

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >
Title	OFDMA PHY Configuration and ASN.1 code
Date Submitted	2006-03-07
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Re:	
Abstract	This contribution proposed the text and ASN.1 code for OFDMA PHY.
Purpose	Adoption
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2 1. Introduction

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This contribution proposes the text for Section 13 and Annex E of IEEE P802.16i WG draft.

4 2. OFDMA PHY Configuration

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5

This section proposes new table for OFDMA PHY.

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[Insert a new subclause 16:]

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16. 802.16 Mobile MIB Structure for SNMP

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16.1.1.5 wmanIfBsPhy

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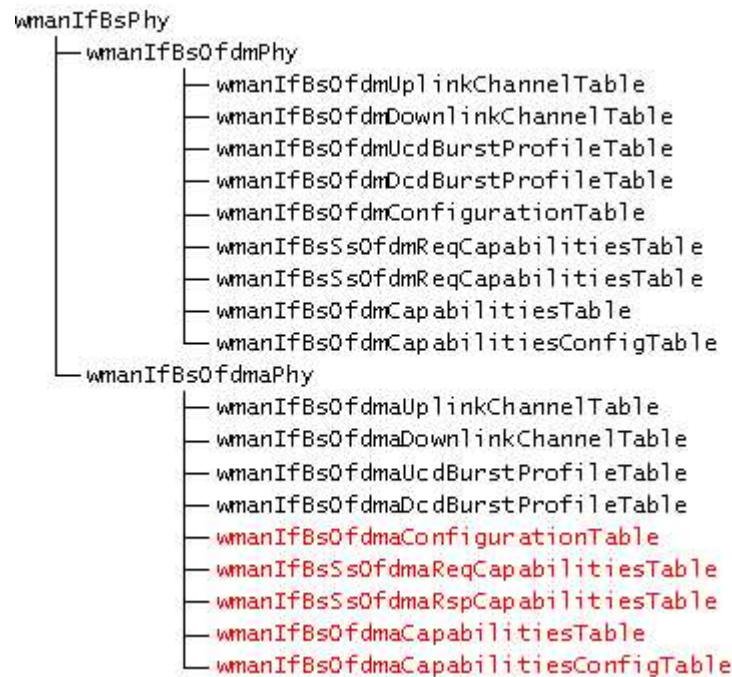


Figure 7—wmanIfBsPhy structure

16.1.1.5.2.5 wmanIfBsOfdmaConfigurationTable

wmanIfBsOfdmaConfigurationTable contains BS configuration objects, specific to OFDMA PHY.

16.1.1.5.2.6 wmanIfBsSsOfdmaReqCapabilitiesTable

wmanIfBsSsOfdmaReqCapabilitiesTable contains the basic capability information, specific to OFDMA Phy, of SSs or MSs that have been reported by SSs to BS using RNG-REQ, SBC-REQ and REG-REQ messages. Entries in this table should be created when an SS registers with a BS.

16.1.1.5.2.7 wmanIfBsSsOfdmaRspCapabilitiesTable

wmanIfBsSsOfdmaRspCapabilitiesTable contains the basic capability information, specific to OFDMA Phy, of SSs or MSs that have been negotiated and agreed between BS and SS via RNG-REQ/RSP, SBC-REQ/RSP and REG-REQ/RSP messages. This table augments the wmanIfBsRegisteredSsTable.

1 16.1.1.5.2.8 wmanIfBsOfdmaCapabilitiesTable

2 wmanIfBsOfdmaCapabilitiesTable contains the basic capabilities, specific to OFDMA Phy, of the
3 BS as implemented in BS hardware and software.

4 16.1.1.5.2.9 wmanIfBsOfdmaCapabilitiesConfigTable

5 wmanIfBsOfdmaCapabilitiesConfigTable contains the configuration for basic capabilities of BS,
6 specific to OFDMA Phy. The table is intended to be used to restrict the Capabilities implemented
7 by BS.

