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Re:	Contribution to revision of IEEE P802.16f/D1	
Abstract	This contribution defines the extension to wmanIfMib (Wireless MAN Interface MIB). The areas covered are SS/BS capabilities, upgrade, management actions, missing QoS and CS parameters, default Phy settings.	
Purpose	Adopt to improve the manageability of 802.16d based equipment.	
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Extension of wmanIfMib

for improved manageability of 802.16d equipment

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1. Introduction

The first draft of “Amendment to IEEE Standard for Local and Metropolitan Area Networks - Management Information Base” IEEE P802.16f/D1 largely covers configuration, status and notification as required by MAC and Phy definitions of the standard.
The standard MIB however lacks some of objects required to assure efficient and comprehensive management of 802.16d equipment. This includes reporting/controlling capabilities, software upgrade, management actions etc. The missing objects are either directly or indirectly related to the standard but are very relevant to 802.16d equipment management. This contribution details the MIB objects we believe need to be added, along with appropriate justification.
Detailed review of the draft MIB uncovered a number of issues, which need to be resolved. All the unresolved issues are also enumerated in this contribution along with suggested corrective action.

2. Proposed MIB extensions

The proposed extensions are based on ASN.1 definition of wmanIfMib of the revision dated 2004-09-21 (embedded in the draft 1 of 802.16f standard).

2.1. wmanIfBsCapabilities

Description:
wmanIfBsCapabilities contains all the tables with capabilities BS and SS negotiate using RNG, SBC and REG messages.

2.1.1. wmanIfBsCapabilitiesTable

Description:
wmanIfBsCapabilitiesTable table reports all the capabilities of BS as defined in the standard, which are subject to negotiation with SS.
The table augments (uses the same indexes) wmanIfBsConfigurationTable.

Justification:
- NMS/EMS system must report raw capabilities of managed equipment. This information is essential for fault and performance problems diagnosis. The raw capabilities can be compared with negotiated capabilities and the actual performance can be compared with expected performance for BS with particular capabilities.

2.1.2. wmanIfBsCapabilitiesConfigTable

Description:

wmanIfBsCapabilitiesConfigTable table contains configuration objects for each reported BS capability. Whether the enabled and reported capabilities of the BS are used for a particular connection with the SS will depend on the result of negotiation with each SS.
The table augments (uses the same indexes) wmanIfBsConfigurationTable.

Justification:
- NMS/EMS system should be able to disable/enable capabilities to satisfy local operator's regulatory requirements, to apply predefined BS profile (e.g. by WiMax consortium) and finally for interoperability test purposes.

2.1.3. wmanIfBsSsRepCapabilitiesTable

Description:
wmanIfBsSsRepCapabilitiesTable table reports all the capabilities of each registered SS as received from the SS by the BS during the relevant net entry phases (SBC-REQ, REG-REQ, RNG-REQ messages).
The table augments (uses the same indexes) the wmanIfBsRegisteredSsTable.

Justification:
- NMS/EMS system must report raw capabilities of managed equipment. This information is essential for fault and performance problems diagnostis. The raw capabilities can be compared with the negotiated capabilities and the actual performance can be compared with the expected performance for SS with particular capabilities.

2.1.4. wmanIfBsSsRspCapabilitiesTable

Description:
wmanIfBsSsRspCapabilitiesTable table contains the basic capability information of SS that have been negotiated and agreed between BS and SS using RNG-RSP, SBC-RSP, REG-RSP messages.
The table augments (uses the same indexes) the wmanIfBsRegisteredSsTable.

Justification:
- NMS/EMS system must report the negotiated capabilities of managed equipment. This information is essential for fault and performance problems diagnosis. The raw capabilities can be compared with negotiated capabilities and the actual performance can be compared with expected performance for SS with particular capabilities.

2.2. wmanIfBsController

Description:
wmanIfBsController contains the tables with status and configuration related to BS as an entity as oppose to a specified interface (sector).

2.2.1. wmanIfBSControllerConfigTable

Description:
This table contains configuration objects relevant to the whole BS as opposed to a single sector of a BS. The table will have only one row. The table contains:
- Configuration of the BS software upgrade (file name and software version to download, server IP address)

- Identification of software to run
- V1, V2 trap destination (IP address and port number)

Justification:

- Software upgrade control is an essential part of the NMS/EMS responsibilities and should be supported by the standard MIB

- NMS should be able to configure BS SNMP agent with a trap destination to allow trap reception in the circumstances where the destination server changes.

2.2.2. wmanIfBSControllerActionsTable

Description:
This table contains actions objects relevant to the whole BS as opposed to a single sector of the BS. The table will have only one row. The table contains:
- Reset BS action
- Reset Sector action

Justification:
- The ability to reset the whole BS as well as the selected sector is essential for remote diagnostics and test purposes.

2.2.3. wmanIfBSControllerStatusTable

Description:
This table contains status objects relevant to the whole BS as opposed to a single sector of the BS. The table will have only one row. The table contains:
- Version of the running software
- Version of the backup software

Justification:
- The reporting of the running software version and the backup software version is essential for remote diagnostics and test purposes as well as for software upgrade management.

2.3. wmanIfBsConfiguration

Description:
wmanIfBsConfiguration contains all the tables with general configuration for the BS.

2.3.1. wmanIfBsConfigExtTable

Description:
This table contains general default configuration for BS, which is not defined in section 10.1 of the standard. The table augments wmanIfBsConfigurationTable. The table contains:
- Default Service Classes for Secondary Management Connection downlink and uplink QoS configuration

- Range of SFID numbers BS is allowed to allocate autonomously for SF created without being provisioned.
- OFDM ranging configuration parameters
- AAS configuration parameters
- Initial downlink burst rate ID

Justification:
- Secondary Management Connection is used for IP connectivity. As such it should be subject to strict QoS and bandwidth control.
- One of the SF creation models described in the standard does allow creation of the SF without it being provisioned by NMS. In this case BS would have to autonomously allocate SFID. To guarantee the uniqueness of the SFID numbers across the operator's network, configuration of the allowed range of the SFID numbers is required for the SF flows created without provisioning.
- Ranging process is defined in the standard with some basic configuration parameters. These parameters are required for BS to take appropriate ranging decisions and are described in the OFDM section of 802.16d PHY (section 8.3).
- AAS is defined in the standard and requires a number of configuration parameters.
- Initial DL Burst does not have to be transmitted with the most robust modulation/coding and operator may decide to apply different rate to different cells.

2.4. wmanIfBsSsActions

Description:
This table contains objects used to request a particular action for an SS specified by MAC address. The actions are:
- Reset SS (message RES-CMD)
- Abort SS (unsolicited RNG-RSP with Abort ranging result and optionally with downlink frequency override)
- DeReRegister SS (unsolicited DREG-CMD with appropriate action code)

Justification:
- SS actions are specified in the standard and are essential for effective management, diagnostics and test.

2.5. Change in wmanIfBsClassifierRuleTable:

Description:
This table will have additional objects defining PHS configuration for the classifier:
- PHS Size (PHSS)
- PHS Mask (PHSM)
- PHS Verify (PHSV)

Justification:
PHS rules are defined in the standard and essential to guarantee efficient use of air interface.
Standard 5.2.3 says "The classifier uniquely maps packets to its associated PHS Rule".

2.6. wmanIfCmnPhsRuleTable

Description:

This table contains the reported definition of PHS rules in use. It is indexed by wmanIfCmnCpsSfId and wmanIfCmnPhsRulePhsIndex. It contains all parameters of PHS rule.

Justification:
PHS rules are part of DSC message defined in the standard along with PHS TLV encodings.

