
Source: SA1
Title: CR to 22.146 on MBMS Cell broadcast in shared network (Rel-6)
Document for: Approval
Agenda Item: 7.1.3

SA Doc	Spec	CR	Rev	Phase	Cat	Subject	Old Vers	New Vers	SA1 Doc
SP-030026	22.146	040	-	Rel-6	C	CR to 22.146 - MBMS Cell broadcast in shared network	6.1.0	6.2.0	S1-030154

CR-Form-v7

CHANGE REQUEST

⌘ **22.146 CR 040** ⌘ rev **-** ⌘ Current version: **6.1.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ MBMS Cell broadcast in shared radio network		
Source:	⌘ SA1 (Telia AB)		
Work item code:	⌘ MBMS	Date:	⌘ 22/01/2003
Category:	⌘ C	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ In the current dynamic market place network sharing is an important tool for operators to reduce investment cost. This is valid especially for sparsely populated regions where just one WCDMA carrier is enough for supporting the generated traffic
	It is important that the MBMS broadcast service functions the same way, from a customer point of view, in a shared network as in a non-shared network.
Summary of change:	⌘ It shall be possible to define broadcast services separately for the subscribers and inbound roamers of each one of the operators sharing radio network.
Consequences if not approved:	⌘ The MBMS broadcast service is not fully supported in shared networks.

Clauses affected:	⌘ 5.1.1, 5.3										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other core specifications	⌘
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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<input type="checkbox"/>	<input type="checkbox"/>										
		Test specifications									
		O&M Specifications									
Other comments:	⌘										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>.

Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3.1 Definitions

For the purposes of the present document, the definitions in 3GPP TR 21.905 [1] as well as the following definitions apply.

Broadcast service area: The area in which a specific broadcast service is available. It is defined individually per broadcast service. The broadcast service area may represent the coverage area of the entire PLMN, or part(s) of the PLMN's coverage area. The broadcast service area is the sum of all local broadcast areas offering the same service.

Local Broadcast Area: The area of a broadcast service, where the service content is the same. One broadcast service may have different content in different local broadcast areas.

Broadcast mode: The part of MBMS that supports broadcast services.

Broadcast service: A unidirectional point-to-multipoint service in which data is efficiently transmitted from a single source to multiple UEs in the associated broadcast service area. Broadcast services may be received by all users who have enabled the specific broadcast service locally on their UE and who are in the broadcast area defined for the service.

Broadcast session: A continuous and time-bounded reception of a broadcast service by the UE. A single broadcast service can only have one broadcast session at any time. A broadcast service may consist of multiple successive broadcast sessions.

Mobile Station (MS): Defined in TS 24.002. (The abbreviation "UE" in this specification refers both to MS and User Equipment.)

Multicast transmission activation: The process by which the network activates the transmission of Multicast data.

Multicast service area: The area in which a specific multicast service is available. It is defined individually per multicast service. The multicast service area may represent the coverage area of an entire PLMN, or part(s) of the PLMN's coverage area. The multicast service area is the sum of all local multicast areas offering the same service.

Local multicast area: The area of a multicast service, where the service content is the same. One multicast service may have different content in different local multicast areas.

Multicast mode: The part of MBMS that supports multicast services.

Multicast joining: The process by which a user joins a multicast group.

Multicast session: A continuous and time-bounded reception of a multicast service by the UE. A single multicast service can only have one multicast session at any time. A multicast service may consist of multiple successive multicast sessions.

Multimedia Broadcast/Multicast Service (MBMS): A unidirectional point-to-multipoint service in which data is transmitted from a single source entity to a group of users in a specific area. The MBMS has two modes: Broadcast mode and Multicast mode.

Multicast group: A group of users that have an activated MBMS in multicast mode and therefore are ready to or are receiving data transmitted by this service. The multicast group is a subset of the **Multicast subscription group**. Multicast subscription group members may join the corresponding multicast group.

Multicast service: A unidirectional point-to-multipoint service in which data is efficiently transmitted from a single source to a multicast group in the associated multicast service area. Multicast services can only be received by such users that are subscribed to the specific multicast service and have joined the multicast group associated with the specific service.

Multicast subscription: The process by which a user subscribes or is subscribed to a multicast subscription group and thereby is authorised to join certain multicast services. Multicast subscription is performed either upon user selection or due to home environment initiation.

Multicast Subscription Group: A group of users who are subscribed to a certain MBMS in multicast mode and therefore authorised to join and receive multicast services associated with this group.

User Equipment: defined in TS 21.905. An occurrence of a User Equipment is an MS for GSM as defined in TS 24.002.

FIRST MODIFIED SECTION

High level requirements

5.1 High level requirements

5.1 Broadcast mode

5.1.1 Home environment requirements

- Broadcast services

The PLMN operator shall be able to provision one or more broadcast services within his PLMN.