8 3. ASN.1 Code for OFDMA PHY

9 The following lists the ASN.1 code for OFDMA PHY enhancement.

10 *[Insert the following ASN.1 code to subclause 16.2:]*

```

11 WmanIfOfdmFftSizes ::= TEXTUAL-CONVENTION
12     STATUS         current
13     DESCRIPTION
14         "This field indicates the FFT sizes supported by the SS/MS.
15         For each FFT size, a bit value of 0 indicates
16         'not supported' while 1 indicates 'supported'."
17     REFERENCE
18         "Subclause 11.8.3.6.1 in IEEE 802.16-2004"
19     SYNTAX          BITS {fft256(0),
20                         fft2048(1),
21                         fft128(2),
22                         fft512(3),
23                         fft1024(4)}
24
25
26 WmanIfOfdmaMsDeModType ::= TEXTUAL-CONVENTION
27     STATUS         current
28     DESCRIPTION
29         "This field indicates the different demodulator options
30         supported by a WirelessMAN-OFDMA PHY SS for downlink.
31         A bit value of 0 indicates 'not supported' while 1
32         indicates 'supported'."
33     REFERENCE
34         "Subclause 11.8.3.7.2 in IEEE 802.16e"
35     SYNTAX          BITS {qam64(0),
36                         btc(1),
37                         ctc(2),
38                         stc(3),
39                         aasDiversityMapScan(4),
40                         harqChase(5),
41                         harqCtcIr(6),
42                         reserved(7),
43                         harqCcIr(8),
44                         ldpc(9)}
45
46 WmanIfOfdmaMsModType ::= TEXTUAL-CONVENTION
47     STATUS         current
48     DESCRIPTION
49         "This field indicates the different modulator options
50         supported by a WirelessMAN-OFDMA PHY SS for uplink. A bit
51         value of 0 indicates 'not supported' while 1 indicates
52         'supported'."
53     REFERENCE
54         "Subclause 11.8.3.7.3 in IEEE 802.16e"
55     SYNTAX          BITS {qam64(0),
56                         btc(1),
57                         ctc(2),
58                         stc(3),
59                         harqChase(4),

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1           ctcIr(5),
2           ccIr(6),
3           ldpc(7)}
4
5 WmanIfOfdmaPermutation ::= TEXTUAL-CONVENTION
6     STATUS      current
7     DESCRIPTION
8       "This field indicates the OFDMA SS Permutation support
9       A bit value of 0 indicates 'not supported' while 1
10      indicates 'supported'."
11    REFERENCE
12      "Subclause 11.8.3.7.5 in IEEE 802.16e"
13    SYNTAX      BITS {optionalPuscSupport(0),
14                   optionalFuscSupport(1),
15                   amcOneBySixSupport(2),
16                   amcTwoByThreeSupport(3),
17                   amcThreeByTwoSupport(4),
18                   amcSupportWithHarqMap(5),
19                   tusclSupport(6),
20                   tusc2(7)}
21
22 WmanIfOfdmaMobility ::= TEXTUAL-CONVENTION
23     STATUS      current
24     DESCRIPTION
25       "This field indicates whether or not the MS supports
26       mobility hand-over, Sleepmode, and Idle-mode. A bit
27       value of 0 indicates 'not supported' while 1 indicates
28       it is supported."
29    REFERENCE
30      "Subclause 11.8.3.7.5 in IEEE 802.16e"
31    SYNTAX      BITS {handoverSupport(0),
32                   sleepModeSupport(1),
33                   idleModeSupport(2)}
34
35 wmanIfBsMsOfdmaReqCapabilitiesTable OBJECT-TYPE
36     SYNTAX      SEQUENCE OF WmanIfBsMsOfdmaReqCapabilitiesEntry
37     MAX-ACCESS  not-accessible
