**3GPP TSG-SA5 Meeting #136e S5-212174**

**E-Meeting, 1st – 9th March 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **32.240** | **CR** | **0421** | **rev** | **1** | **Current version:** | **16.1.0** |  |
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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 the CCS in the definitions | | | | | | | | | |
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| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | SA5 | | | | | | | | | |
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| ***Work item code:*** | TEI16 | | | | |  | ***Date:*** | | | 2021-03-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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)* | |
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| ***Reason for change:*** | | For 5G charging, the CHF (Charging Function) and CCS(Converged charging system) are introduced. The corresponding definition should be specifed in TS 32.240. | | | | | | | | |
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| ***Summary of change:*** | | Add the definition of converged charging system.  Correct the definition of online charging systme. | | | | | | | | |
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| ***Consequences if not approved:*** | | The definition for CCS is missing. | | | | | | | | |
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| ***Clauses affected:*** | | 3.1 | | | | | | | | |
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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** |

## 3.1 Definitions

For the purposes of the present document, the terms and definitions defined in TR 21.905 [100] and the following apply:

**2G‑ / 3G‑:** prefixes 2G‑ and 3G‑ refer to functionality that supports only GSM or UMTS, respectively, e.g. 2G‑SGSN refers only to the GSM functionality of an SGSN.

**accounting:** process of apportioning charges between the Home Environment, Serving Network and Subscriber.

**accounting meter record:** record containing one or more counters employed to register the usage of resources en masse. Includes simple event counters and/ or cumulative call second counters.

**Advice of Charge (AoC):** real-time display of the network utilization charges incurred by the Mobile Station  
The charges are displayed in the form of charging units. If a unit price is stored by the MS then the display may also include the equivalent charge in the home currency.

**AoC service:** combination of one or more services, both basic and supplementary, together with a number of other charging relevant parameters to define a customized service for the purpose of advice of charge.

**Application Based Charging (ABC):** ability to perform charging on an application basis for network usage based upon application detection.

**billing:** function whereby CDRs generated by the charging function(s) are transformed into bills requiring payment.

**Billing Domain:** part of the operator network, which is outside the core network, which receives and processes CDR files from the core network charging functions. It includes functions that can provide billing mediation and billing or other (e.g. statistical) end applications. It is only applicable to offline charging (see "Online Charging System" for equivalent functionality in online charging).

**CAMEL:** network feature that provides the mechanisms to support operator specific services even when roaming outside HPLMN.

**CAMEL subscription information:** identifies a subscriber as having CAMEL services.

**chargeable event:** activity utilizing telecommunications network resources and related services for:

- user to user communication (e.g. a single call, a data communication session or a short message); or

- user to network communication (e.g. service profile administration); or

- inter-network communication (e.g. transferring calls, signalling, short messages, interconnection); or

- mobility (e.g. roaming or inter-system handover); or

- user to application/service communication ; and

- that the network operator may want to charge for.

As a minimum, a chargeable event characterises the resource / service usage and indicates the identity of the involved end user(s).

**charged party:** user involved in a chargeable event that has to pay parts or the whole charges of the chargeable event, or a third party paying the charges caused by one or all users involved in the chargeable event, or a network operator.

**charging:** function within the telecommunications network and the associated OCS/BD components whereby information related to a chargeable event is collected, formatted, transferred and evaluated in order to make it possible to determine usage for which the charged party may be billed (offline charging) or the subscriber’s account balance may be debited (online charging).

**Charging Data Record (CDR):** formatted collection of information about a chargeable event (e.g. time of call set-up, duration of the call, amount of data transferred, etc) for use in billing and accounting. For each party to be charged for parts of or all charges of a chargeable event a separate CDR is generated, i.e. more than one CDR may be generated for a single chargeable event, e.g. because of its long duration, or because more than one charged party is to be charged.

**charging event:** set of charging information forwarded by the CTF towards the CDF (offline charging) or towards the OCS (online charging). Each charging event matches exactly one chargeable event.

**circuit switched domain:** domain within GSM / UMTS in which information is transferred in circuit switched mode.

**Credit-Control:** mechanism which directly interacts in real-time with an account and controls or monitors the charges, related to the service usage. Credit-Control is a process of: checking if credit is available, credit reservation, deduction of credit from the end user account when service is completed and refunding of reserved credit not used.

