**3GPP TSG-SA WG6 Meeting #42-e S6-210407**

**e-meeting, 1st – 9th March 2021 (revision of S6-21xxxx)**

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

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| ***Title:*** | Introduction of MC service UE label for location reporting | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | BDBOS | | | | | | | | | |
| ***Source to TSG:*** | SA6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | enh3MCPTT | | | | |  | ***Date:*** | | | 2021-02-23 |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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:*** | | Whilst an MC system allows an MC service user to log into multiple MC service UEs concurrently (see 3GPP TS 22.280 requirement below), there is currenly no process that allows distinguishing these MC service UEs, when sending location information reports.  3GPP TS 22.280:  [R-5.1.1-001] The MCX Service shall allow an MCX User utilizing one or more MCX UE(s), concurrently, to sign-in and receive service on each of the MCX UE(s).  The changes are based on 3GPP TR 23.744 solution #9 and #11. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding an MC service UE label to allow mapping of location reports to specific MC service UEs. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Location reports sent from multiple MC service UEs assigned to the same MC service ID cannot be distinguished. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.1, 8.1.6 (new), 10.1.1.1, 10.9.2.2, A.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **N** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **N** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **N** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* First Change \* \* \*

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**Accuracy:** Reflects the uncertainty of the location at the moment of location measurement, e.g. see 3GPP TS 25.305 [30] and 3GPP TS 23.032 [31].

**Active MC service user profile:** The MC service user profile that is currently used by an MC service client of an MC service user while receiving MC service.

**Altitude:** Third dimension for the geographical coordinates at the moment of location measurement, e.g. see 3GPP TS 25.305 [30] and 3GPP TS 23.032 [31].

**Bearing:** Direction at the moment of location measurement, e.g. see 3GPP TS 25.305 [30].

**ECGI:** E-UTRAN Cell Global Identifier, which is used to identify cells globally, where the ECGI is constructed from the Mobile Country Code (MCC), Mobile Network Code (MNC) and the E-UTRAN Cell Identifier (ECI).

**Interconnection:** A means of communication between MC systems whereby MC service users obtaining MC service from one MC system can communicate with MC service users who are obtaining MC service from one or more other MC systems.

**Interconnection group:** An MC service group that is configured to allow inclusion of MC service group members who are MC service users from partner MC system(s).

**LCS network:** The 3GPP network that provides location service as defined in 3GPP TS 23.271 [29].

**Location:** The current physical location of the MC service UE.

**MBMS SAI:** Multimedia Broadcast Multicast Service Area Identity which is mapped to the MBMS service area.

**MC gateway server:** A server providing topology hiding for MC service interconnection with a partner MC system, where that partner MC system is in a different trust domain.

**MC service:** A generic name for any one of the three mission critical services: either MCPTT, or MCVideo, or MCData.

**MC service affiliated group member:** An MC service user who has indicated an interest in a particular MC service group and has been accepted to participate in MC service group communication for that MC service group.

**MC service client:** A generic name for the client application function of a specific MC service. MC service client could be replaced by MCPTT client, or MCVideo client, or MCData client depending on the context.

**MC service group:** A defined set of MC service users with associated communication dispositions (e.g. media restrictions, default priority and commencement directions) configured for the use with one or more MC services.

**MC service group affiliation:** A mechanism by which an MC service user's MC service(s) communication interest in one or more MC service groups is determined.

**MC service group call:** A mechanism by which an MC service user can make a one-to-many MC service(s) transmission to other users that are members of MC service group(s).

**MC service group de-affiliation:** A mechanism by which an MC service user's MC service(s) communication interest in one or more MC service groups is removed.

**MC service group home system:** The MC system where the MC service group is defined.

**MC service group host MC service server:** The MC service server within an MC system which provides centralised support for a particular MC service of an MC service group defined in a MC service group home system.

**MC service group member:** An MC service user, whose MC service ID is listed in a particular MC service group.

**MC service ID:** A generic name for the user ID of a mission critical user within a specific MC service. MC service ID could be replaced by MCPTT ID, or MCVideo ID, or MCData ID depending on the context.

**MC service server:** A generic name for the server application function of a specific MC service. MC service server could be replaced by MCPTT server, MCVideo server, or MCData server depending on the context.

**MC service user:** An authorized user, who can use an MC service UE to participate in one or more MC services.

**MC service user profile:** The set of information associated to an MC service user that allows that user to employ one or more MC services in a given role and from a given MC service UE.