38     STATUS      current
39     DESCRIPTION
40       "This table contains the basic capability information,
41       specific to OFDMA Phy, of MSs that have been reported by
42       MSs to BS using RNG-REQ, SBC-REQ and REG-REQ messages.
43       Entries in this table should be created when an MS
44       registers with a BS."
45     ::= { wmanIfBsOfdmaPhy 5 }
46
47 wmanIfBsMsOfdmaReqCapabilitiesEntry OBJECT-TYPE
48     SYNTAX      WmanIfBsMsOfdmaReqCapabilitiesEntry
49     MAX-ACCESS  not-accessible
50     STATUS      current
51     DESCRIPTION
52       "This table provides one row for each MS that has been
53       registered in the BS. This table augments the table
54       wmanIfBsRegisteredSsTable."
55     AUGMENTS { wmanIfBsRegisteredSsEntry }
56     ::= { wmanIfBsMsOfdmaReqCapabilitiesTable 1 }
57
58 WmanIfBsMsOfdmaReqCapabilitiesEntry ::= SEQUENCE {
59     wmanIfBsMsOfdmaReqCapFftSizes      WmanIfOfdmFftSizes,
60     wmanIfBsMsOfdmaReqCapDemodulator    WmanIfOfdmaMsDeModType,
61     wmanIfBsMsOfdmaReqCapModulator      WmanIfOfdmaMsModType,
62     wmanIfBsMsOfdmaReqCapPermutation    WmanIfOfdmaPermutation,
63     wmanIfBsMsOfdmaReqCapMobilityFeature WmanIfOfdmaMobility}
64
65 wmanIfBsMsOfdmaReqCapFftSizes OBJECT-TYPE
66     SYNTAX      WmanIfOfdmFftSizes
67     MAX-ACCESS  read-only
68     STATUS      current
69     DESCRIPTION
70       "This field indicates the FFT sizes supported by MS."
71     ::= { wmanIfBsMsOfdmaReqCapabilitiesEntry 1 }

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1
2   wmanIfBsMsOfdmaReqCapDemodulator OBJECT-TYPE
3       SYNTAX      WmanIfOfdmaMsDeModType
4       MAX-ACCESS  read-only
5       STATUS      current
6       DESCRIPTION
7           "This field indicates the different demodulator options
8            supported by MS for downlink."
9       ::= { wmanIfBsMsOfdmaReqCapabilitiesEntry 2 }
10
11  wmanIfBsMsOfdmaReqCapModulator OBJECT-TYPE
12      SYNTAX      WmanIfOfdmaMsModType
13      MAX-ACCESS  read-only
14      STATUS      current
15      DESCRIPTION
16          "This field indicates the different modulator options
17           supported by MS for uplink."
18      ::= { wmanIfBsMsOfdmaReqCapabilitiesEntry 3 }
19
20  wmanIfBsMsOfdmaReqCapPermutation OBJECT-TYPE
21      SYNTAX      WmanIfOfdmaPermutation
22      MAX-ACCESS  read-only
23      STATUS      current
24      DESCRIPTION
25          "This field indicates the OFDMA MS Permutation support"
26      ::= { wmanIfBsMsOfdmaReqCapabilitiesEntry 4 }
27
28  wmanIfBsMsOfdmaReqCapMobilityFeature OBJECT-TYPE
29      SYNTAX      WmanIfOfdmaMobility
30      MAX-ACCESS  read-only
31      STATUS      current
32      DESCRIPTION
33          "The field indicates whether or not the MS supports
34           mobility hand-over, Sleepmode, and Idle-mode."
35      ::= { wmanIfBsMsOfdmaReqCapabilitiesEntry 5 }
36
37  wmanIfBsMsOfdmaRspCapabilitiesTable OBJECT-TYPE
38      SYNTAX      SEQUENCE OF WmanIfBsMsOfdmaRspCapabilitiesEntry
39      MAX-ACCESS  not-accessible
40      STATUS      current
41      DESCRIPTION
42          "This table contains the basic capability information,
43           specific to OFDMA Phy, of MSs that have been reported by
44           MSs to BS using RNG-REQ, SBC-REQ and REG-REQ messages.
45           Entries in this table should be created when an MS
46           registers with a BS."
47      ::= { wmanIfBsOfdmaPhy 6 }
48
49  wmanIfBsMsOfdmaRspCapabilitiesEntry OBJECT-TYPE
50      SYNTAX      WmanIfBsMsOfdmaRspCapabilitiesEntry
51      MAX-ACCESS  not-accessible
