**3GPP TSG-CT WG1 Meeting #125-eC1-204978**

**Electronic meeting, 20-28 August 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.548** | **CR** | **0004** | **rev** | **-** | **Current version:** | **16.0.0** |  |
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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 | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Updates to user plane delivery mode | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Hisilicon | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SEAL | | | | |  | ***Date:*** | | | 2020-08-08 |
|  |  | | | |  | |  | | |  |
| ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | There is an update in clause 14.3.2.12 of Stage 2 TS 23,434: *14.3.2.12 User plane delivery mode* *Table 14.3.2.12-1 describes the information flow for the user plane delivery mode from NRM server to VAL server.*  *Table 14.3.2.12-1: User plane delivery mode*   |  |  |  | | --- | --- | --- | | *Information element* | *Status* | *Description* | | *Delivery mode* | *M* | *Indicates whether to deliver the user data to the UE(s) via unicast mode or multicast mode* | | *MBMS media stream identifier* | *M* | *Indicates the MBMS media stream to be used to deliver the media currently over unicast, or the MBMS media stream currently being used.* | | *Unicast media stream identifier(s)* | *M* | *Indicates the unicast media stream to be used to deliver the media currently over multicast, or the unicast to be stopped and switched to multicast.* |   The description of MBMS media stream identifier and unicast media stream identifier(s) is detailed in Stage 2. Therefore, the specification should be updated | | | | | | | | |
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| ***Summary of change:*** | | 1. Update the description of MBMS media stream identifier and unicast media stream identifier(s). | | | | | | | | |
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| ***Consequences if not approved:*** | | 1. Inconsistent with Stage 2. | | | | | | | | |
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| ***Clauses affected:*** | | 6.2.3.5.2, 7.5.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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

##### 6.2.3.5.2 Server procedure

Upon receiving an HTTP POST request message containing:

a) a Content-Type header field set to "application/vnd.3gpp.seal-mbms-usage-info +xml"; and

b) an application/vnd.3gpp.seal-mbms-usage-info+xml MIME body with an <mbms-listening-status-report> elment;

the SNRM-S:

a) shall determine the identity of the sender of the received HTTP POST request as specified in clause 6.2.1.1, and:

1) if the identity of the sender of the received HTTP POST request is not authorized to report mbms listening status, shall respond with a HTTP 403 (Forbidden) response to the HTTP POST request and shall skip rest of the steps; and

2) shall support handling an HTTP POST request from a SNRM-C according to procedures specified in IETF RFC 4825 [19] "POST Handling";

b) shall generate an HTTP POST request message according to IETF RFC 2616 [15]. In the HTTP POST request message, the SNRM-S:

1) shall include a Request-URI set to the URI corresponding to the identity of the VAL server;

2) shall include a Content-Type header field set to "application/vnd.3gpp.seal-mbms-usage-info +xml";

3) shall include an application/vnd.3gpp.seal-mbms-usage-info+xml MIME body with a <user-plane-delivery-mode> element in the <mbms-info> root element which shall include:

i) a <delivery-mode> element indicating whether to deliver the user data to the UE(s) via unicast mode or multicast mode;

ii) an <MBMS-media-stream-id> element indicating the MBMS media stream to be used to deliver the media currently over unicast, or the MBMS media stream currently being used.; and

iii) one or more <unicast-media-stream-id> element(s), each element indicating the unicast media stream to be used to deliver the media currently over multicast, or the unicast to be stopped and switched to multicast; and

c) shall send the HTTP POST request towards the VAL server according to IETF RFC 2616 [15].

