
Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Clarification on MAC control messages in IEEE 802.16.1a	
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Re:	In response to Sponsor Ballot on P802.16.1a	
Abstract	Comments on MAC control message table in GRIDMAN Draft Standard	
Purpose	To discuss and adopt the proposed text in the draft amendment document on GRIDMAN	
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Clarification on MAC control messages in IEEE 802.16.1a

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1. Introduction

This document provides some comment on MAC control messages in Table 29, P802.16.1a.

2. References

- [1] IEEE 802.16-12-0132-00, GRIDMAN System Requirement Document including SARM annex, January 2012.
- [2] IEEE P802.16nTM/D5, Air Interface for Broadband Wireless Access Systems - Draft Amendment: Higher Reliability Networks, June 2012.
- [3] IEEE P802.16.1aTM/D5, WirelessMAN-Advanced Air Interface for Broadband Access Systems - Draft Amendment: Higher Reliability Networks, June 2012.
- [4] IEEE P802.16TM-2012, IEEE Standard for Air Interface for Broadband Wireless Access Systems,” August 2012.
- [5] IEEE P802.16.1TM-2012, IEEE Standard for WirelessMAN-Advanced Air Interface for Broadband Wireless Access Systems, September 2012.

3. Proposed Text on the IEEE 802.16.1a Amendment Draft Standard

[-----Start of Text Proposal-----]

[Remedy: change Table 29, page 7 on P802.16.1a/D5 as follows:]

Table 29 - MAC Control messages

No.	Functional Areas	Message names	Message description	Security	Connection
24	Security	AAI-PKM-RSP	Privacy Key Management Response	Before AK is derived at network entry: NULL at network entry and EAP-transfer message is enclosed: encryption/ICV after AK is derived after AK is derived at network entry and the other message is enclosed: CMAC	Unicast or <u>Multi-cast</u>
71	<u>Multimode</u>	<u>AAI-MM-ADV</u>	<u>Multimode advertisement</u>	<u>N/A</u>	<u>Broadcast</u>
72	<u>Multimode</u>	<u>AAI-MM-RS-REQ</u>	<u>Multimode Relay request</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
73	<u>Multimode</u>	<u>AAI-MM-RS-RSP</u>	<u>Multimode Relay response</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
74	<u>Multimode</u>	<u>AAI-MM-RL-REQ</u>	<u>Multimode release request</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
75	<u>Multimode</u>	<u>AAI-MM-RL-RSP</u>	<u>Multimode release response</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
76	<u>Multimode</u>	<u>AAI-MM-BS-REQ</u>	<u>Multimode Base station request</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
77	<u>Multimode</u>	<u>AAI-MM-BS-RSP</u>	<u>Multimode Base station response</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
78	<u>Multimode</u>	<u>AAI-MM-BS-CMD</u>	<u>Multimode Base station command</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
79	<u>Multimode</u>	<u>AAI-MM-RS-SYN-REQ</u>	<u>Multimode Relay Synchronization request</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>

Table 29 - MAC Control messages

No.	Functional Areas	Message names	Message description	Security	Connection
80	<u>Multimode</u>	<u>AAI-MM-RS-SYN-RSP</u>	<u>Multimode Relay Synchronization response</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
81	<u>BS-controlled direct communication</u>	<u>AAI-HR-RNG-CMD</u>	<u>HR-MS/HR-MS ranging command</u>	<u>Encrypted/ICV</u>	<u>Unicast or multicast or broadcast</u>
82	<u>BS-controlled direct communication</u>	<u>AAI-HR-RNG-REP</u>	<u>HR-MS/HR-MS ranging report</u>	<u>Encrypted/ICV</u>	<u>Unicast or multicast or broadcast</u>
83	<u>BS-controlled direct communication</u>	<u>AAI-HR-PCC</u>	<u>Power Control Configuration</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
84	<u>BS-controlled direct communication</u>	<u>AAI-DC-LC-REQ</u>	<u>Link Creation Request</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
85	<u>BS-controlled direct communication</u>	<u>AAI-DC-LC-RSP</u>	<u>Link Creation Response</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
86	<u>BS-controlled direct communication</u>	<u>AAI-DC-LD-REQ</u>	<u>Link Deletion Request</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
87	<u>BS-controlled direct communication</u>	<u>AAI-DC-LD-RSP</u>	<u>Link Deletion Response</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
88	<u>BS-controlled direct communication</u>	<u>AAI-DC-LR-REQ</u>	<u>Link Status Report Request</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
89	<u>BS-controlled direct communication</u>	<u>AAI-DC-LR-RSP</u>	<u>Link Status Report Response</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
90	<u>Talk-around direct communication</u>	<u>AAI-DC-LEST-REQ</u>	<u>Link Establishment Request</u>		<u>Unicast</u>
91	<u>Talk-around direct communication</u>	<u>AAI-DC-LEST-RSP</u>	<u>Link Establishment Response</u>		<u>Unicast</u>
92	<u>Talk-around direct communication</u>	<u>AAI-DC-LEST-CMD</u>	<u>Link Establishment Command</u>		<u>Multicast</u>
93	<u>Talk-around direct communication</u>	<u>AAI-DC-MES-REP</u>	<u>Measurement Report</u>		<u>Unicast</u>
94	<u>Talk-around direct communication</u>	<u>AAI-DC-MES-CMD</u>	<u>Measurement Command</u>		<u>Unicast or Multicast</u>
95	<u>Talk-around direct communication</u>	<u>AAI-DC-RCHG-REQ</u>	<u>Resource Change Request</u>		<u>Unicast</u>