52      STATUS      current
53      DESCRIPTION
54          "This table provides one row for each MS that has been
55           registered in the BS. This table augments the table
56           wmanIfBsRegisteredSsTable."
57      AUGMENTS { wmanIfBsRegisteredSsEntry }
58      ::= { wmanIfBsMsOfdmaRspCapabilitiesTable 1 }
59
60  WmanIfBsMsOfdmaRspCapabilitiesEntry ::= SEQUENCE {
61      wmanIfBsMsOfdmaRspCapFftSizes      WmanIfOfdmFftSizes,
62      wmanIfBsMsOfdmaRspCapDemodulator   WmanIfOfdmaMsDeModType,
63      wmanIfBsMsOfdmaRspCapModulator     WmanIfOfdmaMsModType,
64      wmanIfBsMsOfdmaRspCapPermutation   WmanIfOfdmaPermutation,
65      wmanIfBsMsOfdmaRspCapMobilityFeature WmanIfOfdmaMobility}
66
67  wmanIfBsMsOfdmaRspCapFftSizes OBJECT-TYPE
68      SYNTAX      WmanIfOfdmFftSizes
69      MAX-ACCESS  read-only
70      STATUS      current
71      DESCRIPTION

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1           "This field indicates the FFT sizes negotiated with the
2           MS."
3           ::= { wmanIfBsMsOfdmaRspCapabilitiesEntry 1 }
4
5 wmanIfBsMsOfdmaRspCapDemodulator OBJECT-TYPE
6     SYNTAX      WmanIfOfdmaMsDeModType
7     MAX-ACCESS  read-only
8     STATUS      current
9     DESCRIPTION
10            "This field indicates the different demodulator options
11            negotiated for MS for downlink."
12            ::= { wmanIfBsMsOfdmaRspCapabilitiesEntry 2 }
13
14 wmanIfBsMsOfdmaRspCapModulator OBJECT-TYPE
15     SYNTAX      WmanIfOfdmaMsModType
16     MAX-ACCESS  read-only
17     STATUS      current
18     DESCRIPTION
19            "This field indicates the different modulator options
20            negotiated for MS for uplink."
21            ::= { wmanIfBsMsOfdmaRspCapabilitiesEntry 3 }
22
23 wmanIfBsMsOfdmaRspCapPermutation OBJECT-TYPE
24     SYNTAX      WmanIfOfdmaPermutation
25     MAX-ACCESS  read-only
26     STATUS      current
27     DESCRIPTION
28            "This field indicates the OFDMA MS Permutation support
29            negotiated for MS."
30            ::= { wmanIfBsMsOfdmaRspCapabilitiesEntry 4 }
31
32 wmanIfBsMsOfdmaRspCapMobilityFeature OBJECT-TYPE
33     SYNTAX      WmanIfOfdmaMobility
34     MAX-ACCESS  read-only
35     STATUS      current
36     DESCRIPTION
37            "The field indicates the mobility hand-over, Sleepmode,
38            and Idle-mode negotiated for MS."
39            ::= { wmanIfBsMsOfdmaRspCapabilitiesEntry 5 }
40
41 wmanIfBsOfdmaCapabilitiesTable OBJECT-TYPE
42     SYNTAX      SEQUENCE OF WmanIfBsOfdmaCapabilitiesEntry
43     MAX-ACCESS  not-accessible
44     STATUS      current
45     DESCRIPTION
46            "This table contains the basic capabilities, specific to
47            OFDMA Phy, of the BS as implemented in BS hardware and
48            software. These capabilities along with the configuration
49            for them (wmanIfBsOfdmaCapabilitiesConfigTable) are used
50            for negotiation of basic capabilities with SS using
51            RNG-RSP, SBC-RSP and REG-RSP messages. The negotiated
52            capabilities are obtained by interSubclause of MS raw
53            reported capabilities, BS raw capabilities and BS
54            configured capabilities. The objects in the table have
55            read-only access. The table is maintained by BS."
56            ::= { wmanIfBsOfdmaPhy 7 }
57
58 wmanIfBsOfdmaCapabilitiesEntry OBJECT-TYPE
59     SYNTAX      WmanIfBsOfdmaCapabilitiesEntry
60     MAX-ACCESS  not-accessible
61     STATUS      current