3. ASN.1 Definition of 802.16 MIB extensions

```
WMAN-IF-MIB DEFINITIONS ::= BEGIN

  IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        NOTIFICATION-TYPE,
        Unsigned32,
        Integer32,
        Counter32,
        Counter64,
        TimeTicks,
        IpAddress,
        transmission,
        BITS
                FROM SNMPv2-SMI
        SnmpAdminString
                FROM SNMP-FRAMEWORK-MIB
        TEXTUAL-CONVENTION,
        MacAddress,
        RowStatus,
        TruthValue,
        DateAndTime,
        DisplayString,
        TimeInterval,
        TimeStamp
                FROM SNMPv2-TC
        InetAddressType, InetAddress
                FROM INET-ADDRESS-MIB
        OBJECT-GROUP,

        MODULE-COMPLIANCE
                FROM SNMPv2-CONF
        ifIndex, InterfaceIndex, InterfaceIndexOrZero
                FROM IF-MIB;

wmanIfMib MODULE-IDENTITY
        LAST-UPDATED    "0410280000Z" -- October 28, 2004
        ORGANIZATION    "IEEE 802.16"
        CONTACT-INFO
             Editor:    Krzysztof Dudzinski
             Postal:    Airspan Communications Ltd
                        Cambridge House
                        Oxford Road
                        Uxbridge UB8 1UN
                        UK
             E-mail:    kdudzins@airspan.com
        DESCRIPTION
            "PROPOSAL: This MIB is based on the 802.16f draft 1
             of the MIB for 802.16d standard. It contains the changes
             suggested by Airspan Networks to improve managability of
             802.16 equipment.
             This MIB is only intended as a illustration to the contribution C802.16f-04_03."
        ::= { transmission 184 }

wmanIfMibObjects  OBJECT IDENTIFIER ::= { wmanIfMib 1 }
wmanIfBsObjects OBJECT IDENTIFIER ::= { wmanIfMibObjects 1 }
wmanIfSsObjects   OBJECT IDENTIFIER ::= { wmanIfMibObjects 2 }
wmanIfCommonObjects OBJECT IDENTIFIER ::= { wmanIfMibObjects 3 }

-- Textual Conventions
WmanIfSfSchedulingType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The scheduling service provided by a SC for an
```

```
             upstream service flow. If the parameter is omitted
             from an upstream QOS Parameter Set, this object takes
             the value of bestEffort (2). This parameter must be
             reported as undefined (1) for downstream QOS Parameter
             Sets."
        SYNTAX      INTEGER {undefined(1),
                             bestEffort(2),
                             nonRealTimePollingService(3),
                             realTimePollingService(4),
                             unsolictedGrantService(6)}

WmanIfBsPhsRulePhsVerifyType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The value of this field indicates to the sending entity
             whether or not the packet header contents are to be verified
             prior to performing suppression.
             If PHSV is enabled, the sender shall compare the bytes in the
             packet header with the bytes in the PHSF that
             are to be suppressed as indicated by the PHSM."
        REFERENCE   "Section 11.13.19.3.7.5 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER {phsVerifyEnable(0),
                             phsVerifyDisable(1)}

WmanIfClassifierBitMap ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "A bit of of this object is set to 1 if the parameter
             indicated by the comment was present in the classifier
             encoding, and 0 otherwise.
             Note: that BITS are encoded most significant bit first,
             so that if e.g. bits 6 and 7 are set, this object is
             encoded as the octet string '030000'H."
        SYNTAX      BITS {priority(0),
                          ipTosLow(1),
                          ipTosHigh(2),
                          ipTosMask(3),
                          ipProtocol(4),
                          ipAddrType(5),
                          ipSrcAddr(6),
                          ipSrcAddrMask(7),
                          ipDestAddr(8),
                          ipDestAddrMask(9),
                          srcPortStart(10),
                          srcPortEnd(11),
                          destPortStart(12),
                          destPortEnd(13),
                          destMacAddr(14),
                          destMacAddrMask(15),
                          srcMacAddr(16),
                          srcMacAddrMask(17),
                          ethernetProtType(18),
                          ethernetProtocol(19),
                          userPriLow(20),
                          userPriHigh(21),
                          vlanId(22),
                          phsSize(23),
                          phsMask(24),
                          phsVerify(25)
                          }

-- Textual convention for capabilities encodings
WmanIfCapUlCidSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this typeshows the number of Uplink CIDs the SS can
             support."
        REFERENCE
            "Section 11.7.4 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER (2..65535)
```

```
WmanIfCapManagementSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this typeindicates whether or not the SS is managed."
        REFERENCE
            "Section 11.7.2 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER {unmanagedSs(0),
                             managedSs(1)}

WmanIfCapArqSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type indicates whether the SS support ARQ."
        REFERENCE
            "Section 11.7.8.1 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER {arqNotSupported(0),
                             arqSupported(1)}

WmanIfCapDsxFlowControlType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type specifies the maximum number of concurrent
             DSA, DSC, or DSD transactions that may be outstanding."
        REFERENCE
            "Section 11.7.8.2 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER (0..255)

WmanIfCapMacCrcSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type indicates whether or not the SS supports MAC
             level CRC."
        REFERENCE
            "Section 11.7.8.3 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER {noMacCrcSupport(0),
                             macCrcSupport(1)}

WmanIfCapMcaFlowControlType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type specifies the maximum number of concurrent
             MCA transactions that may be outstanding."
        REFERENCE
            "Section 11.7.8.4 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER (0..255)

WmanIfCapMcpGroupCidSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type indicates the maximum number of
             simultaneous Multicast Polling Groups the SS is
             capable of belonging to."
        REFERENCE
            "Section 11.7.8.5 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER (0..255)

WmanIfCapPkmFlowControlType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type specifies the maximum number of concurrent PKM
             transactions that may be outstanding."
        REFERENCE
            "Section 11.7.8.6 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER (0..255)

WmanIfCapAuthorizationPolicyControlType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type specifies authorization policy that both SS and
             BS need to negotiate and synchronize. A bit value of 0 =
             not supported, 1 = supported. If this field is omitted, then
```

```
             both SS and BS shall use the IEEE 802.16 security,
             constituting X.509 digital certificates and the RSA public
             key encryption algorithm, as authorization policy."
        REFERENCE
            "Section 11.7.8.7 in IEEE 802.16REVd/D5-2004"
        SYNTAX      BITS {ieee802-16PrivacySupported(0),
                          reserved1(1),
                          reserved2(2),
                          reserved3(3),
                          reserved4(4),
                          reserved5(5),
                          reserved6(6),
                          reserved7(7)}

WmanIfCapMaxNumOfSupportedSAType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field specifies maximum number of supported security
             association of the SS."
        REFERENCE
            "Section 11.7.8.8 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER (0..255)

WmanIfCapIpVersionType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type indicates the version of IP used on the
             Secondary Management Connection. The valus should be undefined
             if the 2nd management CID doesn't exist."
        REFERENCE
            "Section 11.7.4 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER {undefined(0),
                                      ipv4(1),
                             ipv6(2)}

WmanIfCapMacCsSupportBitMapType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type indicates the set of MAC convergence
             sublayer support. When a bit is set, it indicates
             the corresponding CS feature is supported."
        REFERENCE
            "Section 11.7.7.1 in IEEE 802.16REVd/D5-2004"
        SYNTAX      BITS {atm(0),
                          packetIpv4(1),
                          packetIpv6(2),
                          packet802-3(3),
                          packet802-1Q(4),
                          packetIpv4Over802-3(5),
                          packetIpv6Over802-3(6),
                          packetIpv4Over802-1Q(7),
                          packetIpv6Over802-1Q(8)}

WmanIfCapMaxNumOfClassifierType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type indicates the maximum number of admitted
             Classifiers that the SS is allowed to have."
        REFERENCE
            "Section 11.7.7.2 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER (0..65535)

WmanIfCapPhsSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The object of this type indicates indicates the level of PHS support."
        REFERENCE
            "Section 11.7.7.3 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER {noPhsSupport(0),
                             atmPhsSupport(1),
                             packetPhsSupport(2)}
```

```
WmanIfCapIpManagementSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The IP management mode parameter dictates whether
             the provider intends to manage the SS on an ongoing
             basis via IP-based mechanisms."
        REFERENCE
            "Section 11.7.3 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER {unmanaged(0),
                             ipManaged(1)}

WmanIfCapBandwidthAllocSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates properties of the SS
             that the BS needs to know for bandwidth allocation purposes.
             When a bit is set, it indicates the corresponding feature is supported.
             All unspecified and reserved bits should be set to zero."
        REFERENCE
            "Section 11.8.1 in IEEE 802.16REVd/D5-2004"
        SYNTAX      BITS {reserved(0),
                          halfDuplexFdd(1),
                          fullDuplexFdd(2)}

WmanIfCapPduConstructionType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "Specifies capabilities for construction and transmission of MAC PDUs.
             When piggybackedRequests bit is set, it indicates that the piggybacked
             requests are supported.The fsnValuesSize bit is coded as follows:
             0 - only 3-bit FSN values are supported
             1 - only 11-bit FSN values are supported
             All unspecified and reserved bits should be set to zero."
        REFERENCE
            "Section 11.8.2 in IEEE 802.16REVd/D5-2004"
        SYNTAX      BITS {piggybackedRequests(0),
                          fsnValuesSize(1)}

WmanIfCapSsTransitionGapType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates the transition speed SSTTG and SSRTG for TDD and H-FDD SSs.
             Allowed values are:
             OFDM mode: TDD and H-FDD 0..100
             Other modes: TDD: 0..50; H-FDD: 0..100"
        REFERENCE
            "Section 11.8.3.1 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER (0..100)

WmanIfCapMaxTransmitPowerType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This type is used to define maximum available power for
             BPSK, QPSK, 16-QAM and 64-QAM constellations. The maximum power
             parameters are reported in dBm and quantized in 0.5 dBm steps
             ranging from -64 dBm (encoded 0x00) to 63.5 dBm (encoded 0xFF).
             Values outside this range shall be assigned the closest extreme.
             SSs that do not support QAM64 shall report the value of 0x00
             in the maximum QAM64 power field."
        REFERENCE
            "Section 11.8.3.2 in IEEE 802.16REVd/D5-2004"
        SYNTAX      INTEGER (0..255)

WmanIfCapOfdmFftSizesType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates the FFT sizes supported by the SS.
             For each FFT size, a bit value of 0 indicates 'not supported'
             while 1 indicates 'supported'."
        REFERENCE
```

```
            "Section 11.8.3.6.1 in IEEE 802.16REVd/D5-2004"
        SYNTAX      BITS {fft256(0),
                          fft2048(1)}

WmanIfCapOfdmSsDemodulatorType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates the different demodulator options supported
             by a WirelessMAN-OFDM PHY SS for downlink. This field is not used
             for other PHY specifications.
             A bit value of 0 indicates 'not supported' while 1 indicates 'supported'."
        REFERENCE
            "Section 11.8.3.6.2 in IEEE 802.16REVd/D5-2004"
        SYNTAX      BITS {qam64(0),
                          btc(1),
                          ctc(2),
                          stc(3),
                          aac(4)}

WmanIfCapOfdmSsModulatorType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates the different modulator options supported
             by a WirelessMAN-OFDM PHY SS for uplink. This field is not used
             for other PHY specifications. A bit value of 0 indicates 'not supported'
             while 1 indicates 'supported'."
        REFERENCE
            "Section 11.8.3.6.3 in IEEE 802.16REVd/D5-2004"
        SYNTAX      BITS {qam64(0),
                          btc(1),
                          ctc(2),
                          subchanellization(3),
                          focusedCtBwReq(4)}

WmanIfCapOfdmFocusedCtSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates whether the SS supports Focused Contention (see 8.3.7.3.3).
             A bit value of 0 indicates 'not supported' while 1 indicates 'supported'."
        REFERENCE
            "Section 11.8.3.6.4 in IEEE 802.16REVd/D5-2004"
        SYNTAX      BITS {focusedCtSupport(0)}

WmanIfCapOfdmTcSublayerSupportType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates whether or not the SS supports the TC sublayer (see 8.3.4).
             A bit value of 0 indicates 'not supported' while 1 indicates 'supported'."
        REFERENCE
            "Section 11.8.3.6.5 in IEEE 802.16REVd/D5-2004"
        SYNTAX      BITS {tcSublayerSupport(0)}


--
-- BS object group – containing tables and objects to be implemented in
-- the Base station

--
-- wmanIfBsPacketCs contain the Base Station Packet Convergence Sublayer
-- objects
wmanIfBsPacketCs OBJECT IDENTIFIER ::= { wmanIfBsObjects 1 }


wmanIfBsClassifierRuleTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsClassifierRuleEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains packet classifier rules associated
             with service flows."
        REFERENCE
```

```
            "Section 11.13.19.3.4 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsPacketCs 3 }

wmanIfBsClassifierRuleEntry OBJECT-TYPE
        SYNTAX      WmanIfBsClassifierRuleEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
           "This table provides one row for each packet classifier
            rule, and is indexed by wmanIfBsSfId and
            wmanIfBsClassifierRuleIndex. wmanIfBsSfIndex
            identifies the service flow, while
            wmanIfBsClassifierRuleIndex identifies the packet
            classifier rule."
        INDEX { wmanIfBsSfIndex, wmanIfBsClassifierRuleIndex }
        ::= { wmanIfBsClassifierRuleTable 1 }

WmanIfBsClassifierRuleEntry::= SEQUENCE {
        wmanIfBsSfIndex                         Unsigned32,
        wmanIfBsClassifierRuleIndex             Unsigned32,
        wmanIfBsClassifierRulePriority          INTEGER,
        wmanIfBsClassifierRuleIpTosLow          OCTET STRING,
        wmanIfBsClassifierRuleIpTosHigh         OCTET STRING,
        wmanIfBsClassifierRuleIpTosMask         OCTET STRING,
        wmanIfBsClassifierRuleIpProtocol             Integer32,
        wmanIfBsClassifierRuleIpAddressType     InetAddressType,
        wmanIfBsClassifierRuleIpSourceAddr      InetAddress,
        wmanIfBsClassifierRuleIpSourceMask      InetAddress,
        wmanIfBsClassifierRuleIpDestAddr        InetAddress,
        wmanIfBsClassifierRuleIpDestMask       InetAddress,
        wmanIfBsClassifierRuleSourcePortStart        Integer32,
        wmanIfBsClassifierRuleSourcePortEnd          Integer32,
        wmanIfBsClassifierRuleDestPortStart          Integer32,
        wmanIfBsClassifierRuleDestPortEnd            Integer32,
        wmanIfBsClassifierRuleDestMacAddr            MacAddress,
        wmanIfBsClassifierRuleDestMacMask            MacAddress,
        wmanIfBsClassifierRuleSourceMacAddr          MacAddress,
        wmanIfBsClassifierRuleSourceMacMask          MacAddress,
        wmanIfBsClassifierRuleEnetProtocolType       INTEGER,
        wmanIfBsClassifierRuleEnetProtocol           Integer32,
        wmanIfBsClassifierRuleUserPriLow             Integer32,
        wmanIfBsClassifierRuleUserPriHigh            Integer32,
        wmanIfBsClassifierRuleVlanId                 Integer32,
        wmanIfBsClassifierRuleState             INTEGER,
        wmanIfBsClassifierRulePkts              Counter64,
        wmanIfBsClassifierRulePhsSize           Integer32,
        wmanIfBsClassifierRulePhsMask           OCTET STRING,
        wmanIfBsClassifierRulePhsVerify         WmanIfBsPhsRulePhsVerifyType,
        wmanIfBSClassifierRuleBitMap            WmanIfClassifierBitMap,
        wmanIfBsClassifierRuleRowStatus         RowStatus
        }
wmanIfBsSfIndex OBJECT-TYPE
        SYNTAX      Unsigned32 (1 .. 4294967295)
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "A 32 bit quantity that uniquely identifies a service flow
             to both the subscriber station and base station (BS)."
        ::= { wmanIfBsClassifierRuleEntry 1 }

wmanIfBsClassifierRuleIndex  OBJECT-TYPE
        SYNTAX      Unsigned32 (1..4294967295)
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "An index is assigned to a classifier in BS classifiers
             table"
        ::= { wmanIfBsClassifierRuleEntry 2 }

wmanIfBsClassifierRulePriority OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
```

```
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "The value specifies the priority for the Classifier, which
             is used for determining the order of the Classifier. A
             higher value indicates higher priority. Classifiers may
             have priorities in the range 0..255."
        REFERENCE
            "Section 11.13.19.3.4.1 in IEEE 802.16REVd/D4-2004"
        DEFVAL      { 0 }
        ::= { wmanIfBsClassifierRuleEntry 3 }

wmanIfBsClassifierRuleIpTosLow OBJECT-TYPE
        SYNTAX      OCTET STRING (SIZE(1))
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "The low value of a range of TOS byte values. If the
            referenced parameter is not present in a classifier, this
            object reports the value of 0."
        REFERENCE
            "Section 11.13.19.3.4.2 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 4 }

wmanIfBsClassifierRuleIpTosHigh OBJECT-TYPE
        SYNTAX      OCTET STRING (SIZE(1))