Table 29 - MAC Control messages

No.	Functional Areas	Message names	Message description	Security	Connection
96	<u>Talk-around direct communication</u>	<u>AAI-DC-RCHG-RSP</u>	<u>Resource Change Response</u>		<u>Unicast</u>
97	<u>Talk-around direct communication</u>	<u>AAI-DC-RCHG-CMD</u>	<u>Resource Change Command</u>		<u>Unicast or Multicast</u>
98	<u>Talk-around direct communication</u>	<u>AAI-DC-TKN-REQ</u>	<u>Token Request</u>		<u>Unicast</u>
99	<u>Talk-around direct communication</u>	<u>AAI-DC-TKN-RSP</u>	<u>Token Response</u>		<u>Unicast</u>
100	<u>Talk-around direct communication</u>	<u>AAI-DC-TKN-HO</u>	<u>Token Handover</u>		<u>Unicast</u>
101	<u>Talk-around direct communication</u>	<u>AAI-DC-TKN-ADV</u>	<u>Token Advertisement</u>		<u>Multicast</u>
102	<u>Talk-around direct communication</u>	<u>AAI-DC-LREL-CMD</u>	<u>Link Release Command</u>		<u>Unicast or Multicast</u>
103	<u>Talk-around direct communication</u>	<u>AAI-DC-DSA-CMD</u>	<u>Dynamic Service Addition Command</u>		<u>Unicast or Multicast</u>
104	<u>Talk-around direct communication</u>	<u>AAI-DC-DSC-CMD</u>	<u>Dynamic Service Change Command</u>		<u>Unicast or Multicast</u>
105	<u>Talk-around direct communication</u>	<u>AAI-DC-DSD-CMD</u>	<u>Dynamic Service Delete Command</u>		<u>Unicast or Multicast</u>
106	<u>Talk-around direct communication</u>	<u>AAI-DC-RTS</u>	<u>Request to Send</u>		<u>Unicast or Multicast or broadcast</u>
107	<u>Talk-around direct communication</u>	<u>AAI-DC-CTS</u>	<u>Clear to Send</u>		<u>Unicast</u>
108	<u>Talk-around direct communication</u>	<u>AAI-DC-CFG-CMD</u>	<u>Configuration Command</u>		<u>Unicast</u>
109	<u>Talk-around direct communication</u>	<u>AAI-DC-RELAY-ADV</u>	<u>Relay Advertisement</u>		<u>Broadcast</u>
110	<u>Talk-around direct communication</u>	<u>AAI-DC-RELAY-REQ</u>	<u>Relay Request</u>		<u>Unicast</u>
111	<u>Talk-around direct communication</u>	<u>AAI-DC-RELAY-RSP</u>	<u>Relay Response</u>		<u>Unicast</u>

Table 29 - MAC Control messages

No.	Functional Areas	Message names	Message description	Security	Connection
112	Talk-around direct communication	AAI-DC-MM-ADV	MS list Advertisement		Broadcast or multicast or unicast
113	Talk-around direct communication	AAI-DC-LU-REQ	MS List Update Request		Unicast
114	Talk-around direct communication	AAI-DC-LU-RSP	MS List Update Response		Unicast
115	BS-controlled HR-MS forwarding to network	AAI-FN-CONFIG-CMD	Forwarding to network configuration		Unicast or multicast
112	Talk-around direct communication	AAI-DC-FWD-ADV	Forwarding advertisement		Broadcast
113	Talk-around direct communication	AAI-DC-FWD-JOIN	Forwarding Join		Unicast
116 114	BS-controlled HR-MS forwarding to network	AAI-FN-RNG-ACK	Acknowledging successful receiving of ranging preamble by forwarding HR-MS		Broadcast (toward new HR-MS that is carrying out network entry through the forwarding HR-MS)
117 115	BS-controlled HR-MS forwarding to network	AAI-FN-RNG-FLU	HR-BS/RS selects one or group of HR-MS to follow-up with the ranging process of new HR-MS	Encrypted/ICV	Unicast or multicast
118 116	BS-controlled HR-MS forwarding to network	AAI-MSPG-GRP	HR-MS Paging Group List (Add/Delete)		Unicast
119 117	BS-controlled HR-MS forwarding to network	AAI-MSPG-PG	HR-MS Paging Group Configuration		Multicast
120 118	Standalone	AAI-SA-BPAG-ADV	Blind Page Advertisement Message		Broadcast

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No.	Functional Areas	Message names	Message description	Security	Connection
121 119	<u>Standalone</u>	<u>AAI-SA-BPAG-ACK</u>	<u>Blind Page ACK message</u>		<u>Unicast</u>
122 120	<u>Path management</u>	<u>AP-NBR-REQ</u>	<u>Alternative Path Neighbor Request</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
123 121	<u>Path management</u>	<u>AP-NBR-REP</u>	<u>Alternative Path Neighbor Report</u>	<u>Encrypted/ICV</u>	<u>Unicast</u>
124 122	<u>Multicast</u>	<u>AAI-HR-MG-IND</u>	<u>Multicast Group Indication Message</u>		<u>Broadcast</u>
125 123	<u>Multicast</u>	<u>AAI-HR-MT-IND</u>	<u>Multicast Traffic Indication Message</u>		<u>Broadcast or Multicast</u>
126 124	<u>Multicast</u>	<u>AAI-HR-DSC-CMD</u>	<u>Multicast-based Service Flow Change</u>	<u>Encrypted/ICV by Multicast Key</u>	<u>Multicast</u>
127 125	<u>Multicast</u>	<u>AAI-HR-DSD-CMD</u>	<u>Multicast-based Service Flow Delete</u>	<u>Encrypted/ICV by Multicast Key</u>	<u>Multicast</u>

[-----End of Text Proposal-----]