Source: SA1

Title: CR to 22.146 on Addition of a concept regarding UE joining time (Rel-6)

Document for: Approval

Agenda Item: 7.1.3

Meeting	SA Doc	TS No.	CR No	Rev	Rel	Cat	Subject	Vers. Current	Vers New	SA1 Doc
SP-24	SP-040291	22.146	043	-	Rel-6	F	Addition of a concept regarding UE joining time	6.4.0	6.5.0	S1-040518

CR-Form-v7

CHANGE REQUEST

| ⌘ | **22.146** CR **043** | ⌘ **rev** | **-** | ⌘ | Current version: | **6.4.0** | ⌘ |

*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: ⌘	Addition of a concept regarding UE joining time	
Source: ⌘	SA1 (Samsung Electronics Co.)	
Work item code: ⌘	MBMS	**Date:** ⌘ 03/05/2004
Category: ⌘	**F**	**Release:** ⌘ Rel-6

Use *one* of the following categories:
F *(correction)*
A *(corresponds to a correction 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.

Use *one* of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
Rel-4   (Release 4)
Rel-5   (Release 5)
Rel-6   (Release 6)

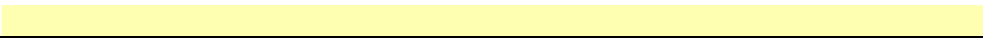|	
Reason for change: ⌘	At January meeting we handled LS from SA3 regarding "Joining availability time" which denotes the starting time after which MBMS users can join MBMS services. SA3 introduced it as a solution for key distribution. SA1's opinion was that a user should be able to join an MBMS user service as soon as possible after announcement of the service therefore SA1 does not see the need for the concept of "Joining Availability Time". Even though this time concept is important for certain WG, MBMS related specifications have no mention about the time between to get an announcement and to join a multicast service. TS 22.146 just contains the transmission time, which means even if a user joins a multicast service user may get the service at a later time. Thus, to give more information to other WG, SA1 should add related contents to MBMS specification.
Summary of change: ⌘	Adding the following sentence to TS 22.146. The user should be able to join a multicast service as soon as possible after the announcement of the service.
Consequences if not approved: ⌘	Missing requirements

Clauses affected: ⌘	4.2.1

	Y	N		
Other specs ⌘	X		Other core specifications	⌘ 23.246,

CR page 1

affected:		**X**	Test specifications	
		X	O&M Specifications	

| *Other comments:*	⌘	

4.2   MBMS multicast mode

The multicast mode allows the unidirectional point-to-multipoint transmission of multimedia data (e.g. text, audio, picture, video) from a single source point to a multicast group in a multicast service area. The multicast mode is intended to efficiently use radio/network resources e.g. data is transmitted over a common radio channel. Data is transmitted in the multicast service area as defined by the network (Home environment). In the multicast mode there is the possibility for the network to selectively transmit to cells within the multicast service area which contain members of a multicast group.

MBMS data transmission should adapt to different RAN capabilities or different radio resource availability, e.g. by reducing the bitrate of the MBMS data. The selection and description of an appropriate mechanism is subject to MBMS stage 2.

A multicast service received by the UE, involves one or more successive multicast sessions. A multicast service might, for example, consist of a single on-going session (e.g. a multimedia stream) or may involve several intermittent multicast sessions over an extended period of time (e.g. messages).

An example of a service using the multicast mode could be a football results service for which a subscription is required.

