**3GPP TSG SA WG4#117e S4-220066**

**E-meeting, 14th – 23rd February 2022**

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| *CR-Form-v12.0* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26**.**347** | **CR** | draft | **rev** |  | **Current version:** | **16.3.1** |  |
|  | | | | | | | | |
| *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:*** | **[TEI-17+TRAPI] Extensions to MBMS-URLs for ROM Services** | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm Incorporated | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17+TRAPI | | | | |  | ***Date:*** | | | 07/02/2022 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Different scenarios exist for which other services, applications or web sites use a URL to point to the service, or to a specific resource of a service. There are cases for which finding a service should be possible by   * Using a URL that points to the service or an object delivered on a service * No unicast is available * Service acquisition is quick   This particularly applies for ROM services. Examples are   * Pointers from Emergency Alert services to Emergency Broadcast media services * Fast redirection from unicast to broadcast * Reference in service guides such as DVB-I   The MBMS URL is a good choice for thos, but is underspecified | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Define an MBMS URL that points to ROM services using the TMGI * Add additional parameters to the URL in order to support quickly finding the service | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Service announcements can not be found quickly and will delay the access the to the ROM service. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 8.2.4 (new), Annex F (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

**===== CHANGE =====**

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same* Release as the present document.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 22.146: "Multimedia Broadcast/Multicast Service; Stage 1".

[3] 3GPP TS 22.246: "Multimedia Broadcast/Multicast Service (MBMS) user services; Stage 1".

[4] 3GPP TS 23.246: "Multimedia Broadcast/Multicast Service (MBMS); Architecture and functional description".

[5] 3GPP TS 26.346: "Multimedia Broadcast/Multicast Service (MBMS); Protocols and codecs".

[6] 3GPP TR 26.852: "Multimedia Broadcast/Multicast Service (MBMS); Extensions and profiling".

[7] 3GPP TS 26.247: "Transparent end-to-end Packet-switched Streaming Service (PSS); Progressive Download and Dynamic Adaptive Streaming over HTTP (3GP-DASH)".

[8] IETF RFC 2616: "Hypertext Transfer Protocol -- HTTP/1.1".

[9] Object Management Group: "Interface Definition Language™ (IDL™) 4.0".

[10] IETF RFC 3066: "Tags for the Identification of Languages".

[11] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".

[12] 3GPP TS 29.116: "Representational state transfer over xMB reference point between content provider and BM-SC".

[13] IETF RFC 7595: "Guidelines and Registration Procedures for URI Schemes".

[14] IETF RFC 7230: " Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing".

[15] IETF RFC 7553, "The Uniform Resource Identifier (URI) DNS Resource Record"

[16] IETF RFC 6335, "Internet Assigned Numbers Authority (IANA) Procedures for the Management of the Service Name and Transport Protocol Port Number Registry"

[17] 3GPP TS 36.101: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception".

[18] 3GPP TS 36.211, "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical channels and modulation".

[19] 3GPP TS 36.104, "Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception".

[20] 3GPP TS 24.116, "Stage 3 aspects of system architecture enhancements for TV services".

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### 8.2.4 MBMS-URL for ROM Services

For Receive-only Mode (ROM) services, DNS resolution or preprovioning is not always possible. Hence, an extended URL from is needed in order to find service announcements and services. For this purpose, a specific extension and instantiation of the generic URL introduced in clause 8.2.2 is provided in this clause. In particular, the following domain name is explicitly reserved for Receive-only Mode services:

mbms://<tmgi>.tmgi.3gpp.org

where <tmgi> is the ASCII hexadecimal representation of the TMGI of the ROM service, encoded in up to twelve characters.

Leading zeros in the hexadecimal value may be omitted from the <tmgi> string. For example, the two MBMS-URLs mbms://000000901056.tmgi.3gpp.org and mbms://901056.tmgi.3gpp.org encode an identical TMGI value.

If such a URL is provided, then the ROM service shall have the following properties:

- Based on the requirements in TS 24.116 [20], clause 6.3.3:

- The first digit of the TMGI value is always zero, indicating the service is a ROM service as defined in TS 26.346 [5].

- If the service is a Service Announcement service:

- The first five digits of the TMGI value are always zero, as specified by TS 26.346 [5].

- The service shall include a required capability '23’, i.e. the Service Announcement the MBMS User Service Discovery/Announcement Profile 1b as documented in clause L.3 of TS 26 346 [5] shall be used.

- If the service is a User Service, then the first digit of the TMGI value is zero and at least one of the second to fifth digits is non-zero, as specified by TS 26.346 [5].

- The User Service Description should include the r16:ROMSvcRfParams child element and signal EARFCN for frequency, subcarrier spacing and bandwidth.

For such a URL, additional mid-part &name=value pairs are defined according to Table 8.2.4-1.

