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Title	Management Connection through Dedicated Multicast CIDs.	
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Re:	Response to Sponsor Ballot	
Abstract	Management Connection through Dedicated Multicast CIDs in 802.16e	
Purpose	Adoption of proposed changes into P802.16e	
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Management Connection through Designated Multicast CIDs.

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1. Introduction

In this contribution, Multicast Network Management CIDs are introduced. If an MSS decides to use Mobile IP or IPv6 for Data or Management, not only unicast layer 3 control signal but also broadcast control signal from the network should be delivered to the number of MSSs for IP interface management.

If the broadcast control messages are not delivered, each and every MSSs, which are supposed to receive broadcast layer 3 control messages periodically, will generate layer 3 signal, e.g, Agent Solicitation, or Router Solicitation and unicast reply from the router or Agent to MSSs will be generated. This is waste of bandwidth. Especially in IPv6, this is serious because Advertisement interval is very short (mean time between unsolicited muticast router advertisements: 50ms [IETF RFC 3775]).

Under current specification, broadcasting over the data IP interface can be supported by assigning specific multicast connection CID for broadcast traffic. In this way, more than one virtual group can be defined. However, delivering broadcasting control signal from the network over the traffic multicast connection has several disadvantages. Because creation of multicast connection needs DSA procedure before L3 signaling broadcast, more time is required for MSS to enter the network than using pre-defined Multicast Network Management CID. Whenever MSS performs handover, Multicast Transport CID update should be done. MSSs in Idle Mode while maintaining IP connectivity can not be managed with multicast transport CIDs.

In order to overcome disadvantages introduced above, we propose to define several Multicast Network Management CIDs to be used to deliver layer 3 control signals to MSSs. Multicast Network Management CID is pre-defined value. Once a Multicast Network Management CID for layer 3 control signal is assigned to a MSS, MSS learns to monitor the specific CID value for layer 3 control signal since values are same over all BSs.

2. Proposed Text Changes in Document

Remedy1:

[In 6.3.10 Establish IP connectivity, page 92, line 52, add]:

For fixed SS and for MSSs using IPv6, the SS shall either invoke DHCPv6 [IETF RFC 3315] or IPv6 Stateless Address Autoconfiguration [IETF RFC 2462] based on the value of TLV tuple in REG_RSP. SSs and MSSs using Mobile IPv4 or IPv6 shall receive advertisement through multicast network management connection in order to manage IP connectivity. Multicast network management connection is established through assigned multicast network management CID in the REG-RSP message. Multicast network management connection is pre-configured with same multicast network management CID value depending on protocol type between BSs. SSs and MSSs using Mobile IPv4 or IPv6 shall monitor assigned multicast network management CID regardless of MSS's modes to manage IP connectivity.

Establishment of IP connectivity shall be performed on the SS's Secondary Management Connection; see Table 96.

Remedy2:

Define a multicast network management connection to inform the MSS of multicast network management connection.

[In 11.7 REG-REQ/RSP management message encodings, page 291, line 65, add new section; editor to make appropriate allocation to number pp for Type]:

11.7.20 Multicast management connection

Depending on the reported method for allocation IP address in REG-REQ, the BS informs the MSSs of multicast network management CID.

<u>Name</u>	<u>Type</u>	<u>Length</u>	<u>Value</u>
<u>Multicast network management CID</u>	<u>pp</u>	<u>2</u>	<u>16 bit CID value</u>

Remedy3:

Add Multicast Network Management CIDs to the Table 343 CIDs.

[In 10.4 Well-known addresses and identifiers, page 274, line 48, modify and append to 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 secondary Mgt CIDs	CIDs 2m+1 - 0xFE9F	For the secondary management connection, the same value is assigned to both the DL and UL connection.
Multicast CIDs	0xFE A0 0xFE FD FC	-For the downlink multicast service, the same value is assigned to all MSSs on the same channel that participate in the connection.
<u>Multicast Network Mgt CIDs</u>	<u>0xFE FD</u> <u>0xFE FE</u>	<u>Used for transmission of IP related multicast message to all managed MSSs.</u> <u>0xFE FD: Mobile IPv4</u> <u>0xFE FE: IPv6</u>
AAS initial ranging CID	0xFE FF	A BS supporting AAS shall use this CID when allocating a Initial Ranging period for AAS devices
Multicast polling CIDs	0xFF 00 0xFF FD	-An SS may be included in one or more multicast polling groups for the purposes of obtaining bandwidth via polling.
Padding CID	0xFF E	Used for transmission of padding information by SS and BS.
Broadcast CID	0xFF F	Used for broadcast information that is transmitted on a downlink to all SS.