Upon receiving an HTTP POST request message containing:

a) a Content-Type header field set to "application/vnd.3gpp.seal-location-info+xml";

b) an application/vnd.3gpp.seal-location-info+xml MIME body with a <report> element in the <location-info> root element;

the SNRM-S:

a) shall determine the identity of the sender of the received HTTP POST request as specified in clause 6.2.1.1, and:

1) if the identity of the sender of the received HTTP POST request is not authorized to report location information, shall respond with a HTTP 403 (Forbidden) response to the HTTP POST request and shall skip rest of the steps; and

2) shall support handling an HTTP POST request from a SNRM-C according to procedures specified in IETF RFC 4825 [19] "POST Handling"; and

b) shall send an MBMS bearer announcement message with information related to TMGI 2 as specified in clause 6.2.3.3 towards the SNRM-C.

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

### 7.5.3 MBMSInfo document

The recipient of the XML ignores any unknown element and any unknown attribute.

The <mbms-info> element is the root element of the XML document. The <mbms-info> element contains one or more <announcement> subelements, the <mbms-listening-status-report> subelement, the <request> subelement, the <mbms-bearers> subelement, the <user-plane-delivery-mode> subelement, the <mbms-suspension-reporting-instruction> subelement and the <mbms-suspension-report> subelement.

<announcement> element contains the following sub-elements:

a) <TMGI>, an element contains the TMGI. The <TMGI> element is coded as described in 3GPP TS 24.008 [5] clause 10.5.6.13 excluding the Temporary mobile group identity IEI and the Length of temporary mobile group identity contents (octet 1 and octet 2 in 3GPP TS 24.008 [5] clause 10.5.6.13);

b) <alternative-TMGI>, an optional element contains a list of additional alternative TMGI used in roaming scenarios;

c) <QCI>, an optional element contains the QCI information used by the ProSe UE-Network Relay to determine the ProSe Per-Packet Priority value to be applied for the multicast packets relayed to Remote UE over PC5. QCI values are defined in 3GPP TS 23.203 [4];

d) <mbms-service-areas>, an element contains a list of MBMS service area IDs for the applicable MBMS broadcast area as specified in 3GPP TS 23.003 [3] for service area identifier (SAI), and with the encoding as specified in 3GPP TS 29.061 [11] for the MBMS-Service-Area AVP;

e) <frequency>, an optional element contains identification of frequency in case of multi carrier support. The <frequency> element is coded as specified in 3GPP TS 29.468 [13];

f) <seal-mbms-sdp>, an element contains SDP with media and application control information applicable to groups that can use this bearer;

g) <monitoring-state>, an optional element contains a string used to control if the client is actively monitoring the MBMS bearer quality or not:

- The value "monitor" indicates that the SNRM-C shall monitor the MBMS bearer quality; and

- The value "not-monitor" indicates that the SNRM-C shall not monitor the MBMS bearer quality;

h) <announcement-acknowlegement>, presence of the <announcement-acknowlegement> element indicates the NRM server requires an acknowledgement of the MBMS bearer announcement;

i) <unicast-status>, presence of the <unicast-status> element indicates the listening status of the unicast bearer is requested; and

j) <seal-mbms-rohc>, presence of the <seal-mbms-rohc> element indicates that the flows delivered by the announced MBMS bearer are header compressed with ROHC as specified in IETF RFC 5795 [20] and IETF RFC 3095 [16].

<mbms-listening-status-report> element contains the following sub-elements:

a) <identity>, an element contains the identity of the VAL user or VAL UE who wants to report the MBMS listening status;

b) <TMGI>, an element contains the TMGI. The <TMGI> element is coded as described in 3GPP TS 24.008 [5] clause 10.5.6.13 excluding the Temporary mobile group identity IEI and the Length of temporary mobile group identity contents (octet 1 and octet 2 in 3GPP TS 24.008 [5] clause 10.5.6.13);

c) <mbms-listening-status>, an element contains a string “listening” or “not-listening” used to indicate the MBMS listening status per TMGI;

d) <mbms-reception-quality-level>, an optional element contains an integer used to indicate the reception quality level per TMGI; and

e) <unicast-listening-status>, an optional element contains a string “listening” or “not-listening” used to indicate the unicast listening status.

