**3GPP TSG-SA5 Meeting #142-e *S5-222434***

**e-meeting, 4 - 12 April 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **32.291** | **CR** | **draftCR** | **rev** | **-** | **Current version:** | **17.2.0** |  |
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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:*** | Correcting IMS triggering for PLMN change | | | | | | | | | |
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| ***Source to WG:*** | Ericsson LM | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2022-03-24 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***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)* | |
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| ***Reason for change:*** | | That the location information and trigger for PLMN change can be used also for IMS is not derscibed | | | | | | | | |
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| ***Summary of change:*** | | Adding description for location information and PLMN change trigger applicablity for IMS. | | | | | | | | |
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| ***Consequences if not approved:*** | | How the location information and PLMN change is used in the context of IMS will be unclear. | | | | | | | | |
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| ***Clauses affected:*** | | 6.1.6.2.8.3, 6.1.6.3.6 | | | | | | | | |
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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** |

###### 6.1.6.2.8.3 Type IMSChargingInformation

Table 6.1.6.2.8.3-1: Definition of type IMSChargingInformation

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| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| eventType | SIPEventType | OC | 0..1 | This field holds the SIP Method, the content of the SIP "Event" header and the content of the SIP "expires" header when present in the SIP request. |  |
| iMSNodeFunctionality | IMSNodeFunctionality | OM | 1 | This field contains the function of the IMS node. |  |
| roleOfNode | RoleOfIMSNode | OM | 1 | This field specifies whether the IMS node is serving the Originating or the Terminating party. |  |
| userInformation | UserInformation | OM | 1 | Group of user information. |  |
| userLocationInfo | UserLocation | OC | 0..1 | This field indicates details of where the UE is currently located (access-specific user location information). |  |
| ueTimeZone | TimeZone | OC | 0..1 | This field holds the Time Zone of where the UE is located, if available where the UE currently resides. |  |
| 3gppPSDataOffStatus | 3GPPPSDataOffStatus | OC | 0..1 | This field holds the 3GPP Data off Status when UE's 3GPP Data Off status is Activated or Deactivated. |  |
| isupCause | ISUPCause | OC | 0..1 | This indicates the reason a circuit switch call was released. |  |
| controlPlaneAddress | IMSAddress | OC | 0..1 | This identifies the control plane IP address i.e., GGSN, PGW, or SMF, that handles one or more media component(s) of a IMS session. |  |
| vlrNumber | E164 | OC | 0..1 | This identifies the international E.164 address of the VLR serving the user. |  |
| mscAddress | E164 | OC | 0..1 | This identifies the international E.164 address of the MSC that generated the network call reference number. |  |
| userSessionID | string | OM | 1 | This field holds the session identifier. For a SIP session the *Session-ID* contains the SIP Call ID. When the AS acts as B2BUA, the incoming session is identified. |  |
| outgoingSessionID | string | OC | 0..1 | When the AS acts as B2BUA, the outgoing side session is identified by the Outgoing Session ID which contains the SIP Call ID. |  |
| sessionPriority | IMSSessionPriority | OC | 0..1 | This field contains the priority of the session. |  |
| callingPartyAddresses | array(Uri) | OM | 1..N | This field holds the addresses (SIP URI or Tel URI) URI of the party (Public User Identity or Public Service Identity) initiating a session or requesting a service. |  |
| calledPartyAddress | string | OM | 1 | For SIP transactions, except for registration, this field holds the address of the party (Public User ID or Public Service ID) to whom the SIP transaction is posted.  For registration transactions, this field holds the Public User ID under registration. |  |
