**3GPP TSG-SA4 Meeting #128 *S4-241003***

**Jeju**, KR**, 20th May 2024 – 24th May 2024** revison of S4-240805

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| *CR-Form-v12.3* |
| **PSEUDO CHANGE REQUEST** |
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|  | 26.942 | **pCR** |  | **rev** | 1 | **Current version:** | 0.0.1 |  |
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| *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)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network | **x** |

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| ***Title:***  | [GreenMEDIA]Context information on greenhouse gas reporting laws, protocols and framework  |
|  |  |
| ***Source to WG:*** | InterDigital Europe |
| ***Source to TSG:*** | S4 |
|  |  |
| ***Work item code:*** | FS\_MediaGREEN |  | ***Date:*** | 2-4-2024 |
|  |  |  |  |  |
| ***Category:*** | D |  | ***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 canbe 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)* |
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| ***Reason for change:*** | Proposed addition of contextual information, move to different sections, remove text and provide references and pointer to SA5 work. |
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| ***Summary of change:*** | Introduction of reporting law and measurement as well as related work relevant to SA4 |
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| ***Consequences if not approved:*** |  |
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| ***Clauses affected:*** | 2, 4.1.x and 4.2.xx |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Revision 1 of S4-240805 |

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| 1st Change (all new) |

### 4.1 General

### 4.1.xx Greenhouse gas emissions reporting and energy measurement

A study from Ember Climate [xx6] emphasises that electricity use may be mapped onto greenhouse gas via a conversion factor known as the *carbon intensity* measured in grams of Cos equivalent per kilowatt hour (-e/). The carbon intensity depends strongly on the method used to produce electricity, and therefore on the natural resources available in a given geographic location. Currently, the carbon intensity ranges from under 100 -e/ to over 700 -e/, with a global average of 436 -e/ (data from [6]).

The measurement of greenhouse gas emissions is difficult if not impossible to perform directly, but through the locally and globally known carbon intensities, energy consumption measurements may be converted to estimates of greenhouse gas emissions. The energy consumption of a 5G network and its components could therefore be used as a proxy for greenhouse gas emissions.

### 4.1.xx Legislative frameworks for greenhouse gas reporting

Larger companies in European member states are subject to corporate sustainability reporting under the Corporate Sustainability Reporting Directive (CSRD), and following European Sustainability Reporting Standards which are available under [5] supplementing Directive 2013/34/EU of the European Parliament and of the Council as regards sustainability reporting standards. This reporting law follows the Scopes defined by the Greenhouse Gas Protocol [refxxx].

Other regions in the world may be subject to other and/or additional reporting requirements.

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|  2nd Change (all new) |

## 4.2 Related work

### 4.2. xx Greenhouse Gas Protocol

The Greenhouse Gas Protocol [2] is an organisation that “provides standards, guidance, tools and training for business and government to measure and manage climate-warming emissions.” The first edition of their reporting standard was published in 2001, establishing a reporting framework for businesses. Relative to a given company, the concept of “scopes” are introduced, which delineate direct and indirect emission source, and are used for accounting and reporting purposes. The reporting principally involves the six greenhouse gasses that are defined in the Kyoto protocol: carbon dioxide (), methane (), nitrous oxide (), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphurhexafluoride (). Scopes 1 (sources owned or controlled by a company giving rise to direct greenhouse gas) and 2 (the electricity purchased and consumed by a company gives rise to greenhouse gas emissions) are defined in [3], and Scope 3 (All other indirect emissions) is defined in [4].

NOTE: 3GPP SA5 is also considering the Greenhouse Gas Protocol as part of its feasibility study FS\_EE5G\_Ph2 [xxx]

### [4.3.2 Scope 1

Sources owned or controlled by a company give rise to direct greenhouse gas emissions. The activities undertaken by a company that give rise to scope 1 emissions include the generation of electricity, heat, or steam; physical or chemical processing; transportation of materials, products, and waste; fugitive emissions.

### 4.3.3 Scope 2

The electricity purchased and consumed by a company gives rise to greenhouse gas emissions. Scope 2 emissions occur at the facility where the electricity is generated, rather than where the electricity is consumed. For the reporting company, these emissions are therefore counted as one form of indirect emissions. As purchased electricity is for many companies one of the largest sources of greenhouse gas emissions, it also offers a significant potential for reductions, either by investing in energy efficient technologies, by energy conservation, or by switching to less greenhouse gas intensive sources of electricity.

### 4.3.4 Scope 3

All other indirect emissions can be reported under scope 3. The emissions reported in this category are the consequence of the activities of a company, but they come from sources not owned or controlled by this company. These indirect emissions arise elsewhere in the corporate value chain of a given company, both upstream and downstream. Upstream emissions are indirect emissions relating to purchased or acquired goods and services. Downstream emissions relate to sold goods and services. Scope 3 indirect emissions are categorised into 15 distinct categories, of which the upstream categories are:

1. **Purchased goods and services.** Extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in categories 2 to 8.
2. **Capital goods.** Extraction, production, and transportation of capital goods, purchased or acquired by the reporting company in the reporting year.
3. **Fuel- and energy-related activities (not included in scope 1 or scope 2).** Extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year.
4. **Upstream transportation and distribution.** Transportation and distribution of purchased products or services in the reporting year, including inbound and outbound logistics; transportation between a company’s own facilities.
5. **Waste generated in operations.** Disposal and treatment of waste generated by the reporting company’s operations in the reporting year.
6. **Business travel.** Transportation of employees for business-related activities in the reporting year in vehicles not owned or operated by the reporting company.
7. **Employee commuting.** Transportation of employees between their homes and their worksites during the reporting year, in vehicles not owned or operated by the reporting company.
8. **Upstream leased assets.** Operation of assets leased by the reporting company in the reporting year.

The downstream categories are:

1. **Downstream transportation and distribution.** Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company’s operations and the end consumer, if not paid for by the reporting company (in vehicles and facilities not owned by the reporting company).
2. **Processing of sold products.** Processing of intermediate products sold in the reporting year by the downstream companies.
3. **Use of sold products.** End use of goods and services sold by the reporting company in the reporting year.
4. **End-of-life treatment of sold products.** Waste disposal and treatment of products sold by the reporting company (in the reporting year) at the end of their life.
5. **Downstream leased assets.** Operation of assets owned by the reporting company and leased by other companies in the reporting year.
6. **Franchises.** Operation of franchise in the reporting year.
7. **Investments.** Operation of investments (including equity and debt investments and project finance) in the reporting year.]

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| 3rd Change |

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] The Greenhouse Gas Protocol, <https://ghgprotocol.org>

[3] The Greenhouse Gas Protocol, “A Corporate Accounting and Reporting Standard, Revised Edition”

[4] The Greenhouse Gas Protocol: "Corporate Value Chain (Scope 3) Accounting and Reporting Standard: Supplement to the GHG Protocol Corporate Accounting and Reporting Standard".

[5] The European Commission: "Commission Delegated Regulation (EU) 2023/2772", The Official Journal of the European Union, 23-7-2023

[6] Ember Climate: "Global Electricity Review 2023",
https://ember-climate.org/insights/research/global-electricity-review-2023/

…

[x] <doctype> <#>[ ([up to and including]{yyyy[-mm]|V<a[.b[.c]]>}[onwards])]: "<Title>".

It is preferred that the reference to TR 21.905 be the first in the list.

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| End of changes |