**3GPP TSG SA WG5 Meeting #155 S5-243009**

**Jeju, South Korea, 27 - 31 May 2024**

**Source: Huawei (moderator)**

**Title: Rel-19 New WID on Enhancement on Converged Charging**

**Document for: Approval**

**Agenda Item: 7.2**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>   
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: New WID on Enhancement on Converged Charging

Acronym: EnO\_CH

Unique identifier:

Potential target Release: Rel-19

# 1 Impacts

{For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  |  | X | X |  |
| No | X | X |  |  | X |
| Don't know |  |  |  |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
|  | Study |
|  | Normative – Stage 1 |
| X | Normative – Stage 2 |
| X | Normative – Stage 3 |
|  | Normative – Other\* |

**\* Other = e.g. testing**

## 2.2 Parent Work Item

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

|  |  |  |  |
| --- | --- | --- | --- |
| Parent Work / Study Items | | | |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
|  |  |  |  |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work /Study Items (if any) | | |
| Unique ID | Title | Nature of relationship |
|  |  |  |
|  |  |  |
|  |  |  |
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|  |  |  |
|  |  |  |

# 3 Justification

When converged online charging are applicable to a service delivery, the charging information with quota management can be used for the IEC, ECUR, SCUR charging scenarios. The authorization for the network resource usage must be obtained from CHF prior to the actual resource usage to occur. The enhancement for the converged online charging is required for more appropriate authorization, more accurate charging and better service experience.

Using IEC charging scenarios, the charging request is sent before the service has been deliver, when the service delivery fails, the operator would like to have the possibility to cancel (e.g., by doing a refund) the previous charging request, in order to avoid the invalid charging.

Using SCUR charging scenarios, the authorization and quota management is performed per RG.

- The cost and rates can be determined by the rating group but not the consumption rate of the quota. CHF may need additional information corresponding to the Rating Group to assist CHF to grant quota appropriately.

- For non-blocking mode, when the PCC Rule attribute Service Data flow handling while requesting credit indicates "non-blocking", the SMF requests the report of the relevant usage information for the Charging key and Sponsor Identity (if applicable) and provide a default threshold value to the UPF while waiting for the quota from the CHF. CHF may need be aware of the non-blocking of SDF when grant quota.

- The CHF may optionally indicate to the NF consumer (i.e. SMF) that the quota consumption shall be stopped after a period equal to the Quota Consumption Time in which no packets are received or at session termination, whichever is sooner, which in order to monitor the actual service usage during the charging session for the more accurate charging and better user experience.

- The converged charging support of IoT need to be guaranteed by limiting down the number of requests in the charging system, otherwise the charging service may be disrupted.

# 4 Objective

The objective of the work item is to specify the enhancement to converged online charging with the following aspects:

- WT-1: Support the cancelling mechanism for event based charging

- WT-2: Support the enhancement for CHF rating

- WT-3: Support the non-blocking mode awareness

- WT-4: Support the quota consumption time mechanism.

- WT-5: Support the IoT Charging continuous availability.

## TU estimates and dependencies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Work Task ID** | **TU Estimate**  **(Study)** | **TU Estimate**  **(Normative)** | **RAN Dependency**  **(Yes/No/Maybe)** | **SA Dependency**  **(Yes/No/Maybe)** | **Non-3GPP Dependency** |
| WT-1 | 0 | 2 | No | Noe | No |
| WT-2 | 0 | 2 | No | No | No |
| WT-3 | 0 | 1 | No | No | No |
| WT-4 | 0 | 1 | No | No | No |
| WT-4 | 0 | 1 | No | No | No |

**Total TU estimates for the study phase: 0**

**Total TU estimates for the normative phase: 7**

**Total TU estimates: 7**

# 5 Expected Output and Time scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| New specifications {One line per specification. Create/delete lines as needed} | | | | | |
| Type | TS/TR number | Title | For info  at TSG# | For approval at TSG# | Rapporteur |
|  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| TS 32.255 | Enhancements for the QCT charging, CHF rating, IoT threshold and clarification on the Non-blocking charging mode. | TSG SA #106  (Dec, 2024) |  |
| TS 32.290 | Enhancement on the general charging mechanism about the cancelling unsuccessful event. | TSG SA #106  (Dec, 2024) |  |
| TS 32.291 | The corresponding data model and open API | TSG SA #107  (Mar, 2025) |  |
| TS 32.298 | The corresponding CHF CDR and ASN.1 | TSG SA #107  (Mar, 2025) |  |

# 6 Work item Rapporteur(s)

# 7 Work item leadership

SA5

# 8 Aspects that involve other WGs

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| HiSilicon |
| Huawei |
| Nokia |
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