

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >
Title	Proposed text and ASN.1 code for DCD Channel Encodings
Date Submitted	2006-11-10
Source(s)	Joey Chou Intel Corporation [mailto:joey.chou@intel.com]
Re:	
Abstract	This contribution proposes the DCD channel encoding text and ASN.1 code for wmanIf2Mib.
Purpose	Adoption
Notice	This document has been prepared to assist IEEE 802.16. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.
Release	The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.
Patent Policy and Procedures	<p>The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures (Version 1.0) <http://ieee802.org/16/ipr/patents/policy.html>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, if there is technical justification in the opinion of the standards-developing committee and provided the IEEE receives assurance from the patent holder that it will license applicants under reasonable terms and conditions for the purpose of implementing the standard."</p> <p>Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair <mailto:r.b.marks@ieee.org> as early as possible, in written or electronic form, of any patents (granted or under application) that may cover technology that is under consideration by or has been approved by IEEE 802.16. The Chair will disclose this notification via the IEEE 802.16 web site <http://ieee802.org/16/ipr/patents/notices>.</p>

Table of Content

- 1. Introduction..... 3**
- 2. NRM IRP SNMP Solution Set change Proposal..... 3**
- 2.1 wmanIf2Mib Change..... 3**
- 2.2 wmanIf2Mib ASN.1 Code Change..... 4**

1

1

2 **1. Introduction**

2

3 This contribution proposes the DCD channel encoding text and ASN.1 code that have been added
 4 to IEEE 802.16e 2005.

5 **2. NRM IRP SNMP Solution Set change Proposal**

5

6 **2.1 wmanIf2Mib Change**

6

7

8 **15.2.1.1.5 wmanIf2BsPhy**

8

9 [\[Change Figure 23 as the following:\]](#)

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39



Figure 23—wmanIf2BsPhy Structure

40 **15.2.1.1.1.5.2 wmanIf2OfdmaBsPhy**

40

41 [\[Add the following text to subclause 15.2.1.1.1.5.2:\]](#)

42

1 **15.2.1.1.5.2.10 wmanIf2BsOfdmaExUplinkChannelTable**

2 wmanIf2BsOfdmaExUplinkChannelTable arguments wmanIf2BsOfdmaUplinkChannelTable to
3 contain new UCD channel encodings that have been added to IEEE 802.16e 2005.

4
5 **15.2.1.1.5.2.11 wmanIf2BsOfdmaExDownlinkChannelTable**

6 wmanIf2BsOfdmaExDownlinkChannelTable arguments wmanIf2BsOfdmaDownlinkChannelTable
7 to contain new DCD channel encodings that have been added to IEEE 802.16e 2005.

8

9 **2.2 wmanIf2Mib ASN.1 Code Change**

10 **15.2.3 ASN.1 Definitions of 802.16 MIB for SNMP**

11 **15.2.3.1 WMAN-IF2-MIB**

12 [\[Add the following code to WMAN-IF2-MIB:\]](#)

13

```
14 wmanIf2BsOfdmaExDownlinkChannelTable OBJECT-TYPE
15     SYNTAX      SEQUENCE OF WmanIf2BsOfdmaExDownlinkChannelEntry
16     MAX-ACCESS  not-accessible
17     STATUS      current
18     DESCRIPTION
19         "This table contains DCD channel attributes, defining the
20         transmission characteristics of uplink channels"
21     REFERENCE
22         "Table 358, in IEEE Std 802.16e-2005"
23     ::= { wmanIf2BsOfdmaPhy 10 }
```

24

```
25 wmanIf2BsOfdmaExDownlinkChannelEntry OBJECT-TYPE
26     SYNTAX      WmanIf2BsOfdmaExDownlinkChannelEntry
27     MAX-ACCESS  not-accessible
28     STATUS      current
29     DESCRIPTION
30         "This table provides one row for each downlink channel of
31         multi-sector BS, and is indexed by BS ifIndex. An entry
32         in this table exists for each ifEntry of BS with an
33         ifType of ieee80216WMAN."
34     AUGMENTS { wmanIf2BsOfdmaDownlinkChannelEntry }
35     ::= { wmanIf2BsOfdmaExDownlinkChannelTable 1 }
```

