**3GPP TSG SA WG4#117e S4-220261**

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

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **26**.**347** | **CR** | **0011** | **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, BBC |
| ***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 canbe 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 zero characters in the hexadecimal value representation 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 a ROM service as defined in TS 26.346 [5].

- If the ROM 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 ROM 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 ROM 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*. | OptionalIf 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]. | OptionalIf 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]. | OptionalIf 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]. | OptionalIf omitted, the *bandwidth* value is unknown. |
| serviceId | The *serviceId* in the Service Announcement channel that points to the referenced User Service. | OptionalIf 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=%22television-service%22

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