**domain:** part of a communication network that provides resources using a certain bearer technology.

**Fully qualified Partial CDR (FQPC):** partial CDR that contains a complete set of the fields specified for the CDR type in the respective middle tier TS. This includes all the mandatory and conditional fields as well as those fields that the PLMN operator has provisioned to be included in the CDR. The first Partial CDR shall be a Fully Qualified Partial CDR.

**GPRS:** packet switched bearer and radio services for GSM and UMTS systems.

**(GSM only):** qualifier indicating that this clause or paragraph applies only to a GSM system. For multi-system cases this is determined by the current serving radio access network.

**in GSM,...:** qualifier indicating that this paragraph applies only to GSM Systems

**in UMTS,...:** qualifier indicating that this paragraph applies only to UMTS Systems

**interconnection charging:** process ofinter-operator charging between the related operators

**inter-system change:** change of radio access between different radio access technologies such as GSM and UMTS

**middle tier TS:** termused for the 3GPP charging TSs that specify the domain / subsystem / service specific, online and offline, charging functionality. These are all the TSs in the numbering range from TS 32.250 to TS 32.279, e.g. TS 32.250 [10] for the CS domain, TS 32.260 [20] for the IMS or TS 32.270 [30] for the MMS service.

Currently, there is only one "tier 1" TS in 3GPP, which is the present document that specifies the charging architecture and principles. Finally, there are a number of top tier TSs in the 32.29x numbering range ([50]) that specify common charging aspects such as parameter definitions, encoding rules, the common Billing Domain interface or common charging applications.

**near real-time:** near real-time charging and billing information is to be generated, processed, and transported to a desired conclusion in less than one (1) minute.

**observed IMEI ticket:** record used to describe an EIR relevant event e.g. a blacklisted IMEI.

**offline charging:** charging mechanism where charging information **does not** affect, in real-time, the service rendered.

**Offline Charging System:** the entity that collects and processes offline charging information prior to delivery to the Billing Domain.

**online charging:** charging mechanism where charging information can affect, in real-time, the service rendered and therefore a direct interaction of the charging mechanism with bearer/session/service control is required.

**Online Charging System:** the entity that performs quota management. Its functionality includes transaction handling, rating, online correlation and management of subscriber accounts/balances.

**Converged Charging System:** the system that combines the functionalities of the Offline Charging System and the Online Charging System into a single converged system.

**packet switched domain:** domain in which data is transferred between core network elements.

**partial CDR:** CDR that provides charging information on part of a user session. A long session may be covered by several partial CDRs. Two formats are considered for Partial CDRs. One that contains all of the necessary fields (FQPC); the second has a reduced format (RPC).

**real-time:** real-time charging and billing information is to be generated, processed, and transported to a desired conclusion in less than 1 second.

**Reduced Partial CDR (RPC):** partial CDRs that only provide mandatory fields and information regarding changes in the session parameters relative to the previous partial CDR. For example, location information is not repeated in these CDRs if the subscriber did not change its location.

**settlement:** payment of amounts resulting from the accounting process.

**subscriber:** entity (associated with one or more users) that is engaged in a Subscription with a service provider. The subscriber is allowed to subscribe and unsubscribe services, to register a user or a list of users authorised to enjoy these services, and also to set the limits relative to the use that associated users make of these services.

**successful call:** connection that reaches the communication or data transfer phase e.g. the "answered" state for speech connections. All other connection attempts are regarded as unsuccessful.

**tariff period:** part of one (calendar) day during which a particular tariff is applied. Defined by the time at which the period commences (the switch-over time) and the tariff to be applied after switch-over

**tariff:** set of parameters defining the network utilization charges for the use of a particular bearer / session / service.

**transit:** interconnection scenarios in multi operator environments where one or more transit operators are between the originating and terminating operator.

**UMTS only:** qualifier indicating that this clause or paragraph applies only to a UMTS system. For multi-system cases this is determined by the current serving radio access network.

**user:** entity, not part of the 3GPP System, which uses network resources by means of a subscription. The user may or may not be identical to the subscriber holding that subscription.

**User Equipment (UE):** device allowing a user access to network services. For the purpose of 3GPP specifications the interface between the UE and the network is the radio interface. A User Equipment can be subdivided into a number of domains, the domains being separated by reference points. Currently defined domains are the USIM and ME Domains. The ME Domain can further be subdivided into several components showing the connectivity between multiple functional groups. These groups can be implemented in one or more hardware devices. An example of such connectivity is the TE – MT interface. Further, an occurrence of a User Equipment is an MS for GSM as defined in TS 24.002 [213].

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| **End of change** |