3GPP TSG SA WG5 Meeting 134-e TDoc S5-205123rev3

**electronic meeting, online, 16th - 25th November 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **32.275** | **CR** | **0075** | **rev** | **1** | **Current version:** | **16.x.0** |  |
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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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Add service based architecture for offline charging | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GSIMSCH | | | | |  | ***Date:*** | | | 2020-11-19 |
|  |  | | | |  | |  | | |  |
| ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | Offline charging architecture for MMTel service based charging is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding Offline charging architecture options for MMTel service based charging. | | | | | | | | |
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| ***Consequences if not approved:*** | | Offline charging architecture for MMTel service based charging architecture options won’t be specified. | | | | | | | | |
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| ***Clauses affected:*** | | 4.4, 5.4.1.2.1, 5.4.2.2, 5.4.2.3 | | | | | | | | |
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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 ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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| **First change** |

## 4.4 MMTel converged charging architecture

The architectural options for MMTel converged charging are depicted in figure 4.4.1



Figure 4.4.1: MMTel converged charging architecture

This MMTel converged charging architecture is based on the IMS converged charging architecture described in TS 32.260 [20], with service CTFs supporting MMTel specific service charging, using the Nchf service.

The CTFs considered in the MMTel converged charging architecture reside in the Application level network functionality providing MMTel service and supplementary services, other CTFs related to charging for the IMS basic capabilities (supporting MMTel service), are described in TS 32.260 [20].

MMTel converged charging architecture is applicable for converged online and offline charging service and offline only charging service via the Nchf interface.

The general architecture components can be found in TS 32.240 [1].

Ga is described in clause 5.2.3 and Bi in clause 5.2.4 of this document, and Nchf is described in TS 32.290 [57].

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| **Second change** |

##### 5.4.1.2.1 General

When a charging event is issued towards the CHF, it includes details such as Subscriber identifier (e.g. IMPI).

Each trigger condition (i.e. chargeable event) defined for the MMTel converged charging functionality, is specified with the associated behaviour when they are met.

Table 5.4.1.2.1 summarizes the set of default trigger conditions, including their category and if they are possible to change, which shall be supported by the MMTel AS. For "immediate report" category, the table also provides the corresponding Charging Data Request [Initial, Update, Termination] message sent towards the CHF.

Table 5.4.1.2.1: Default Trigger conditions for MMTel

| Trigger Conditions | Trigger level | Converged Charging default category | Offline only charging default category | CHF allowed to change category | CHF allowed to enable and disable | Message when "immediate reporting" category |
| --- | --- | --- | --- | --- | --- | --- |
| Originating Identification Presentation (OIP) | | | | | | |
| Invite OK | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Originating Identification Restriction (OIR) | | | | | | |
| Invite OK | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Terminating Identification Presentation (TIP) | | | | | | |
| Invite OK | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Terminating Identification Restriction (TIR) | | | | | | |
| Invite OK | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Communication Hold (HOLD) | | | | | | |
| Update OK | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Communication Barring (CB) | | | | | | |
| Invite | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Message Waiting Indication (MWI) | | | | | | |
| Notify | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Conference (CONF) | | | | | | |
| Invite | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Created | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| User joining | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| User leaving | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Bye | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Completion of Communication sessions to Busy Subscriber (CCBS) | | | | | | |
| Notify | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Completion of Communications by No Reply (CCNR) | | | | | | |
| Notify | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Communications Diversion (CDIV) | | | | | | |
| Invite (OK) | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Answer | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Bye | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Communication Waiting (CW) | | | | | | |
| Invite OK | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Explicit Communication Transfer (ECT) | | | | | | |
| Refer | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Invite | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Answer | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Release | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Flexible Alerting (FA) | | | | | | |
| Invite | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Answer/Cancel | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Bye | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Malicious Communication Identification (MCID) | | | | | | |
| Store | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Customized Alerting Tone (CAT) | | | | | | |
| Stop | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Closed User Group (CUG) | | | | | | |
| Invite | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Answer | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Bye | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Personal Network Management (PNM) | | | | | | |
| Invite | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Answer | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Bye | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Customized Ringing Signal (CRS) | | | | | | |
| Stop | - | Immediate | Immediate | Not Applicable | Not Applicable |  |
| Advice of Charge (Aoc) | | | | | | |
| Invite | - | Not applicable | Immediate | Not Applicable | Not Applicable |  |
| Answer | - | Not applicable | Immediate | Not Applicable | Not Applicable |  |
| Bye | - | Not applicable | Immediate | Not Applicable | Not Applicable |  |

Editor's note: The use of IEC, PEC, ECUR and SCUR is FFS.

The CDR generation mechanism processed by the CHF upon receiving Charging Data Request [Event, Initial, Update, Termination] issued by the MMTel for these chargeable events, is specified in clause 5.4.3.

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| **Third change** |

#### 5.4.2.2 Originating Identification Presentation (OIP) charging

The following figure 5.4.2.2.1 describes Originating Identification Presentation (OIP) charging via converged online and offline charging service, or offline only charging service.



Figure 5.4.2.2.1: Originating Identification Presentation (OIP) service - PEC

#### 5.4.2.3 Originating Identification Restriction (OIR) charging

The following figure 5.4.2.3.1 describes Originating Identification Restriction (OIR) charging via converged online and offline charging service, or offline only charging service.



Figure 5.4.2.3.1: Originating Identification Restriction (OIR) service - PEC

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| **End of changes** |