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**
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Re:	
Abstract	This contribution proposes the DCD channel encoding text and ASN.1 code for wmanIf2Mib.
Purpose	Adoption
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1. Introduction

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

2. NRM IRP SNMP Solution Set change Proposal

2.1 wmanIf2Mib Change

15.2.1.1.5 wmanIf2BsPhy

[Change Figure 23 as the following:]

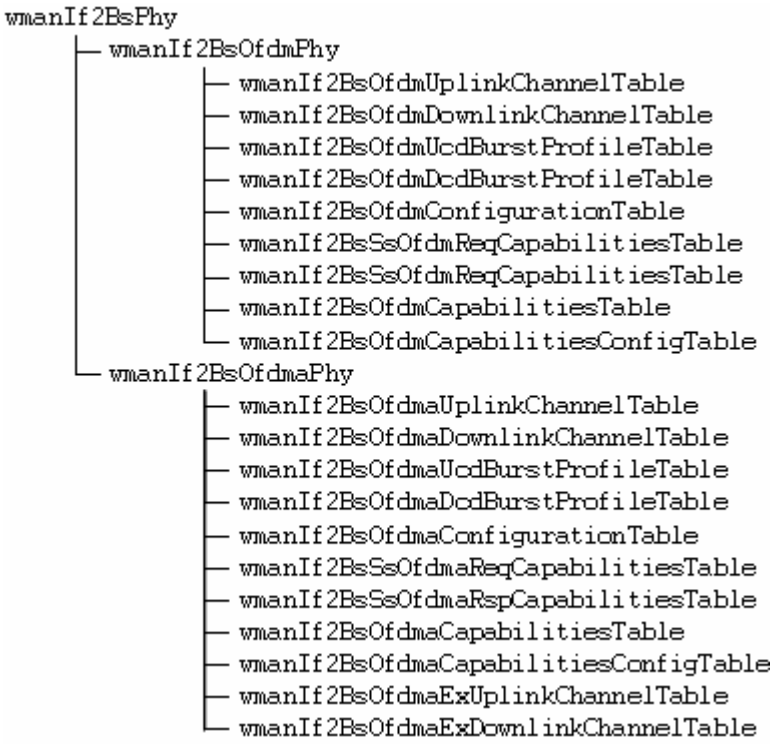

Figure 23—wmanIf2BsPhy Structure

15.2.1.1.1.5.2 wmanIf2OfdmaBsPhy

[Add the following text to subclause 15.2.1.1.1.5.2:]

15.2.1.1.5.2.10 wmanIf2BsOfdmaExUplinkChannelTable

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

15.2.1.1.5.2.11 wmanIf2BsOfdmaExDownlinkChannelTable

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

2.2 wmanIf2Mib ASN.1 Code Change

15.2.3 ASN.1 Definitions of 802.16 MIB for SNMP

15.2.3.1 WMAN-IF2-MIB

[Add the following code to WMAN-IF2-MIB:]

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

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

WmanIf2BsOfdmaExDownlinkChannelEntry ::= SEQUENCE {
        wmanIf2BsOfdmaExHARQAackDelayULBurst    WmanIf2HarqAckDelay,
        wmanIf2BsOfdmaExHarqZonePermutation     WmanIfPermutationType,
        wmanIf2BsOfdmaExHMaxRetransmission      INTEGER,
        wmanIf2BsOfdmaExCinrAlphaAvg            INTEGER,
        wmanIf2BsOfdmaExRssiAlphaAvg            INTEGER,
        wmanIf2BsOfdmaExDlAmcAlloPhyBandsBitmap OCTET STRING,
        wmanIf2BsOfdmaExHandoverSupported       WmanIf2HoSupportType,
        wmanIf2BsOfdmaExThresholdAddBsDivSet    INTEGER,
        wmanIf2BsOfdmaExThresholdDelBsDivSet    INTEGER,
        wmanIf2BsOfdmaExAsrSlotLength           INTEGER,
        wmanIf2BsOfdmaExAsrSwitchingPeriod      INTEGER,
        wmanIf2BsOfdmaExHytseresisMargin        INTEGER,
        wmanIf2BsOfdmaExTimeToTrigger           INTEGER,
        wmanIf2BsOfdmaExRetartCount             INTEGER}

wmanIf2BsOfdmaExHARQAackDelayULBurst OBJECT-TYPE
        SYNTAX      WmanIf2HarqAckDelay
        MAX-ACCESS  read-write
```

```
            STATUS      current
            DESCRIPTION
                "This object defines the OFDMA H-ARQ ACK delay for UL
                 burst."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 1 }

    wmanIf2BsOfdmaExHarqZonePermutation OBJECT-TYPE
            SYNTAX      WmanIfPermutationType
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Permutation type for broadcast region in HARQ zone"
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 2 }

    wmanIf2BsOfdmaExHMaxRetransmission OBJECT-TYPE
            SYNTAX      INTEGER (0..255)
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Maximum number of retransmission in DL HARQ."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            DEFVAL      { 4 }
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 3 }

    wmanIf2BsOfdmaExCinrAlphaAvg OBJECT-TYPE
            SYNTAX      INTEGER (0..15)
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Bit 0..3 of Default RSSI and CINR averaging parameter
                 TLV.

