Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**WirelessMAN-SCa Support For Overlapped Uplink Transmissions**
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Re:	Call for Reply Comments on Letter Ballot #11a
Abstract	Alters SCa MAC/PHY interface to support overlapped uplink transmissions
Purpose	Suggested remedy for comment 160
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WirelessMAN-SCa Support For Overlapped Uplink Transmissions

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In IEEE Std 802.16a-2003
Replace the contents of section 8.3.1.4.5.3 UL Information Element formats up to but not including Table 116y with the following:

The Information Elements of Table 116y are used in UL-MAP messages. The format for these UL-MAP messages is specified in Table 116x.

Table 116x – SCa UL-MAP Information Element format

Syntax	Size	Notes
UL-MAP_Information_Element() {		
CID	16 bits	
UIUC	4 bits	
If (UIUC == 15) {		
Extended UIUC dependent IE	variable	AAS_UL_IE()
} else {		
Offset	12 bits	
If (Modulation Type is Spread BPSK) {		
Duration	12 bits	
}		
}		
}		

Connection Identifier (CID):

Represents the assignment of the IE to a unicast, multicast, or broadcast address. When specifically addressed to allocate a bandwidth grant, the CID may be either the Basic CID of the SS or a Traffic CID for one of the connections of the SS.

Uplink Interval Usage Code (UIUC):

A four-bit code used to define the type of uplink access and the burst type associated with that access. A Burst Descriptor shall be included in an UCD message for each Uplink Interval Usage Code that is to be used in the UL-MAP. The UIUC shall be one of the values defined in Table 1116y.

Offset:

Indicates the start time, in units of minislots, of the burst relative to the Allocation Start Time given in the UL-MAP message. Consequently, the first IE shall have an offset of 0. The end of the last allocated burst is indicated by allocating a NULL burst (CID = 0 and UIUC = 10) with zero duration. The time instants indicated by offsets are the transmission times of the first symbol of the burst including preamble.

Duration:

For bursts with one of the spread BPSK modulation types, this parameter specifies the length of the associated burst in minislots. (For bursts not assigned one of the spread BPSK modulation types, the duration of the burst is determined by the Offset appearing in the following IE entry and the offset of the current IE entry.)

In document P802.16d_D2/200, section 8.3.1.2.1, page 11, beginning at line 24, replace the final two paragraphs on page 11 (before Table 116c1) with the following text:

The PN sequence generator shall be preset at the beginning of a spread BPSK allocation with one of the seeds listed in Table 116c1. The burst profile setting for spreading is used to select the seed to be used.

On the UL, a BS is not required to make, but may make multiple time-overlapping spread BPSK allocations. Each allocation must be to a different SS, and each must use a different seed. These allocations shall not time-overlap a non-spread allocation. To insure that preambles of overlapping spread BPSK do not time-overlap at the BS receiver, the allocation start-time of a preamble shall commence at least one UW length of symbols after the end of the preamble of any other spread-BPSK allocation that it may time-overlap.

Multiple time-overlapping spread BPSK allocations (from a single BS, over a single sector) shall not be transmitted on the DL. A recommended practice within a coordinated cell plan is for each BS to select a single seed and use this same seed for all DL spread BPSK bursts. If a system does not assign multiple time-overlapping UL allocations, the aforesaid recommended practice for the DL is also recommended for the UL, using the same seed that the DL uses.