**3GPP TSG SA WG 1 Meeting #108 S1-244463**

**Orlando, USA, 18 – 22 Nov 2024** *(revision of S1-244201)*

**Source: Nokia, Futurewei**

**pCR Title: pCR on TR 22.883 : initial PR consolidation**

**Draft Spec: 3GPP TR 22.883-020**

**Agenda item: 7.2 (FS\_EnergyServ\_Ph2)**

**Document for: Approval**

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*Abstract: This document proposes a first consolidation of potential requirements for FS\_EnergyServ\_Ph2.*

**1. Introduction**

This an initial consolidation of the PRs agreed at SA1#106 and #107 is proposed, available in TR 22.883 v0.2.0.

The following classification is proposed, based on previously agreed use cases.

1. Exposure of energy-related characteristics
   * 5.6 and 5.8
2. Service adjustments based on energy-related characteristics
   * 5.2
3. Charging related aspects
   * (placeholder)

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- changes as per drafting session

- post-drafting updates

- add reference to UE in CPR#1 (Futurewei)

- editorial updates to the “comment” column

- removed changes on changes

- added Futurewei as cosigner

**2. Reason for Change**

TR 22.883 is expected to be sent for information to SA at the end of SA1#108.

**3. Conclusions**

In the final version of this contribution, the text of the original PRs will be removed (only references kept).

It is expected that new or modified PRs will be agreed at SA1#108. Those agreements will be consolidated in this contribution at SA1#108 as long as they have no remaining Editor’s Note or FFS.

Other agreements with remaining Editor’s Note or FFS will only be consolidated at SA1#109.

**4. Proposal**

It is proposed to agree the changes in 3GPP TR 22.883-020.

FIRST CHANGE

# 6 Consolidated potential requirements and KPIs

## 6.1 Consolidated potential requirements

### 6.1.1 Exposure of energy-related characteristics

This clause consolidates potential requirements from clauses 5.6 and 5.8.

**Table 6.1.1-1 – Consolidated Requirements on Exposure of energy-related characteristics**

| **CPR #** | **Original PR #** | **Consolidated Potential Requirement** | **Comment** |
| --- | --- | --- | --- |
| [CPR 6.1.1-1] | [PR.5.6.6-1] Subject to operator’s policy, regulatory requirements and user consent, the 5G network shall be able to expose to authorized 3rd parties the carbon equivalent emissions resulting from the use of the communication service, related to one or more specific home subscribers (e.g. fleet of vehicles, IoT devices, company phones etc), over a specific time period (e.g. month etc).  NOTE 1: This requirement does not apply to the use of the communication service when roaming.  NOTE 2: Exposing carbon equivalent emissions at subscriber level can rely on but does not imply any real-time collection, monitoring or exact subscriber-specific calculations. It can be provided by means of statistics, computations and estimates as accurate as possible, e.g. based on subscriber’s data volume and operator’s carbon intensity to provide the communication service. In particular, it is expected such information to be provided on demand, not more granularly than on a per-day basis.  NOTE 3: The exposed carbon equivalent emissions can further include information to allow to compare subscribers of e.g. the same PLMN, NPN or slice over the same time period. Such information can take the form of e.g. a range (i.e. minimum and maximum) or average of carbon equivalent emissions per subscriber, or the form of a category, class or score of carbon emissions (e.g. A to F, 1 to 5) . | Subject to operator’s policy, regulatory requirements and user consent, the 5G network shall be able to expose to authorized 3rd parties the carbon equivalent emissions resulting from the use of the communication service, related to one or more specific UEs of home subscribers (e.g. fleet of vehicles, IoT devices, company phones etc), over a specific time period (e.g. month etc).  NOTE 1: This requirement does not apply to the use of the communication service when roaming.  NOTE 2: Exposing carbon equivalent emissions at subscriber level can rely on but does not imply any real-time collection, monitoring or exact subscriber-specific calculations. It can be provided by means of statistics, computations and estimates as accurate as possible, e.g. based on subscriber’s data volume and operator’s carbon intensity to provide the communication service. In particular, it is expected such information to be provided on demand, not more granularly than on a per-day basis.  NOTE 3: The exposed carbon equivalent emissions can further include information to allow to compare subscribers of e.g. the same PLMN, NPN or slice over the same time period. Such information can take the form of e.g. a range (i.e. minimum and maximum) or average of carbon equivalent emissions per subscriber, or the form of a category, class or score of carbon emissions (e.g. A to F, 1 to 5) . | NOTE2 may apply to other CPRs. |
| [CPR 6.1.1-2] | [PR.5.8.6-1] The 5G system shall be able to expose information to an Application Function in the network on the (expected) energy related characteristics applicable to the serving site/network.  NOTE: This information can be used by applications in the Application Function to schedule non time-critical data transfer to or from the UE. | Subject to operator’s policy, regulatory requirements and user consent, the 5G system shall be able to expose to an authorized 3rd party the current and expected energy related characteristics of the serving network resources of a UE.  NOTE: This information can be used by applications to schedule non time-critical data transfer to or from the UE. | Reworded for clarity to relate to UE (with user consent) and to generalize to any authorized 3rd party |

NEXT CHANGE

## 6.1.2 Service adjustments based on energy-related characteristics

This clause consolidates potential requirements from clause 5.2.

**Table 6.1.2-1 – Consolidated Requirements on Service adjustments based on energy-related characteristics**

| **CPR #** | **Original PR #** | **Consolidated Potential Requirement** | **Comment** |
| --- | --- | --- | --- |
| [CPR 6.1.2-1] | [PR 5.2.6-2] Subject to user consent and regulatory requirements, the 5G network shall allow the network operator to configure policies to reduce service performance at the flow level considering energy constraints. | Subject to operator’s policy, regulatory requirements and user consent, the 5G network shall enable the operator to configure policies to reduce experienced QoS considering energy constraints.  NOTE: this does not imply measuring energy information at the per-flow level. | Reworded for clarity |

Editor's Note: The potential requirements PR.5.1.6-1, PR.5.1.6-2, PR 5.2.6-1, PR.5.3.6-1, PR.5.4.6-1, PR.5.5.6-1, PR.5.7.6-1, PR.5.7.6-2 will be considered for consolidation once the ENs are resolved.

NEXT CHANGE

## 6.1.3 Charging-related aspects

This clause consolidates potential requirements from clause X.

**Table 6.1.3-1 – Consolidated Requirements on charging-related aspects**

| **CPR #** | **Original PR #** | **Consolidated Potential Requirement** | **Comment** |
| --- | --- | --- | --- |
|  |  |  |  |

Editor's Note: The potential requirement PR.5.7.6-3 will be considered for consolidation once the ENs are resolved.

NEXT CHANGE

## 6.2 Consolidated potential KPIs

The 5G network shall be able to support the following KPIs with respect to energy-related characteristics.

| Use Cases | Characteristic parameter (KPI) | | | |
| --- | --- | --- | --- | --- |
| Information | System Granularity | Time Granularity | Time Range | Obtainment (informative) |
| Subscriber’s carbon footprint information exposure to 3rd party | Carbon equivalent emissions (e.g. in gCO2eq) | Subscriber | Daily | Month | Calculation (average or statistical model) based on aggregation/attribution of network energy consumption, carbon intensity and/or renewable energy ratio. |

END OF CHANGES