The operators sharing a network shall be able to provide one or more broadcast services for their own subscribers and inbound roamers from roaming partners only. This shall be applicable for sharing of radio network and for sharing of radio network and the core network entities connected to the radio network.

A broadcast area is configured individually for each broadcast service. Broadcast areas associated with different broadcast services are independent of each other and may overlap.

A broadcast service shall be able to distribute different content data to different locations, i.e. local broadcast areas, within the broadcast service area as shown in figure 3. This allows the user to receive broadcast data depending on his location (e.g. a “nationwide traffic service” with localized traffic reports) Only one location specific version of content data is distributed to each of the individual local broadcast areas, i.e. in any location a user will never receive different content data from a single broadcast service.

It shall be possible to define a broadcast service for only the subscribers and inbound roamers of one of the operators sharing network. The broadcast services transmitted in a broadcast service area of operator A shall only be available to the subscribers and inbound roamers of operator A. The broadcast areas of different sharing operators may cover the same geographical area. This shall be applicable for sharing of radio network and for sharing of radio network and the core network entities connected to the radio network.

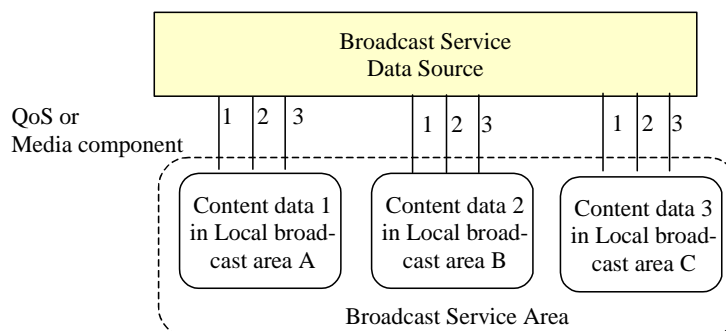


Figure 3 Broadcast Service with different content data for different locations

- Quality of service

The PLMN operator shall be able to configure the quality of service for each individual broadcast service. It should be possible to adapt the MBMS data transmission to different RAN capabilities or different radio resource availability.

The home environment shall be able to set priority to select which simultaneous broadcast services are supported when there is a limit on the resources available.-

- Network and radio efficiency

The PLMN operator shall be able to use network and radio resources in an efficient manner.

NOTE: Allocation of resources based on actual need in the broadcast service area is not applicable for the broadcast mode.

The operator shall be able to schedule a certain broadcast service at pre-determined times.

- Types of data services

MBMS in The broadcast mode shall be transparent for the transferred data packets independent of the type of service being transmitted, will support a number of services, and permit support of and therefore transfer all data types e.g. Audio, Data, Video or combinations thereof. A minimum number of data types may need to be identified to enable interoperability.

- Sources of data services

In addition to supporting their own broadcast services the PLMN shall as well support broadcast services from third parties (i.e. HE-VASPs or VASPs)

- Broadcast service announcements

The PLMN operator shall be able to provide service announcements for a broadcast service within and outside of the broadcast area defined for the service.

5.1.2 User requirements for MBMS

- User mobility

The user shall be able to continue receiving broadcast services throughout the broadcast service area. For example, in case of handover and presuming that a certain broadcast service is offered in the target cell, it should be possible for the user to continue receiving the service in the target cell.

- User selectivity

The user shall be able to discover what broadcast services are available at the user's current location and outside of the current location.

The user shall be able to enable/disable the reception of specific broadcast services and can receive simultaneously more than one MBMS service.

The user may be able to define service preference for reception. A priority procedure may be implemented to allow the user to select between simultaneous broadcast services e.g. while receiving commercial broadcast service a new multicast service may interrupt this.

While receiving one or more broadcast services, it shall be possible for the user to be informed about incoming voice calls or the availability of other MBMS services.

Dependent on terminal capabilities, it shall be possible for the user to participate in other services, while simultaneously participating in MBMS services. For example the user can originate or receive a call or send and receive messages whilst receiving advertisements.

[NEXT MODIFIED SECTION]

5.3 Availability

MBMS in multicast or broadcast mode shall be available to all users that are registered/attached to a PLMN, in case of non-shared network.

In the case of two or more operators sharing infrastructure (e.g. parts of the radio network or sharing of radio network and the core network entities connected to the radio network), it shall be possible for a sharing operator offering MBMS in multicast or broadcast mode to prevent access to these MBMS services by subscribers and inbound roamers of the other operator(s) sharing the same infrastructure.

Within the broadcast or multicast service area, it shall be possible to inform users of up-coming MBMS sessions which they may receive. This may be useful e.g. to initiate UE processes for the reception of MBMS data.

In case of roaming a user should also be able to subscribe and join Multicast Services that are provided locally in the visited network, as allowed by the user's home environment.