3GPP TSG SA WG5 Meeting 135-e S5-211261

electronic meeting, online, 25 January - 3 February 2021

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.260** | **CR** | **0412** | **rev** | **1** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Update of converged charging trigger tables using IMS node | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | S5 | | | | | | | | | |
| ***Source to TSG:*** | Ericsson LM | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GSIMSCH | | | | |  | ***Date:*** | | | 2021-01-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The clause 5 is about charging principles and “service based charging” is not a charging principle but converged charging is, in comparison with the other clauses in 5. Solving the editor’s note on wherever to have tables per IMS node | | | | | | | | |
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| ***Summary of change:*** | | Changing the heading of clause 5.4 to converged charging scenarios and updating tables to only show IMS node and not individual node types. | | | | | | | | |
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| ***Consequences if not approved:*** | | The editor’s note cannot be resolved and the clauses in 5 is misaligned. | | | | | | | | |
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| ***Clauses affected:*** | | 5.4, 5.4.2, 5.4.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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| **First change** |

## 5.4 IMS converged charging scenarios

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| **Second change** |

### 5.4.2 CHF and charging service selection

The CHF address can be selected from IMS signalling as per the TS 24.229[204] or can be configured locally.

The CHF services may be selected by local configuration.

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| **Third change** |

### 5.4.3 Applicable triggers for IMS charging

The IMS nodes for which SIP method a charging Data Request is sent shall be operator configurable. The tables below describe all possible Charging Data Requests that might be sent from IMS nodes.

The generation of a Charging Data Request message by the IMS nodes in response to a particular "triggering SIP method" shall be operator configurable (enable or disable).

Table 5.4.3.1: Default Trigger conditions in IMS Node

| Trigger Conditions | Trigger level | Default category | CHF allowed to change category | CHF allowed to enable and disable | Message when "immediate reporting" category |
| --- | --- | --- | --- | --- | --- |
| SIP INVITE | - | Immediate | Not Applicable | Not Applicable | SCUR: Charging Data Request [Initial] |
| SIP NOTIFY | - | Immediate | Not Applicable | Not Applicable | ECUR: Charging Data Request [Initial]  IEC: Charging Data Request [Event] |
| SIP MESSAGE | - | Immediate | Not Applicable | Not Applicable |
| SIP REGISTER | - | Immediate | Not Applicable | Not Applicable |
| SIP SUBSCRIBE | - | Immediate | Not Applicable | Not Applicable |
| SIP REFER | - | Immediate | Not Applicable | Not Applicable |
| SIP PUBLISH | - | Immediate | Not Applicable | Not Applicable |
| **Change of charging conditions** | | | | | SCUR: Charging Data Request [Update] |
| SIP RE-INVITE or UPDATE (e.g. change in media components, terminating identity change) | - | Immediate | No | No |
| SIP 2xx acknowledging a SIP INVITE, RE-INVITE or UPDATE (e.g. change in media components) | - | Immediate | No | No |
| SIP 1xx provisional response, mid-dialog requests, mid-dialog responses and SIP INFO embedding RTTI XML body | - | Immediate | No | No |
| SIP 4xx, 5xx or 6xx response, indicating an unsuccessful SIP RE-INVITE or UPDATE | - | Immediate | No | No |
| Any other SIP message during a SIP session, that allows the SIP session to continue | - | Immediate | Yes | No |
| **CHF limit** | | | | |
| Expiry of time limit | - | Immediate | No | Yes |
| Expiry of limit of number of charging condition changes | - | Immediate | No | Yes |
| **Quota management** | | | | |
| Time threshold reached | - | Immediate | No | Yes |
| Time quota exhausted | - | Immediate | No | Yes |
| Unit quota exhausted | - | Immediate | No | Yes |
| Expiry of quota validity time | - | Immediate | No | Yes |
| Expiry of quota holding time | - | Immediate | No | Yes |
| Re-authorization request by CHF | - | Immediate | No | Yes |
| **Other** | | | | |
| Management intervention | - | Immediate | No | No |
| SIP BYE message | - | Immediate | Not Applicable | Not Applicable | SCUR: Charging Data Request [Termination] |
| SIP 2xx acknowledging a SIP BYE | - | Immediate | Not Applicable | Not Applicable |
| Aborting a SIP session set-up procedure, using an internal trigger or a SIP CANCEL | - | Immediate | Not Applicable | Not Applicable |
| SIP 3xx final or redirection response | - | Immediate | Not Applicable | Not Applicable |
| SIP 2xx acknowledging non-session related SIP messages | - | Immediate | Not Applicable | Not Applicable | ECUR: Charging Data Request [Termination] |
| Deregistration | - | Immediate | Not Applicable | Not Applicable |
| SIP 4xx, 5xx or 6xx final response, indicating an unsuccessful procedure | - | Immediate | Not Applicable | Not Applicable | SCUR: Charging Data Request [Termination]  ECUR: Charging Data Request [Termination]  PEC: Charging Data Request [Event] |











