

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Proposed text to wmanIf2mMib	
Date Submitted	2006-11-10	
Source(s)	Joey Chou Intel Corporation	[mailto:joey.chou@intel.com]
	Eero Wallenius Nokia	[mailto: Eero.Wallenius@nokia.com]
	Krzysztof Dudzinski Airspan	[mailto: KDudzins@Airspan.com]
Re:		
Abstract	This contribution proposes the new text for wmanIf2mMib.	
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 wmanlf2mMib Change..... 3**
- 2.2 wmanlf2mMib ASN.1 Code Change..... 5**

1

1

2 1. Introduction

2

3 This contribution proposes the new text for wmanIf2mMib.

4 2. NRM IRP SNMP Solution Set change Proposal

4

5 2.1 wmanIf2mMib Change

5

6

7 15.2.2 wmanIf2mMib

7

8 [\[Add the following text to subclause 15.2.2:\]](#)

8

9

10 Figure 31 shows the high level MIB structure of wmanIf2mMib for IEEE 802.16e-2005. The MIB
11 structure is organized based on the the FCAPS reference model.

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

40

41

42

43

44

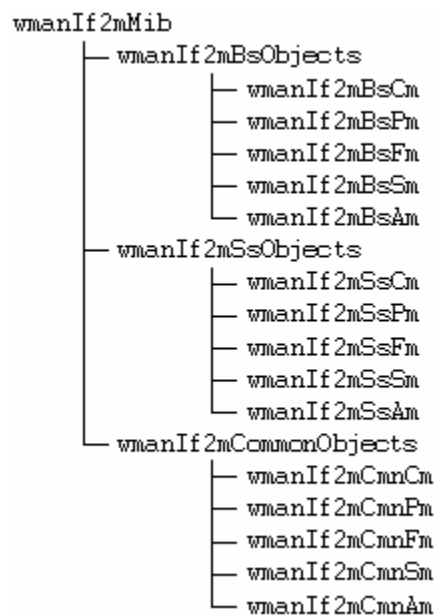


Figure 31—wmanIf2mMib Structure

36

15.2.1 wmanIf2mBsObjects

37

15.2.1.1 wmanIf2mBsCm

38 Figure 32 shows the structure of wmanIf2mBsCm subtree that contains BS managed objects
39 related to Configuration Management.

40

41

42

43

44

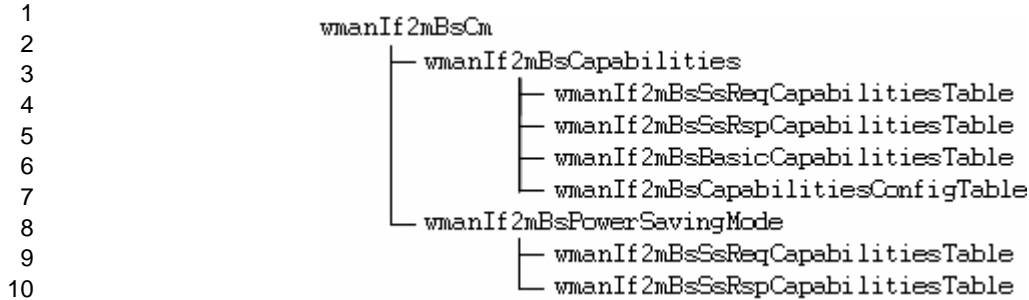


Figure 32—wmanIf2mBsCm Structure

14 **15.2.1.1.1 wmanIf2mBsCapabilities**

15 **15.2.1.1.1.1 wmanIf2mBsSsReqCapabilitiesTable**

16 wmanIf2mBsSsReqCapabilitiesTable contains the basic capability information of SSs that have
17 been reported by SSs to BS using RNG-REQ, SBC-REQ and REG-REQ messages

18
19 **15.2.1.1.1.2 wmanIf2mBsSsRspCapabilitiesTable**

20 wmanIf2mBsSsRspCapabilitiesTable contains the basic capability information of SSs that have
21 been negotiated and agreed between BS and SS via RNG-REQ/RSP, SBC-REQ/RSP and REG-
22 REQ/RSP messages

23
24 **15.2.1.1.1.3 wmanIf2mBsBasicCapabilitiesTable**

25 wmanIf2mBsBasicCapabilitiesTable contains the basic capabilities of the BS as implemented in BS
26 hardware and software. These capabilities along with the configuration for them
27 (wmanIf2mBsCapabilitiesConfigTable) are used for negotiation of basic capabilities with SS using
28 RNG-RSP, SBC-RSP and REG-RSP messages.

29
30 **15.2.1.1.1.4 wmanIf2mBsCapabilitiesConfigTable**

31 wmanIf2mBsCapabilitiesConfigTable contains the configuration for basic capabilities of BS. The
32 table is intended to be used to restrict the Capabilities implemented by BS, for example in order to
33 comply with local regulatory requirements. The BS should use the configuration along with the
34 implemented Capabilities (wmanIf2mBsBasicCapabilitiesTable) for negotiation of basic capabilities
35 with SS using RNG-RSP, SBC-RSP and REG-RSP messages.

36
37 **15.2.1.1.2 wmanIf2mBsPowerSavingMode**

38 **15.2.1.1.2.1 wmanIf2mBsSsPowerSavingStatusTable**

39 wmanIf2mBsSsPowerSavingStatusTable contains the power saving status for each CID in an
40 SS.

41
42 **15.2.1.1.1.2 wmanIf2mBsSsPowerSavingClassesTable**

43

1 wmanIf2mBsSsPowerSavingClassesTable contains the power saving classes definitions, and
 2 activation / deactivation information that are provided by MOB_SLP-REQ and MOB_SLP-RSP
 3 messages..

4

5 **15.2.1.2 wmanIf2mBsPm**

6 Figure 33 shows the structure of wmanIf2mBsPm subtree that contains BS managed objects
 7 related to Performance Management.

8

9

```
10          wmanIf2mBsPm
11            └─ wmanIf2mBsSsSleepModeStatisticsTable
```

12

13 **Figure 33—wmanIf2mBsPm Structure**

14

15

16 **15.2.1.2.1 wmanIf2mBsSsSleepModeStatisticsTable**

17 wmanIf2mBsSsSleepModeStatisticsTable contains the sleep mode statistic for SS.

18

19 **2.2 wmanIf2mMib ASN.1 Code Change**

20 **15.2.3 ASN.1 Definitions of 802.16 MIB for SNMP**

21 **15.2.3.2 WMAN-IF2M-MIB**

22 [\[Replace WMAN-IF2M-MIB with the following MIB module:\]](#)

23

```
24 WMAN-IF2M-MIB DEFINITIONS ::= BEGIN
```

25

```
26     IMPORTS
27         MODULE-IDENTITY,
28         OBJECT-TYPE,
29         NOTIFICATION-TYPE,
30         Unsigned32, Integer32, Counter32,
31         Counter64, transmission
32         FROM SNMPv2-SMI
33         SnmpAdminString
34         FROM SNMP-FRAMEWORK-MIB
35     TEXTUAL-CONVENTION,
36     MacAddress, RowStatus, TruthValue,
37     TimeStamp, DateAndTime
38     FROM SNMPv2-TC
39     InetAddressType, InetAddress
40     FROM INET-ADDRESS-MIB
41     OBJECT-GROUP,
42     MODULE-COMPLIANCE,
43     NOTIFICATION-GROUP
44     FROM SNMPv2-CONF
45     ifIndex
46     FROM IF-MIB;
```