<request> is an element used to include the multicast resource management requested information. The <request> element contains the following sub-elements:

a) <requester-indentity>, an element contains the identity of the VAL server performing the request;

b) <VAL-group-id>, an element contains the identity of the VAL group that the MBMS bearer is requested for;

c) <service-anouncement-mode>, an element contains a string used to indicate whether the request is sent by NRM server or by the VAL server:

- The value “NRM-S” indicates the request is sent by NRM server;

- The value “VAL-server” indicates the request is sent by the VAL server;

d) <QoS>, an element contains the requested QoS information for the bearer;

e) <broadcast-area>, an optional element specifying the serving MBMS service area id where the MBMS bearer is requested for; and

f) <endpoint-info>, an element contains the information of the endpoint of the VAL server to which the user plane notifications have to be sent.

<mbms-bearers> element contains the following sub-elements:

a) <result>, an element contains a string either "success" or "failure" indicating success or failure of the MBMS bearers request operation;

b) <TMGI>, an optional element contains the TMGI. The <TMGI> element is coded as described in 3GPP TS 24.008 [5] clause 10.5.6.13 excluding the Temporary Mobile Group Identity IEI and Length of Temporary Mobile Group Identity contents (octet 1 and octet 2 in 3GPP TS 24.008 [5] clause 10.5.6.13);

c) <user-plane-address>, an element contains the BM-SC user plane IP address and port; and

d) <service-description>, an optional element contains the MBMS bearer related configuration information as defined in 3GPP TS 26.346 [10];

<user-plane-delivery-mode> element contains the following sub-elements:

a) <delivery-mode>, an element contains a string used to indicate whether to deliver the user data to the UE(s) via unicast mode or multicast mode:

- The value “unicast” indicates to deliver the user data to the UE(s) via unicast mode;

- The value “multicast” indicates to deliver the user data to the UE(s) via mulicast mode;

b) <MBMS-media-stream-id>, an element set to the MBMS media stream ID indicating the MBMS media stream to be used to deliver the media currently over unicast, or the MBMS media stream currently being used; and

c) one or more <unicast-media-stream-id> element(s), each element set to the unicast media stream ID indicating the unicast media stream to be used to deliver the media currently over multicast, or the unicast to be stopped and switched to multicast.

<mbms-suspension-reporting-instruction> contains the following sub-elements:

a) <identity>, an element contains the identity of the VAL user or VAL UE that reports MBMS suspension in case of a unicast bearer is used for MBMS suspension reporting;

b) <suspension-reporting>, an element contains a string used to enable or disable the suspension reporting for the SNRM-C in case of a unicast bearer is used for MBMS suspension reporting:

- The value “enable” indicates to enable the suspension reporting;

- The value “disable” indicates to disable the suspension reporting; and

c) <suspension-reporting-client-subset>, an element contains one or more <NRM-client-id> child elements set to the identities of the NRM clients that shall report MBMS suspension in case of a multicast bearer is used for MBMS suspension reporting;

<mbms-suspension-report> element contains the following sub-elements:

a) <mbms-suspension-status>, an element contains a string used to indicate the MBMS bearers intended suspension status:

- The value "suspending" indicates that the RAN has decided to suspend the referenced MBMS bearer(s) at the beginning of the next MCCH modification period;

- The value "not-suspending" indicates that the RAN has decided to revoke its decision to suspend the referenced MBMS bearer(s) before the beginning of the next MCCH modification period;

b) <number-of-reported-bearers>, an element contains a hex binary number denoting the total number of occurrences of the <suspended-TMGI> and <other-TMGI> elements reported as part of the MBMS bearer suspension status;

c) <suspended-TMGI>, an element contains a TMGI that is being reported as about to be suspended or as no longer about to be suspended; and

d) <other-TMGI>, an element contains a TMGI that is not being reported as about to be suspended or as no longer about to be suspended, but which shares the same MCH with MBMS bearers reported in the <suspended-TMGI> elements;

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