number in TS 28.554 [2] | Note |
| **Availability** |  |  |  |
| Radio access network availability KPI | 6.10.1.1.2 | This availability KPI provides “average availability time duration per cell” of an RAN sub-network. |

The new EE KPIs, which are evaluated as the ratio between performance (see availability KPIs captured in Table 5.6.3.2.2-1) and energy consumption, are captured in Table 5.6.3.2.2-2.

Table 5.6.3.2.2-2: New EE KPIs evaluated from network availability performance dimension

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| --- | --- | --- |
| Performance dimension to evaluate EE KPIs | New EE KPIs | Note |
| **Network availability** | **Availability** as the network availability performance indicator |  |  |
|  | This new EE KPI provides the energy efficiency of an RAN sub-network.This new EE KPI is obtained by Radio access network availability KPI divided by the energy consumption of the RAN sub-network over the same observation period. The energy consumption of the RAN sub-network is obtained by summing up the Energy Consumption of all the Network Functions (ECNF) that constitute the RAN sub-network. ECNF is defined in clause 6.7.3.1 of TS 28.554 [2]. |

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| **End of change** |