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "The 8-bit high value of a range of TOS byte values.
             If the referenced parameter is not present in a classifier,
             this object reports the value of 0."
        REFERENCE
            "Section 11.13.19.3.4.2 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 5 }

wmanIfBsClassifierRuleIpTosMask OBJECT-TYPE
        SYNTAX      OCTET STRING (SIZE(1))
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "The mask value is bitwise ANDed with TOS byte in an IP
             packet and this value is used check range checking of
             TosLow and TosHigh. If the referenced parameter is not
             present in a classifier, this object reports the value
             of 0."
        REFERENCE
            "Section 11.13.19.3.4.2 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 6 }

wmanIfBsClassifierRuleIpProtocol OBJECT-TYPE
        SYNTAX      Integer32 (0..255)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object indicates the value of the IP Protocol field
             required for IP packets to match this rule. If the
             referenced parameter is not present in a classifier, this
             object reports the value of 0."
        REFERENCE
            "Section 11.13.19.3.4.3 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 7 }

wmanIfBsClassifierRuleIpAddressType OBJECT-TYPE
        SYNTAX      InetAddressType
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "The type of the internet address for
             wmanIfBsClassifierRuleIpSourceAddr,
             wmanIfBsClassifierRuleIpSourceMask,
```

```
             wmanIfBsClassifierRuleIpDestAddr, and
             wmanIfBsClassifierRuleIpDestMask.
             If the referenced parameter is not present in a classifier,
             this object reports the value of ipv4(1)."
        ::= { wmanIfBsClassifierRuleEntry 8 }

wmanIfBsClassifierRuleIpSourceAddr OBJECT-TYPE
        SYNTAX      InetAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object specifies the value of the IP Source Address
             required for packets to match this rule. An IP packet
             matches the rule when the packet ip source address bitwise
             ANDed with the wmanIfBsClassifierRuleIpSourceMask value
             equals the wmanIfBsClassifierRuleIpSourceAddr value.
             If the referenced parameter is not present n a classifier,
             this object reports the value of 0.0.0.0."
        REFERENCE
            "Section 11.13.19.3.4.4 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 9 }

wmanIfBsClassifierRuleIpSourceMask OBJECT-TYPE
        SYNTAX      InetAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object specifies which bits of a packet's IP Source
             Address that are compared to match this rule. An IP packet
             matches the rule when the packet source address bitwise
             ANDed with the
             wmanIfBsClassifierRuleIpSourceMask value equals the
             wmanIfBsClassifierRuleIpSourceAddr value.
             If the referenced parameter is not present in a classifier,
             this object reports the value of 0.0.0.0."
        REFERENCE
            "Section 11.13.19.3.4.4 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 10 }

wmanIfBsClassifierRuleIpDestAddr OBJECT-TYPE
        SYNTAX      InetAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object specifies the value of the IP Destination
             Address required for packets to match this rule. An IP
             packet matches the rule when the packet IP destination
             address bitwise ANDed with the
             wmanIfBsClassifierRuleIpDestMask value equals the
             wmanIfBsClassifierRuleIpDestAddr value.
             If the referenced parameter is not present in a
             classifier, this object reports the value of 0.0.0.0."
        REFERENCE
            "Section 11.13.19.3.4.5 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 11 }

wmanIfBsClassifierRuleIpDestMask OBJECT-TYPE
        SYNTAX      InetAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object specifies which bits of a packet's IP
             Destination Address that are compared to match this rule.
             An IP packet matches the rule when the packet destination
             address bitwise ANDed with the
             wmanIfBsClassifierRuleIpDestMask value equals the
             wmanIfBsClassifierRuleIpDestAddr value.
             If the referenced parameter is not present in a classifier
             , this object reports the value of 0.0.0.0."
        REFERENCE
            "Section 11.13.19.3.4.5 in IEEE 802.16REVd/D5-2004"
```

```
        ::= { wmanIfBsClassifierRuleEntry 12 }

wmanIfBsClassifierRuleSourcePortStart OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object specifies the low end inclusive range of
             TCP/UDP source port numbers to which a packet is compared.
             This object is irrelevant for non-TCP/UDP IP packets.
             If the referenced parameter is not present in a
             classifier, this object reports the value of 0."
        REFERENCE
            "Section 11.13.19.3.4.6 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 13 }

wmanIfBsClassifierRuleSourcePortEnd OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object specifies the high end inclusive range of
             TCP/UDP source port numbers to which a packet is compared.
             This object is irrelevant for non-TCP/UDP IP packets.
             If the referenced parameter is not present in a classifier,
             this object reports the value of 65535."
        REFERENCE
            "Section 11.13.19.3.4.6 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 14 }

wmanIfBsClassifierRuleDestPortStart OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object specifies the low end inclusive range of
             TCP/UDP destination port numbers to which a packet is
             compared. If the referenced parameter is not present
             in a classifier, this object reports the value of 0."
        REFERENCE
            "Section 11.13.19.3.4.7 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 15 }

wmanIfBsClassifierRuleDestPortEnd OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object specifies the high end inclusive range of
             TCP/UDP destination port numbers to which a packet is
             compared. If the referenced parameter is not present
             in a classifier, this object reports the value of
             65535."
        REFERENCE
            "Section 11.13.19.3.4.7 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 16 }

wmanIfBsClassifierRuleDestMacAddr OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "An Ethernet packet matches an entry when its destination
             MAC address bitwise ANDed with
             wmanIfBsClassifierRuleDestMacMask equals the value of
             wmanIfBsClassifierRuleDestMacAddr. If the referenced
             parameter is not present in a classifier, this object
             reports the value of '000000000000'H."
        REFERENCE
            "Section 11.13.19.3.4.8 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 17 }
```

```
wmanIfBsClassifierRuleDestMacMask OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "An Ethernet packet matches an entry when its destination
             MAC address bitwise ANDed with
             wmanIfBsClassifierRuleDestMacMask equals the value of
             wmanIfBsClassifierRuleDestMacAddr. If the referenced
             parameter is not present in a classifier, this object
             reports the value of '000000000000'H."
        REFERENCE
            "Section 11.13.19.3.4.8 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 18 }

wmanIfBsClassifierRuleSourceMacAddr OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "An Ethernet packet matches this entry when its source
             MAC address  bitwise ANDed with
             wmanIfBsClassifierRuleSourceMacMask equals the value
             of wmanIfBsClassifierRuleSourceMacAddr. If the
             referenced parameter is not present in a classifier,
             this object reports the value of '000000000000'H."
        REFERENCE
            "Section 11.13.19.3.4.9 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 19 }

wmanIfBsClassifierRuleSourceMacMask OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "An Ethernet packet matches an entry when its destination
             MAC address bitwise ANDed with
             wmanIfBsClassifierRuleSourceMacMask equals the value of
             wmanIfBsClassifierRuleSourceMacAddr. If the referenced
             parameter is not present in a classifier, this object
             reports the value of '000000000000'H."
        REFERENCE
            "Section 11.13.19.3.4.9 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 20 }

wmanIfBsClassifierRuleEnetProtocolType OBJECT-TYPE
        SYNTAX      INTEGER {none(0),
                             ethertype(1),
                             dsap(2)}
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object indicates the format of the layer 3 protocol
             id in the Ethernet packet. A value of none(0) means that
             the rule does not use the layer 3 protocol type as a
             matching criteria. A value of ethertype(1) means that the
             rule applies only to frames which contains an EtherType
             value. Ethertype values are contained in packets using
             the Dec-Intel-Xerox (DIX) encapsulation or the RFC1042
             Sub-Network Access Protocol (SNAP) encapsulation formats.
             A value of dsap(2) means that the rule applies only to
             frames using the IEEE802.3 encapsulation format with a
             Destination Service Access Point (DSAP) other than 0xAA
             (which is reserved for SNAP). If the Ethernet frame
             contains an 802.1P/Q Tag header (i.e. EtherType 0x8100),
             this object applies to the embedded EtherType field within
             the 802.1P/Q header. If the referenced parameter is not
             present in a classifier, this object reports the value of
             0."
        REFERENCE
```

```
            "Section 11.13.19.3.4.10 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 21 }

wmanIfBsClassifierRuleEnetProtocol OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "If wmanIfBsClassifierRuleEnetProtocolType is none(0),
             this object is ignored when considering whether a packet
             matches the current rule.
             If wmanIfBsClassifierRuleEnetProtocolType is ethertype(1),
             this object gives the 16-bit value of the EtherType that
             the packet must match in order to match the rule.
             If wmanIfBsClassifierRuleEnetProtocolType is dsap(2), the
             lower 8 bits of this object's value must match the DSAP
             byte of the packet in order to match the rule.
             If the Ethernet frame contains an 802.1P/Q Tag header
             (i.e. EtherType 0x8100), this object applies to the
             embedded EtherType field within the 802.1P/Q header.
             If the referenced parameter is not present in the
             classifier, the value of this object is reported as 0."
        REFERENCE
            "Section 11.13.19.3.4.10 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 22 }

wmanIfBsClassifierRuleUserPriLow OBJECT-TYPE
        SYNTAX      Integer32 (0..7)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object applies only to Ethernet frames using the
             802.1P/Q tag header (indicated with EtherType 0x8100).
             Such frames include a 16-bit Tag that contains a 3 bit
             Priority field and a 12 bit VLAN number.
             Tagged Ethernet packets must have a 3-bit Priority field
             within the range of wmanIfBsClassifierRulePriLow and
             wmanIfBsClassifierRulePriHigh in order to match this
             rule.
             If the referenced parameter is not present in the
             classifier, the value of this object is reported as 0."
        REFERENCE
            "Section 11.13.19.3.4.11 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 23 }

wmanIfBsClassifierRuleUserPriHigh OBJECT-TYPE
        SYNTAX      Integer32 (0..7)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object applies only to Ethernet frames using the
             802.1P/Q tag header (indicated with EtherType 0x8100).
             Such frames include a 16-bit Tag that contains a 3 bit
             Priority field and a 12 bit VLAN number.
             Tagged Ethernet packets must have a 3-bit Priority
             field within the range of wmanIfBsClassifierRulePriLow
             and wmanIfBsClassifierRulePriHigh in order to match
             this rule.
             If the referenced parameter is not present in the
             classifier, the value of this object is reported as 7."
        REFERENCE
            "Section 11.13.19.3.4.11 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 24 }

wmanIfBsClassifierRuleVlanId OBJECT-TYPE
        SYNTAX      Integer32 (0..4095)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object applies only to Ethernet frames using the
             802.1P/Q tag header.
```

```
             If this object's value is nonzero, tagged packets must
             have a VLAN Identifier that matches the value in order
             to match the rule.
             Only the least significant 12 bits of this object's
             value are valid.
             If the referenced parameter is not present in the
             classifier, the value of this object is reported as 0."
        REFERENCE
            "Section 11.13.19.3.4.12 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 25 }

wmanIfBsClassifierRuleState OBJECT-TYPE
        SYNTAX      INTEGER {active(1),
                             inactive(2)}
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object indicates whether or not the classifier is
             enabled to classify packets to a Service Flow.
             If the referenced parameter is not present in the
             classifier, the value of this object is reported
             as active(1)."
        ::= { wmanIfBsClassifierRuleEntry 26 }

wmanIfBsClassifierRulePkts OBJECT-TYPE
        SYNTAX      Counter64
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object counts the number of packets that have
             been classified using this entry."
        REFERENCE
            "Section 11.13.19.3.4.1 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 27 }

wmanIfBsClassifierRulePhsSize OBJECT-TYPE
        SYNTAX      Integer32
        UNITS       "byte"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object is used to configure the PHS rule for this classifer.
             The value of this field - PHSS is the total number of bytes
             in the header to be suppressed and then restored in a service
             flow that uses PHS.
             If the value of this field is 0 bytes then PHS is disabled
             for this classifer.
             If flag phsMask in wmanIfBSClassifierRuleBitMap is set to 0
             and flag phsSize in wmanIfBsClassifierRuleBitMap is set to 0,
             then BS can still create PHS rules using its own custom mask
             (i.e. the rule is not configured by NMS)."
        REFERENCE
            "Section 11.13.19.3.7.4 in IEEE 802.16REVd/D5-2004"
        DEFVAL      {0}
        ::= { wmanIfBsClassifierRuleEntry 28 }

wmanIfBsClassifierRulePhsMask OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object is used to configure the PHS rule for this classifer.
             It is encoded as follows:
             bit 0: 0 = don't suppress first byte of the suppression field
                    1 = suppress first byte of the suppression field
             bit 1: 0 = don't suppress second byte of the suppression field
                    1 = suppress second byte of the suppression field
             bit x: 0 = don't suppress (x+1) byte of the suppression field
                    1 = suppress (x+1) byte of the suppression field
             where the length of the octet string is ceiling (wmanIfBsClassifierRulePhsSize/8).
             BS should use this value to create a new PHS rule index (PHSI) and field (PHSF)
```

```
             as defined in the standard.
             If flag phsMask in wmanIfBSClassifierRuleBitMap is set to 0
             and flag phsSize in wmanIfBsClassifierRuleBitMap is set to 0,
             then BS can still create PHS rules using its own custom mask
             (i.e. the rule is not configured by NMS)."
        REFERENCE
            "Section 11.13.19.3.7.3 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 29 }

wmanIfBsClassifierRulePhsVerify OBJECT-TYPE
        SYNTAX      WmanIfBsPhsRulePhsVerifyType
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "The value of this field indicates to the sending entity
             whether or not the packet header contents are to be verified
             prior to performing suppression."
        DEFVAL      { phsVerifyEnable }
        ::= { wmanIfBsClassifierRuleEntry 30 }

wmanIfBSClassifierRuleBitMap OBJECT-TYPE
        SYNTAX      WmanIfClassifierBitMap
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object indicates which parameter encodings were
             actually present in the entry. A bit set to '1' indicates
             the corresponding classifier encoding is present, and '0'
             means otherwise"
        REFERENCE
            "Section 11.13.19.3.7.5 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsClassifierRuleEntry 31 }

wmanIfBsClassifierRuleRowStatus OBJECT-TYPE
        SYNTAX      RowStatus
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object is used to create a new row or modify or
             delete an existing row in this table.

             If the implementator of this MIB has choosen not
             to implement 'dynamic assignment' of profiles, this
             object is not useful and should return noSuchName
             upon SNMP request."
        ::= { wmanIfBsClassifierRuleEntry 32 }

--
-- wmanIfBsCps contain the Base Station Common Part Sublayer objects
wmanIfBsCps OBJECT IDENTIFIER ::= { wmanIfBsObjects 2 }

wmanIfBsRegisteredSsTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsRegisteredSsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains all the basic information of SSs
             collected during net entry process for all registered SSs.
             BS and SS via REG-REQ and REG-RSP messages. This includes
             the SS cpabilities, wchi are not subject to negotiation.
             All the negotiated capabilities are part of wmanIfBsSsRspCapabilitiesTable"
        REFERENCE
            "Section 6.3.2.3.7 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsCps 1 }

wmanIfBsRegisteredSsEntry OBJECT-TYPE
        SYNTAX      WmanIfBsRegisteredSsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each SS that has been registered in the BS,
```

```
            and is indexed by ifIndex and wmanIfBsSsMacAddress."
        INDEX { ifIndex, wmanIfBsSsMacAddress }
        ::= { wmanIfBsRegisteredSsTable 1 }

WmanIfBsRegisteredSsEntry ::= SEQUENCE {
        wmanIfBsSsMacAddress                    MacAddress,
        wmanIfBsSsBasicCid                      INTEGER,
        wmanIfBsSsPrimaryCid                    INTEGER,
        wmanIfBsSsSecondaryCid                  INTEGER,
        wmanIfBsSsHmacTuple                     OCTET STRING,
        wmanIfBsSs2ndMgmtArqEnable              TruthValue,
        wmanIfBsSs2ndMgmtArqWindowSize          INTEGER,
        wmanIfBsSs2ndMgmtArqFragmentLifetime    INTEGER,
        wmanIfBsSs2ndMgmtArqSyncLossTimeout     INTEGER,
        wmanIfBsSs2ndMgmtArqDeliverInOrder      TruthValue,
        wmanIfBsSs2ndMgmtArqRxPurgeTimeout      INTEGER,
        wmanIfBsSs2ndMgmtArqBlockSize           INTEGER,
        wmanIfBsSsVendorIdEncoding              OCTET STRING,