47

```
48 wmanIf2mMib MODULE-IDENTITY
49     LAST-UPDATED "200610160000Z" -- October 16, 2006
50     ORGANIZATION "IEEE 802.16"
51     CONTACT-INFO
52         "WG E-mail: stds-802-16@ieee.org
```

```

1           WG Chair: Roger B. Marks
2           Postal: NextWave Broadband, Inc.
3           E-mail: r.b.marks@ieee.org
4
5           TGF Chair: Phillip Barber
6           Postal: Huawei Technologies Co., Ltd
7           E-mail: pbarber@futurewei.com
8
9           Editor: Joey Chou
10          Postal: Intel Corporation
11                 5000 W. Chandler Blvd,
12                 Chandler, AZ 85227, USA
13          E-mail: joey.chou@intel.com"
14  DESCRIPTION
15          "This material is from IEEE Std 802.16i
16          Copyright (c) 2006 IEEE.
17          This MIB Module defines managed objects for
18          Subscriber Station and Base Station based on IEEE Std
19          802.16-2004 and its amendment IEEE Std 802.16e-2005.
20          The MIB contains managed objects that are specific
21          to mobile Broadband Wireless Networks."
22  REVISION      "200610160000Z"
23  DESCRIPTION
24          "The 1st revision of WMAN-IF2M-MIB module."
25          ::= { iso std(0) iso8802(8802) wman(16) 3 }
26
27  wmanIf2mMibObjects      OBJECT IDENTIFIER ::= { wmanIf2mMib 1 }
28  wmanIf2mBsObjects      OBJECT IDENTIFIER ::= { wmanIf2mMibObjects 1 }
29  wmanIf2mSsObjects      OBJECT IDENTIFIER ::= { wmanIf2mMibObjects 2 }
30  wmanIf2mCommonObjects  OBJECT IDENTIFIER ::= { wmanIf2mMibObjects 3 }
31
32  --
33  -- Textual Conventions
34  --
35  WmanIf2mOfdmaMobility ::= TEXTUAL-CONVENTION
36          STATUS      current
37          DESCRIPTION
38          "This field indicates whether or not the MS supports
39          mobility hand-over, Sleepmode, and Idle-mode. A bit
40          value of 0 indicates 'not supported' while 1 indicates
41          it is supported."
42          REFERENCE
43          "Subclause 11.7.14.1 in IEEE Std 802.16e-2005"
44          SYNTAX      BITS {handoverSupport(0),
45                       sleepModeSupport(1),
46                       idleModeSupport(2)}
47
48  WmanIf2mHandoverType ::= TEXTUAL-CONVENTION
49          STATUS      current
50          DESCRIPTION
51          "Indicates what type(s) of Handover the BS and the MS
52          supports.
53          bit#0: when it is set to 1, MDHO/FBSS HO not supported.
54                 the BS shall ignore all other bits.
55          bit#1: when it is set to 1, FBSS/MDHO DL RF Combining
56                 is supported with monitoring MAPs from active BSs
57          bit#2: when it is set to 1, MDHO DL soft Combining is
58                 supported with monitoring single MAP from
59                 anchor BS
60          bit#3: when it is set to 1, MDHO DL soft combining is
61                 supported with monitoring MAPs from active BSs
62          bit#3: when it is set to 1, MDHO UL Multiple
63                 transmission is supported"
64          REFERENCE

```

```

1          "Subclause 11.7.8.12 in IEEE Std 802.16e-2005"
2      SYNTAX      BITS {mdhcFbssHoNotSpported(0),
3                  mdhcFbssDlMapsFromActiveBss(1),
4                  mdhcDlMapFromAnchorBs(2),
5                  mdhcDlMapsFromActiveBss(3),
6                  mdhcUlMultipleTx(4)}
7
8      WmanIf2mCidType ::= TEXTUAL-CONVENTION
9          STATUS      current
10         DESCRIPTION
11             "Type of CID."
12         SYNTAX      INTEGER (0 .. 65535)
13
14      WmanIf2mPsClassId ::= TEXTUAL-CONVENTION
15          STATUS      current
16         DESCRIPTION
17             "Indicates the index to Power Saving Classes. The ID shall
18             be unique within the group of Power Saving Classes
19             associated with the MS. This ID may be used in further
20             MOB_SLP-REQ/RSP messages for activation / deactivation
21             of Power Saving Class."
22         REFERENCE
23             "Subclause 6.3.2.3.44 in IEEE Std 802.16e-2005"
24         SYNTAX      INTEGER (0..63)
25
26      WmanIf2mPsClassType ::= TEXTUAL-CONVENTION
27          STATUS      current
28         DESCRIPTION
29             "The types of power saving classes."
30         REFERENCE
31             "Table 374a in IEEE Std 802.16e-2005"
32         SYNTAX      INTEGER {powerSavingClassTypeI(1),
33                             powerSavingClassTypeII(2),
34                             powerSavingClassTypeIII(3)}
35
36      WmanIf2mPsClassCidDir ::= TEXTUAL-CONVENTION
37          STATUS      current
38         DESCRIPTION
39             "The direction of power saving class's CIDs.
40             0b00 = Unspecified. Each CID has its own direction
41             assign in its connection creation. Can be
42             DL, UL, or both (in the case of management
43             connections).
44             0b01 = Downlink direction only.
45             0b10 = Uplink direction only."
46         REFERENCE
47             "Subclause 6.3.2.3.44 in IEEE Std 802.16e-2005"
48         SYNTAX      INTEGER {unspecified(0),
49                             downlink(1),
50                             uplink(2)}
51
52      WmanIf2mPowerSavingMode ::= TEXTUAL-CONVENTION
53          STATUS      current
54         DESCRIPTION
55             "Power saving class mode active or not active."
56         REFERENCE
57             "Subclause 6.3.2.3.44 in IEEE Std 802.16e-2005"
58         SYNTAX      INTEGER {psNotActive(0),
59                             psActive(1)}
60
61      --
62      -- wmanIf2mBsObjects - containing tables and objects to be implemented in
63      -- the Base station
64      --

```

```

1  -- wmanIf2mBsCm contain the Base Station Configuration Management objects
2  --
3  wmanIf2mBsCm OBJECT IDENTIFIER ::= { wmanIf2mBsObjects 1 }
4
5  --
6  -- Base Station capabilities
7  --
8  wmanIf2mBsCapabilities OBJECT IDENTIFIER ::= { wmanIf2mBsCm 1 }
9
10 wmanIf2mBsSsReqCapabilitiesTable OBJECT-TYPE
11     SYNTAX      SEQUENCE OF WmanIf2mBsSsReqCapabilitiesEntry
12     MAX-ACCESS  not-accessible
13     STATUS      current
14     DESCRIPTION
15         "This table contains the SS's capabilities that are necessary
16         for supporting mobility. SS reports these capabilities in
17         the REG-REQ messages."
18     REFERENCE
19         "Subclause 6.3.2.3.7 in IEEE Std 802.16e-2005"
20     ::= { wmanIf2mBsCapabilities 1 }
21
22 wmanIf2mBsSsReqCapabilitiesEntry OBJECT-TYPE
23     SYNTAX      WmanIf2mBsSsReqCapabilitiesEntry
24     MAX-ACCESS  not-accessible
25     STATUS      current
26     DESCRIPTION
27         "This table provides one row for each SS that has entered and
28         registered into the BS. The primary index is the ifIndex
29         with an ifType of ieee80216WMAN, indicating the BS sector
30         with which the SS is associated. wmanIf2mBsSsMacAddress
31         identifies the SS being registered."
32     INDEX { ifIndex, wmanIf2mBsSsMacAddress }
33     ::= { wmanIf2mBsSsReqCapabilitiesTable 1 }
34
35 WmanIf2mBsSsReqCapabilitiesEntry ::= SEQUENCE {
36     wmanIf2mBsSsMacAddress      MacAddress,
37     wmanIf2mBsSsReqCapHandoverSupported  WmanIf2mHandoverType,
38     wmanIf2mBsSsReqCapHoProcessTimer     Unsigned32,
39     wmanIf2mBsSsReqCapMobilityFeature    WmanIf2mOfdmaMobility,
40     wmanIf2mBsSsReqCapSleepRecoveryTime  Unsigned32,
41     wmanIf2mBsSsReqCapPreviousIpAddr     OCTET STRING,
42     wmanIf2mBsSsReqCapIdleModeTimeout    Unsigned32,
43     wmanIf2mBsSsReqCapHoConnProcessTime  Unsigned32,
44     wmanIf2mBsSsReqCapHoTekProcessTime   Unsigned32}
45
46 wmanIf2mBsSsMacAddress OBJECT-TYPE
47     SYNTAX      MacAddress
48     MAX-ACCESS  not-accessible
49     STATUS      current
50     DESCRIPTION
51         "The MAC address of SS is received from the RNG-REQ
52         message, and used as the identifier to the SS."
53     REFERENCE
54         "Subclause 6.3.2.3.5 in IEEE Std 802.16e-2005"
55     ::= { wmanIf2mBsSsReqCapabilitiesEntry 1 }
56
57 wmanIf2mBsSsReqCapHandoverSupported OBJECT-TYPE
58     SYNTAX      WmanIf2mHandoverType
59     MAX-ACCESS  read-only
60     STATUS      current
61     DESCRIPTION
62         "Indicates what type(s) of Handover the BS or MS supports."
63     REFERENCE
64         "Subclause 11.7.12 in IEEE Std 802.16e-2005"