For converged charging, the following details of chargeable events and corresponding actions in the IMS nodes are defined in Table 5.4.3.2:

Table 5.4.3.2: Chargeable events and their related actions in IMS nodes

| Chargeable event | Conditions | IMS node action |
| --- | --- | --- |
| SIP INVITE |  | SCUR: Charging Data Request [Initial] with a possible request quota for later use |
| SIP NOTIFY |  | ECUR: Charging Data Request [Initial] with a possible request quota for later use  IEC: Charging Data Request [Event] |
| SIP MESSAGE |  | ECUR: Charging Data Request [Initial] with a possible request quota for later use  IEC: Charging Data Request [Event] |
| SIP REGISTER |  | ECUR: Charging Data Request [Initial] with a possible request quota for later use  IEC: Charging Data Request [Event] |
| SIP SUBSCRIBE |  | ECUR: Charging Data Request [Initial] with a possible request quota for later use  IEC: Charging Data Request [Event] |
| SIP REFER |  | ECUR: Charging Data Request [Initial] with a possible request quota for later use  IEC: Charging Data Request [Event] |
| SIP PUBLISH |  | ECUR: Charging Data Request [Initial] with a possible request quota for later use  IEC: Charging Data Request [Event] |
| SIP RE-INVITE or UPDATE (e.g. change in media components, terminating identity change) |  | SCUR: Charging Data Request [Update] with a request quota with a possible amount of quota |
| SIP 2xx acknowledging a SIP INVITE, RE-INVITE or UPDATE (e.g. change in media components) |  | SCUR: Charging Data Request [Update] with a request quota with a possible amount of quota |
| SIP 1xx provisional response, mid-dialog requests, mid-dialog responses and SIP INFO embedding RTTI XML body |  | SCUR: Charging Data Request [Update] with a request quota with a possible amount of quota |
| SIP 4xx, 5xx or 6xx response, indicating an unsuccessful SIP RE-INVITE or UPDATE |  | SCUR: Charging Data Request [Update] with a request quota with a possible amount of quota |
| Any other SIP message during a SIP session, that allows the SIP session to continue |  | Start new counts with time stamps for all active service data flows. |
| If the corresponding trigger is enabled and the category is set to "immediate reporting" | SCUR: Charging Data Request [Update] with a possible request quota. |
| Expiry of time limit |  | SCUR: Charging Data Request [Update] with a possible request quota  Close the counts and start new counts with time stamps |
| Expiry of limit of number of charging condition changes |  | SCUR: Charging Data Request [Update] with a possible request quota  Close the counts and start new counts with time stamps |
| Time threshold reached |  | SCUR: Charging Data Request [Update] with a possible request quota  Close the counts and start new counts with time stamps |
| Time quota exhausted |  | SCUR: Charging Data Request [Update] with a possible request quota  Close the counts and start new counts with time stamps |
| Unit quota exhausted |  | SCUR: Charging Data Request [Update] with a possible request quota  Close the counts and start new counts with time stamps |
| Expiry of quota validity time |  | SCUR: Charging Data Request [Update] with a possible request quota  Close the counts and start new counts with time stamps |
| Expiry of quota holding time |  | SCUR: Charging Data Request [Update] with a possible request quota  Close the counts and start new counts with time stamps |
| Re-authorization request by CHF |  | SCUR: Charging Data Request [Update] with a possible request quota  Close the counts and start new counts with time stamps |
| Management intervention |  | SCUR: Charging Data Request [Update] with a possible request quota  Close the counts and start new counts with time stamps |
| SIP BYE message |  | SCUR:Charging Data Request [Termination]  Close the counts with time stamps |
| SIP 2xx acknowledging a SIP BYE |  | SCUR:Charging Data Request [Termination]  Close the counts with time stamps |
| SIP 2xx acknowledging non-session related SIP messages |  | ECUR: Charging Data Request [Termination]  Close the counts with time stamps |
| Aborting a SIP session set-up procedure, using an internal trigger or a SIP CANCEL |  | SCUR: Charging Data Request [Termination]  ECUR: Charging Data Request [Termination]  Close the counts with time stamps |
| Deregistration |  | SCUR: Charging Data Request [Termination]  ECUR: Charging Data Request [Termination]  Close the counts with time stamps |
| SIP 3xx final or redirection response |  | SCUR: Charging Data Request [Termination]  ECUR: Charging Data Request [Termination]  Close the counts with time stamps |
| SIP 4xx, 5xx or 6xx final response, indicating an unsuccessful procedure |  | SCUR: Charging Data Request [Termination]  ECUR: Charging Data Request [Termination]  Close the counts with time stamps  PEC: Charging Data Request [Event] |

Editor’note: The applicable triggers in the tables is ffs.

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| **End of changes** |