        wmanIfBsSsMaxTransmitPowerBpsk          WmanIfCapMaxTransmitPowerType,
        wmanIfBsSsMaxTransmitPowerQpsk          WmanIfCapMaxTransmitPowerType,
        wmanIfBsSsMaxTransmitPower16Qam         WmanIfCapMaxTransmitPowerType,
        wmanIfBsSsMaxTransmitPower64Qam         WmanIfCapMaxTransmitPowerType,
        wmanIfBsSsMacVersion                    INTEGER,
        wmanIfBsSsAasBroadcastCapability            INTEGER,
        wmanIfBsSsAasBroadcastPermission            INTEGER,
        }

wmanIfBsSsMacAddress OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The MAC address of SS is received from the RNG-REQ
             message. When SS registers, this MAC address is entered
             into the table, and used as the identifier to the SS."
        REFERENCE
            "Section 6.3.2.3.7 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 1 }

wmanIfBsSsBasicCid OBJECT-TYPE
        SYNTAX      INTEGER (0..65535)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object indicates the SS's basic CID
             that was sent in the RNG-RSP message."
        REFERENCE
            "Section 6.3.2.3.8 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 2 }

wmanIfBsSsPrimaryCid OBJECT-TYPE
        SYNTAX      INTEGER (0..65535)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object indicates the primary CID of the
             SS received from the RNG-RSP message."
        REFERENCE
            "Section 6.3.2.3.8 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 3 }

wmanIfBsSsSecondaryCid OBJECT-TYPE
        SYNTAX      INTEGER (0..65535)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object indicates the secondary
             management CID present in the REG-RSP message. The value
             should be null if the 2nd management channel is not
             available."
        REFERENCE
```

```
            "Section 6.4.2.3.8 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 4 }

wmanIfBsSsHmacTuple OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter contains the HMAC Key Sequence Number
             concatenated with an HMAC-Digest message during the
             authentication. The HMAC Key Sequence Number is stored
             in the four least significant bits of the first byte of
             the HMAC Tuple, and the most significant four bits
             are reserved."
        REFERENCE
            "Section 11.1.2 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 5 }
wmanIfBsSs2ndMgmtArqEnable OBJECT-TYPE
        SYNTAX      TruthValue
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "True(1) ARQ enabling is requested for the 2nd
             management channel."
        REFERENCE
            "Section 11.13.18 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 6 }

wmanIfBsSs2ndMgmtArqWindowSize    OBJECT-TYPE
        SYNTAX          INTEGER (1 .. 1024)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Indicates the maximum number of unacknowledged
             fragments at any time for 2nd management channel."
        REFERENCE
            "Section 11.13.18 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 7 }

wmanIfBsSs2ndMgmtArqFragmentLifetime OBJECT-TYPE
        SYNTAX          INTEGER (0 .. 65535)
        UNITS    "10 us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The maximum time interval an ARQ fragment will be
             managed by the transmitter ARQ machine, once
             initial transmission of the fragment has occured.
             If transmission or retransmission of the fragment
             is not acknowledged by the receiver before the
             time limit is reached, the fragmnet is discarded.
             A value of 0 means Infinite."
        REFERENCE
            "Section 11.13.18 in IEEE 802.16REVd/D5-2004"
        DEFVAL             {0}
        ::= { wmanIfBsRegisteredSsEntry 8 }

wmanIfBsSs2ndMgmtArqSyncLossTimeout OBJECT-TYPE
        SYNTAX          INTEGER (0 .. 65535 )
        UNITS    "10 us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The maximum interval before declaring a loss
             of synchronization of the sender and receiver
             state machines. A value of 0 means Infinite."
        REFERENCE
            "Section 11.13.18 in IEEE 802.16REVd/D5-2004"
        DEFVAL          {0}
        ::= { wmanIfBsRegisteredSsEntry 9 }
```

```
wmanIfBsSs2ndMgmtArqDeliverInOrder  OBJECT-TYPE
        SYNTAX      TruthValue
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Indicates whether or not data is to be delivered
             by the receiving MAC to its client application
             in the order in which data was handed off to the
             originating MAC."
        REFERENCE
            "Section 11.13.18 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 10 }

wmanIfBsSs2ndMgmtArqRxPurgeTimeout  OBJECT-TYPE
        SYNTAX          INTEGER (0 .. 65535)
        UNITS    "10 us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Indicates the time interval the ARQ window is advanced
             after a fragment is received. A value of 0 means Infinite."
        REFERENCE
            "Section 11.13.18 in IEEE 802.16REVd/D5-2004"
        DEFVAL          {0}
        ::= { wmanIfBsRegisteredSsEntry 11 }

wmanIfBsSs2ndMgmtArqBlockSize OBJECT-TYPE
        SYNTAX      INTEGER (1..2040)
        UNITS       "byte"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This value of this parameter specifies the size of an ARQ block."
        REFERENCE
            "Section 11.13.18 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 12 }

wmanIfBsSsVendorIdEncoding OBJECT-TYPE
        SYNTAX          OCTET STRING (SIZE(3))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value field contains the vendor identification
             specified by the 3 byte vendor-specific organizationally
             unique identifier of the SS or BS MAC address.A vendor ID
             used in a REG-REQ shall be the Vendor ID of the SS sending
             the request. A vendor ID used in a REG-RSP shall be the
             Vendor ID of the BS sending the response."
        REFERENCE
            "Section 11.1.5 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 13 }

wmanIfBsSsMaxTransmitPowerBpsk OBJECT-TYPE
        SYNTAX      WmanIfCapMaxTransmitPowerType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This type is used to define maximum available power for
             BPSK constellation.
             The usage is defined by WmanIfCapMaxTransmitPowerType."
        ::= { wmanIfBsRegisteredSsEntry 14 }

wmanIfBsSsMaxTransmitPowerQpsk OBJECT-TYPE
        SYNTAX      WmanIfCapMaxTransmitPowerType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This type is used to define maximum available power for
             QPSK constellation.
             The usage is defined by WmanIfCapMaxTransmitPowerType."
        ::= { wmanIfBsRegisteredSsEntry 15 }
```

```
wmanIfBsSsMaxTransmitPower16Qam OBJECT-TYPE
        SYNTAX      WmanIfCapMaxTransmitPowerType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This type is used to define maximum available power for
             16-QAM constellation.
             The usage is defined by WmanIfCapMaxTransmitPowerType."
        ::= { wmanIfBsRegisteredSsEntry 16 }

wmanIfBsSsMaxTransmitPower64Qam OBJECT-TYPE
        SYNTAX      WmanIfCapMaxTransmitPowerType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This type is used to define maximum available power for
             64-QAM constellation.
             The usage is defined by WmanIfCapMaxTransmitPowerType."
        ::= { wmanIfBsRegisteredSsEntry 17 }

wmanIfBsSsMacVersion OBJECT-TYPE
        SYNTAX      INTEGER {ieee802Dot16-2001(1),
                             ieee802Dot16c-2002(2),
                             ieee802Dot16a-2003(3),
                             ieee802Dot16-2004(4)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            " This parameter specifies the version of 802.16 MAC SS supports."
        REFERENCE
            "Section 11.1.3 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 18 }

wmanIfBsSsAasBroadcastCapability OBJECT-TYPE
        SYNTAX      INTEGER {canRcvBcastMsgs(0),
                             cannotRcvBcastMsgs(1)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter indicates whether SS is capable of receiving broadcast messages."
        REFERENCE
            "Section 11.5, table 362 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 19 }

wmanIfBsSsAasBroadcastPermission OBJECT-TYPE
        SYNTAX      INTEGER {canIssueContBwReqs(0),
                             cannotIssueContBwReqs(1)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter indicates whether SS is allowed to issue contention-based
             bandwidth requests."
        REFERENCE
            "Section 11.6, table 365 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsRegisteredSsEntry 20 }

--
-- wmanIfBsCps contain the general Base Station Cps configuration tables
wmanIfBsConfiguration OBJECT IDENTIFIER ::= { wmanIfBsCps 2 }

wmanIfBsConfigurationTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsConfigurationEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each BS sector that
             contains the BS system parameters as defined in section
             10.1 of [3]."
        REFERENCE
            "Section 10.1 in IEEE 802.16REVd/D5-2004"
```

```
        ::= { wmanIfBsConfiguration 1 }

wmanIfBsConfigurationEntry OBJECT-TYPE
        SYNTAX      WmanIfBsConfigurationEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table is indexed by ifIndex with an ifType of
             propBWAp2Mp."
        INDEX { ifIndex }
        ::= { wmanIfBsConfigurationTable 1 }

WmanIfBsConfigurationEntry ::= SEQUENCE {
        wmanIfBsConfigurationRowStatus          RowStatus
        }

wmanIfBsConfigurationRowStatus OBJECT-TYPE
        SYNTAX      RowStatus
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object is used to create a new row or modify or
             delete an existing row in this table.

             If the implementator of this MIB has choosen not
             to implement 'dynamic assignment' of profiles, this
             object is not useful and should return noSuchName
             upon SNMP request."
        ::= { wmanIfBsConfigurationEntry 17 }


wmanIfBsConfigExtTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsConfigExtEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains BS configuration objects, which are
             not specified in section 10.1 in IEEE 802.16REVd/D5-2004.
             The objects in this table define the default behaviour of the BS
             for Secondary Management Channel scheduling and SFID allocation
             as well as configuration parameters of the Cps scheduler
             and AAS system."
        ::= { wmanIfBsConfiguration 2 }

wmanIfBsConfigExtEntry OBJECT-TYPE
        SYNTAX      WmanIfBsConfigExtEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table augments table wmanIfBsConfigurationTable."
        AUGMENTS { wmanIfBsConfigurationEntry }
        ::= { wmanIfBsConfigExtTable 1 }

WmanIfBsConfigExtEntry ::= SEQUENCE {
        wmanIfBsCfgExt2ndMgmtDnlkSvceClassName      OCTET STRING,
        wmanIfBsCfgExt2ndMgmtUplkSvceClassName      OCTET STRING,
        wmanIfBsCfgExtAutoSfidEnabled               INTEGER,
        wmanIfBsCfgExtAutoSfidRangeMin              Unsigned32,
        wmanIfBsCfgExtAutoSfidRangeMax              Unsigned32,
        wmanIfBsCfgExtOfdmMinReqRegionFullTOs       INTEGER,
        wmanIfBsCfgExtOfdmMinFocusedContentionTOs   INTEGER,
        wmanIfBsCfgExtOfdmMaxRoundTripDelay         INTEGER,
        wmanIfBsCfgExtOfdmRangeAbortTimingThresh    INTEGER,
        wmanIfBsCfgExtOfdmRangeAbortPowerThresh     INTEGER,
        wmanIfBsCfgExtOfdmRangeAbortFreqThresh      INTEGER,
        wmanIfBsCfgExtOfdmDnlkRateId                INTEGER,
        wmanIfBsCfgExtAasChanFbckReqFreq            INTEGER,
        wmanIfBsCfgExtAasBeamSelectFreq             INTEGER,
        wmanIfBsCfgExtAasChanFbckReqResolution      INTEGER,
        wmanIfBsCfgExtAasBeamReqResolution          INTEGER,
        wmanIfBsCfgExtAasNumOptDiversityZones       INTEGER,
```

```
        wmanIfBsCfgExtRowStatus                    RowStatus
        }

wmanIfBsCfgExt2ndMgmtDnlkSvceClassName OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines the name of the Service Class which is used
             to specify all QoS parameters, which are required for the BS downlink scheduler
             to properly allocate and manage the bandwidth and schedule the Secondary
             Management Connection traffic. The Secondary Management Connection traffic
             doesn't differ from Traffic Connection traffic in the area of QoS management."
         ::= { wmanIfBsConfigExtEntry 1 }

wmanIfBsCfgExt2ndMgmtUplkSvceClassName OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines the name of the Service Class which is used
             to specify all QoS parameters, which are required for the BS uplink scheduler
             to properly allocate and manage the bandwidth and schedule the Secondary
             Management Connection traffic. The Secondary Management Connection traffic
             doesn't differ from Traffic Connection traffic in the area of QoS management."
        ::= { wmanIfBsConfigExtEntry 2 }

wmanIfBsCfgExtAutoSfidEnabled OBJECT-TYPE
        SYNTAX      INTEGER {autoSfidDisabled(0),
                             autoSfidEnabled(1)}
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines whether the BS is allowed to autonomously allocate SFIDs.
             When the object is set to autoSfidEnabled, the BS is allowed to autonomously allocate
             SFIDs from the range of allowed values defined by wmanIfBsConfigExtAutoSfidRangeMin and
             wmanIfBsConfigExtAutoSfidRangeMax.
             A SF is created autonomously when it has not been provisioned in the
wmanIfBsProvisionedSfTable
                      and may be initiated by either the SS or BS.
             The BS should always initiate SF creation based on the provisioned Service flows
             configured in wmanIfBsProvisionedSfTable."
        REFERENCE   "Section 11.13.1 in IEEE 802.16REVd/D5-2004"
         ::= { wmanIfBsConfigExtEntry 3 }

wmanIfBsCfgExtAutoSfidRangeMin OBJECT-TYPE
        SYNTAX      Unsigned32 ( 1 .. 4294967295)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines the minimum value of the range of SFID values allocated for
             the BS sector for the purpose of autonomous creation of service flows.
             This value is used when the object wmanIfBsCfgExtAutoSfidEnabled allows
             autonomous creation of SFIDs."
        REFERENCE   "Section 11.13.1 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 4 }

wmanIfBsCfgExtAutoSfidRangeMax OBJECT-TYPE
        SYNTAX      Unsigned32 ( 1 .. 4294967295)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines the maximum value of the range of SFID values allocated for
             the BS sector for the purpose of autonomous creation of the service flows.
             This value is used when the object wmanIfBsCfgExtAutoSfidEnabled allows
             autonomous creation of SFIDs."
        REFERENCE   "Section 11.13.1 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 5 }

wmanIfBsCfgExtOfdmMinReqRegionFullTOs OBJECT-TYPE
        SYNTAX      INTEGER (1..65535)
```

```
        UNITS       "1/sec"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The minimum number of Full bandwidth Req-Region Full Transmit
             opportunities scheduled in the UL per second."
        REFERENCE "Section 6.3.7.4.3 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 6 }

wmanIfBsCfgExtOfdmMinFocusedContentionTOs OBJECT-TYPE
        SYNTAX      INTEGER (0..65535)
        UNITS       "1/sec"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The minimum number of focused contention Transmit opportunities
             scheduled in the UL per second.
             The value may be 0 if the focused contention is not implemented."
        REFERENCE "Section 6.3.6.4 and 8.3.7.3.3 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 7 }

wmanIfBsCfgExtOfdmMaxRoundTripDelay OBJECT-TYPE
        SYNTAX      INTEGER (1..65535)
        UNITS       "us"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Maximum supported round trip delay.
             It is required to limit the cell size."
        REFERENCE "Section 8.3.5.1 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 8 }

wmanIfBsCfgExtOfdmRangeAbortTimingThresh OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        UNITS       "1/Fs"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines Tolerable Timing Offset.
             BS performs Initial Ranging until the SS transmissions are within
             limits that are deemed tolerable by the BS. If the SS does not
             transmit within these limits after a number of correction
             attempts then the BS aborts Initial Ranging."
        REFERENCE   "Figure 63 and Table 365 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 9 }

wmanIfBsCfgExtOfdmRangeAbortPowerThresh OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        UNITS       "0.25dB"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines Tolerable Power Offset.
             BS performs Initial Ranging until the SS transmissions are within
             limits that are deemed tolerable by the BS. If the SS does not
             transmit within these limits after a number of correction
             attempts then the BS aborts Initial Ranging."
        REFERENCE   "Figure 63 and Table 365 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 10 }

wmanIfBsCfgExtOfdmRangeAbortFreqThresh OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        UNITS       "Hz"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines Tolerable Frequency Offset.
             BS performs Initial Ranging until the SS transmissions are within
             limits that are deemed tolerable by the BS. If the SS does not
             transmit within these limits after a number of correction
             attempts then the BS aborts Initial Ranging."
```

```
        REFERENCE   "Figure 63 and Table 365 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 11 }

wmanIfBsCfgExtOfdmDnlkRateId OBJECT-TYPE
        SYNTAX      INTEGER {dnlkRateIdBpsk1-2(0),
                             dnlkRateIdQpsk1-2(1),
                             dnlkRateIdQpsk3-4(2),
                             dnlkRateId16Qam1-2(3),
                             dnlkRateId16Qam3-4(4),
                             dnlkRateId64Qam2-3(5),
                             dnlkRateId64Qam3-4(6)}
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The Rate ID to be used in the first downlink burst immediately
             following the FCH. The Rate ID encoding is static and cannot
             be changed during system operation. The change of the Rate ID
             should be applied on system re-intialisation (e.g. following
             sector or BS reset)."
        REFERENCE   "Section 8.3.3.4.3 in IEEE 802.16REVd/D5-2004"
        DEFVAL      { dnlkRateIdBpsk1-2 }
        ::= { wmanIfBsConfigExtEntry 12 }

wmanIfBsCfgExtAasChanFbckReqFreq OBJECT-TYPE
        SYNTAX      INTEGER (5..10000)
        UNITS       "ms"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines AAS channel feedback request frequency.
             It controls the frequency of downlink beam measurements.
             The relevant MAC messages are AAS-FBCK-REQ/RSP"
        REFERENCE "Section 6.3.2.3.40 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 13 }

wmanIfBsCfgExtAasBeamSelectFreq OBJECT-TYPE
        SYNTAX      INTEGER (5..10000)
        UNITS       "ms"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines AAS beam select frequency.
             It controls how often SS issues beam select messages.
             The relevant MAC message is AAS_Beam_Select"
        REFERENCE "Section 6.3.2.3.41 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 14 }

wmanIfBsCfgExtAasChanFbckReqResolution OBJECT-TYPE