```



```

1         ::= { wmanIf2mBsSsReqCapabilitiesEntry 2 }
2
3 wmanIf2mBsSsReqCapHoProcessTimer OBJECT-TYPE
4     SYNTAX      Unsigned32
5     UNITS       "frames"
6     MAX-ACCESS  read-only
7     STATUS      current
8     DESCRIPTION
9         "The duration in frames the MS shall wait until receipt of
10        the next unsolicited network re-entry MAC management
11        message as indicated in the HO Process Optimization
12        element of the RNG-RSP message."
13    REFERENCE
14        "Subclause 11.7.13.2 in IEEE Std 802.16e-2005"
15    ::= { wmanIf2mBsSsReqCapabilitiesEntry 3 }
16
17 wmanIf2mBsSsReqCapMobilityFeature OBJECT-TYPE
18     SYNTAX      WmanIf2mOfdmaMobility
19     MAX-ACCESS  read-only
20     STATUS      current
21     DESCRIPTION
22         "The field indicates whether or not the MS supports
23        mobility hand-over, Sleepmode, and Idle-mode."
24    REFERENCE
25        "Subclause 11.7.14.1 in IEEE Std 802.16e-2005"
26    ::= { wmanIf2mBsSsReqCapabilitiesEntry 4 }
27
28 wmanIf2mBsSsReqCapSleepRecoveryTime OBJECT-TYPE
29     SYNTAX      Unsigned32
30     UNITS       "frames"
31     MAX-ACCESS  read-only
32     STATUS      current
33     DESCRIPTION
34         "The object indicates the time required for an MS that is
35        in a sleep mode to return to awake-mode. This may be used
36        by the BS to determine sleep interval window sizes when
37        initiating sleep mode with an MS."
38    REFERENCE
39        "Subclause 11.7.15 in IEEE Std 802.16e-2005"
40    ::= { wmanIf2mBsSsReqCapabilitiesEntry 5 }
41
42 wmanIf2mBsSsReqCapPreviousIpAddr OBJECT-TYPE
43     SYNTAX      OCTET STRING
44     MAX-ACCESS  read-only
45     STATUS      current
46     DESCRIPTION
47         "The object indicates the IP address that the MS was assigned
48        on the secondary management connection based on an
49        association with its last serving BS. An IPv4 address shall
50        be specified in conventional dotted format; e.g.,
51        '134.234.2.3'. An IPv6 address may be expressed in abridged
52        or unabridged form; however, the form chosen shall be
53        consistent with RFC 2373."
54    REFERENCE
55        "Subclause 11.7.16 in IEEE Std 802.16e-2005"
56    ::= { wmanIf2mBsSsReqCapabilitiesEntry 6 }
57
58 wmanIf2mBsSsReqCapIdleModeTimeout OBJECT-TYPE
59     SYNTAX      Unsigned32
60     UNITS       "seconds"
61     MAX-ACCESS  read-only
62     STATUS      current
63     DESCRIPTION
64         "Max time interval between MS Idle Mode Location Updates."

```

```

1      REFERENCE
2      "Subclause 11.7.20.1 in IEEE Std 802.16e-2005"
3      ::= { wmanIf2mBsSsReqCapabilitiesEntry 7 }
4
5      wmanIf2mBsSsReqCapHoConnProcessTime OBJECT-TYPE
6      SYNTAX      Unsigned32
7      UNITS       "milliseconds"
8      MAX-ACCESS  read-only
9      STATUS      current
10     DESCRIPTION
11     "The duration that the MS needs to process information
12     on connections provided in RNG-RSP or REG-RSP message
13     during Handoff."
14     REFERENCE
15     "Subclause 11.7.24 in IEEE Std 802.16e-2005"
16     ::= { wmanIf2mBsSsReqCapabilitiesEntry 8 }
17
18     wmanIf2mBsSsReqCapHoTekProcessTime OBJECT-TYPE
19     SYNTAX      Unsigned32
20     UNITS       "milliseconds"
21     MAX-ACCESS  read-only
22     STATUS      current
23     DESCRIPTION
24     "The duration that the MS needs to completely process
25     TEK information during Handoff."
26     REFERENCE
27     "Subclause 11.7.24 in IEEE Std 802.16e-2005"
28     ::= { wmanIf2mBsSsReqCapabilitiesEntry 9 }
29
30     wmanIf2mBsSsRspCapabilitiesTable OBJECT-TYPE
31     SYNTAX      SEQUENCE OF WmanIf2mBsSsRspCapabilitiesEntry
32     MAX-ACCESS  not-accessible
33     STATUS      current
34     DESCRIPTION
35     "This table contains the SS's capabilities that are necessary
36     for supporting mobility. BS acknowledges the capabilities in
37     the REG-RSP message in response to REG-REQ messages."
38     REFERENCE
39     "Subclause 6.3.2.3.7 in IEEE Std 802.16e-2005"
40     ::= { wmanIf2mBsCapabilities 2 }
41
42     wmanIf2mBsSsRspCapabilitiesEntry OBJECT-TYPE
43     SYNTAX      WmanIf2mBsSsRspCapabilitiesEntry
44     MAX-ACCESS  not-accessible
45     STATUS      current
46     DESCRIPTION
47     "This table provides one row for each SS that has entered and
48     registered into the BS. The primary index is the ifIndex
49     with an ifType of ieee80216WMAN, indicating the BS sector
50     with which the SS is associated. wmanIf2mBsSsMacAddress
51     identifies the SS being registered."
52     INDEX { ifIndex, wmanIf2mBsSsMacAddress }
53     ::= { wmanIf2mBsSsRspCapabilitiesTable 1 }
54
55     WmanIf2mBsSsRspCapabilitiesEntry ::= SEQUENCE {
56         wmanIf2mBsSsRspCapHandoverSupported      WmanIf2mHandoverType,
57         wmanIf2mBsSsRspCapRetrainTime           Unsigned32,
58         wmanIf2mBsSsRspCapHoProcessTimer        Unsigned32,
59         wmanIf2mBsSsRspCapRetransmissionTimer    Unsigned32,
60         wmanIf2mBsSsRspCapMobilityFeature       WmanIf2mOfdmaMobility,
61         wmanIf2mBsSsRspCapNewSaid               Integer32,
62         wmanIf2mBsSsRspCapOldSaid              Integer32,
63         wmanIf2mBsSsRspCapIdleModeTimeout      Unsigned32,
64         wmanIf2mBsSsRspCapHoConnProcessTime     Unsigned32,

