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| Project | **IEEE 802.16 Broadband Wireless Access Working Group <**<http://ieee802.org/16>**>** | |
| Title | **Acknowledgement to the Reception of AAI-PAG-ADV Message** | |
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| Re: | Sponsor Ballot Recirculation on P802.16.1b/D3 | |
| Abstract | This contribution proposes to change the procedure for acknowledging the reception of AAI-AG-ADV message. | |
| Purpose | For discussion in M2M TG and adoption into 16.1b draft | |
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**Acknowledgement to the Reception of AAI-PAG-ADV Message**

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# Introduction

According to the current draft, if M2M device in idle mode receives AAI-PAG-ADV message which contains MGID update information, it shall send acknowledgement through AAI-MSG-ACK message. In my understanding, the purpose of using AAI-MSG-ACK message is to send acknowledgement without performing location update or network reentry. However, an ABS can’t recognize which M2M device has sent AAI-MSG-ACK message because the AAI-MSG-ACK message doesn’t contain any information on device identification.

In this contribution, we propose to use AAI-RNG-REQ message to acknowledge the reception of MGID information included in AAI-PAG-ADV message instead of using AAI-MSG-ACK message. If M2M device in idle mode receives AAI-PAG-ADV message which contains new MGID, it sends AAI-RNG-REQ message with ranging purpose indication set to 0b0011 (idle mode location update) and MGID update acknowledgement indication in order to acknowledge the reception of new MGID included in AAI-PAG-ADV message.

The procedure proposed in this contribution is consistent with acknowledgment procedure defined in 16p draft. In 16p draft, acknowledgement to MGMC message (during normal operation) is carried by MAMC message while acknowledgement to MOB\_PAG-ADV message (during idle mode) is carried by RNG-REQ message.

# Proposed Texts

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

[***Remedy 1: Modify texts on page 5, line 31 as follows***]

~~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.~~ After receiving AAI-PAG-ADV message which contains new MGID, the M2M device shall send AAI-RNG-REQ message with ranging purpose indication set to 0b0011 (idle mode location update) and MGID acknowledgement indication to acknowledge the reception of the AAI-PAG-ADV message. If the ABS does not receive the acknowledgement ~~message~~ from some 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 to acquire the new MGID value through the AAI-RNG-RSP message.

[***Remedy 2: Modify Table 27 on page 10 as follow***]

Table 27 – AAI-RNG-REQ message field description

|  |  |  |  |
| --- | --- | --- | --- |
| Field | Size  (bits) | Value/Description | Condition |
| … |  |  |  |
| } else if (Ranging Purpose Indication == 0b0011|0b0110|0b0111|0b1011) { |  |  |  |
| … |  |  |  |
| M2M short data burst encryption indicator | 1 | Indicate that the included M2M short data burst is encrypted.  0b0: not encrypted  0b1: encrypted | Present if M2M device includes M2M short data burst in this message |
| Current-M2M-GROUP-ZONE-D | 12 | M2M-GROUP-ZONE-ID for the current MGID | Present when the M2M device does not have the information of new M2M Group Zone. |
| For (i=0; i<Num-MGID; i++) { |  |  |  |
| Current-MGID | 12 | Current MGID | Present when the M2M device does not have the information of new M2M Group Zone |
| } |  |  |  |
| MGID acknowledgement indication | 1 | Indicate that new MGID was received successfully | Shall be present when the M2M device sends this message to acknowledge the reception of new MGID included in AAI-PAG-ADV message. |
| }~~//end of Ranging Purpose Indication~~else if (Ranging Purpose Indication == 0b1110) { |  | //Abnormal or involuntary power down |  |

**[*Remedy 3: Add the following texts on page, line 59 as follow*]**

LocationUpdate ::= SEQUENCE {

addressOrDID AddressOrDID,

pagingControlInfo PagingControlInfo,

pagingCycleChange PgCycle OPTIONAL,

pagingCarrierUpdate INTEGER (0..63) OPTIONAL,

akCount AKCount OPTIONAL,

amsMobility AMSMobilityLevel OPTIONAL,

smsMessage SMS OPTIONAL,

mgidAckIndication BIT STRING (SIZE (1)) OPTIONAL, -- M2M devices only

...

}

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