| numberPortabilityRoutinginformation | string | OC | 0..1 | This field includes information on number portability after DNS/ENUM request from IMS node in the calling user's home network. |  |
| carrierSelectRoutingInformation | string | OC | 0..1 | This field includes information on carrier select after DNS/ENUM request from IMS node in the calling user's home network. |  |
| alternateChargedPartyAddress | string | OC | 0..1 | The address of an alternate party that is identified by the AS at session initiation and is charged in place of the calling party. |  |
| requestedPartyAddress | array(string) | OC | 1..N | For SIP transactions this field initially holds the address of the party (Public User ID or Public Service ID) to whom the SIP transaction was originally posted.  This field is only present if different from the Called Party Address parameter. |  |
| calledAssertedIdentities | array(string) | OC | 1..N | The addresses of the final asserted identity. Present if the final asserted identity is available in the SIP 2xx response. |  |
| calledIdentityChange | CalledIdentityChange | OC | 0..1 | Terminating identity address change and associated time stamp. |  |
| associatedURI | array(Uri) | OC | 1..N | This field holds a non-barred public user identity (SIP URI or Tel URI) associated to the public user identity under registration and is present for registration transactions. |  |
| timeStamps | DateTime | OC | 0..1 | This field holds the time of the SIP Request and the time of the response to the SIP Request. |  |
| applicationServerInformation | array(string) | OC | 1..N | This field holds the SIP URI(s) of the AS(s) addressed during the session and the called party number (SIP URI, E.164), if an AS determines it. |  |
| interOperatorIdentifier | array(InterOperatorIdentifier) | OC | 1..N | This field holds the identification of the network neighbours (originating and terminating) as exchanged via SIP signalling if available. This field may occur several times. |  |
| imsChargingIdentifier | string | OM | 1 | This field holds the IMS Charging Identifier (ICID) as generated by a IMS node for a SIP session. |  |
| relatedICID | string | OC | 0..1 | This field holds the Related IMS charging identifier when the session is the target access leg in case of access transfer. |  |
| relatedICIDGenerationNode | IMSAddress | OC | 0..1 | This field holds the identifier of the server that generated the Related IMS charging identifier. |  |
| transitIOIList | array(string) | OC | 1..N | This field holds the identification of the involved transit networks as exchanged via SIP signalling if available. This field may occur several times. When received from the AS, each occurrence of this field represents transit networks inbound to or outbound from the S-CSCF. |  |
| earlyMediaDescription | array (EarlyMediaDescription) | OC | 1..N | This field holds session and media parameters related to media components set to active during the SIP session establishment and before a final successful or unsuccessful SIP answer to the initial SIP INVITE request is received. Once a media component is set to active, subsequent status changes shall be registered. Since several SDP negotiations may occur during the SIP session establishment, this field may occur several times. |  |
| sdpSessionDescription | array(string) | OC | 1..N | This field holds the content of an "attribute-line" (i=, c=, b=, k=, a=, etc.) related to a session. |  |
| sdpMediaComponent | array(SDPMediaComponent) | OC | 1..N | This is a grouped field comprising several sub-fields associated with one media component. Since several media components may exist for a session in parallel these sub-fields may occur several times. |  |
| servedPartyIPAddress | IMSAddress | OC | 0..1 | This field holds the IP address of either the calling or called party, depending on whether the P-CSCF is in touch with the calling or the called party. |  |
| serverCapabilities | ServerCapabilities | OC | 0..1 | This field contains the server capabilities as described in 3GPP TS 29.229 [205]. |  |
| trunkGroupID | TrunkGroupID | OC | 0..1 | This field identifies the incoming and outgoing PSTN legs. |  |