Unlike the broadcast mode, the multicast mode generally requires a subscription to the multicast subscription group and then the user joining the corresponding multicast group. The subscription and group joining may be made by the PLMN operator, the user or a third party on their behalf (e.g. company). Unlike the broadcast mode, it is expected that charging data for the end user will be generated for this mode.
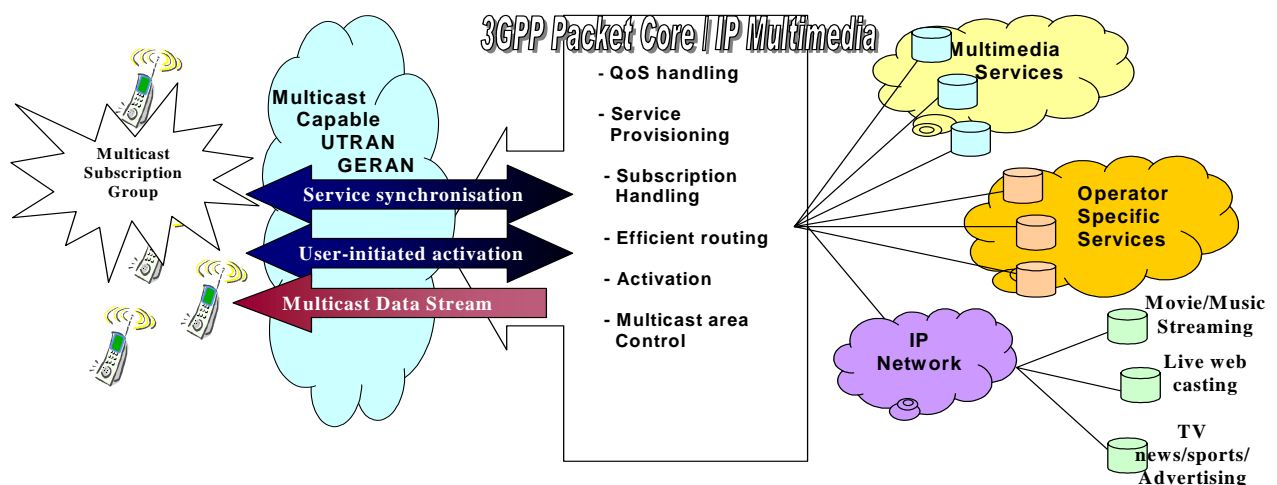
Figure 2: Example of Multicast Mode Network

Reception of multicast services cannot be guaranteed over the access network. For many applications and services guaranteed data reception may be carried out by higher layer services or applications which make use of MBMS.

Multicast mode should allow terminals to minimise their power consumption.

The multicast mode defined in this specification should not be confused with IP Multicast (RFC s 1112, 1301, 1458, 1920 [2]). There are similarities between these two services and such similarities may be exploited in 3GPP networks given that 3GPP multicast mode has been defined with consideration to maximizing efficiency on the radio interface and of network resources.

Multicast mode shall be inter-operable with IETF IP Multicast. This could allow the best use of IP service platforms to help maximize the availability of applications and content so that current and future services can be delivered in a more resource efficient manner. Figure 2 above shows a general high level overview of multicast mode network.

4.2.1　Multicast subscription and reception

The following is the expected sequence for the user to be able to access the MBMS multicast mode:

1　The user subscribes or is subscribed to a multicast subscription group which is uniquely identified and thereby becomes a member of that group. The subscription may be continuous (e.g. as defined by the subscriber's contract), time-limited, or generated by the subscriber on a one-time basis. The subscription to multicast services shall not be further standardized.

2　The user discovers, or becomes aware (e.g. via service announcements), that there are multicast services currently active, or multicast services that will become active at some time later, at the user's current location.

3a)　The user selects a multicast service and hence the user joins the corresponding multicast group. The user should be able to join a multicast service as soon as possible after announcement of the service.

3b)　As an alternative, the Home Environment can join the user to the selected multicast group on behalf of the user, that has previously subscribed to this multicast group.

　　Signalling exchange between the UE and the network might not be necessary in some cases, e.g. in the case of network congestion.

4　If the transmission is not already in progress the network starts transmitting the corresponding multicast content. Alternatively, the transmission may start at a later time.

5　The network may optionally select to set up unicast (point to point) connections to some users e.g. if there are insufficient users to justify multicasting

6　The UE starts receiving the multicast data associated with the multicast group(s) it has joined

7　The user may choose to stop receiving a selected multicast service and thereby leaves the multicast group. The user may also select to continue (or not) to receive service announcements for this multicast subscription group.

8　The user may unsubscribe or be unsubscribed from the multicast subscription group and stop receiving both the multicast data and future service announcements for this multicast subscription group.

The home environment shall be able to remove a user from a multicast group (deactivation) and if required remove the subscriber from the multicast subscription group (un-subscription). This is required to allow the operator to bar service.