```

```

1           wmanIf2mBsSsRspCapHoTekProcessTime      Unsigned32}
2
3   wmanIf2mBsSsRspCapHandoverSupported OBJECT-TYPE
4       SYNTAX      WmanIf2mHandoverType
5       MAX-ACCESS  read-only
6       STATUS      current
7       DESCRIPTION
8           "Indicates what type(s) of Handover the BS or MS supports."
9       REFERENCE
10          "Subclause 11.7.12 in IEEE Std 802.16e-2005"
11          ::= { wmanIf2mBsSsRspCapabilitiesEntry 1 }
12
13  wmanIf2mBsSsRspCapRetrainTime OBJECT-TYPE
14      SYNTAX      Unsigned32
15      UNITS       "100 milliseconds"
16      MAX-ACCESS  read-only
17      STATUS      current
18      DESCRIPTION
19          "Indicates the duration for MS's connection information that
20           will be retained in serving BS. BS shall start
21           Resource Retain Time timer at MS notification of pending HO
22           attempt through MOB_HO-IND or by detecting an MS drop."
23      REFERENCE
24          "Subclause 11.7.13.1 in IEEE Std 802.16e-2005"
25          ::= { wmanIf2mBsSsRspCapabilitiesEntry 2 }
26
27  wmanIf2mBsSsRspCapHoProcessTimer OBJECT-TYPE
28      SYNTAX      Unsigned32
29      UNITS       "frames"
30      MAX-ACCESS  read-only
31      STATUS      current
32      DESCRIPTION
33          "The duration in frames the MS shall wait until receipt of
34           the next unsolicited network re-entry MAC management
35           message as indicated in the HO Process Optimization
36           element of the RNG-RSP message. On HO Process Optimization
37           MS Timer timeout and while HO Process Optimization MS
38           Timer Retries is valid, MS shall send the network re-entry
39           MAC management request message corresponding to the
40           expected and pending network re-entry MAC management
41           response message as indicated in HO Process Optimization
42           and recycle HO Process Optimization MS Timer."
43      REFERENCE
44          "Subclause 11.7.13.2 in IEEE Std 802.16e-2005"
45          ::= { wmanIf2mBsSsRspCapabilitiesEntry 3 }
46
47  wmanIf2mBsSsRspCapRetransmissionTimer OBJECT-TYPE
48      SYNTAX      Unsigned32
49      UNITS       "frames"
50      MAX-ACCESS  read-only
51      STATUS      current
52      DESCRIPTION
53          "When an MS transmits MOB_MSHO-REQ to initiate a handover
54           process, it shall start MS Handover Retransmission Timer
55           and shall not transmit another MOB_MSHO-REQ until the
56           expiration of the MS Handover Retransmission Timer."
57      REFERENCE
58          "Subclause 11.7.13.3 in IEEE Std 802.16e-2005"
59          ::= { wmanIf2mBsSsRspCapabilitiesEntry 4 }
60
61  wmanIf2mBsSsRspCapMobilityFeature OBJECT-TYPE
62      SYNTAX      WmanIf2mOfdmaMobility
63      MAX-ACCESS  read-only
64      STATUS      current

```

```

1      DESCRIPTION
2          "The field indicates the mobility hand-over, Sleepmode,
3          and Idle-mode negotiated for MS."
4      REFERENCE
5          "Subclause 11.7.14.1 in IEEE Std 802.16e-2005"
6          ::= { wmanIf2mBsSsRspCapabilitiesEntry 5 }
7
8      wmanIf2mBsSsRspCapNewSaid OBJECT-TYPE
9          SYNTAX      Integer32 (0 .. 65535)
10         MAX-ACCESS  read-only
11         STATUS      current
12         DESCRIPTION
13             "The field indicates New SAID after handover to new BS. It
14             provides a translation table that allows an MS to update
15             its security associations so that it may continue security
16             service after a handover to a new serving BS."
17         REFERENCE
18             "Subclause 11.7.18 in IEEE Std 802.16e-2005"
19             ::= { wmanIf2mBsSsRspCapabilitiesEntry 6 }
20
21     wmanIf2mBsSsRspCapOldSaid OBJECT-TYPE
22         SYNTAX      Integer32 (0 .. 65535)
23         MAX-ACCESS  read-only
24         STATUS      current
25         DESCRIPTION
26             "The field indicates Old SAID after handover to new BS. It
27             provides a translation table that allows an MS to update
28             its security associations so that it may continue security
29             service after a handover to a new serving BS."
30         REFERENCE
31             "Subclause 11.7.18 in IEEE Std 802.16e-2005"
32             ::= { wmanIf2mBsSsRspCapabilitiesEntry 7 }
33
34     wmanIf2mBsSsRspCapIdleModeTimeout OBJECT-TYPE
35         SYNTAX      Unsigned32
36         UNITS       "seconds"
37         MAX-ACCESS  read-only
38         STATUS      current
39         DESCRIPTION
40             "Max time interval between MS Idle Mode Location Updates."
41         REFERENCE
42             "Subclause 11.7.20.1 in IEEE Std 802.16e-2005"
43             ::= { wmanIf2mBsSsRspCapabilitiesEntry 8 }
44
45     wmanIf2mBsSsRspCapHoConnProcessTime OBJECT-TYPE
46         SYNTAX      Unsigned32
47         UNITS       "milliseconds"
48         MAX-ACCESS  read-only
49         STATUS      current
50         DESCRIPTION
51             "The duration that the MS needs to process information
52             on connections provided in RNG-RSP or REG-RSP message
53             during Handoff."
54         REFERENCE
55             "Subclause 11.7.24 in IEEE Std 802.16e-2005"
56             ::= { wmanIf2mBsSsRspCapabilitiesEntry 9 }
57
58     wmanIf2mBsSsRspCapHoTekProcessTime OBJECT-TYPE
59         SYNTAX      Unsigned32
60         UNITS       "milliseconds"
61         MAX-ACCESS  read-only
62         STATUS      current
63         DESCRIPTION
64             "The duration that the MS needs to completely process

