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| Project | **IEEE 802.16 Broadband Wireless Access Working Group <**<http://ieee802.org/16>**>** | |
| Title | **Clarification of M2MCID Update** | |
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| Re: | WG Letter Ballot #33a | |
| Abstract | This contribution proposes to remove unnecessary M2MCID update scenario from 802.16p draft. | |
| Purpose | For discussion in 802.16p TG and adoption in to 16p draft | |
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**Clarification of M2MCID Update**

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# Introduction

According to the current 16p draft, there are two kinds of M2MCID update. One is an M2MCID update within an M2M GROUP ZONE and the other is an M2MCID update across M2M GROUP ZONE. However, there is no clear use case for M2MCID update within M2M GROUP ZONE.

During M2M ad hoc, usage scenario for M2MCID update within M2M GROUP ZONE was submitted and discussed. But, the submitted scenario was still unclear. According to the scenario, a BS may update M2MCID of all M2M devices when the BS can’t assign a new M2MCID to newly installed M2M devices because there is no more available M2MCID. In this case, a service provider shall re-configure M2M GROUP ZONE. Otherwise, the BS can’t resolve this problem because the maximum number of M2MCIDs within an M2M GROUP ZONE is fixed. It needs to be more investigated whether or not a simple M2MCID update procedure is enough to deal with such re-configuration of M2M GROUP ZONE. If BS reset needs to be performed due to ZONE re-configuration, M2MCID will be updated during BS reset procedure.

In order to support M2MCID update within M2M GROUP ZONE, one-way ACK mechanism is also defined in the current draft. If an M2M device receives MGMC message or MOB\_PAG-ADV message with action code set to 0b11 (Re-assignment of M2MCID), then it shall transmit RNG-REQ message to acknowledge the reception of new M2MCID. The main benefit of this mechanism is DL overhead reduction. However, DL overhead is not critical compared with UL overhead. Moreover, we can’t expect big benefit from this scheme because M2MCID update within M2M GROUP ZONE happens rarely. In addition, from a protocol design perspective, two-way message handshake is more preferred if a control message changes device’s status and may affect synchronization between BS and M2M device.

In this contribution, we propose to remove a concept of M2MCID update within M2M GROUP ZONE and related control messages and parameters from the current draft.

# Proposed Texts

----------------- Start of the text proposal --------------------------------------------------------------------------------------

[*Remedy 1: Modify texts on page 4, line 34 as follows;*]

During Idle Mode, the M2MCID may be changed by a location update procedure or during network reentry through the RNG-RSP message. The BS can trigger the group location update via paging message. During HO, the M2MCID may be changed during network reentry through RNG-RSP message or REG-RSP message. ~~In Nor­mal Operation, the BS can update the M2MCID for a M2M device group using the MAC Group Manage­ment Control (MGMC) message.~~

When the M2M device performs the timer based location update, if the BS needs to update the M2MCID of M2M device, the BS may send a RNG-RSP message with a new M2MCID in response to the RNG-REQ message.

~~A BS may use the MOB\_PAG-ADV message to indicate the update of the M2MCID and its new value to all the M2M devices in a group. When an idle mode M2M device that belongs to the M2M device group (iden­tified by its M2MCID) receives a paging message containing an M2MCID identifying one of its service flows and an Action Code TLV with value set to 0b11, this M2M device shall update the M2MCID based on the value indicated by M2MCID Re-assignment TLV (see 11.17.5).~~

~~After receiving the updated M2MCID value, the M2M device shall send an acknowledgement (ACK) to the BS.~~

~~If the BS does not receive an acknowledgement from some of the M2M devices, it may repeat the procedure in the next paging cycle of those M2M devices or it may send a RNG-RSP message containing the new M2MCID to each of them.~~

~~The BS may use the M2M Group MAC Control (MGMC) message with the M2MCIDs to send the informa­tion to multiple M2M devices. The M2M device shall respond to acknowledge this message with M2M ACK MAC Control (MAMC) message.~~

[*Remedy 2: Modify Table 53 on page 5 as follows;*]

**Table 53 – MAC management messages**

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Message Name | Message description | Connection |
| … |  |  |  |
| 110 | MOB\_MTE-IND | Multicast transmission end indicator | Broadcast |
| ~~111~~ | ~~MGMC~~ | ~~M2M Group MAC Control Message~~ | ~~Broadcast~~ |
| ~~112~~ | ~~MAMC~~ | ~~M2M ACK MAC Control Message~~ | ~~Basic~~ |
| 111~~113110~~-255 |  |  |  |

[*Remedy 3: Modify texts on page 6, line 11 as follows;*]

The following parameter may be included when an M2M device performs ranging:

**Ranging Retries**

The number of ranging retries in the current ranging attempt.

~~The following TLV parameter may be included in a RNG-REQ message when M2MCID is updated in an M2M device.~~

**~~M2MCID Update Acknowledgement Indicator~~**

~~This TLV is used to acknowledge the receipt of an M2MCID update.~~

[*Remedy 4: Remove Section 6.3.2.3.99 MGMC (M2M group MAC Control) entirely*]

[*Remedy 5: Remove Section 6.3.2.3.100 MAMC (M2M ACK MAC Control) entirely*]

[*Remedy 6: Modify Table 685 on page 29 as follows*]

**Table 685 – RNG-REQ message encodings**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NAME | Type | Length | Value | PHY scope |
| … |  |  |  |  |
| MIMO feedback information | 41 | 1 | Bit 0: Matrix indicator. This field suggests the preferred STC/MIMO matrix for the MS:  0b0: Matrix A  0b1: Matrix B  Bits 1-4: DL effective CINR as defined in Table 520  Bits 5-7: Reserved | All |
| ~~M2MCID Update Acknowledgement Indicator~~ | ~~42~~ | ~~1~~ | ~~Bit 0: set to 1 to indicate that new M2MCID was received~~  ~~Bits 1-7:~~ *~~Reserved~~* | ~~OFDMA~~ |
| M2M Bandwidth Request | ~~43~~42 | 2 | Bits 0-10: BR size  Bits 11-15: *Reserved* | OFDMA |
| SFID | ~~44~~43 | 4 | - | OFDMA |

[*Remedy 7: Modify texts on page 33, line 57 as follows*]

The following TLV element shall appear in each M2M device group paging parameter TLV.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Length** | **Value** |
| M2MCID | 156.1 | 2 | Bits 0-14: Indicates M2M device group ID for which the multicast traffic is scheduled  Bit 15: Padding, Will be set to 0 |
| Action code | 156.2 | 1 | Bits 0-1: Indicates Action code for the M2M device group ID  0b00 – Performing network reentry  0b01 – Performing location update  0b10 – Receiving multicast traffic without requiring network reentry  0b11 – *Reserved*~~Re-assignment of M2MCID~~  Bits 2-7: Padding, Will be set to 0 |

The following TLV element may appear in each M2M device group paging parameter TLV only when the value of Action code TLV is set to 0b10.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Length** | **Value** |
| Multicast transmission start time (MTST) | 156.3 | 1 | Least significant 8 bits of the frame number in which the BS starts sending DL multicast data |

~~The following TLV element shall appear in each M2M device group paging parameter TLV if Action code is set to 0b11 (which identifies Re-assignment of M2MCID)~~

|  |  |  |  |
| --- | --- | --- | --- |
| **~~Name~~** | **~~Type~~** | **~~Length~~** | **~~Value~~** |
| ~~M2MCID Re-assignment for M2M~~ | ~~156.4~~ | ~~2~~ | ~~New M2MCID (15 bits)~~ |

----------------- End of the text proposal ---------------------------------------------------------------------------------------