                 Default averaging parameter Alpha Avg for physical
                 CINR measurements, in multiples of 1/16. For example
                 '0' means 1/16, 15 means 16/16."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            DEFVAL      { 3 }
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 4 }

    wmanIf2BsOfdmaExRssiAlphaAvg OBJECT-TYPE
            SYNTAX      INTEGER (0..15)
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Bit 0..3 of Default RSSI and CINR averaging parameter
                 TLV.

                 Default averaging parameter Alpha Avg for physical
                 RSSI measurements, in multiples of 1/16. For example
                 '0' means 1/16, 15 means 16/16."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            DEFVAL      { 3 }
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 5 }

    wmanIf2BsOfdmaExDlAmcAlloPhyBandsBitmap OBJECT-TYPE
            SYNTAX      OCTET STRING (SIZE (6))
            MAX-ACCESS  read-write
```

```
            STATUS      current
            DESCRIPTION
                "A bitmap describing the physical bands allocated to the
                 segment in the DL, when allocating AMC subchannels
                 through the HARQ MAP, or through the Normal MAP, or for
                 Band-AMC CINR reports, or using the optional AMC
                 permutation (see 8.4.6.3). The LSB of the first byte
                 shall correspond to band 0. For any bit that is not set,
                 the corresponding band shall not be used by the SS on
                 that segment. When this TLV is not present, BS may
                 allocate any physical bands to an SS."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 6 }

    wmanIf2BsOfdmaExHandoverSupported OBJECT-TYPE
            SYNTAX      WmanIf2HoSupportType
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Indicates the types of handover supported.
                 Bit #0 = HO
                 Bit #1 = MDHO
                 Bit #2 = FBSS HO."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 7 }

    wmanIf2BsOfdmaExThresholdAddBsDivSet OBJECT-TYPE
            SYNTAX      INTEGER (0..255)
            UNITS       "dB"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Threshold used by the MS to add a neighbor BS to the
                 diversity set. When the CINR of a neighbor BS is higher
                 than H_Add_Threshold, the MS should send MOB_MSHO-REQ to
                 request adding this neighbor BS to the diversity set.
                 This threshold is used for the MS that is performing
                 MDHO/FBSS HO. If the BS does not support FBSS HO/MDHO,
                 this value is not set."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 8 }

    wmanIf2BsOfdmaExThresholdDelBsDivSet OBJECT-TYPE
            SYNTAX      INTEGER (0..255)
            UNITS       "dB"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Threshold used by the MS to delete a neighbor BS to the
                 diversity set. When the CINR of a neighbor BS is lower
                 than H_Add_Threshold, the MS should send MOB_MSHO-REQ to
                 request dropping this neighbor BS to the diversity set.
                 This threshold is used for the MS that is performing
                 MDHO/FBSS HO. If the BS does not support FBSS HO/MDHO,
                 this value is not set."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 9 }

    wmanIf2BsOfdmaExAsrSlotLength OBJECT-TYPE
            SYNTAX      INTEGER (0..15)
```

```
            UNITS       "Frames"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Bit 0..3 of ASR Slot Length and Switching Period.
                 For FBSS operation, the time axis is slotted by an ASR
                 (Anchor Switch Reporting) slot that is
                 wmanIf2BsOfdmaExAsrSlotLength frame long."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 10 }

    wmanIf2BsOfdmaExAsrSwitchingPeriod OBJECT-TYPE
            SYNTAX      INTEGER (0..15)
            UNITS       "ASR slots"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Bit 0..3 of ASR Slot Length and Switching Period.
                 A switching period is introduced whose duration is equals
                 to wmanIf2BsOfdmaExAsrSwitchingPeriod ASR slots that
                 should be long enough such that certain process (e.g.,
                 HARQ transmission, backhaul context transfer) can be
                 completed at the current anchor BS before the MS switches
                 to the new anchor BS."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 11 }

    wmanIf2BsOfdmaExHytseresisMargin OBJECT-TYPE
            SYNTAX      INTEGER (0..57)
            UNITS       "dB"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "When the CINR of a neighbor BS is larger than the sum of
                 the CINR of the current serving BS and
                 wmanIf2BsOfdmaExHytseresisMargin for the time-to-trigger
                 duration, then the neighbor BS is included in the list
                 of possible target BSs in MOB_MSHO-REQ."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 12}

    wmanIf2BsOfdmaExTimeToTrigger OBJECT-TYPE
            SYNTAX      INTEGER
            UNITS       "milliseconds"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Indicates the time duration for MS decides to select a
                 neighbor BS as a possible target BS. It is  applicable
                 only for HHO."
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 13}

    wmanIf2BsOfdmaExRetartCount OBJECT-TYPE
            SYNTAX      INTEGER (0..255)
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "The value is incremented by one whenever BS restarts
                 (see 6.3.9.11). The value rolls over from 0 to 255."
```

```
            REFERENCE
                "Table 358, in IEEE Std 802.16e-2005"
            ::= { wmanIf2BsOfdmaExDownlinkChannelEntry 14}
```