| bearerService | string | OC | 0..1 | This field holds the used bearer service for the PSTN leg. |  |
| imsServiceId | string | OC | 0..1 | This field identifies the service the MRFC is hosting. For conferences the conference ID is used as the value of this parameter. |  |
| messageBodies | array(MessageBody) | OC | 1..N | This field holds information about the Message body, Content-Type, Content-Length, Content-Disposition and Originator if available. |  |
| accessNetworkInformation | array(string) | OC | 1..N | This field contains the content of the first P-header P-Access-Network-Info, if available. |  |
| additionalAccessNetworkInformation | string | OC | 0..1 | This field contains the content of an additional SIP P-header "P-Access-Network-Info", if available. |  |
| cellularNetworkInformation | string | OC | 0..1 | This field contains the content of one SIP "Cellular-Network-Info" header, when the UE supporting one or more cellular radio access technologies but using a non-cellular IP-CAN, such as untrusted WLAN access, provides this header field to relay information to its service provider about the radio cell identity of the cellular radio access network on which the UE most recently camped. |  |
| accessTransferInformation | array(AccessTransferInformation) | OC | 1..N | This field contains information related to the session transfer. |  |
| accessNetworkInfoChange | array(AccessNetworkInfoChange) | OC | 1..N | This field is a grouped field describing the subsequent SIP P-header "P-Access-Network-Info" changes and associated time stamp. |  |
| imsCommunicationServiceID | string | OC | 0..1 | This field contains the IMS communication service identifier if received in the P-Asserted-Service header in the SIP request for all applicable IMS nodes downstream from the S‑CSCF serving the Originating party. This field contains the IMS communication service identifier if received in the "+g.3gpp.icsi-ref" header field parameter of the Feature-Caps header in the SIP response for all applicable IMS nodes upstream from the S‑CSCF serving the Originating party. |  |
| imsApplicationReferenceID | string | OC | 0..1 | This field contains the IMS application reference identifier if received in the SIP Request. |  |
| causeCode | Uint32 | OC | 0..1 | This field contains the cause value. |  |
| reasonHeader | array(string) | OC | 1..N | This field contains SIP reason header included in BYE or CANCEL method,  Reliability of this information is not guaranteed if the SIP or CANCEL is originated outside of the trust domain which is determined by the Operator on a "per parameter basis".  Since several Reason Header may exist for a SIP message, these sub-fields may occur several times |  |
| initialIMSChargingIdentifier | string | OC | 0..1 | This field holds the Initial IMS charging identifier (ICID) as generated by the IMS node for the initial SIP session created for IMS service continuity. |  |
| nniInformation | array(NNIInformation) | OC | 1..N | This field holds information about the NNI used for interconnection and roaming. |  |
| fromAddress | string | OM | 1 | Contains the information from the SIP From header. |  |
| imsEmergencyIndication | boolean | OC | 0..1 | This field indicates the registration is an emergency registration or the IMS session is an IMS emergency session |  |
| imsVisitedNetworkIdentifier | string | OC | 0..1 | Contains the information from the SIP P-Visited-Network-ID header. |  |
| sipRouteHeaderReceived | string | OC | 0..1 | Contains the information in the topmost route header in a received initial SIP INVITE or non-session related SIP MESSAGE request. |  |
| sipRouteHeaderTransmitted | string | OC | 0..1 | Contains the information in the route header representing the destination in a transmitted initial SIP INVITE or non-session related SIP MESSAGE request. |  |
| tadIdentifier | TADIdentifier | OC | 0..1 | This field indicates the type of access network (CS or PS) through which the session shall be terminated. |  |
| feIdentifierList | string | OC | 0..1 | This element contains one or more IM CN subsystem functional entity addresses and/or AS and application identifiers where the IM CN subsystem functional entity does create charging information for the related CDR of this IM CN subsystem functional entity. |  |