**MC service UE:** A UE that can be used to participate in one or more MC services.

**MC service UE label:** A generic name for identification of a specific MC service UE.

**MC system:** The collection of applications, services, and enabling capabilities required to provide a single mission critical service or multiple mission critical services to one or more mission critical organizations.

**MC user:** A user, identified by an MC ID, who, after authorization, obtains mission critical service(s).

**Migration:** A means for an MC Service user to obtain MC service directly from a partner MC system.

**Partner MC system:** Allied MC system that provides MC services to an MC service user based on the MC service user profiles that are defined in the primary MC system of that MC service user.

**Preconfigured MC service group:** an MC service group used only for regrouping that has been configured in advance of a group or user regrouping operation to serve as the source of regroup group configuration.

**Pre-selected MC service user profile:** The MC service user profile that is to be selected as the active MC service user profile through configuration, and applicable for an authenticated MC service user upon MC service authorization.

**Primary MC system:** MC system where the MC service user profiles of an MC service user are defined.

**Requested Priority:** A value for use in a MC service group or MC private communication that, if accepted, is used by the MCX service server to temporarily replace the priority level that is predefined in the MC service group or MC service user profile. This value is used in combination with other factors to determine the application priority for the requested communication.

**Selected MC service user profile:** The MC service user profile that is to be selected as the active MC service user profile for an MC service upon request by an MC service user.

**Serving MC service server:** The MC service server which is providing MC service to an MC service client.

NOTE 1: There is one serving MC service server for each MC service, which can be the primary MC service server of the MC service user of the MC service client, or can be a partner MC service server to which the MC service user has migrated.

**Serving MC system:** The MC system which is providing MC service to an MC user.

NOTE 2: The MC system can be the primary MC system of the MC service user, or can be a partner MC system to which the MC service user has migrated.

**Speed:** Movement at the moment of location measurement, e.g. see 3GPP TS 25.305 [X] and 3GPP TS 23.032 [Y].

**Time of measurement:** Date and time expressed with a certain precision to reflect the moment of the location measurement.

For the purposes of the present document, the following terms given in 3GPP TS 22.280 [3] apply

**Mission Critical**

**Mission Critical Applications**

**Mission Critical Organization**

**Mission Critical Service**

**Functional alias**

For the purposes of the present document, the following terms given in 3GPP TS 22.179 [2] apply

**Multi-talker control**

\* \* \* Next Change \* \* \*

### 8.1.4 MC system identity (MC system ID)

The MC system ID is a globally unique identifier representing an MC system. The MC system ID shall be a URI.

8.1.5 Functional Alias

Functional alias provides a complementary, role-based user identification scheme which can be used by MC service users for operational purposes in the form of meaningful elements such as the function, the order number or vehicle identifications that can be used within any form of MC service communication. Functional alias takes a form of a URI. The application addressing remains in its form and forms the foundation for the association with the corresponding functional alias. An MC service user can simultaneously activate several functional aliases but only one can be associated to a certain communication.

Each functional alias is subject to the uniqueness principle within an organization and can be shared simultaneously by several MC service users, depending on the assignment. In this case, all assigned MC service users sharing a functional alias can be included in a communication.

An MC service user can simultaneously use different functional aliases from multiple service organizations to allow the MC service user to be reachable by different organizations.

The use of a functional alias always requires an association with the MC service ID. The MC service ID needs to be used to provide the security context for a communication.

### 8.1.6 MC service UE label

The optional MC service UE label allows to distinguish between different MC service UEs in use by the same MC service ID. The MC service UE label may be added to location information reports.

The non-routable MC service UE label may include human readable information, such as an incident or MC service user specifc ID, manufacturer name, brand, model, serial number, etc.

NOTE: The MC service UE label may be provided during initial MC service UE configuration, see clause A.6.

\* \* \* Next Change \* \* \*

## 10.1 MC service configuration

### 10.1.1 General

#### 10.1.1.1 MC service configuration on primary MC system

Depicted in figure 10.1.1.1-1 is a MC service configuration time sequence of the data related to specific MC service, representing the general lifecycle of MC service UE using an MC service.



Figure 10.1.1.1-1 MC service UE configuration time sequence and associated configuration data

The MC service UE is provided with initial UE configuration via a bootstrap procedure that provides the MC service UE's clients (e.g. MC service client, group management client, configuration management client, identity management client, key management client, functional alias management client) with critical information needed to connect to the MC system. This includes PDN connection information corresponding to the configured MC services on the MC service UE (see "EPS bearer considerations" in the 3GPP TS 23.379 [16]) , on-network server identity information for all application plane servers with which the MC service UE needs to interact, and an MC service UE label that is used to distinguish MC service UEs. See annex A.6 for more information.

