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Re:	IEEE P802.16e/D3 Letter Ballot
Abstract	This document contains a suggestion of new MAP IE for Group Messaging Service in IEEE 802.16e.
Purpose	The document is contributed to support certain comment on IEEE P802.16e/D3 Letter Ballot.
Notice	
Release	
Patent Policy and Procedures	

A New MAP IE for Group Messaging Service in IEEE 802.16e

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1. Introduction

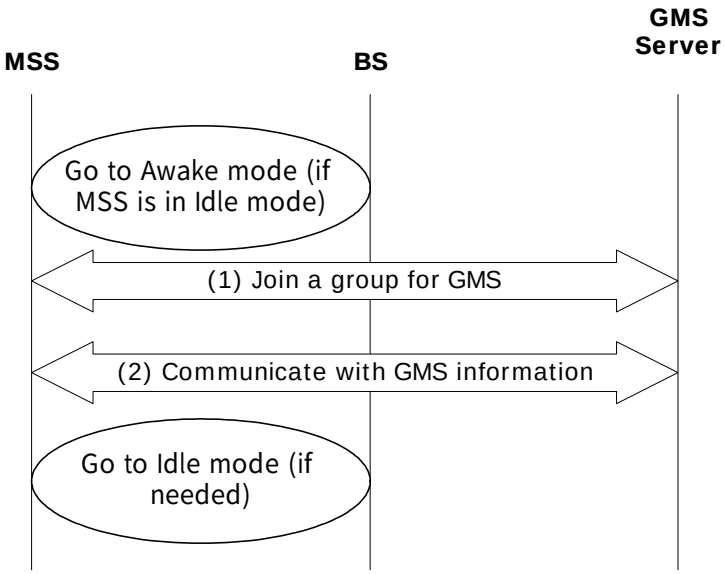
(1) Definition of Group messaging service

Multicast and broadcast data shall be transmitted to MSSs that associated in the specific group or all MSSs in the cell. Radio resources can be saved a lot by transmitting the same data to multiple MSSs at the same time.
Group Messaging Service (GMS) is a service that allows sharing information among group members.
The type of communication can be not only one-to-one but also one-to-many or many-to-many. The advantage of this service is to achieve the efficient use of radio and network resources as well as lessen sender's processing load when sending the same information to multiple users. The type of service could be video conference, messaging service (simple or multimedia) and advertising.

(2) Requirements for GMS

- MSS requirements
  (1) Member identifier: unique, addressable identifier
  (2) Group identifier: MSS could have one more group membership
  (3) Service specific identifier: MSS could have additional right in the group
- GMS server requirements
  (1) Create a group
  (2) Delete a group
  (3) Add members to a group
  (4) Remove member from a group
  (5) Management of member list
  (6) Management of service specific group information.

2. GMS operation in MBS



3. Proposed Text Changes

6.3.13.1 Group Messaging Service (GMS)

In Multicast and Broadcast service, data is transmitted to multiple recipients. Transmitting the same data to multiple recipients allows network resources to be used efficiently. In GMS, MSSs communicate the same information with other members in the same group. GMS uses a group address to share the information among all group members instead of the MSSs' host addresses. We need some group CIDs to transmit the GMS data to all group members efficiently.
If MSSs request to join a multicast group for GMS, BS may establish a connection of GMS by assigning multicast transport CID. To ensure proper GMS operation, the CID used for the group is same for all BSs and MSSs on the same channel that participate in the connection. The data transmitted on the connection with the given CID shall be received. Thus each GMS SDU is transmitted only once per BS channel.

6.3.13.1.1 Establishment of GMS

The MSS can receive GMS by joining a multicast group. The connection establishment of the GMS between the BS and the MSS should be maintained even though the MSS is either in awake, sleep or idle mode.
If MSSs request to join a multicast group for GMS, BS may establish a connection of GMS by assigning multicast transport CID. To ensure the proper GMS operation, the CID used for the group is same for all BSs and MSSs on the same channel that participates in the connection.

6.3.13.1.2 GMS CID assignment

To provide seamless GMS over multiple cells, a unique CID shall be used throughout the whole network.

The GMS CIDs are using the Multicast CIDs in Table 343.

[*Insert this row in Table 343 at the section 10.4*]

Table 343 - CIDs

CID	Value	Description
Initial ranging	0x0000	Used by SS and BS during initial ranging process.
Basic CID	0x0001 – m	The same value is assigned to both the DL and UL connection.
Primary management	m+1 – 2m	The same value is assigned to both the DL and UL connection.
Transport CIDs and secondary Mgt CIDs	2m+1 – 0xFE9F	For the secondary management connection, the same value is assigned to both the DL and UL connection.
Multicast CIDs	0xFEA0 – 0xFEFE	For the downlink multicast service, the same value is assigned to all MSSs on the same channel that participate in the connection.
AAS initial ranging CID	0xFEFF	A BS supporting AAS shall use this CID when allocating a Initial Ranging period for AAS devices
Multicast polling CIDs	0xFF00 – 0xFFFD	An SS may be included in one or more multicast polling groups for the purposes of obtaining bandwidth via polling. These connections have no associated service flow.
Padding CID	0xFFFE	Used for transmission of padding information by SS and BS.
Broadcast CID	0xFFFF	Used for broadcast information that is transmitted on a downlink to all SS.

6.3.13.1.3 Transmission of packets for a seamless GMS among multiple cells

BSs can transmit MAC PDUs for a seamless GMS on the connection with the given CID. Thus each GMS SDU is transmitted only once per BS channel

8.4.5.3.10 GMS MAP IE (GMS_MAP_IE)

In the DL-MAP, a BS may transmit DIUC=15 with the GMS_MAP_IE() to indicate when the next data for a GMS flow will be transmitted. The offset value is associated with a CID value, and indicates the frame that the next data will be transmitted in by using the CID value. The offset value is an integer value and the next frame is calculated by adding the current frame number and offset value.

Table xxx—Group Messaging Service MAP IE

Syntax	Size	Notes
GMS_MAP_IE {		
Extended DIUC	4 bits	GMS_MAP
Length	4 bits	Length = 0x03
CID	16 bits	
Offset	8 bits	
}		