62     DESCRIPTION
63            "This table provides one row for each BS sector and is
64            indexed by ifIndex."
65     INDEX { ifIndex }
66     ::= { wmanIfBsOfdmaCapabilitiesTable 1 }
67
68 WmanIfBsOfdmaCapabilitiesEntry ::= SEQUENCE {
69     wmanIfBsOfdmaCapFftSizes          WmanIfOfdmFftSizes,
70     wmanIfBsOfdmaCapDemodulator       WmanIfOfdmaMsDeModType,
71     wmanIfBsOfdmaCapModulator         WmanIfOfdmaMsModType,

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1           wmanIfBsOfdmaCapPermutation                WmanIfOfdmaPermutation,
2           wmanIfBsOfdmaCapMobilityFeature           WmanIfOfdmaMobility}
3
4   wmanIfBsOfdmaCapFftSizes OBJECT-TYPE
5       SYNTAX      WmanIfOfdmFftSizes
6       MAX-ACCESS  read-only
7       STATUS      current
8       DESCRIPTION
9           "This field indicates the FFT sizes supported by BS."
10          ::= { wmanIfBsOfdmaCapabilitiesEntry 1 }
11
12  wmanIfBsOfdmaCapDemodulator OBJECT-TYPE
13      SYNTAX      WmanIfOfdmaMsDeModType
14      MAX-ACCESS  read-only
15      STATUS      current
16      DESCRIPTION
17          "This field indicates the different demodulator options
18           supported by BS."
19          ::= { wmanIfBsOfdmaCapabilitiesEntry 2 }
20
21  wmanIfBsOfdmaCapModulator OBJECT-TYPE
22      SYNTAX      WmanIfOfdmaMsModType
23      MAX-ACCESS  read-only
24      STATUS      current
25      DESCRIPTION
26          "This field indicates the different modulator options
27           supported by BS."
28          ::= { wmanIfBsOfdmaCapabilitiesEntry 3 }
29
30  wmanIfBsOfdmaCapPermutation OBJECT-TYPE
31      SYNTAX      WmanIfOfdmaPermutation
32      MAX-ACCESS  read-only
33      STATUS      current
34      DESCRIPTION
35          "This field indicates the OFDMA MS Permutation support
36           supported by BS."
37          ::= { wmanIfBsOfdmaCapabilitiesEntry 4 }
38
39  wmanIfBsOfdmaCapMobilityFeature OBJECT-TYPE
40      SYNTAX      WmanIfOfdmaMobility
41      MAX-ACCESS  read-only
42      STATUS      current
43      DESCRIPTION
44          "The field indicates the mobility hand-over, Sleepmode,
45           and Idle-mode supported by BS."
46          ::= { wmanIfBsOfdmaCapabilitiesEntry 5 }
47
48  wmanIfBsOfdmaCapabilitiesConfigTable OBJECT-TYPE
49      SYNTAX      SEQUENCE OF WmanIfBsOfdmaCapabilitiesConfigEntry
50      MAX-ACCESS  not-accessible
51      STATUS      current
52      DESCRIPTION
53          "This table contains the configuration for basic
54           capabilities of BS, specific to OFDMA Phy. The table is
55           intended to be used to restrict the Capabilities
56           implemented by BS, for example in order to comply with
57           local regulatory requirements. The BS should use the
58           configuration along with the implemented Capabilities
59           (wmanIfBsOfdmaPhyTable) for negotiation of basic
60           capabilities with SS using RNG-RSP, SBC-RSP and REG-RSP
61           messages. The negotiated capabilities are obtained by
62           interSubclause of MS reported capabilities, BS raw
63           capabilities and BS configured capabilities. The objects
64           in the table have read-write access. The rows are created
65           by BS as a copy of wmanIfBsBasicCapabilitiesTable
66           and can be modified by NMS."
67          ::= { wmanIfBsOfdmaPhy 8 }
68
69  wmanIfBsOfdmaCapabilitiesConfigEntry OBJECT-TYPE
70      SYNTAX      WmanIfBsOfdmaCapabilitiesConfigEntry
71      MAX-ACCESS  not-accessible