The MC service UE is provided with UE configuration, MC service user profile configuration and group configuration via online configuration. While the MC service UE is using the MC service it may receive online configuration updates. If the MC service user profile configuration contains multiple MC service user profiles for an authenticated MC service user, then the MC service client and MC service server set the active MC service user profile to the configured pre-selected MC service user profile after MC service authorization (which can be updated by the MC service user using the procedure specified in subclause 10.1.4.6). The active MC service user profile can be changed by the MC service user to a different MC service user profile during MC service service (see MC service TSs).

The MC service is configured with the service configuration (not shown in the figure 10.1.1.1-1) which the MC service enforces during the entire phase of MC service UE using the MC service.

Editor's note: The extent of MC services available to an MC service UE with an unauthenticated MC user or unauthorized MC service user is described as 'limited services' in 3GPP TS 33.180 and is FFS.

Editor's note: The decision by the MC service UE to continue use of initial configuration data after MC service authorisation or discontinue its use in favour of configuration data obtained after MC service authorisation is FFS.

\* \* \* Next Change \* \* \*

#### 10.9.2.2 Location information report

Table 10.9.2.2-1 describes the information flow from the location management client to the location management server for the location information reporting.

Table 10.9.2.2-1: Location information report

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Set of MC service IDs | M | Set of identities of the reporting MC service user on the MC service UE (e.g. MCPTT ID, MCVideo ID, MCData ID) |
| Functional alias(es) (see NOTE 1) | O | Functional alias that corresponds to the MC service ID. |
| MC service UE label | O | Generic name of the reporting MC service UE |
| Triggering event | M | Identity of the event that triggered the sending of the report |
| Location Information (see NOTE 2) | M | Location information of the individual MC service user |
| NOTE 1: Each functional alias corresponds to an individual MC service ID.  NOTE 2: This may contain multiple sets of elements for the MC service user. The following elements shall accompany the location information elements: time of measurement and optional accuracy. The following location information elements shall be optional (configurable) present: longitude, latitude, speed, bearing, altitude, ECGI, MBMS SAIs, with at least one provided. | | |

\* \* \* Last Change \* \* \*

# A.6 Initial MC service UE configuration data

The initial MC service UE configuration data is essential to the MC service UE to successfully connect to the MC system. The initial MC service UE configuration data can be the same or different across MC service UEs.

Data in table A.6-1 is provided to the MC service UE's clients (e.g. MC service client, group management client, configuration management client, identity management client, key management client) during the bootstrap process (see subclause 10.1.1), and can be configured on the MC service UE offline using the CSC-11 reference point or via other means e.g. as part of the MCPTT client's provisioning on the UE, using a device management procedure.

Table A.6-1: Initial MC service UE configuration data (on-network)

|  |  |
| --- | --- |
| Reference | Parameter description |
| Subclause 10.1.1 | PDN connectivity information |
|  | > HPLMN ID and optionally VPLMN ID to which the data pertains |
|  | > MC services PDN |
|  | >> APN |
|  | >> PDN access credentials |
|  | > MC common core services PDN |
|  | >> APN |
|  | >> PDN access credentials |
|  | > MC identity management service PDN |
|  | >> APN |
|  | >> PDN access credentials |
| Subclause 10.1.1 | Application plane server identity information |
|  | > Identity management server |
|  | >> Server URI |
|  | > Configuration management server |
|  | >> Server URI |
|  | > Key management server |
|  | >> Server URI (also known as KMSUri for security domain managed by KMS) |
|  | > Indication of whether the UE shall use IPv4 or IPv6 for on-network MCPTT |
|  | > MCPTT Server |
|  | >> Server URI |
|  | > Indication of whether the UE shall use IPv4 or IPv6 for on-network MCData |
|  | > MCData Server |
|  | >> Server URI |
|  | > Indication of whether the UE shall use IPv4 or IPv6 for on-network MCVideo |
|  | > MCVideo Server |
|  | >> Server URI |
|  | > Location management server |
|  | >> Server URI |
| Subclause 10.1.1 | Operational information |
|  | > MC service UE label (see NOTE) |
| NOTE: The MC service label is optional. | |

\* \* \* End Change \* \* \* \*