        SYNTAX      INTEGER {aasChanFbckRes00(0),
                             aasChanFbckRes01(1),
                             aasChanFbckRes10(2),
                             aasChanFbckRes11(3)}
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines AAS feedback request frequency measurements
             resolution. It is coded as follows:
             aasChanFbckRes00 - every 4th carrier (-100, -96, -92, .., 100)
             aasChanFbckRes01 - every 8th carrier (-100, -92, -84, .., 100)
             aasChanFbckRes10 - every 16th carrier (-100, -84, -68, .., 100)
             aasChanFbckRes11 - every 32th carrier (-100, -68, -36, .., 100)"
        REFERENCE "Section 8.3.6.4 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 15 }

wmanIfBsCfgExtAasBeamReqResolution OBJECT-TYPE
        SYNTAX      INTEGER {aasBeamReqRes000(0),
                             aasBeamReqRes001(1),
                             aasBeamReqRes010(2),
                             aasBeamReqRes011(3),
                             aasBeamReqRes100(4)}
        MAX-ACCESS  read-write
```

```
        STATUS      current
        DESCRIPTION
            "This object defines AAS beam select request resolution parameter.
             It is coded as follows:
             aasBeamReqRes000 - every 4th carrier
             aasBeamReqRes001 - every 8th carrier
             aasBeamReqRes010 - every 16th carrier
             aasBeamReqRes011 - every 32th carrier
             aasBeamReqRes100 - every 64th carrier"
        REFERENCE "Section 8.3.6.5 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 16 }

wmanIfBsCfgExtAasNumOptDiversityZones OBJECT-TYPE
        SYNTAX      INTEGER (0..65535)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object defines the number of optional diversity zones
             transmitted in downlink."
        REFERENCE "Figure 209 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsConfigExtEntry 17 }

wmanIfBsCfgExtRowStatus OBJECT-TYPE
        SYNTAX      RowStatus
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object is used to ensure that the write operation to multiple
             columns is guaranteed to be treated as atomic operation by agent."
        ::= { wmanIfBsConfigExtEntry 18 }


wmanIfBsStatisticCounter OBJECT IDENTIFIER ::= { wmanIfBsCps 3 }
wmanIfBsCapabilities OBJECT IDENTIFIER ::= { wmanIfBsCps 4 }

wmanIfBsSsReqCapabilitiesTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsSsReqCapabilitiesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the basic capability information
             of SSs 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."
        ::= { wmanIfBsCapabilities 1 }

wmanIfBsSsReqCapabilitiesEntry OBJECT-TYPE
        SYNTAX      WmanIfBsSsReqCapabilitiesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each SS that has been
             registered in the BS. This table augments the table
             wmanIfBsRegisteredSsTable."
        AUGMENTS { wmanIfBsRegisteredSsEntry }
        ::= { wmanIfBsSsReqCapabilitiesTable 1 }

WmanIfBsSsReqCapabilitiesEntry ::= SEQUENCE {
        wmanIfBsSsReqCapUlCidSupport                  WmanIfCapUlCidSupportType,
        wmanIfBsSsReqCapManagementSupport             WmanIfCapManagementSupportType,
        wmanIfBsSsReqCapArqSupport                    WmanIfCapArqSupportType,
        wmanIfBsSsReqCapDsxFlowControl                WmanIfCapDsxFlowControlType,
        wmanIfBsSsReqCapMacCrcSupport                 WmanIfCapMacCrcSupportType,
        wmanIfBsSsReqCapMcaFlowControl                WmanIfCapMcaFlowControlType,
        wmanIfBsSsReqCapMcpGroupCidSupport            WmanIfCapMcpGroupCidSupportType,
        wmanIfBsSsReqCapPkmFlowControl                WmanIfCapPkmFlowControlType,
        wmanIfBsSsReqCapAuthorizationPolicyControl    WmanIfCapAuthorizationPolicyControlType,
        wmanIfBsSsReqCapMaxNumOfSupportedSA           WmanIfCapMaxNumOfSupportedSAType,
        wmanIfBsSsReqCapIpVersion                     WmanIfCapIpVersionType,
        wmanIfBsSsReqCapMacCsSupportBitMap            WmanIfCapMacCsSupportBitMapType,
        wmanIfBsSsReqCapMaxNumOfClassifier            WmanIfCapMaxNumOfClassifierType,
```

```
        wmanIfBsSsReqCapPhsSupport                  WmanIfCapPhsSupportType,
        wmanIfBsSsReqCapIpManagementSupport         WmanIfCapIpManagementSupportType,
        wmanIfBsSsReqCapBandwidthAllocSupport       WmanIfCapBandwidthAllocSupportType,
        wmanIfBsSsReqCapPduConstruction             WmanIfCapPduConstructionType,
        wmanIfBsSsReqCapSsTtgTransitionGap          WmanIfCapSsTransitionGapType,
        wmanIfBsSsReqCapSsRtgTransitionGap          WmanIfCapSsTransitionGapType,
        wmanIfBsSsReqCapOfdmFftSizes                WmanIfCapOfdmFftSizesType,
        wmanIfBsSsReqCapOfdmSsDemodulator           WmanIfCapOfdmSsDemodulatorType,
        wmanIfBsSsReqCapOfdmSsModulator             WmanIfCapOfdmSsModulatorType,
        wmanIfBsSsReqCapOfdmFocusedCtSupport        WmanIfCapOfdmFocusedCtSupportType,
        wmanIfBsSsReqCapOfdmTcSublayerSupport       WmanIfCapOfdmTcSublayerSupportType
        }

wmanIfBsSsReqCapUlCidSupport OBJECT-TYPE
        SYNTAX      WmanIfCapUlCidSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "This object shows the number of Uplink CIDs the SS can support."
        ::= { wmanIfBsSsReqCapabilitiesEntry 1 }

wmanIfBsSsReqCapManagementSupport OBJECT-TYPE
        SYNTAX      WmanIfCapManagementSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether or not the SS is managed."
        ::= { wmanIfBsSsReqCapabilitiesEntry 2 }

wmanIfBsSsReqCapArqSupport OBJECT-TYPE
        SYNTAX      WmanIfCapArqSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether the SS supports ARQ."
        ::= { wmanIfBsSsReqCapabilitiesEntry 3 }

wmanIfBsSsReqCapDsxFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapDsxFlowControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object specifies the maximum number of concurrent
             DSA, DSC, or DSD transactions that SS is capable of having
             outstanding."
        DEFVAL              { 0 }
        ::= { wmanIfBsSsReqCapabilitiesEntry 4 }

wmanIfBsSsReqCapMacCrcSupport OBJECT-TYPE
        SYNTAX      WmanIfCapMacCrcSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether or not the SS supports MAC level CRC."
        DEFVAL              { macCrcSupport }
        ::= { wmanIfBsSsReqCapabilitiesEntry 5 }

wmanIfBsSsReqCapMcaFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapMcaFlowControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object specifies the maximum number of concurrent
             MCA transactions that SS is capable of having outstanding."
        DEFVAL              { 0 }
        ::= { wmanIfBsSsReqCapabilitiesEntry 6 }

wmanIfBsSsReqCapMcpGroupCidSupport OBJECT-TYPE
        SYNTAX      WmanIfCapMcpGroupCidSupportType
        MAX-ACCESS  read-only
        STATUS      current
```

```
        DESCRIPTION
            "This object indicates the maximum number of
             simultaneous Multicast Polling Groups the SS is
             capable of belonging to."
        DEFVAL              { 0 }
        ::= { wmanIfBsSsReqCapabilitiesEntry 7 }

wmanIfBsSsReqCapPkmFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapPkmFlowControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object specifies the maximum number of concurrent PKM
             transactions that SS is capable of having outstanding."
        DEFVAL              { 0 }
        ::= { wmanIfBsSsReqCapabilitiesEntry 8 }

wmanIfBsSsReqCapAuthorizationPolicyControl OBJECT-TYPE
        SYNTAX      WmanIfCapAuthorizationPolicyControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object specifies authorization policy that SS is capable of.
             A bit value of 0 = not supported, 1 = supported. If this field is omitted, then
             both SS and BS shall use the IEEE 802.16 security,
             constituting X.509 digital certificates and the RSA public
             key encryption algorithm, as authorization policy."
        ::= { wmanIfBsSsReqCapabilitiesEntry 9 }

wmanIfBsSsReqCapMaxNumOfSupportedSA OBJECT-TYPE
        SYNTAX      WmanIfCapMaxNumOfSupportedSAType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field specifies the maximum number of supported security
             associations of the SS."
        DEFVAL              { 1 }
        ::= { wmanIfBsSsReqCapabilitiesEntry 10 }

wmanIfBsSsReqCapIpVersion OBJECT-TYPE
        SYNTAX      WmanIfCapIpVersionType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the version of IP used on the
             Secondary Management Connection. The value should be undefined
             if the 2nd management CID doesn't exist."
        ::= { wmanIfBsSsReqCapabilitiesEntry 11 }


wmanIfBsSsReqCapMacCsSupportBitMap OBJECT-TYPE
        SYNTAX      WmanIfCapMacCsSupportBitMapType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates SS reported set of MAC convergence
             sublayer support. When a bit is set, it indicates
             the corresponding CS feature is supported."
        ::= { wmanIfBsSsReqCapabilitiesEntry 12 }

wmanIfBsSsReqCapMaxNumOfClassifier OBJECT-TYPE
        SYNTAX      WmanIfCapMaxNumOfClassifierType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the maximum number of admitted
             Classifiers that the SS can support."
        DEFVAL      { 0 }
        ::= { wmanIfBsSsReqCapabilitiesEntry 13 }

wmanIfBsSsReqCapPhsSupport OBJECT-TYPE
```

```
        SYNTAX      WmanIfCapPhsSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates indicates the level of SS support for PHS."
        DEFVAL      { noPhsSupport }
        ::= { wmanIfBsSsReqCapabilitiesEntry 14 }

wmanIfBsSsReqCapIpManagementSupport OBJECT-TYPE
        SYNTAX      WmanIfCapIpManagementSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The IP management mode parameter dictates whether
             the provider intends to manage the SS on an ongoing
             basis via IP-based mechanisms."
        ::= { wmanIfBsSsReqCapabilitiesEntry 15 }

wmanIfBsSsReqCapBandwidthAllocSupport OBJECT-TYPE
        SYNTAX      WmanIfCapBandwidthAllocSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the bandwidth allocation capabilities of the SS.
             The usage is defined by WmanIfCapBandwidthAllocSupportType."
        ::= { wmanIfBsSsReqCapabilitiesEntry 16 }

wmanIfBsSsReqCapPduConstruction OBJECT-TYPE
        SYNTAX      WmanIfCapPduConstructionType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the SS's capabilities for construction and transmission
             of MAC PDUs.
             The usage is defined by WmanIfCapPduConstructionType."
        ::= { wmanIfBsSsReqCapabilitiesEntry 17 }

wmanIfBsSsReqCapSsTtgTransitionGap OBJECT-TYPE
        SYNTAX      WmanIfCapSsTransitionGapType
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the SS's transition speed SSTTG for TDD and H-FDD SSs.
             The usage is defined by WmanIfCapSsTransitionGapType."
        ::= { wmanIfBsSsReqCapabilitiesEntry 18 }

wmanIfBsSsReqCapSsRtgTransitionGap OBJECT-TYPE
        SYNTAX      WmanIfCapSsTransitionGapType
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the SS's transition speed SSRTG for TDD and H-FDD SSs.
             The usage is defined by WmanIfCapSsTransitionGapType."
        ::= { wmanIfBsSsReqCapabilitiesEntry 19 }

wmanIfBsSsReqCapOfdmFftSizes OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmFftSizesType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the FFT sizes supported by SS.
             The usage is defined by WmanIfCapOfdmFftSizesType."
        ::= { wmanIfBsSsReqCapabilitiesEntry 20 }

wmanIfBsSsReqCapOfdmSsDemodulator OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmSsDemodulatorType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
```

```
            "This field indicates the different demodulator options
             supported by SS for downlink.
             The usage is defined by WmanIfCapOfdmSsDemodulatorType."
        ::= { wmanIfBsSsReqCapabilitiesEntry 21 }

wmanIfBsSsReqCapOfdmSsModulator OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmSsModulatorType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the different modulator options
             supported by SS for uplink.
             The usage is defined by WmanIfCapOfdmSsModulatorType."
        ::= { wmanIfBsSsReqCapabilitiesEntry 22 }

wmanIfBsSsReqCapOfdmFocusedCtSupport OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmFocusedCtSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates whether the SS supports Focused Contention.
             The usage is defined by WmanIfCapOfdmFocusedCtSupportType."
        ::= { wmanIfBsSsReqCapabilitiesEntry 23 }

wmanIfBsSsReqCapOfdmTcSublayerSupport OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmTcSublayerSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates whether or not the SS supports the TC sublayer.
             The usage is defined by WmanIfCapOfdmTcSublayerSupportType."
        ::= { wmanIfBsSsReqCapabilitiesEntry 24 }


wmanIfBsSsRspCapabilitiesTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsSsRspCapabilitiesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the basic capability information
             of SSs 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."
        REFERENCE
            "Section 6.3.2.3.7 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsCapabilities 2 }

wmanIfBsSsRspCapabilitiesEntry OBJECT-TYPE
        SYNTAX      WmanIfBsSsRspCapabilitiesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each SS that has been registered in the BS.
             This table augments the wmanIfBsRegisteredSsTable. "
        AUGMENTS { wmanIfBsRegisteredSsEntry }
        ::= { wmanIfBsSsRspCapabilitiesTable 1 }

WmanIfBsSsRspCapabilitiesEntry ::= SEQUENCE {
        wmanIfBsSsRspCapUlCidSupport                  INTEGER,
        wmanIfBsSsRspCapManagementSupport             INTEGER,
        wmanIfBsSsRspCapArqSupport                    INTEGER,
        wmanIfBsSsRspCapDsxFlowControl                INTEGER,
        wmanIfBsSsRspCapMacCrcSupport                 INTEGER,
        wmanIfBsSsRspCapMcaFlowControl                INTEGER,
        wmanIfBsSsRspCapMcpGroupCidSupport            INTEGER,
        wmanIfBsSsRspCapPkmFlowControl                INTEGER,
        wmanIfBsSsRspCapAuthorizationPolicyControl    BITS,
        wmanIfBsSsRspCapMaxNumOfSupportedSA           INTEGER,
        wmanIfBsSsRspCapIpVersion                     INTEGER,
        wmanIfBsSsRspCapMacCsSupportBitMap            BITS,
        wmanIfBsSsRspCapMaxNumOfClassifier            INTEGER,
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        wmanIfBsSsRspCapPhsSupport                  INTEGER,
        wmanIfBsSsRspCapIpManagementSupport         INTEGER,
        wmanIfBsSsRspCapBandwidthAllocSupport       WmanIfCapBandwidthAllocSupportType,
        wmanIfBsSsRspCapPduConstruction             WmanIfCapPduConstructionType,
        wmanIfBsSsRspCapTtgTransitionGap            WmanIfCapSsTransitionGapType,
        wmanIfBsSsRspCapRtgTransitionGap            WmanIfCapSsTransitionGapType,
        wmanIfBsSsRspCapOfdmFftSizes                WmanIfCapOfdmFftSizesType,
        wmanIfBsSsRspCapOfdmSsDemodulator           WmanIfCapOfdmSsDemodulatorType,
        wmanIfBsSsRspCapOfdmSsModulator             WmanIfCapOfdmSsModulatorType,
        wmanIfBsSsRspCapOfdmFocusedCtSupport        WmanIfCapOfdmFocusedCtSupportType,
        wmanIfBsSsRspCapOfdmTcSublayerSupport       WmanIfCapOfdmTcSublayerSupportType
        }

wmanIfBsSsRspCapUlCidSupport OBJECT-TYPE
        SYNTAX      WmanIfCapUlCidSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION "Negotiated number of Uplink CIDs the SS can support."
        ::= { wmanIfBsSsRspCapabilitiesEntry 1 }

wmanIfBsSsRspCapManagementSupport OBJECT-TYPE
        SYNTAX      WmanIfCapManagementSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION "This object indicates whether or not the SS is managed
                        as a result of the capabilities negotiation."
        ::= { wmanIfBsSsRspCapabilitiesEntry 2 }

wmanIfBsSsRspCapArqSupport OBJECT-TYPE
        SYNTAX      WmanIfCapArqSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION "This object indicates whether the SS is allowed to use ARQ
                        as a result of the capabilities negotiation."
        ::= { wmanIfBsSsRspCapabilitiesEntry 3 }

wmanIfBsSsRspCapDsxFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapDsxFlowControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated maximum number of concurrent
             DSA, DSC, or DSD transactions that may be outstanding."
        ::= { wmanIfBsSsRspCapabilitiesEntry 4 }

wmanIfBsSsRspCapMacCrcSupport OBJECT-TYPE
        SYNTAX      WmanIfCapMacCrcSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether or not the SS is allowed to use MAC level CRC
             as a result of the capabilities negotiation."
        DEFVAL             { macCrcSupport }
        ::= { wmanIfBsSsRspCapabilitiesEntry 5 }

wmanIfBsSsRspCapMcaFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapMcaFlowControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated maximum number of concurrent
             MCA transactions that may be outstanding."
        DEFVAL             { 0 }
        ::= { wmanIfBsSsRspCapabilitiesEntry 6 }

wmanIfBsSsRspCapMcpGroupCidSupport OBJECT-TYPE
        SYNTAX      WmanIfCapMcpGroupCidSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated maximum number of
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             simultaneous Multicast Polling Groups the SS is
             capable of belonging to."
        DEFVAL              { 0 }
        ::= { wmanIfBsSsRspCapabilitiesEntry 7 }

wmanIfBsSsRspCapPkmFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapPkmFlowControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated maximum number of concurrent PKM
             transactions that may be outstanding."
        DEFVAL              { 0 }
        ::= { wmanIfBsSsRspCapabilitiesEntry 8 }

wmanIfBsSsRspCapAuthorizationPolicyControl OBJECT-TYPE
        SYNTAX      WmanIfCapAuthorizationPolicyControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object specifies negotiated authorization policy. A bit value of 0 =
             not supported, 1 = supported. If this field is omitted, then
             both SS and BS shall use the IEEE 802.16 security,
             constituting X.509 digital certificates and the RSA public
             key encryption algorithm, as authorization policy."
        ::= { wmanIfBsSsRspCapabilitiesEntry 9 }

wmanIfBsSsRspCapMaxNumOfSupportedSA OBJECT-TYPE
        SYNTAX      WmanIfCapMaxNumOfSupportedSAType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated maximum number of supported security
             association of the SS."
        DEFVAL              { 1 }
        ::= { wmanIfBsSsRspCapabilitiesEntry 10 }

wmanIfBsSsRspCapIpVersion OBJECT-TYPE
        SYNTAX      WmanIfCapIpVersionType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated version of IP used on the
             Secondary Management Connection. The value should be undefined
             if the 2nd management CID doesn't exist."
        ::= { wmanIfBsSsRspCapabilitiesEntry 11 }


wmanIfBsSsRspCapMacCsSupportBitMap OBJECT-TYPE
        SYNTAX      WmanIfCapMacCsSupportBitMapType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated set of MAC convergence
             sublayer support. When a bit is set, it indicates
             the corresponding CS feature is supported."
        ::= { wmanIfBsSsRspCapabilitiesEntry 12 }

wmanIfBsSsRspCapMaxNumOfClassifier OBJECT-TYPE
        SYNTAX      WmanIfCapMaxNumOfClassifierType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated maximum number of admitted
             Classifiers that the SS is allowed to have."
        DEFVAL      { 0 }
        ::= { wmanIfBsSsRspCapabilitiesEntry 13 }

wmanIfBsSsRspCapPhsSupport OBJECT-TYPE
        SYNTAX      WmanIfCapPhsSupportType
        MAX-ACCESS  read-only
```