36

```
37 WmanIf2BsOfdmaExDownlinkChannelEntry ::= SEQUENCE {
38     wmanIf2BsOfdmaExHARQAackDelayULBurst  WmanIf2HarqAckDelay,
39     wmanIf2BsOfdmaExHarqZonePermutation   WmanIfPermutationType,
40     wmanIf2BsOfdmaExHMaxRetransmission    INTEGER,
41     wmanIf2BsOfdmaExCinrAlphaAvg          INTEGER,
42     wmanIf2BsOfdmaExRssiAlphaAvg          INTEGER,
43     wmanIf2BsOfdmaExDlAmcAlloPhyBandsBitmap OCTET STRING,
44     wmanIf2BsOfdmaExHandoverSupported     WmanIf2HoSupportType,
45     wmanIf2BsOfdmaExThresholdAddBsDivSet  INTEGER,
46     wmanIf2BsOfdmaExThresholdDelBsDivSet  INTEGER,
47     wmanIf2BsOfdmaExAsrSlotLength         INTEGER,
48     wmanIf2BsOfdmaExAsrSwitchingPeriod    INTEGER,
49     wmanIf2BsOfdmaExHytseresisMargin      INTEGER,
50     wmanIf2BsOfdmaExTimeToTrigger         INTEGER,
51     wmanIf2BsOfdmaExRetartCount           INTEGER }
```

52

```
53 wmanIf2BsOfdmaExHARQAackDelayULBurst OBJECT-TYPE
54     SYNTAX      WmanIf2HarqAckDelay
55     MAX-ACCESS  read-write
```

```

1      STATUS      current
2      DESCRIPTION
3          "This object defines the OFDMA H-ARQ ACK delay for UL
4          burst."
5      REFERENCE
6          "Table 358, in IEEE Std 802.16e-2005"
7      ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 1 }
8
9      wmanIf2BsOfdmaExHarqZonePermutation OBJECT-TYPE
10     SYNTAX      WmanIfPermutationType
11     MAX-ACCESS  read-write
12     STATUS      current
13     DESCRIPTION
14         "Permutation type for broadcast region in HARQ zone"
15     REFERENCE
16         "Table 358, in IEEE Std 802.16e-2005"
17     ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 2 }
18
19     wmanIf2BsOfdmaExHMaxRetransmission OBJECT-TYPE
20     SYNTAX      INTEGER (0..255)
21     MAX-ACCESS  read-write
22     STATUS      current
23     DESCRIPTION
24         "Maximum number of retransmission in DL HARQ."
25     REFERENCE
26         "Table 358, in IEEE Std 802.16e-2005"
27     DEFVAL     { 4 }
28     ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 3 }
29
30     wmanIf2BsOfdmaExCinrAlphaAvg OBJECT-TYPE
31     SYNTAX      INTEGER (0..15)
32     MAX-ACCESS  read-write
33     STATUS      current
34     DESCRIPTION
35         "Bit 0..3 of Default RSSI and CINR averaging parameter
36         TLV.
37
38         Default averaging parameter Alpha Avg for physical
39         CINR measurements, in multiples of 1/16. For example
40         '0' means 1/16, 15 means 16/16."
41     REFERENCE
42         "Table 358, in IEEE Std 802.16e-2005"
43     DEFVAL     { 3 }
44     ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 4 }
45
46     wmanIf2BsOfdmaExRssiAlphaAvg OBJECT-TYPE
47     SYNTAX      INTEGER (0..15)
48     MAX-ACCESS  read-write
49     STATUS      current
50     DESCRIPTION
51         "Bit 0..3 of Default RSSI and CINR averaging parameter
52         TLV.
53
54         Default averaging parameter Alpha Avg for physical
55         RSSI measurements, in multiples of 1/16. For example
56         '0' means 1/16, 15 means 16/16."
57     REFERENCE
58         "Table 358, in IEEE Std 802.16e-2005"
59     DEFVAL     { 3 }
60     ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 5 }
61
62     wmanIf2BsOfdmaExDlAmcAlloPhyBandsBitmap OBJECT-TYPE
63     SYNTAX      OCTET STRING (SIZE (6))
64     MAX-ACCESS  read-write

