**3GPP TSG-SA4 Meeting # 129-eS4-241410**

**Online, 19th August – 23th August 2024**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **PSEUDO CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.942** | **CR** |  | **rev** |  | **Current version:** | **0.2.1** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Orange | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FS\_MediaEnergyGREEN | | | | |  | ***Date:*** | | | 2024-08-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-19 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Describe addtionnal use cases linked with existing SA4 specifications. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Description of the use cases to ensure consistency with existing SA4 specifications. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Inconsistency with existing SA4 specifications. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

|  |
| --- |
| **1st Change** |

# 2 References

[ARCEP] Arcep, "Arcep publishes a draft decision for public consultation, with a view to enhancing its annual “Achieving digital sustainability” survey",  
<https://en.arcep.fr/fileadmin/cru-1714402758/user_upload/41-24-english-version.pdf>

[ARCOM23-02] ARCOM recommendation 2023-02: "???????????", 26th July 2023.

|  |
| --- |
| **2nd Change** |

## 5.2 Additional use cases defined by SA4

Use cases defined by SA1 on energy monitoring or energy consumption information exposure are not yet taken into consideration in 26.XXX series specifications but similar use cases have already been addressed. As explained in clause 4.2.2.4, some mechanisms like UE data collection, reporting and event exposure have already been defined. For consistency between specifications, supporting the collection and exposure of UE energy consumption information will require expansion of these existing mechanisms or else the use of mechanisms widely deployed in the market. This expansion will have to take into consideration indicators requested by regulators.

In France, the “Chaize Act” on reinforcing regulation of the digital sector by Arcep, strengthens Arcep’s powers by giving it the ability to collect environmental data not only from electronic communications operators, but also from online communication service providers, data centre operators, consumer device manufacturers, network equipment suppliers and operating system providers. Arcep (France’s Regulatory Authority for Electronic Communications, Postal Affairs and Press Distribution) has been collecting indicators since 2020 from France’s four largest telecoms operators, to be able to track the evolution of their environmental footprint, and relays this information through the publication of its annual “Achieving digital sustainability” survey [ARCEP]. The fourth edition of the survey, which Arcep will be publishing in early 2025, will incorporate data for monitoring the environmental footprint of a new category of player, namely mobile network equipment suppliers. This work has been complemented by ARCOM (the French Regulatory Authority for Audiovisual and Digital Communication) in its recommendation n° 2023-02 [ARCOM23-02] about consumer information on energy consumption and greenhouse gas emissions equivalents of data consumption related to the use of television services, on-demand audiovisual media services and video sharing platform services.

In addition to collecting energy consumption information from UEs and exposing it to event consumers, ARCOM encourages collection and exposure of energy consumption information *to* UEs could help to address the energy efficiency issue. This would be used to inform users about the environmental impact of consuming audiovisual content, but this information could also be used by UEs to optimise energy efficiency associated with media consumption.

ARCOM also encourages service providers to offer access to video quality parameter settings, allowing an easy way for end users to choose a simple “energy efficiency” mode. Instead of always being in a “best video performances regardless energy consumption” mode, having data on the QoE and energy consumption could enable a second mode to be offered to users representing reasonably good video performance with good energy efficiency. Having this information, instead of having a manual selection of video bit rates or SDR/HDR modes, the 5GMS Client could automatically select the best compromise to offer this additional mode to the users.

Regulators like ARCOM also encourage TV services, VOD services, video sharing plaforms and other actors in the sector to put in place a common methodology for calculating the environmental impact of audiovisual uses. The study item plans to study the feasibility of having implementation-independent metrics and a framework to evaluate the energy usage/savings of multimedia standards features and proposals.

|  |
| --- |
| **3rd Change** |

### 6.1.2 Potential requirements

Subclause 6.4 in [22882] contains the consolidated requirements extracted from use cases, related to information exposure related with this Key Issue:

|  |
| --- |
| [CPR 6.4-1] Subject to operator’s policy and agreement with 3rd party, the 5G system shall be able to expose information on energy consumption forserving this 3rd party.  [CPR 6.4-2] Subject to operator’s policy, the 5G system shall support a means to expose energy consumption to authorized third parties for services, including energy consumption information related to the condition of energy credit limit (e.g. when the energy consumption is reaching the energy credit limit).  [CPR 6.4-3] Subject to operator policy, the 5G system shall provide means for the trusted 3rd party, to configure which network performance statistic information (e.g. the data rate, packet delay and packet loss) for the communication service provided to the 3rd party, needs to be exposed along with the information on energy consumption for serving this 3rd party.  [CPR 6.4-4] Based on operator policy and agreement with 3rd party, the 5G system shall be able to expose energy consumption information and prediction on energy consumption of the 5G network per application service to the 3rd party.  [CPR 6.4-5] Subject to operator’s policy and agreement with 3rd party, the 5G system shall support a mechanism for the 3rd party to provide current or predicted energy consumption information over a specific period of time. |

Additional potential requirements identified from related work:

|  |
| --- |
| [PR 1-1] Where possible, existing mechanisms (e.g., UE data collection and reporting architecture as in TS 26.531 [26531]) and information shall be reused for exposure of energy-related information.  [PR 1-2] Commonly supported client data reporting formats shall be reused for energy-related information exposure when possible.  [PR 1-3] Energy consumption and greenhouse gas emissions equivalents of data consumption requested by regulators shall be available.  [PR 1-4] The 5GMS Client shall be able to obtain energy-related information from the UE, allowing it to optimise the media delivery sessions it is handling in an energy-efficient manner. |

|  |
| --- |
| **End of Changes** |