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        STATUS      current
        DESCRIPTION
            "This object indicates indicates the negotiated level of PHS support."
        DEFVAL      { noPhsSupport }
        ::= { wmanIfBsSsRspCapabilitiesEntry 14 }

wmanIfBsSsRspCapIpManagementSupport OBJECT-TYPE
        SYNTAX      WmanIfCapIpManagementSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the negotiated IP management mode
            for the SS.  It indicates whether the provider intends to
            manage the SS on an ongoing basis via IP-based mechanisms."
        ::= { wmanIfBsSsRspCapabilitiesEntry 15 }

wmanIfBsSsRspCapBandwidthAllocSupport OBJECT-TYPE
        SYNTAX      WmanIfCapBandwidthAllocSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates negotiated properties of the SS
             for bandwidth allocation purposes.
             The usage is defined by WmanIfCapBandwidthAllocSupportType."
        ::= { wmanIfBsSsRspCapabilitiesEntry 16 }

wmanIfBsSsRspCapPduConstruction OBJECT-TYPE
        SYNTAX      WmanIfCapPduConstructionType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Specifies negotiated capabilities for construction and transmission of MAC PDUs.
             The usage is defined by WmanIfCapPduConstructionType."
        ::= { wmanIfBsSsRspCapabilitiesEntry 17 }

