**3GPP TSG SA WG4#117e S4-220308**

**E-meeting, 14th – 23rd February 2022 revision of S4-220251**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **26**.**347** | **CR** | **0011** | **rev** | **2** | **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:***  | **Extensions to MBMS-URLs for ROM Services** |
|  |  |
| ***Source to WG:*** | Qualcomm Incorporated, BBC, ORS |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | TEI17+TRAPI |  | ***Date:*** | 07/02/2022 |
|  |  |  |  |  |
| ***Category:*** | **C** |  | ***Release:*** | 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 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://rom.3gpp.org

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 |
| *tmgi* | 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 values 000000901056 and 901056 encode an identical TMGI. | OptionalIf omitted, the *tmgi* value is unknown. |
| *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://rom.tmgi.3gpp.org&tmgi=901056&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://rom.tmgi.3gpp.org&tmgi=901056&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://rom.tmgi.3gpp.org&tmgi=901056&serviceArea=40201&frequency=68616&subCarrierSpacing=1.25&bandwidth=8&serviceId=%22television-service%22

EXAMPLE 4: This URL identifies a specific service identified by a *serviceId* in a specific area and with receiver frequency parameters, but the TMGI is unknown.

 mbms://rom.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> |