Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Fix Improper SS/MS Changes in 6.3.2.3.26 DREG-CMD message**
Date Submitted	**2005-7-18**
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Re:	Fix Improper SS/MS Changes in 6.3.2.3.26 DREG-CMD message
Abstract	Current proposed language changes in 802.16e/D9 to 6.3.2.3.26 DREG-CMD messages breaks backwards compatibility, is out-of-scope of the 16e PAR
Purpose	Provide remedy to fix identified problems to bring document back into conformance with the 16e PAR while preserving the added functionality
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Fix Improper SS/MS Changes in 6.3.2.3.26 DREG-CMD message
Phillip Barber
Huawei

Problem:

Again, inappropriate SS to MS changes from the 802.16-2004 documents that would remove necessary specification for 802.16-2004 compliant SS breaking backwards compatibility thus is out-of-scope of the 16e PAR.

Simple remedy is to change the MS back to SS where appropriate in the Table. This MUST be fixed.

Also, in Action Code 2 actions, correcting improper Action Code response to resume Normal Operation specified. Says '0x00' but should be '02 or 03'.

[Phil Barber: 2005-6-10] Based on comments received from Ori Zivan, clarify language in 0x7 so that it is clear that a subsequent DREG-CMD that includes Code 0x3 will end the restriction of 0x7.

[Phil Barber: 2005-7-14] Fix D9 Accepted-Modified remedy horrible mangling of this section.

[Phil Barber: 2005-7-18] Adjusted MAC Hash Skip Threshold description per comment 6057

[Phil Barber: 2005-7-18] Removed IDLE Mode operation language inappropriately copied in this section from the Idle Mode operation section, as per comment 6058.

Remedy:

[In 6.3.2.3.26 De/Re-register command (DREG-CMD) message, page 58, line 42 through page 61, line 14; **replace entire subsection in the D9 document**, including editorial instruction, as:]
6.3.2.3.26 De/Re-register command (DREG-CMD) message

[Change Table 55 as indicated:]

Table 55—Action codes and actions

Action Code (hexadecimal)	Action
00	SS shall ~~leave the current channel and attempt to access another channel~~immediately terminate service with the BS and should attempt network entry at another BS
01	SS shall listen to the current ~~channel~~BS but shall not transmit until an RES-CMD message or DREG_CMD with Action Code ~~that allows transmission~~02 or 03 is received.
02	SS shall listen to the current ~~channel~~BS but only transmit on the Basic~~,~~ and Primary Management~~, and Secondary Management Connections~~.
03	SS shall return to normal operation and may transmit on any of its active connections.
04	SS shall terminate current Normal Operations with the BS; the

	BS shall transmit this action code only in response to any SS DREG-REQ message.
05	MS shall immediately begin de-registration from serving BS and request initiation of MS Idle Mode
06	The MS may retransmit the DREG-REQ message after the time duration (REQ-duration) provided in the message
07	The MS shall not retransmit the DREG-REQ message and shall wait the DREG-CMD message. BS transmittal of a subsequent DREG-CMD with Action Code 03 shall cancel this restriction.
0x0508-FF	*Reserved*

[Insert the following text after Table 55 as indicated:]

When the DREG-CMD message is sent with Action Code = 0x05, the following TLVs shall be included:

Paging Information (see 11.14)
   The Paging Information TLV defines the Paging Group ID and the PAGING_CYCLE and PAGING OFFSET parameters to be used by the MS in IDLE mode

Paging Controller ID
   The Paging Controller ID is a logical network identifier for the serving BS or other network entity retaining MS service and operational information and/or administering paging activity for the MS while in IDLE Model. Paging Controller ID shall be set to BSID when a BS is acting as Paging Controller.

Idle Mode Retain Information
   Idle Mode Retain Information provided as part of this message is indicative only. Network Re-entry from Idle Mode process requirements may change at time of actual re-entry. For each bit location, a value of 0 indicates the information for the associated re-entry management messages shall not be retained and managed, a value of 1 indicates the information for the associated re-entry management message shall be retained and managed.

   Bit #0: Retain MS service and operational information associated with SBC-REQ/RSP messages

   Bit #1: Retain MS service and operational information associated with PKM-REQ/RSP messages

   Bit #2: Retain MS service and operational information associated with REG-REQ/RSP messages

   Bit #3: Retain MS service and operational information associated with Network Address

   Bit #4: Retain MS service and operational information associated with Time of Day

   Bit #5: Retain MS service and operational information associated with TFTP message s

   Bit #6: Retain MS service and operation information associated with Full service (MAC state machines, CS classifier information, etc.). The information retained by setting Bit #6 does not include those information associated with SBC-REQ/RSP messages, PKM-REQ/RSP messages, REG-REQ/RSP messages, Network Address, Time of Day, and TFTP messages unless otherwise specified by setting one or more Bits #0-#5.

   Bit #7: Consider Paging Preference of each Service Flow in resource retention. Bit #7 is meaningful when Bit #2 and Bit #6 have a value of 1. If Bit #2, Bit #6 and Bit #7 is 1, MS service and operational information associated with Full service (MAC state machines, CS classifier information, etc) are retained for Service Flows with positive Paging Preference. If Bit #2 and Bit #6 are 1 and Bit #7 is 0, MS service and operational information associated with Full service (MAC state machines, CS classifier information, etc) are retained for all Service Flows.

When the DREG-CMD is sent with Action Code = 0x05, the following TLVs may be included:

MAC Hash Skip Threshold

Maximum number of successive MOB_PAG-ADV messages that may be sent from a BS without individual notification for an MS, including MAC Address hash of an MS for which Action Code is 00,'No Action Required'. If a BS receives the DREG-REQ message containing MAC Hash Skip Threshold TLV, the BS shall include MAC Hash Skip Threshold TLV in the DREG-CMD message. If the value is set to 0xFF, a BS shall omit MAC Address hash of the MS with 'No Action Required' for every MOB_PAG-ADV message. If the value is set to zero, BS shall include the MS MAC Address hash in every MOB_PAG-ADV message.

The DREG-CMD message may include the following parameters encoded as TLV tuples:

REQ-duration

Waiting value for the DREG-REQ message re-transmission (measured in frames) If serving BS includes REQ-duration in a message including an Action Code = 0x05, the MS may initiate an Idle Mode request through a DREG-REQ with Action Code = 0x01, request for MS De-Registration from serving BS and initiation of MS Idle Mode, at REQ-duration expiration.