wmanIfBsSsRspCapTtgTransitionGap OBJECT-TYPE
        SYNTAX      WmanIfCapSsTransitionGapType
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the negotiated transition speed SSTTG for TDD and H-FDD SSs.
             The usage is defined by WmanIfCapSsTransitionGapType."
        ::= { wmanIfBsSsRspCapabilitiesEntry 18 }

wmanIfBsSsRspCapRtgTransitionGap OBJECT-TYPE
        SYNTAX      WmanIfCapSsTransitionGapType
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the negotiated transition speed SSRTG for TDD and H-FDD SSs.
             The usage is defined by WmanIfCapSsTransitionGapType."
        ::= { wmanIfBsSsRspCapabilitiesEntry 19 }

wmanIfBsSsRspCapOfdmFftSizes OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmFftSizesType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the FFT sizes negotiated with the SS.
             The usage is defined by WmanIfCapOfdmFftSizesType."
        ::= { wmanIfBsSsRspCapabilitiesEntry 20 }

wmanIfBsSsRspCapOfdmSsDemodulator OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmSsDemodulatorType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the different demodulator options
             negotiated for SS for downlink.
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             The usage is defined by WmanIfCapOfdmSsDemodulatorType."
        ::= { wmanIfBsSsRspCapabilitiesEntry 21 }

wmanIfBsSsRspCapOfdmSsModulator OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmSsModulatorType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the different modulator options
             negotiated for SS for uplink.
             The usage is defined by WmanIfCapOfdmSsModulatorType."
        ::= { wmanIfBsSsRspCapabilitiesEntry 22 }

wmanIfBsSsRspCapOfdmFocusedCtSupport OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmFocusedCtSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates whether the SS has negotiated the support
             for Focused Contention.
             The usage is defined by WmanIfCapOfdmFocusedCtSupportType."
        ::= { wmanIfBsSsRspCapabilitiesEntry 23 }

wmanIfBsSsRspCapOfdmTcSublayerSupport OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmTcSublayerSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates whether the SS has negotiated support
             for the TC sublayer.
             The usage is defined by WmanIfCapOfdmTcSublayerSupportType."
        ::= { wmanIfBsSsRspCapabilitiesEntry 24 }


wmanIfBsCapabilitiesTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsCapabilitiesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the basic capabilities of the BS as implemented
             in BS hardware and software.
             These capabilities along with the configuration for them
(wmanIfBsCapabilitiesConfigTable)
             are used for negotiation of basic capabilities
             with SS using RNG-RSP, SBC-RSP and REG-RSP messages.
             The negotiated capabilities are obtained by intersection of SS raw reported
             capabilities, BS raw capabilities and BS configured capabilities.
             The objects in the table have read-only access. The table is maintained by BS."
        ::= { wmanIfBsCapabilities 3 }

wmanIfBsCapabilitiesEntry OBJECT-TYPE
        SYNTAX      WmanIfBsCapabilitiesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each BS sector and is indexed by ifIndex."
        INDEX { ifIndex }
        ::= { wmanIfBsCapabilitiesTable 1 }

WmanIfBsCapabilitiesEntry ::= SEQUENCE {
        wmanIfBsCapUlCidSupport                 WmanIfCapUlCidSupportType,
        wmanIfBsCapManagementSupport            WmanIfCapManagementSupportType,
        wmanIfBsCapArqSupport                   WmanIfCapArqSupportType,
        wmanIfBsCapDsxFlowControl               WmanIfCapDsxFlowControlType,
        wmanIfBsCapMacCrcSupport                WmanIfCapMacCrcSupportType,
        wmanIfBsCapMcaFlowControl               WmanIfCapMcaFlowControlType,
        wmanIfBsCapMcpGroupCidSupport           WmanIfCapMcpGroupCidSupportType,
        wmanIfBsCapPkmFlowControl               WmanIfCapPkmFlowControlType,
        wmanIfBsCapAuthorizationPolicyControl   WmanIfCapAuthorizationPolicyControlType,
        wmanIfBsCapMaxNumOfSupportedSA          WmanIfCapMaxNumOfSupportedSAType,
        wmanIfBsCapIpVersion                    WmanIfCapIpVersionType,
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        wmanIfBsCapMacCsSupportBitMap           WmanIfCapMacCsSupportBitMapType,
        wmanIfBsCapMaxNumOfClassifier           WmanIfCapMaxNumOfClassifierType,
        wmanIfBsCapPhsSupport                   WmanIfCapPhsSupportType,
        wmanIfBsCapIpManagementSupport          WmanIfCapIpManagementSupportType,
        wmanIfBsCapBandwidthAllocSupport        WmanIfCapBandwidthAllocSupportType,
        wmanIfBsCapPduConstruction              WmanIfCapPduConstructionType,
        wmanIfBsCapSsTtgTransitionGap           WmanIfCapSsTransitionGapType,
        wmanIfBsCapSsRtgTransitionGap           WmanIfCapSsTransitionGapType,
        wmanIfBsCapOfdmFftSizes                 WmanIfCapOfdmFftSizesType,
        wmanIfBsCapOfdmBsModulator              WmanIfCapOfdmSsDemodulatorType,
        wmanIfBsCapOfdmBsDemodulator            WmanIfCapOfdmSsModulatorType,
        wmanIfBsCapOfdmFocusedCtSupport         WmanIfCapOfdmFocusedCtSupportType,
        wmanIfBsCapOfdmTcSublayerSupport        WmanIfCapOfdmTcSublayerSupportType
        }

wmanIfBsCapUlCidSupport OBJECT-TYPE
        SYNTAX      WmanIfCapUlCidSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object shows the number of Uplink CIDs the BS can support per SS."
        ::= { wmanIfBsCapabilitiesEntry 1 }

wmanIfBsCapManagementSupport OBJECT-TYPE
        SYNTAX      WmanIfCapManagementSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether or not the BS can support managed SS."
        ::= { wmanIfBsCapabilitiesEntry 2 }

wmanIfBsCapArqSupport OBJECT-TYPE
        SYNTAX      WmanIfCapArqSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether the BS supports ARQ."
        ::= { wmanIfBsCapabilitiesEntry 3 }

wmanIfBsCapDsxFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapDsxFlowControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object specifies the maximum number of concurrent
             DSA, DSC, or DSD transactions that BS allows each SS to have outstanding."
        DEFVAL              { 0 }
        ::= { wmanIfBsCapabilitiesEntry 4 }

wmanIfBsCapMacCrcSupport OBJECT-TYPE
        SYNTAX      WmanIfCapMacCrcSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether or not the BS supports MAC level CRC."
        DEFVAL              { macCrcSupport }
        ::= { wmanIfBsCapabilitiesEntry 5 }

wmanIfBsCapMcaFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapMcaFlowControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object specifies the maximum number of concurrent
             MCA transactions that BS allows each SS to have."
        DEFVAL              { 0 }
        ::= { wmanIfBsCapabilitiesEntry 6 }

wmanIfBsCapMcpGroupCidSupport OBJECT-TYPE
        SYNTAX      WmanIfCapMcpGroupCidSupportType
        MAX-ACCESS  read-only
```

```
        STATUS      current
        DESCRIPTION
            "This object indicates the maximum number of
             simultaneous Multicast Polling Groups the BS allows each SS
             to belong to."
        DEFVAL             { 0 }
        ::= { wmanIfBsCapabilitiesEntry 7 }

wmanIfBsCapPkmFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapPkmFlowControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object specifies the maximum number of concurrent PKM
             transactions that BS allows each SS to have."
        DEFVAL             { 0 }
        ::= { wmanIfBsCapabilitiesEntry 8 }

wmanIfBsCapAuthorizationPolicyControl OBJECT-TYPE
        SYNTAX      WmanIfCapAuthorizationPolicyControlType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object specifies authorization policy that BS is capable of.
             A bit value of 0 = not supported, 1 = upported. If this field is omitted, then
             both SS and BS shall use the IEEE 802.16 security,
             constituting X.509 digital certificates and the RSA public
             key encryption algorithm, as authorization policy."
        ::= { wmanIfBsCapabilitiesEntry 9 }

wmanIfBsCapMaxNumOfSupportedSA OBJECT-TYPE
        SYNTAX      WmanIfCapMaxNumOfSupportedSAType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field specifies maximum number of supported security
             associations per SS that the BS allows."
        DEFVAL             { 1 }
        ::= { wmanIfBsCapabilitiesEntry 10 }

wmanIfBsCapIpVersion OBJECT-TYPE
        SYNTAX      WmanIfCapIpVersionType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the version of IP BS allows each SS to use on the
             Secondary Management Connection. The value 'undefined' should not be used
             for this field."
        REFERENCE
            "Section 11.7.4 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsCapabilitiesEntry 11 }


wmanIfBsCapMacCsSupportBitMap OBJECT-TYPE
        SYNTAX      WmanIfCapMacCsSupportBitMapType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates BS set of MAC convergence
             sublayer support. When a bit is set, it indicates
             the corresponding CS feature is supported."
        ::= { wmanIfBsCapabilitiesEntry 12 }

wmanIfBsCapMaxNumOfClassifier OBJECT-TYPE
        SYNTAX      WmanIfCapMaxNumOfClassifierType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the maximum number of admitted
             Classifiers per SS that the BS allows."
        DEFVAL      { 0 }
```

```
        ::= { wmanIfBsCapabilitiesEntry 13 }

wmanIfBsCapPhsSupport OBJECT-TYPE
        SYNTAX      WmanIfCapPhsSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates indicates the level of BS support for PHS.
             The usage is defined by WmanIfCapPhsSupportType."
        DEFVAL      { noPhsSupport }
        ::= { wmanIfBsCapabilitiesEntry 14 }

wmanIfBsCapIpManagementSupport OBJECT-TYPE
        SYNTAX      WmanIfCapIpManagementSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The IP management mode parameter dictates whether BS allows SS
             to be managed on an ongoing basis via IP-based mechanisms.
             The usage is defined by WmanIfCapIpManagementSupportType."
        ::= { wmanIfBsCapabilitiesEntry 15 }

wmanIfBsCapBandwidthAllocSupport OBJECT-TYPE
        SYNTAX      WmanIfCapBandwidthAllocSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the bandwidth allocation properties that
             the BS permits SSs to use.
             The usage is defined by WmanIfCapBandwidthAllocSupportType."
        ::= { wmanIfBsCapabilitiesEntry 16 }

wmanIfBsCapPduConstruction OBJECT-TYPE
        SYNTAX      WmanIfCapPduConstructionType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Specifies the capabilities for construction and transmission of MAC PDUs
             allowed by the BS.
             The usage is defined by WmanIfCapPduConstructionType."
        ::= { wmanIfBsCapabilitiesEntry 17 }

wmanIfBsCapSsTtgTransitionGap OBJECT-TYPE
        SYNTAX      WmanIfCapSsTransitionGapType
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the transition speed SSTTG for TDD and H-FDD SSs allowed
             by the BS.
             The usage is defined by WmanIfCapSsTransitionGapType."
        ::= { wmanIfBsCapabilitiesEntry 18 }

wmanIfBsCapSsRtgTransitionGap OBJECT-TYPE
        SYNTAX      WmanIfCapSsTransitionGapType
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the transition speed SSRTG for TDD and H-FDD SSs allowed
             by the BS.
             The usage is defined by WmanIfCapSsTransitionGapType."
        ::= { wmanIfBsCapabilitiesEntry 19 }

wmanIfBsCapOfdmFftSizes OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmFftSizesType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the FFT sizes supported by the BS.
             The usage is defined by WmanIfCapOfdmFftSizesType."
```

```
        ::= { wmanIfBsCapabilitiesEntry 20 }

wmanIfBsCapOfdmBsModulator OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmSsDemodulatorType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the different BS modulator options for downlink
             supported by the BS.
             The usage is defined by WmanIfCapOfdmSsDemodulatorType."
        ::= { wmanIfBsCapabilitiesEntry 21 }

wmanIfBsCapOfdmBsDemodulator OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmSsModulatorType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the different BS demodulator options for uplink
            supported by the BS.
             The usage is defined by WmanIfCapOfdmSsModulatorType."
        ::= { wmanIfBsCapabilitiesEntry 22 }

wmanIfBsCapOfdmFocusedCtSupport OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmFocusedCtSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the BS support for Focused Contention.
             The usage is defined by WmanIfCapOfdmFocusedCtSupportType."
        ::= { wmanIfBsCapabilitiesEntry 23 }

wmanIfBsCapOfdmTcSublayerSupport OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmTcSublayerSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the BS supports for TC sublayer.
             The usage is defined by WmanIfCapOfdmTcSublayerSupportType."
        ::= { wmanIfBsCapabilitiesEntry 24 }


wmanIfBsCapabilitiesConfigTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsCapabilitiesConfigEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the configuration for basic capabilities of BS.
             The table is intended to be used to restrict the Capabilities implemented
             by BS, for example in order to comply with local regulatory requirements.
             The BS should use the configuration along with the implemented Capabilities
             (wmanIfBsCapabilitiesTable) for negotiation of basic capabilities
             with SS using RNG-RSP, SBC-RSP and REG-RSP messages.
             The negotiated capabilities are obtained by intersection of SS reported
             capabilities, BS raw capabilities and BS configured capabilities.
             The objects in the table have read-write access. The rows are created by BS
             as a copy of wmanIfBsCapabilitiesTable and can be modified by NMS."
        ::= { wmanIfBsCapabilities 4 }

wmanIfBsCapabilitiesConfigEntry OBJECT-TYPE
        SYNTAX      WmanIfBsCapabilitiesConfigEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each BS sector and is indexed by ifIndex."
        INDEX { ifIndex }
        ::= { wmanIfBsCapabilitiesConfigTable 1 }