```



```

1          STATUS      current
2          DESCRIPTION
3              "This table provides one row for each BS sector and is
4              indexed by ifIndex."
5          INDEX { ifIndex }
6          ::= { wmanIfBsOfdmaCapabilitiesConfigTable 1 }
7
8          WmanIfBsOfdmaCapabilitiesConfigEntry ::= SEQUENCE {
9              wmanIfBsOfdmaCapCfgFftSizes          WmanIfOfdmFftSizes,
10             wmanIfBsOfdmaCapCfgDemodulator        WmanIfOfdmaMsDeModType,
11             wmanIfBsOfdmaCapCfgModulator          WmanIfOfdmaMsModType,
12             wmanIfBsOfdmaCapCfgPermutation        WmanIfOfdmaPermutation,
13             wmanIfBsOfdmaCapCfgMobilityFeature    WmanIfOfdmaMobility}
14
15         wmanIfBsOfdmaCapCfgFftSizes OBJECT-TYPE
16             SYNTAX      WmanIfOfdmFftSizes
17             MAX-ACCESS  read-only
18             STATUS      current
19             DESCRIPTION
20                 "This field indicates the FFT sizes configured for the BS."
21             ::= { wmanIfBsOfdmaCapabilitiesConfigEntry 1 }
22
23         wmanIfBsOfdmaCapCfgDemodulator OBJECT-TYPE
24             SYNTAX      WmanIfOfdmaMsDeModType
25             MAX-ACCESS  read-only
26             STATUS      current
27             DESCRIPTION
28                 "This field indicates the different demodulator options
29                 configured for the BS."
30             ::= { wmanIfBsOfdmaCapabilitiesConfigEntry 2 }
31
32         wmanIfBsOfdmaCapCfgModulator OBJECT-TYPE
33             SYNTAX      WmanIfOfdmaMsModType
34             MAX-ACCESS  read-only
35             STATUS      current
36             DESCRIPTION
37                 "This field indicates the different modulator options
38                 configured for the BS."
39             ::= { wmanIfBsOfdmaCapabilitiesConfigEntry 3 }
40
41         wmanIfBsOfdmaCapCfgPermutation OBJECT-TYPE
42             SYNTAX      WmanIfOfdmaPermutation
43             MAX-ACCESS  read-only
44             STATUS      current
45             DESCRIPTION
46                 "This field indicates the OFDMA MS Permutation support
47                 configured for the BS."
48             ::= { wmanIfBsOfdmaCapabilitiesConfigEntry 4 }
49
50         wmanIfBsOfdmaCapCfgMobilityFeature OBJECT-TYPE
51             SYNTAX      WmanIfOfdmaMobility
52             MAX-ACCESS  read-only
53             STATUS      current
54             DESCRIPTION
55                 "The field indicates the mobility hand-over, Sleepmode,
56                 and Idle-mode configured for the BS."
57             ::= { wmanIfBsOfdmaCapabilitiesConfigEntry 5 }
58
59
60

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