```

```

1           TEK information during Handoff."
2     REFERENCE
3       "Subclause 11.7.24 in IEEE Std 802.16e-2005"
4     ::= { wmanIf2mBsSsRspCapabilitiesEntry 10 }
5
6     wmanIf2mBsBasicCapabilitiesTable OBJECT-TYPE
7       SYNTAX      SEQUENCE OF WmanIf2mBsBasicCapabilitiesEntry
8       MAX-ACCESS  not-accessible
9       STATUS      current
10      DESCRIPTION
11        "This table contains the basic capabilities of the BS as
12         implemented in BS hardware and software. These capabilities
13         along with the configuration for them
14         (wmanIf2mBsCapabilitiesConfigTable) are used for negotiation
15         of basic capabilities with SS using RNG-RSP, SBC-RSP and
16         REG-RSP messages. The negotiated capabilities are obtained
17         by interSubclause of SS raw reported capabilities, BS raw
18         capabilities and BS configured capabilities. The objects in
19         the table have read-only access. The table is maintained
20         by BS."
21      ::= { wmanIf2mBsCapabilities 3 }
22
23     wmanIf2mBsBasicCapabilitiesEntry OBJECT-TYPE
24       SYNTAX      WmanIf2mBsBasicCapabilitiesEntry
25       MAX-ACCESS  not-accessible
26       STATUS      current
27       DESCRIPTION
28        "This table provides one row for each BS sector and is
29         indexed by ifIndex."
30       INDEX { ifIndex }
31     ::= { wmanIf2mBsBasicCapabilitiesTable 1 }
32
33     WmanIf2mBsBasicCapabilitiesEntry ::= SEQUENCE {
34       wmanIf2mBsCapHandoverSupported          WmanIf2mHandoverType,
35       wmanIf2mBsCapRetrainTime                Unsigned32,
36       wmanIf2mBsCapHoProcessTimer            Unsigned32,
37       wmanIf2mBsCapRetransmissionTimer       Unsigned32,
38       wmanIf2mBsCapMobilityFeature           WmanIf2mOfdmaMobility,
39       wmanIf2mBsCapIdleModeTimeout           Unsigned32,
40       wmanIf2mBsCapHoConnProcessTime        Unsigned32,
41       wmanIf2mBsCapHoTekProcessTime         Unsigned32}
42
43     wmanIf2mBsCapHandoverSupported OBJECT-TYPE
44       SYNTAX      WmanIf2mHandoverType
45       MAX-ACCESS  read-only
46       STATUS      current
47       DESCRIPTION
48        "Indicates what type(s) of Handover the BS or MS supports."
49       REFERENCE
50       "Subclause 11.7.12 in IEEE Std 802.16e-2005"
51     ::= { wmanIf2mBsBasicCapabilitiesEntry 1 }
52
53     wmanIf2mBsCapRetrainTime OBJECT-TYPE
54       SYNTAX      Unsigned32
55       UNITS       "100 milliseconds"
56       MAX-ACCESS  read-only
57       STATUS      current
58       DESCRIPTION
59        "Indicates the duration for MS's connection information that
60         will be retained in serving BS. BS shall start
61         Resource_Retain_Time timer at MS notification of pending HO
62         attempt through MOB_HO-IND or by detecting an MS drop."
63       REFERENCE
64       "Subclause 11.7.13.1 in IEEE Std 802.16e-2005"

```

```

1         ::= { wmanIf2mBsBasicCapabilitiesEntry 2 }
2
3 wmanIf2mBsCapHoProcessTimer OBJECT-TYPE
4     SYNTAX      Unsigned32
5     UNITS       "frames"
6     MAX-ACCESS  read-only
7     STATUS      current
8     DESCRIPTION
9         "The duration in frames the MS shall wait until receipt of
10        the next unsolicited network re-entry MAC management
11        message as indicated in the HO Process Optimization
12        element of the RNG-RSP message."
13    REFERENCE
14        "Subclause 11.7.13.2 in IEEE Std 802.16e-2005"
15    ::= { wmanIf2mBsBasicCapabilitiesEntry 3 }
16
17 wmanIf2mBsCapRetransmissionTimer OBJECT-TYPE
18     SYNTAX      Unsigned32
19     UNITS       "frames"
20     MAX-ACCESS  read-only
21     STATUS      current
22     DESCRIPTION
23         "When an MS transmits MOB_MSHO-REQ to initiate a handover
24         process, it shall start MS Handover Retransmission Timer
25         and shall not transmit another MOB_MSHO-REQ until the
26         expiration of the MS Handover Retransmission Timer."
27    REFERENCE
28        "Subclause 11.7.13.3 in IEEE Std 802.16e-2005"
29    ::= { wmanIf2mBsBasicCapabilitiesEntry 4 }
30
31 wmanIf2mBsCapMobilityFeature OBJECT-TYPE
32     SYNTAX      WmanIf2mOfdmaMobility
33     MAX-ACCESS  read-only
34     STATUS      current
35     DESCRIPTION
36         "The field indicates the mobility hand-over, Sleepmode,
37         and Idle-mode supported by BS."
38    REFERENCE
39        "Subclause 11.7.14.1 in IEEE Std 802.16e-2005"
40    ::= { wmanIf2mBsBasicCapabilitiesEntry 5 }
41
42 wmanIf2mBsCapIdleModeTimeout OBJECT-TYPE
43     SYNTAX      Unsigned32
44     UNITS       "seconds"
45     MAX-ACCESS  read-only
46     STATUS      current
47     DESCRIPTION
48         "Max time interval between MS Idle Mode Location Updates."
49    REFERENCE
50        "Subclause 11.7.20.1 in IEEE Std 802.16e-2005"
51    ::= { wmanIf2mBsBasicCapabilitiesEntry 6 }
52
53 wmanIf2mBsCapHoConnProcessTime OBJECT-TYPE
54     SYNTAX      Unsigned32
55     UNITS       "milliseconds"
56     MAX-ACCESS  read-only
57     STATUS      current
58     DESCRIPTION
59         "The duration that the MS needs to process information
60         on connections provided in RNG-RSP or REG-RSP message
61         during Handoff."
62    REFERENCE
63        "Subclause 11.7.24 in IEEE Std 802.16e-2005"
64    ::= { wmanIf2mBsBasicCapabilitiesEntry 7 }

```

```

1
2 wmanIf2mBsCapHoTekProcessTime OBJECT-TYPE
3     SYNTAX      Unsigned32
4     UNITS       "milliseconds"
5     MAX-ACCESS  read-only
6     STATUS      current
7     DESCRIPTION
8         "The duration that the MS needs to completely process
9         TEK information during Handoff."
10    REFERENCE
11        "Subclause 11.7.24 in IEEE Std 802.16e-2005"
12    ::= { wmanIf2mBsBasicCapabilitiesEntry 8 }
13
14 wmanIf2mBsCapabilitiesConfigTable OBJECT-TYPE
15     SYNTAX      SEQUENCE OF WmanIf2mBsCapabilitiesConfigEntry
16     MAX-ACCESS  not-accessible
17     STATUS      current
18     DESCRIPTION
19         "This table contains the configuration for basic
20         capabilities of BS. The table is intended to be used to
21         restrict the Capabilities implemented by BS, for example in
22         order to comply with local regulatory requirements. The BS
23         should use the configuration along with the implemented
24         Capabilities (wmanIf2mBsBasicCapabilitiesTable) for
25         negotiation of basic capabilities with SS using RNG-RSP,
26         SBC-RSP and REG-RSP messages. The negotiated capabilities
27         are obtained by interSubclause of SS reported capabilities,
28         BS raw capabilities and BS configured capabilities. The
29         objects in the table have read-write access. The rows are
30         created by BS as a copy of wmanIf2mBsBasicCapabilitiesTable
31         and can be modified by NMS."
32    ::= { wmanIf2mBsCapabilities 4 }
33
34 wmanIf2mBsCapabilitiesConfigEntry OBJECT-TYPE
35     SYNTAX      WmanIf2mBsCapabilitiesConfigEntry
36     MAX-ACCESS  not-accessible
37     STATUS      current
38     DESCRIPTION
39         "This table provides one row for each BS sector and is
40         indexed by ifIndex."
41     INDEX { ifIndex }
42    ::= { wmanIf2mBsCapabilitiesConfigTable 1 }
43
44 WmanIf2mBsCapabilitiesConfigEntry ::= SEQUENCE {
45     wmanIf2mBsCapCfgHandoverSupported      WmanIf2mHandoverType,
46     wmanIf2mBsCapCfgRetrainTime           Unsigned32,
47     wmanIf2mBsCapCfgHoProcessTimer        Unsigned32,
48     wmanIf2mBsCapCfgRetransmissionTimer   Unsigned32,
49     wmanIf2mBsCapCfgMobilityFeature        WmanIf2mOfdmaMobility,
50     wmanIf2mBsCapCfgIdleModeTimeout       Unsigned32,
51     wmanIf2mBsCapCfgHoConnProcessTime     Unsigned32,
52     wmanIf2mBsCapCfgHoTekProcessTime      Unsigned32}
53
54 wmanIf2mBsCapCfgHandoverSupported OBJECT-TYPE
55     SYNTAX      WmanIf2mHandoverType
56     MAX-ACCESS  read-write
57     STATUS      current
58     DESCRIPTION
59         "Indicates what type(s) of Handover the BS or MS supports."
60     REFERENCE
61        "Subclause 11.7.12 in IEEE Std 802.16e-2005"
62    ::= { wmanIf2mBsCapabilitiesConfigEntry 1 }
63
64 wmanIf2mBsCapCfgRetrainTime OBJECT-TYPE