```

```

1      STATUS      current
2      DESCRIPTION
3          "A bitmap describing the physical bands allocated to the
4          segment in the DL, when allocating AMC subchannels
5          through the HARQ MAP, or through the Normal MAP, or for
6          Band-AMC CINR reports, or using the optional AMC
7          permutation (see 8.4.6.3). The LSB of the first byte
8          shall correspond to band 0. For any bit that is not set,
9          the corresponding band shall not be used by the SS on
10         that segment. When this TLV is not present, BS may
11         allocate any physical bands to an SS."
12     REFERENCE
13         "Table 358, in IEEE Std 802.16e-2005"
14     ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 6 }
15
16 wmanIf2BsOfdmaExHandoverSupported OBJECT-TYPE
17     SYNTAX      WmanIf2HoSupportType
18     MAX-ACCESS  read-write
19     STATUS      current
20     DESCRIPTION
21         "Indicates the types of handover supported.
22         Bit #0 = HO
23         Bit #1 = MDHO
24         Bit #2 = FBSS HO."
25     REFERENCE
26         "Table 358, in IEEE Std 802.16e-2005"
27     ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 7 }
28
29 wmanIf2BsOfdmaExThresholdAddBsDivSet OBJECT-TYPE
30     SYNTAX      INTEGER (0..255)
31     UNITS       "dB"
32     MAX-ACCESS  read-write
33     STATUS      current
34     DESCRIPTION
35         "Threshold used by the MS to add a neighbor BS to the
36         diversity set. When the CINR of a neighbor BS is higher
37         than H_Add_Threshold, the MS should send MOB_MSHO-REQ to
38         request adding this neighbor BS to the diversity set.
39         This threshold is used for the MS that is performing
40         MDHO/FBSS HO. If the BS does not support FBSS HO/MDHO,
41         this value is not set."
42     REFERENCE
43         "Table 358, in IEEE Std 802.16e-2005"
44     ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 8 }
45
46 wmanIf2BsOfdmaExThresholdDelBsDivSet OBJECT-TYPE
47     SYNTAX      INTEGER (0..255)
48     UNITS       "dB"
49     MAX-ACCESS  read-write
50     STATUS      current
51     DESCRIPTION
52         "Threshold used by the MS to delete a neighbor BS to the
53         diversity set. When the CINR of a neighbor BS is lower
54         than H_Add_Threshold, the MS should send MOB_MSHO-REQ to
55         request dropping this neighbor BS to the diversity set.
56         This threshold is used for the MS that is performing
57         MDHO/FBSS HO. If the BS does not support FBSS HO/MDHO,
58         this value is not set."
59     REFERENCE
60         "Table 358, in IEEE Std 802.16e-2005"
61     ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 9 }
62
63 wmanIf2BsOfdmaExAsrSlotLength OBJECT-TYPE
64     SYNTAX      INTEGER (0..15)

```

```

1      UNITS          "Frames"
2      MAX-ACCESS    read-write
3      STATUS        current
4      DESCRIPTION
5          "Bit 0..3 of ASR Slot Length and Switching Period.
6          For FBSS operation, the time axis is slotted by an ASR
7          (Anchor Switch Reporting) slot that is
8          wmanIf2BsOfdmaExAsrSlotLength frame long."
9      REFERENCE
10         "Table 358, in IEEE Std 802.16e-2005"
11         ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 10 }
12
13 wmanIf2BsOfdmaExAsrSwitchingPeriod OBJECT-TYPE
14     SYNTAX          INTEGER (0..15)
15     UNITS           "ASR slots"
16     MAX-ACCESS      read-write
17     STATUS          current
18     DESCRIPTION
19         "Bit 0..3 of ASR Slot Length and Switching Period.
20         A switching period is introduced whose duration is equals
21         to wmanIf2BsOfdmaExAsrSwitchingPeriod ASR slots that
22         should be long enough such that certain process (e.g.,
23         HARQ transmission, backhaul context transfer) can be
24         completed at the current anchor BS before the MS switches
25         to the new anchor BS."
26     REFERENCE
27         "Table 358, in IEEE Std 802.16e-2005"
28         ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 11 }
29
30 wmanIf2BsOfdmaExHytseresisMargin OBJECT-TYPE
31     SYNTAX          INTEGER (0..57)
32     UNITS           "dB"
33     MAX-ACCESS      read-write
34     STATUS          current
35     DESCRIPTION
36         "When the CINR of a neighbor BS is larger than the sum of
37         the CINR of the current serving BS and
38         wmanIf2BsOfdmaExHytseresisMargin for the time-to-trigger
39         duration, then the neighbor BS is included in the list
40         of possible target BSs in MOB_MSHO-REQ."
41     REFERENCE
42         "Table 358, in IEEE Std 802.16e-2005"
43         ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 12}
44
45 wmanIf2BsOfdmaExTimeToTrigger OBJECT-TYPE
46     SYNTAX          INTEGER
47     UNITS           "milliseconds"
48     MAX-ACCESS      read-write
49     STATUS          current
50     DESCRIPTION
51         "Indicates the time duration for MS decides to select a
52         neighbor BS as a possible target BS. It is applicable
53         only for HHO."
54     REFERENCE
55         "Table 358, in IEEE Std 802.16e-2005"
56         ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 13}
57
58 wmanIf2BsOfdmaExRetartCount OBJECT-TYPE
59     SYNTAX          INTEGER (0..255)
60     MAX-ACCESS      read-only
61     STATUS          current
62     DESCRIPTION
63         "The value is incremented by one whenever BS restarts
64         (see 6.3.9.11). The value rolls over from 0 to 255."

```

1 REFERENCE
2 "Table 358, in IEEE Std 802.16e-2005"
3 ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 14}
4
5
6

7

8

9

10

11

12

13

14

15