Table 8.2.4-1: Name–value pairs in ROM MBMS-URL

|  |  |  |
| --- | --- | --- |
| Parameter name | Value and semantics | Optionality |
| serviceArea | The list of service areas that are also present in the *userServiceDescription*. | Optional  If omitted, the *serviceArea* value is unknown. |
| frequency | The *Frequency* value also present in the *userServiceDescription*, coded as EARFCN, as defined in 3GPP TS 36.101 [17]. | Optional  If omitted, the *frequency* value is unknown. |
| subcarrierSpacing | The *subcarrierSpacing* value also present in the *userServiceDescription*, coded as subcarrier spacing (*∆f*) values per 3GPP TS 36.211 [18]. | Optional  If omitted, the *subcarrierSpacing* value is unknown. |
| bandwidth | The *bandwidth* value, restricted to be one of the specified channel bandwidth values in 3GPP TS 36.104 [19]. | Optional  If omitted, the *bandwidth* value is unknown. |
| serviceId | The *serviceId* in the Service Announcement channel that points to the referenced User Service. | Optional  If omitted, the MBMS‑URL points to an SA service. |

If the URL points to a Service Announcement channel, then information from the URL may be used by an MBMS-URL Handler to generate a User Service Description Bundle including a *userServiceDescription* and an associated SDP fragment. A bundle template is provided in Annex F. This SA file may be used to initiate the MBMS Client using the addSA() method defined in clause 6.2.3.22.

A few examples are provided in the following:

EXAMPLE 1: This URL identifies a Service Announcement channel in a specific area and with receiver frequency parameters.

mbms://901056.tmgi.3gpp.org&serviceArea=40201&frequency=68616&subCarrierSpacing=1.25&bandwidth=8

EXAMPLE 2: This URL identifies a Service Announcement channel in a different area and with receiver frequency parameters.

mbms://901056.tmgi.3gpp.org&serviceArea=65535,65536&frequency=68616&subCarrierSpacing=1.25&bandwidth=6

EXAMPLE 3: This URL identifies a specific service identified by a *serviceId* in a specific area and with receiver frequency parameters.

mbms://901056.tmgi.3gpp.org&serviceArea=40201&frequency=68616&subCarrierSpacing=1.25&bandwidth=8&serviceId="television-service"

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Annex F (informative):  
User Service Description templates for use with ROM Service Announcement MBMS URLs

# F.1 Introduction

Assuming an MBMS-URL for ROM services as defined in clause 8.2.4 is provided, then the MBMS Client may create a Service Announcement file using the parameters from the URL and the SDP Template in clause F.2 and the User Service Description Template in clause F.3 by replacing the bold semantics.

# F.2 SDP template

|  |
| --- |
| v=0  o=3gpp 2890844526 2890842807 IN IP4 **<see TS 26.346, clause C.17>**  t=0 0  a=mbms-mode:broadcast **<tmgi in decimal>** 1  a=FEC-declaration:0 encoding-id=1  a=source-filter: incl IN IP4 \* **<see TS 26.346, clause C.17>**  a=flute-tsi:0  m=application 12345 FLUTE/UDP 0  c=IN IP4 **<see TS 26.346, clause C.17>**/**<see TS 26.346, clause C.19>**  a=FEC:0 |

# F.3 User Service Description template

|  |
| --- |
| <?xml version="1.0" encoding="UTF-8"?>  <bundleDescription  xsi:schemaLocation="urn:3GPP:metadata:2005:MBMS:userServiceDescription USD-schema-main.xsd"  xmlns="urn:3GPP:metadata:2005:MBMS:userServiceDescription" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:r7="urn:3GPP:metadata:2007:MBMS:userServiceDescription" xmlns:r8="urn:3GPP:metadata:2008:MBMS:userServiceDescription" xmlns:r9="urn:3GPP:metadata:2009:MBMS:userServiceDescription" xmlns:r12="urn:3GPP:metadata:2013:MBMS:userServiceDescription"  xmlns:r14="urn:3GPP:metadata:2017:MBMS:userServiceDescription"  xmlns:r15="urn:3GPP:metadata:2019:MBMS:userServiceDescription"  xmlns:r16="urn:3GPP:metadata:2020:MBMS:userServiceDescription"  xmlns:sv="urn:3gpp:metadata:2009:MBMS:schemaVersion">  <userServiceDescription serviceId="rom-sa-bootstrap" r14:romService="true">  <deliveryMethod sessionDescriptionURI="http://www.example.com/3gpp/mbms/session1.sdp">  <sv:delimiter>0</sv:delimiter>  <sv:delimiter>0</sv:delimiter>  </deliveryMethod>  <sv:delimiter>0</sv:delimiter>  <r16:ROMSvcRfParams>  <16:Frequency r16:subCarrierSpacing=**"value from URL subCarrierSpacing"**  r16:bandwidth=**"value from URL bandwidth"**>**value of URL frequency**</r16:Frequency>  </r16:ROMSvcRfParams>  <sv:delimiter>0</sv:delimiter>  </userServiceDescription>  <sv:schemaVersion>3</sv:schemaVersion>  </bundleDescription> |