```

```

1      SYNTAX      Unsigned32
2      UNITS       "100 milliseconds"
3      MAX-ACCESS  read-write
4      STATUS      current
5      DESCRIPTION
6          "Indicates the duration for MS's connection information that
7          will be retained in serving BS. BS shall start
8          Resource_Retain_Time timer at MS notification of pending HO
9          attempt through MOB_HO-IND or by detecting an MS drop."
10     REFERENCE
11         "Subclause 11.7.13.1 in IEEE Std 802.16e-2005"
12     DEFVAL      { 1 }
13     ::= { wmanIf2mBsCapabilitiesConfigEntry 2 }
14
15     wmanIf2mBsCapCfgHoProcessTimer OBJECT-TYPE
16         SYNTAX      Unsigned32
17         UNITS       "frames"
18         MAX-ACCESS  read-write
19         STATUS      current
20         DESCRIPTION
21             "The duration in frames the MS shall wait until receipt of
22             the next unsolicited network re-entry MAC management
23             message as indicated in the HO Process Optimization
24             element of the RNG-RSP message."
25         REFERENCE
26             "Subclause 11.7.13.2 in IEEE Std 802.16e-2005"
27         ::= { wmanIf2mBsCapabilitiesConfigEntry 3 }
28
29     wmanIf2mBsCapCfgRetransmissionTimer OBJECT-TYPE
30         SYNTAX      Unsigned32
31         UNITS       "frames"
32         MAX-ACCESS  read-write
33         STATUS      current
34         DESCRIPTION
35             "When an MS transmits MOB_MSHO-REQ to initiate a handover
36             process, it shall start MS Handover Retransmission Timer
37             and shall not transmit another MOB_MSHO-REQ until the
38             expiration of the MS Handover Retransmission Timer."
39         REFERENCE
40             "Subclause 11.7.13.3 in IEEE Std 802.16e-2005"
41         ::= { wmanIf2mBsCapabilitiesConfigEntry 4 }
42
43     wmanIf2mBsCapCfgMobilityFeature OBJECT-TYPE
44         SYNTAX      WmanIf2mOfdmaMobility
45         MAX-ACCESS  read-write
46         STATUS      current
47         DESCRIPTION
48             "The field indicates the mobility hand-over, Sleepmode,
49             and Idle-mode configured for the BS."
50         REFERENCE
51             "Subclause 11.7.14.1 in IEEE Std 802.16e-2005"
52         ::= { wmanIf2mBsCapabilitiesConfigEntry 5 }
53
54     wmanIf2mBsCapCfgIdleModeTimeout OBJECT-TYPE
55         SYNTAX      Unsigned32
56         UNITS       "seconds"
57         MAX-ACCESS  read-write
58         STATUS      current
59         DESCRIPTION
60             "Max time interval between MS Idle Mode Location Updates."
61         REFERENCE
62             "Subclause 11.7.20.1 in IEEE Std 802.16e-2005"
63         DEFVAL      { 4096 }
64         ::= { wmanIf2mBsCapabilitiesConfigEntry 6 }

```



```

1
2 wmanIf2mBsCapCfgHoConnProcessTime OBJECT-TYPE
3     SYNTAX      Unsigned32
4     UNITS       "milliseconds"
5     MAX-ACCESS  read-write
6     STATUS      current
7     DESCRIPTION
8         "The duration that the MS needs to process information
9         on connections provided in RNG-RSP or REG-RSP message
10        during Handoff."
11    REFERENCE
12        "Subclause 11.7.24 in IEEE Std 802.16e-2005"
13    ::= { wmanIf2mBsCapabilitiesConfigEntry 7 }
14
15 wmanIf2mBsCapCfgHoTekProcessTime OBJECT-TYPE
16     SYNTAX      Unsigned32
17     UNITS       "milliseconds"
18     MAX-ACCESS  read-write
19     STATUS      current
20     DESCRIPTION
21        "The duration that the MS needs to completely process
22        TEK information during Handoff."
23    REFERENCE
24        "Subclause 11.7.24 in IEEE Std 802.16e-2005"
25    ::= { wmanIf2mBsCapabilitiesConfigEntry 8 }
26
27 --
28 -- Base Station Power Saving Mode
29 --
30 wmanIf2mBsPowerSavingMode OBJECT IDENTIFIER ::= { wmanIf2mBsCm 2 }
31
32 --
33 -- wmanIf2mBsSsPowerSavingStatusTable contains the power saving status
34 --
35 wmanIf2mBsSsPowerSavingStatusTable OBJECT-TYPE
36     SYNTAX      SEQUENCE OF WmanIf2mBsSsPowerSavingStatusEntry
37     MAX-ACCESS  not-accessible
38     STATUS      current
39     DESCRIPTION
40        "This table contains the power saving status for each CID
41        in an MS. When the BS roams to a different BS, all entries
42        associated with such MS will be deleted."
43    ::= { wmanIf2mBsPowerSavingMode 1 }
44
45 wmanIf2mBsSsPowerSavingStatusEntry OBJECT-TYPE
46     SYNTAX      WmanIf2mBsSsPowerSavingStatusEntry
47     MAX-ACCESS  not-accessible
48     STATUS      current
49     DESCRIPTION
50        "This table provides one row for each CID in an MS, and
51        is indexed by ifIndex, wmanIf2mBsSsMacAddress, and
52        wmanIf2mBsSsCid."
53     INDEX      { ifIndex,
54                 wmanIf2mBsSsMacAddress,
55                 wmanIf2mBsSsCid }
56    ::= { wmanIf2mBsSsPowerSavingStatusTable 1 }
57
58 WmanIf2mBsSsPowerSavingStatusEntry ::= SEQUENCE {
59     wmanIf2mBsSsCid          WmanIf2mCidType,
60     wmanIf2mBsSsPowerSavingClassId  WmanIf2mPsClassId }
61
62 wmanIf2mBsSsCid OBJECT-TYPE
63     SYNTAX      WmanIf2mCidType
64     MAX-ACCESS  read-only