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| **Second change** |

##### 6.1.6.3.6 Enumeration: TriggerType

Table 6.1.6.3.6-1: Enumeration TriggerType

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| Enumeration value | Description | Applicability |
| QUOTA\_THRESHOLD | the quota threshold has been reached |  |
| QHT | the quota holding time specified in a previous response has been hit (i.e. the quota has been unused for that period of time) |  |
| FINAL | a service normal termination has occurred. |  |
| QUOTA\_EXHAUSTED | the quota has been exhausted |  |
| VALIDITY\_TIME | the credit authorization lifetime provided from CHF has expired |  |
| OTHER\_QUOTA\_TYPE | usage reporting of the particular quota type indicated in the used unit container where it appears is that, for a multi-dimensional quota, one reached a trigger condition and the other quota is being reported. |  |
| FORCED\_REAUTHORISATION | a Server initiated re-authorization procedure, i.e. receipt of notify service operation |  |
| UNIT\_COUNT\_INACTIVITY\_TIMER | the unit count inactivity timer has expired |  |
| ABNORMAL\_RELEASE | a service abnormal termination has occurred. |  |
| QOS\_CHANGE | In request message, this value is used to indicate that QoS change has happened. Any of elements of QoSData may result in QoS change.  In response message, this value is used to indicate that a change of authorized QoS shall cause the service consumer to ask for a re-authorization of the associated quota. |  |
| VOLUME\_LIMIT | Volume limit has been reached. |  |
| TIME\_LIMIT | Time limit has been reached |  |
| EVENT\_LIMIT | Event limit has been reached |  |
| PLMN\_CHANGE | PLMN has been changed.  For IMS this could be a SIP MESSAGE with indication of a change of PLMN ID during an ongoing call. |  |
| USER\_LOCATION\_CHANGE | In request message, this value is used to indicate that User location has been changed. The change in location information that triggered reporting is included.  In response message, this value is used to indicate that a change in the end user location shall cause the service consumer to ask for a re-authorization of the associated quota |  |
| RAT\_CHANGE | In request message, this value is used to indicate that RAT type has been changed.  In response message, this value is used to indicate that a change in the radio access technology shall cause the service consumer to ask for a re-authorization of the associated quota |  |
| SESSION\_AMBR\_CHANGE | In request message, this value is used to indicate that Session AMBR has been changed.  In response message, this value is used to indicate that a change in the session AMBR shall cause the service consumer to ask for a re-authorization of the associated quota. |  |
| GFBR\_GUARANTEED\_STATUS\_CHANGE | In request message,thisvalue is used to indicate that GFBR targets for the indicated SDFs are changed ("NOT\_GUARANTEED" or "GUARANTEED" again).  In response message, this value is used to indicate that a NF Consumer (CTF) needs to ensure requesting the notification from the access network and that a change in the GFBR targets shall cause the service consumer to ask for a re-authorization of the associated quota. |  |
| UE\_TIMEZONE\_CHANGE | In request message, this value is used to indicate that UE timezone has been changed.  In response message, this value is used to indicate that a change in the time zone where the end user is located shall cause the service consumer to ask for a re-authorization of the associated quota. |  |
| TARIFF\_TIME\_CHANGE | Tariff time change has happened. |  |
| MAX\_NUMBER\_OF\_CHANGES\_IN\_CHARGING\_CONDITIONS | Max number of change has been reached |  |
| MANAGEMENT\_INTERVENTION | Management intervention |  |
| CHANGE\_OF\_UE\_PRESENCE\_IN\_PRESENCE\_REPORTING\_AREA | In request message, this value is used to indicate that Change of UE presence in PRA has happened.  In response message, this value is used to indicate a request of reporting the event that the user enters/leaves the area(s) as indicated in the presenceReportingArea Attribute |  |
| CHANGE\_OF\_3GPP\_PS\_DATA\_OFF\_STATUS | In request message, this value is used to indicate that Change of 3GPP PS Data off status has happened.  In response message, this value is used to indicate that a change in the 3GPP PS Data off status shall cause the service consumer to ask for a re-authorization of the associated quota |  |
| SERVING\_NODE\_CHANGE | A serving node (e.g., AMF) change in the NF Consumer |  |
| REMOVAL\_OF\_UPF | A used UPF is removed |  |
| ADDITION\_OF\_UPF | A new UPF is added. |  |
| INSERTION\_OF\_ISMF | A new I-SMF is inserted | ETSUN |
| REMOVAL\_OF\_ISMF | A used I-SMF is removed | ETSUN |
| CHANGE\_OF\_ISMF | A used I-SMF is removed, and a new I-SMF is inserted | ETSUN |
| START\_OF\_SERVICE\_DATA\_FLOW | A Service Data Flow has started |  |
| HANDOVER\_CANCEL | The handover is cancelled. |  |
| HANDOVER\_START | The handover is start. |  |
| HANDOVER\_COMPLETE | The handover is completed. |  |
| ECGI\_CHANGE | In request message, this value is used to indicate that ECGI has been changed.  In response message, this value is used to indicate that a change in the end user location shall cause the service consumer to ask for a re-authorization of the associated quota | 5GIEPC\_CH |
| TAI\_CHANGE | In request message, this value is used to indicate that TAI has been changed.  In response message, this value is used to indicate that a change in the end user location shall cause the service consumer to ask for a re-authorization of the associated quota | 5GIEPC\_CH |
| ADDITION\_OF\_ACCESS | Addition of access to the MA PDU session | ATSSS |
| REMOVAL\_OF\_ACCESS | Removal of access to the MA PDU session | ATSSS |
| START\_OF\_SDF\_ADDITIONAL\_ACCESS | Start of service data flow on additional access in a MA PDU session | ATSSS |
| REDUNDANT\_TRANSMISSION\_CHANGE | In request message, this value is used to indicate whether redundant transmission has been activated or not.  In response message, this value is used to indicate that a change for the redendant transmission shall cause the service consumer to ask for a re-authorization and reporting. | URLLC |
| CGI\_SAI\_CHANGE | In request message, this value is used to indicate that CGI-SAI has been changed.  In response message, this value is used to indicate that a change in the end user location shall cause the service consumer to ask for a re-authorization of the associated quota | TEI17\_NIESGU |
| RAI\_CHANGE | In request message, this value is used to indicate that RAI has been changed.  In response message, this value is used to indicate that a change in the end user location shall cause the service consumer to ask for a re-authorization of the associated quota | TEI17\_NIESGU |

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| **End of changes** |