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| Title | **Clarification of MGID Update** | |
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| Re: | WG Letter Ballot #36 | |
| Abstract | This contribution proposes to remove unnecessary MGID update scenario from 802.16.1b draft. | |
| Purpose | For discussion in M2M TG and adoption into 16.1b draft | |
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**Clarification of MGID Update**

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# Introduction

According to the current 161.b draft, there are two kinds of MGID update. One is an MGID update within an M2M GROUP ZONE and the other is an MGID update across M2M GROUP ZONE. However, there is no clear use case for MGID update within M2M GROUP ZONE.

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

In order to support MGID update within M2M GROUP ZONE, one-way ACK mechanism is also defined in the current draft. If an M2M device receives MGMC message or AAI\_PAG-ADV message with action code set to 0b11 (Re-assignment of MGID), then it shall transmit AAI-MSG-ACK message to acknowledge the reception of new MGID. 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 MGID 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 ABS and M2M device.

In this contribution, we propose to remove a concept of MGID 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 5, line 11 as follows;*]

During the idle state, the MGID may be changed by location update or network reentry. When the ABS changes the MGID of all M2M devices within the multicast group, the ABS can trigger the group location update via paging message. When the M2M device performs the timer based location update, if the ABS needs to update the MGID of M2M device, the AAI-RNG-RSP message with new MGID is sent by the ABS in response to the AAI-RNG-REQ message.

~~An ABS may use AAI-PAG-ADV to indicate the update of MGID 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 MGID) receives a paging message directed to its MGID and the Action Code is set to 0b11, this M2M device shall update its MGID based on the new MGID value indicated.~~

~~After receiving the updated MGID value, the M2M device shall send an acknowledgement (ACK) message to the ABS. This ACK message may be carried in the AAI-MSG-ACK message. If the ABS does not receive the acknowledgement message from any of the M2M devices belonging to that M2M device group which MGID was updated, it assumes that those M2M devices missed the MGID update information. In the next paging cycle the ABS may ask those M2M devices to perform location update and may send them a unicast message with the new MGID value (AAI-RNG-RSP).~~

~~The ABS may use the M2M device group MAC Control (MGMC) message with the MGID to send the information to multiple M2M devices. The AMS shall respond to acknowledge this message with AAI-MSG-ACK defined in 6.2.3.36.~~

[*Remedy 2: Modify Table 26 on page 7 as follows;*]

**Table 26 – MAC Control messages**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. | Functional areas | Message names | Message description | Security | Connection |
| 70 | RELAY | AAI-ARS-CONFIG-CMD | ARS configuration Command | N/A | Unicast |
| ~~70~~ | ~~M2M~~ | ~~AAI-MGMC~~ | ~~M2M device group MAC Control~~ | ~~N/A~~ | ~~Broadcast~~ |
| 71-255 |  |  | Reserved |  |  |

[*Remedy 3: Modify Table 49 on page 21 as follows;*]

**Table 49 – AAI-PAG-ADV message field description**

|  |  |  |  |
| --- | --- | --- | --- |
| Field | Size  (bits) | Value/Description | Condition |
| … |  |  |  |
| For (i=0; i<Num\_MGID; i++) { |  | Num\_MGID indicates the number of MGIDs included in this paging message [0..63] | Shall be included if the ABS sends DL multicast data for M2M after transmission of the AAI-PAG-ADV message |
| MGID | 12 | M2M Group ID |  |
| Zone Index | 2 | Zone Index corresponding to an M2M GROUP ZONE ID based on the implicit ordering of the M2M GROUP ZONE IDs in the broadcast message | Present if ABS is part of more than one M2M group zone. |
| Action Code | 2 | 0b00: Performing network reentry  0b01: Performing location update  0b10: Receiving multicast traffic without requiring network reentry  0b11: *Reserved*~~MGID re-assignment~~ |  |
| … |  |  |  |
| ~~If (Action Code == 0b11) {~~ |  |  |  |
| ~~New MGID~~ | ~~12~~ | ~~New MGID~~ |  |
| ~~M2M\_Group\_Zone\_Index~~ | ~~2~~ | ~~M2M Group Zone Index of the corresponding M2M GROUP ZONE ID that the MGID belongs to~~ | ~~Present if ABS is part of more than one M2M group zone.~~ |
| ~~}~~ |  |  |  |
| } |  |  |  |
| Ranging backoff window indicator | 1 | 0b0: increasing the ranging backoff window size by a factor of 2 per every ranging retry  0b1: decreasing the ranging backoff window size by a factor of 2 per every ranging retry as described in 6.2.18.7.2 | If initial ranging backoff start field is present |
| … |  |  |  |

[*Remedy 4: Remove Section 6.2.3.65 AAI-MGMC (M2M device group MAC Control) entirely*]

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