```

```

1      STATUS      current
2      DESCRIPTION
3      "A 16 bit channel identifier to identify a connection."
4      ::= { wmanIf2mBsSsPowerSavingStatusEntry 1 }
5
6      wmanIf2mBsSsPowerSavingClassId OBJECT-TYPE
7          SYNTAX      WmanIf2mPsClassId
8          MAX-ACCESS  read-only
9          STATUS      current
10         DESCRIPTION
11             "wmanIf2mBsSsPowerSavingClassId identifies the power
12              saving class associated with this CID. It maps to an
13              entry in wmanIf2mBsSsPowerSavingClassesTable."
14         ::= { wmanIf2mBsSsPowerSavingStatusEntry 2 }
15
16     --
17     -- wmanIf2mBsSsPowerSavingClassesTable contains the power saving classes
18     -- information
19     --
20     wmanIf2mBsSsPowerSavingClassesTable OBJECT-TYPE
21         SYNTAX      SEQUENCE OF WmanIf2mBsSsPowerSavingClassesEntry
22         MAX-ACCESS  not-accessible
23         STATUS      current
24         DESCRIPTION
25             "This table contains the power saving classes definitions,
26              and activation / deactivation information that are provided
27              by MOB_SLP-REQ and MOB_SLP-RSP messages. When the BS roams
28              to a different BS, all entries associated with such MS will
29              be deleted."
30         ::= { wmanIf2mBsPowerSavingMode 2 }
31
32     wmanIf2mBsSsPowerSavingClassesEntry OBJECT-TYPE
33         SYNTAX      WmanIf2mBsSsPowerSavingClassesEntry
34         MAX-ACCESS  not-accessible
35         STATUS      current
36         DESCRIPTION
37             "This table is indexed by ifIndex, wmanIf2mBsSsMacAddress,
38              and wmanIf2mBsSsPsClassesId. It is intended to support both
39              unicast and multicast service flows.
40              wmanIf2mBsSsMacAddress contains the MAC address of the MS
41              to which the power saving classes are associated."
42         INDEX { ifIndex,
43                wmanIf2mBsSsMacAddress,
44                wmanIf2mBsSsPsClassId }
45         ::= { wmanIf2mBsSsPowerSavingClassesTable 1 }
46
47     WmanIf2mBsSsPowerSavingClassesEntry ::= SEQUENCE {
48         wmanIf2mBsSsPsClassId          WmanIf2mPsClassId,
49         wmanIf2mBsSsStartFrameNumber   INTEGER,
50         wmanIf2mBsSsPowerSavingClassType WmanIf2mPsClassType,
51         wmanIf2mBsSsPsClassCidDirection WmanIf2mPsClassCidDir,
52         wmanIf2mBsSsTrafficTriggeredWakening INTEGER,
53         wmanIf2mBsSsInitialSleepWindow INTEGER,
54         wmanIf2mBsSsFinalSleepWindowBase INTEGER,
55         wmanIf2mBsSsFinalSleepWindowExponent INTEGER,
56         wmanIf2mBsSsListeningWindow   INTEGER,
57         wmanIf2mBsSsPowerSavingMode    WmanIf2mPowerSavingMode,
58         wmanIf2mBsSsSlpId              INTEGER}
59
60     wmanIf2mBsSsPsClassId OBJECT-TYPE
61         SYNTAX      WmanIf2mPsClassId
62         MAX-ACCESS  not-accessible
63         STATUS      current
64         DESCRIPTION

```

```

1           "This object uniquely identifies the power saving classes
2           in a MS."
3           ::= { wmanIf2mBsSsPowerSavingClassesEntry 1 }
4
5 wmanIf2mBsSsStartFrameNumber OBJECT-TYPE
6     SYNTAX      INTEGER
7     MAX-ACCESS  read-write
8     STATUS      current
9     DESCRIPTION
10            "Start frame number for first sleep window."
11     REFERENCE
12            "Subclause 6.3.2.3.44 in IEEE Std 802.16e-2005"
13     ::= { wmanIf2mBsSsPowerSavingClassesEntry 2 }
14
15 wmanIf2mBsSsPowerSavingClassType OBJECT-TYPE
16     SYNTAX      WmanIf2mPsClassType
17     MAX-ACCESS  read-write
18     STATUS      current
19     DESCRIPTION
20            "Power saving classes type I - BE & NRT-VR,
21            Power saving classes type II - UGS & RT-VR,
22            Power saving classes type III - multicast, management CID"
23     REFERENCE
24            "Subclause 6.3.21.2-4, in IEEE Std 802.16e-2005"
25     ::= { wmanIf2mBsSsPowerSavingClassesEntry 3 }
26
27 wmanIf2mBsSsPsClassCidDirection OBJECT-TYPE
28     SYNTAX      WmanIf2mPsClassCidDir
29     MAX-ACCESS  read-write
30     STATUS      current
31     DESCRIPTION
32            "The direction of power saving class's CIDs."
33     REFERENCE
34            "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
35     ::= { wmanIf2mBsSsPowerSavingClassesEntry 4 }
36
37 wmanIf2mBsSsTrafficTriggeredWakening OBJECT-TYPE
38     SYNTAX      INTEGER (0..1)
39     MAX-ACCESS  read-write
40     STATUS      current
41     DESCRIPTION
42            "0 = Power Saving Class shall not be deactivated if
43            traffic appears at the connection as per 6.3.19.2.
44            1 = Power Saving Class shall be deactivated if
45            traffic appears at the connection as 6.3.19.2."
46     REFERENCE
47            "Subclause 6.3.19.2, in IEEE Std 802.16e-2005"
48     ::= { wmanIf2mBsSsPowerSavingClassesEntry 5 }
49
50 wmanIf2mBsSsInitialSleepWindow OBJECT-TYPE
51     SYNTAX      INTEGER (0..255)
52     UNITS       "frame"
53     MAX-ACCESS  read-write
54     STATUS      current
55     DESCRIPTION
56            "The initial duration for the sleep window. It is not
57            relevant for Power Saving Class type III, and shall
58            return '0'."
59     REFERENCE
60            "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
61     ::= { wmanIf2mBsSsPowerSavingClassesEntry 6 }
62
63 wmanIf2mBsSsFinalSleepWindowBase OBJECT-TYPE
64     SYNTAX      INTEGER (0..1023)

```

```

1      UNITS      "frame"
2      MAX-ACCESS read-write
3      STATUS     current
4      DESCRIPTION
5          "The final value for the sleep interval. It is not
6           relevant for Power Saving Class type II, and shall
7           return '0'. For Power Saving Class type III, it is the
8           base for duration of single sleep window request."
9      REFERENCE
10         "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
11     ::= { wmanIf2mBsSsPowerSavingClassesEntry 7 }
12
13 wmanIf2mBsSsFinalSleepWindowExponent OBJECT-TYPE
14     SYNTAX     INTEGER (0..7)
15     MAX-ACCESS read-write
16     STATUS     current
17     DESCRIPTION
18         "The factor by which the final-sleep window base is
19         multiplied in order to calculate the final-sleep window.
20         The following formula is used:
21         final-sleep window = final-sleep window base x
22                             2^(final-sleep window exponent)
23         For Power Saving Class type III, it is the exponent for
24         the duration of single sleep window request."
25     REFERENCE
26         "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
27     ::= { wmanIf2mBsSsPowerSavingClassesEntry 8 }
28
29 wmanIf2mBsSsListeningWindow OBJECT-TYPE
30     SYNTAX     INTEGER (0..255)
31     UNITS      "frame"
32     MAX-ACCESS read-write
33     STATUS     current
34     DESCRIPTION
35         "The Duration of MS listening window. It is not
36         relevant for Power Saving Class type III, and shall
37         return '0'."
38     REFERENCE
39         "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
40     ::= { wmanIf2mBsSsPowerSavingClassesEntry 9 }
41
42 wmanIf2mBsSsPowerSavingMode OBJECT-TYPE
43     SYNTAX     WmanIf2mPowerSavingMode
44     MAX-ACCESS read-write
45     STATUS     current
46     DESCRIPTION
47         "Indicate whether the power saving class mode of such
48         CID is active or not.
49         wmanIf2mBsSsPowerSavingMode = Sleep_Approved && Operation."
50     REFERENCE
51         "Subclause 6.3.2.3.45, in IEEE Std 802.16e-2005"
52     ::= { wmanIf2mBsSsPowerSavingClassesEntry 10 }
53
54 wmanIf2mBsSsSlpId OBJECT-TYPE
55     SYNTAX     INTEGER (0..1023)
56     MAX-ACCESS read-only
57     STATUS     current
58     DESCRIPTION
59         "wmanIf2mBsSsSlpId is assigned by the BS whenever an MS is
60         instructed to enter sleep mode. This number shall be unique
61         among all MSs that are in sleep mode."
62     REFERENCE
63         "Subclause 6.3.2.3.45, in IEEE Std 802.16e-2005"
64     ::= { wmanIf2mBsSsPowerSavingClassesEntry 11 }

```

```

1
2 wmanIf2mBsPm OBJECT IDENTIFIER ::= { wmanIf2mBsObjects 2 }
3
4 --
5 -- Mobile Station Sleep Mode Statistics Table
6 --
7 wmanIf2mBsSsSleepModeStatisticsTable OBJECT-TYPE
8     SYNTAX      SEQUENCE OF WmanIf2mBsSsSleepModeStatisticsEntry
9     MAX-ACCESS  not-accessible
10    STATUS      current
11    DESCRIPTION
12        "This table contains the sleep mode statistic for MS. This
13        table shall be maintained as FIFO to store the sleep mode
14        statistics over a period of time that is subject to
15        implementation. This statistics information can be to
16        monitor, fine tuning, or debugging the power saving
17        performance of each MS. When the statistics entry for an
18        MS reaches the limit, it wraps around to the beginning, and
19        overwrites the oldest entry with the new entry. When the BS
20        roams to a different BS, all entries associated with such
21        MS will be deleted."
22    REFERENCE
23        "6.3.21 in IEEE Std 802.16e-2005"
24    ::= { wmanIf2mBsPm 1 }
25
26 wmanIf2mBsSsSleepModeStatisticsEntry OBJECT-TYPE
27     SYNTAX      WmanIf2mBsSsSleepModeStatisticsEntry
28     MAX-ACCESS  not-accessible
29     STATUS      current
30     DESCRIPTION
31        "Each entry in the table contains the event of an MS
32        entering the sleep mode. It is indexed by ifIndex,
33        wmanIf2mBsSsMacAddress, and wmanIf2mBsSsStatisticsIndex.
34        wmanIf2mBsSsStatisticsIndex is the index to sleep mode event
35        entry in the table, and should be increased monotonically,
36        and wraps around when it reaches the implementation
37        specific limit. A time stamp is provided in each entry to
38        indicate when the sleep mode event took place."
39     INDEX      { ifIndex,
40                 wmanIf2mBsSsMacAddress,
41                 wmanIf2mBsSsCid,
42                 wmanIf2mBsSsStatisticsIndex }
43     ::= { wmanIf2mBsSsSleepModeStatisticsTable 1 }
44
45 WmanIf2mBsSsSleepModeStatisticsEntry ::= SEQUENCE {
46     wmanIf2mBsSsStatisticsIndex      Unsigned32,
47     wmanIf2mBsSsSleepWindowStarted   Unsigned32,
48     wmanIf2mBsSsListeningWindowStarted Unsigned32,
49     wmanIf2mBsSsPendingMsdu          INTEGER,
50     wmanIf2mBsSsSleepWindowTimeStamp DateAndTime}
51
52 wmanIf2mBsSsStatisticsIndex OBJECT-TYPE
53     SYNTAX      Unsigned32 (1 .. 4294967295)
54     MAX-ACCESS  read-only
55     STATUS      current
56     DESCRIPTION
57        "wmanIf2mBsSsStatisticsIndex identifies the entry in the
58        table where the latest sleep mode event took place."
59     ::= { wmanIf2mBsSsSleepModeStatisticsEntry 1 }
60
61 wmanIf2mBsSsSleepWindowStarted OBJECT-TYPE
62     SYNTAX      Unsigned32 (1 .. 166777215)
63     UNITS       "frame"
64     MAX-ACCESS  read-only

```

```

1      STATUS      current
2      DESCRIPTION
3          "wmanIf2mBsSsSleepWindowStarted identifies when the sleep
4          mode is activated.
5          wmanIf2mBsSsSleepWindowStarted = current frame number +
6          Start frame number.
7          The frame number is provided in the DL-MAP, and is
8          incremented by 1 MOD 2^24 each frame."
9      ::= { wmanIf2mBsSsSleepModeStatisticsEntry 2 }
10
11     wmanIf2mBsSsListeningWindowStarted OBJECT-TYPE
12         SYNTAX      Unsigned32 (1 .. 166777215)
13         UNITS       "frame"
14         MAX-ACCESS  read-only
15         STATUS      current
16         DESCRIPTION
17             "wmanIf2mBsSsListeningWindowStarted identifies when the sleep
18             mode is deactivated.
19             wmanIf2mBsSsListeningWindowStarted =
20             wmanIf2mBsSsListeningWindowStarted + sleep window
21             The frame number is provided in the DL-MAP, and is
22             incremented by 1 MOD 2^24 each frame."
23         ::= { wmanIf2mBsSsSleepModeStatisticsEntry 3 }
24
25     wmanIf2mBsSsPendingMsdu OBJECT-TYPE
26         SYNTAX      INTEGER
27         MAX-ACCESS  read-only
28         STATUS      current
29         DESCRIPTION
30             "Indicate the number of MAC SDU that are received from the
31             network during the sleep window."
32         ::= { wmanIf2mBsSsSleepModeStatisticsEntry 4 }
33
34     wmanIf2mBsSsSleepWindowTimeStamp OBJECT-TYPE
35         SYNTAX      DateAndTime
36         MAX-ACCESS  read-only
37         STATUS      current
38         DESCRIPTION
39             "This is the time when sleep window is started in seconds.
40             The definition of time is as in IETF RFC 868."
41         ::= { wmanIf2mBsSsSleepModeStatisticsEntry 5 }
42
43     wmanIf2mBsFm OBJECT IDENTIFIER ::= { wmanIf2mBsObjects 3 }
44
45     wmanIf2mBsSm OBJECT IDENTIFIER ::= { wmanIf2mBsObjects 4 }
46
47     wmanIf2mBsAm OBJECT IDENTIFIER ::= { wmanIf2mBsObjects 5 }
48
49     --
50     -- wmanIf2mSsObjects - containing tables and objects to be implemented in
51     -- the Mobile station
52     --
53     -- wmanIf2mSsCm contain the Mobile Station Configuration Management
54     -- objects
55     --
56     wmanIf2mSsCm OBJECT IDENTIFIER ::= { wmanIf2mSsObjects 1 }
57
58     wmanIf2mSsPm OBJECT IDENTIFIER ::= { wmanIf2mSsObjects 2 }
59
60     wmanIf2mSsFm OBJECT IDENTIFIER ::= { wmanIf2mSsObjects 3 }
61
62     wmanIf2mSsSm OBJECT IDENTIFIER ::= { wmanIf2mSsObjects 4 }
63
64     wmanIf2mSsAm OBJECT IDENTIFIER ::= { wmanIf2mSsObjects 5 }

```

```
1
2  --
3  -- wmanIf2mCommonObjects - containing tables and objects to be
4  -- implemented in the Mobile station
5  --
6  -- wmanIf2mCmnCm contain the Mobile Station Configuration Management
7  -- objects
8  --
9  wmanIf2mCmnCm OBJECT IDENTIFIER ::= { wmanIf2mCommonObjects 1 }
10
11 wmanIf2mCmnPm OBJECT IDENTIFIER ::= { wmanIf2mCommonObjects 2 }
12
13 wmanIf2mCmnFm OBJECT IDENTIFIER ::= { wmanIf2mCommonObjects 3 }
14
15 wmanIf2mCmnSm OBJECT IDENTIFIER ::= { wmanIf2mCommonObjects 4 }
16
17 wmanIf2mCmnAm OBJECT IDENTIFIER ::= { wmanIf2mCommonObjects 5 }
18
19 END
20
21
22
23
24
25
26
27
28
29
30
31
32
```