WmanIfBsCapabilitiesConfigEntry ::= SEQUENCE {
        wmanIfBsCapCfgUlCidSupport                  WmanIfCapUlCidSupportType,
        wmanIfBsCapCfgManagementSupport             WmanIfCapManagementSupportType,
        wmanIfBsCapCfgArqSupport                    WmanIfCapArqSupportType,
```

```
        wmanIfBsCapCfgDsxFlowControl               WmanIfCapDsxFlowControlType,
        wmanIfBsCapCfgMacCrcSupport                WmanIfCapMacCrcSupportType,
        wmanIfBsCapCfgMcaFlowControl               WmanIfCapMcaFlowControlType,
        wmanIfBsCapCfgMcpGroupCidSupport           WmanIfCapMcpGroupCidSupportType,
        wmanIfBsCapCfgPkmFlowControl               WmanIfCapPkmFlowControlType,
        wmanIfBsCapCfgAuthorizationPolicyControl   WmanIfCapAuthorizationPolicyControlType,
        wmanIfBsCapCfgMaxNumOfSupportedSA          WmanIfCapMaxNumOfSupportedSAType,
        wmanIfBsCapCfgIpVersion                    WmanIfCapIpVersionType,
        wmanIfBsCapCfgMacCsSupportBitMap           WmanIfCapMacCsSupportBitMapType,
        wmanIfBsCapCfgMaxNumOfClassifier           WmanIfCapMaxNumOfClassifierType,
        wmanIfBsCapCfgPhsSupport                   WmanIfCapPhsSupportType,
        wmanIfBsCapCfgIpManagementSupport          WmanIfCapIpManagementSupportType,
        wmanIfBsCapCfgBandwidthAllocSupport        WmanIfCapBandwidthAllocSupportType,
        wmanIfBsCapCfgPduConstruction              WmanIfCapPduConstructionType,
        wmanIfBsCapCfgSsTtgTransitionGap           WmanIfCapSsTransitionGapType,
        wmanIfBsCapCfgSsRtgTransitionGap           WmanIfCapSsTransitionGapType,
        wmanIfBsCapCfgOfdmFftSizes                 WmanIfCapOfdmFftSizesType,
        wmanIfBsCapCfgOfdmBsModulator              WmanIfCapOfdmSsDemodulatorType,
        wmanIfBsCapCfgOfdmBsDemodulator            WmanIfCapOfdmSsModulatorType,
        wmanIfBsCapCfgOfdmFocusedCtSupport         WmanIfCapOfdmFocusedCtSupportType,
        wmanIfBsCapCfgOfdmTcSublayerSupport        WmanIfCapOfdmTcSublayerSupportType,
        wmanIfBsCapabilitiesConfigRowStatus             RowStatus
        }

wmanIfBsCapCfgUlCidSupport OBJECT-TYPE
        SYNTAX      WmanIfCapUlCidSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object shows the configured number of Uplink CIDs the BS can support per SS."
        ::= { wmanIfBsCapabilitiesConfigEntry 1 }

wmanIfBsCapCfgManagementSupport OBJECT-TYPE
        SYNTAX      WmanIfCapManagementSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates whether BS is configured to support managed SS."
        ::= { wmanIfBsCapabilitiesConfigEntry 2 }

wmanIfBsCapCfgArqSupport OBJECT-TYPE
        SYNTAX      WmanIfCapArqSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates whether the BS is configured to support ARQ."
        ::= { wmanIfBsCapabilitiesConfigEntry 3 }

wmanIfBsCapCfgDsxFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapDsxFlowControlType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object specifies the configured maximum number of concurrent
             DSA, DSC, or DSD transactions that BS allows each SS to have outstanding."
        DEFVAL              { 0 }
        ::= { wmanIfBsCapabilitiesConfigEntry 4 }

wmanIfBsCapCfgMacCrcSupport OBJECT-TYPE
        SYNTAX      WmanIfCapMacCrcSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates whether BS is configured to support MAC level CRC."
        DEFVAL              { macCrcSupport }
        ::= { wmanIfBsCapabilitiesConfigEntry 5 }

wmanIfBsCapCfgMcaFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapMcaFlowControlType
        MAX-ACCESS  read-write
        STATUS      current
```

```
        DESCRIPTION
            "This object specifies the maximum number of concurrent
             MCA transactions that BS is configured to allow each SS to have."
        DEFVAL              { 0 }
        ::= { wmanIfBsCapabilitiesConfigEntry 6 }

wmanIfBsCapCfgMcpGroupCidSupport OBJECT-TYPE
        SYNTAX      WmanIfCapMcpGroupCidSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates the maximum number of simultaneous
             Multicast Polling Groups the BS is configured to allow each SS
             to belong to."
        DEFVAL              { 0 }
        ::= { wmanIfBsCapabilitiesConfigEntry 7 }

wmanIfBsCapCfgPkmFlowControl OBJECT-TYPE
        SYNTAX      WmanIfCapPkmFlowControlType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object specifies the maximum number of concurrent PKM
             transactions that BS is configured to allow each SS to have."
        DEFVAL              { 0 }
        ::= { wmanIfBsCapabilitiesConfigEntry 8 }

wmanIfBsCapCfgAuthorizationPolicyControl OBJECT-TYPE
        SYNTAX      WmanIfCapAuthorizationPolicyControlType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object specifies authorization policy that BS is configured to be capable of.
             A bit value of 0 = not supported, 1 = upported. If this field is omitted, then
             both SS and BS shall use the IEEE 802.16 security,
             constituting X.509 digital certificates and the RSA public
             key encryption algorithm, as authorization policy."
        ::= { wmanIfBsCapabilitiesConfigEntry 9 }

wmanIfBsCapCfgMaxNumOfSupportedSA OBJECT-TYPE
        SYNTAX      WmanIfCapMaxNumOfSupportedSAType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field specifies configured maximum number of supported security
             association per SS."
        DEFVAL              { 1 }
        ::= { wmanIfBsCapabilitiesConfigEntry 10 }

wmanIfBsCapCfgIpVersion OBJECT-TYPE
        SYNTAX      WmanIfCapIpVersionType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates the configured version of IP that the BS
            allows each SS to use on the Secondary Management Connection.
            The value 'undefined' should not be used in this field."
        ::= { wmanIfBsCapabilitiesConfigEntry 11 }


wmanIfBsCapCfgMacCsSupportBitMap OBJECT-TYPE
        SYNTAX      WmanIfCapMacCsSupportBitMapType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates BS configured set of MAC convergence
             sublayer support. When a bit is set, it indicates
             the corresponding CS feature is supported."
        ::= { wmanIfBsCapabilitiesConfigEntry 12 }

wmanIfBsCapCfgMaxNumOfClassifier OBJECT-TYPE
```

```
        SYNTAX      WmanIfCapMaxNumOfClassifierType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates the configured maximum number of admitted
             Classifiers per SS that the BS can support."
        DEFVAL      { 0 }
        ::= { wmanIfBsCapabilitiesConfigEntry 13 }

wmanIfBsCapCfgPhsSupport OBJECT-TYPE
        SYNTAX      WmanIfCapPhsSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates the configured level of BS support for PHS."
        DEFVAL      { noPhsSupport }
        ::= { wmanIfBsCapabilitiesConfigEntry 14 }

wmanIfBsCapCfgIpManagementSupport OBJECT-TYPE
        SYNTAX      WmanIfCapIpManagementSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The IP management mode parameter dictates whether BS is configured
             to allow SS to be managed on an ongoing basis via IP-based mechanisms."
        ::= { wmanIfBsCapabilitiesConfigEntry 15 }

wmanIfBsCapCfgBandwidthAllocSupport OBJECT-TYPE
        SYNTAX      WmanIfCapBandwidthAllocSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates configured properties of the BS
             for bandwidth allocation purposes.
             The usage is defined by WmanIfCapBandwidthAllocSupportType."
        ::= { wmanIfBsCapabilitiesConfigEntry 16 }

wmanIfBsCapCfgPduConstruction OBJECT-TYPE
        SYNTAX      WmanIfCapPduConstructionType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Specifies configured capabilities for construction and transmission of MAC PDUs.
             The usage is defined by WmanIfCapPduConstructionType."
        ::= { wmanIfBsCapabilitiesConfigEntry 17 }

wmanIfBsCapCfgSsTtgTransitionGap OBJECT-TYPE
        SYNTAX      WmanIfCapSsTransitionGapType
        UNITS       "us"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the configured transition speed SSTTG for TDD and H-FDD SSs.
             The usage is defined by WmanIfCapSsTransitionGapType."
        ::= { wmanIfBsCapabilitiesConfigEntry 18 }

wmanIfBsCapCfgSsRtgTransitionGap OBJECT-TYPE
        SYNTAX      WmanIfCapSsTransitionGapType
        UNITS       "us"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the configured transition speed SSRTG for TDD and H-FDD SSs.
             The usage is defined by WmanIfCapSsTransitionGapType."
        ::= { wmanIfBsCapabilitiesConfigEntry 19 }

wmanIfBsCapCfgOfdmFftSizes OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmFftSizesType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
```

```
            "This field indicates the FFT sizes support configured for the BS.
             The usage is defined by WmanIfCapOfdmFftSizesType."
        ::= { wmanIfBsCapabilitiesConfigEntry 20 }

wmanIfBsCapCfgOfdmBsModulator OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmSsDemodulatorType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the different BS modulator options configured for downlink.
             The usage is defined by WmanIfCapOfdmSsDemodulatorType."
        ::= { wmanIfBsCapabilitiesConfigEntry 21 }

wmanIfBsCapCfgOfdmBsDemodulator OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmSsModulatorType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the different BS demodulator options configured for uplink.
             The usage is defined by WmanIfCapOfdmSsModulatorType."
        ::= { wmanIfBsCapabilitiesConfigEntry 22 }

wmanIfBsCapCfgOfdmFocusedCtSupport OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmFocusedCtSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the BS support configured for Focused Contention.
             The usage is defined by WmanIfCapOfdmFocusedCtSupportType."
        ::= { wmanIfBsCapabilitiesConfigEntry 23 }

wmanIfBsCapCfgOfdmTcSublayerSupport OBJECT-TYPE
        SYNTAX      WmanIfCapOfdmTcSublayerSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the BS support configured for TC sublayer.
             The usage is defined by WmanIfCapOfdmTcSublayerSupportType."
        ::= { wmanIfBsCapabilitiesConfigEntry 24 }

wmanIfBsCapabilitiesConfigRowStatus OBJECT-TYPE
        SYNTAX      RowStatus
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object is used to ensure that the write operation to multiple
             comments is guaranteed to be treated as atomic operation by agent."
        ::= { wmanIfBsCapabilitiesConfigEntry 25 }


wmanIfBsSsActionsTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsSsActionsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains all the actions specified for SSs in the standard.
             The actions are routed down to SS using unsolicited MAC messages:
             REG-RSP, DREG-REQ and RES-CMD. The table also contains the parameters
             of the actions in cases where they are specified by the standard."
        ::= { wmanIfBsCps 5 }

wmanIfBsSsActionsEntry OBJECT-TYPE
        SYNTAX      WmanIfBsSsActionsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table is indexed by wmanIfBsSsActionsMacAddress. The action can be requested
             for SS in any state not only those registered. However BS will decide whether
             the action is applicable to the SS based on its current state and execute it
             or skip it as defined in each action definition."
        INDEX { wmanIfBsSsActionsMacAddress }
```

```
        ::= { wmanIfBsSsActionsTable 1 }

WmanIfBsSsActionsEntry ::= SEQUENCE {
        wmanIfBsSsActionsMacAddress         MacAddress,
        wmanIfBsSsActionsResetSs            INTEGER,
        wmanIfBsSsActionsAbortSs            INTEGER,
        wmanIfBsSsActionsOverrideDnFreq     Unsigned32,
        wmanIfBsSsActionsOverrideChannelId  INTEGER,
        wmanIfBsSsActionsDeReRegSs          INTEGER,
        wmanIfBsSsActionsDeReRegSsCode      INTEGER,
        wmanIfBsSsActionsRowStatus                  RowStatus
        }

wmanIfBsSsActionsMacAddress OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION "This object uniquely identifies the SS as an action target."
        ::= { wmanIfBsSsActionsEntry 1 }

wmanIfBsSsActionsResetSs OBJECT-TYPE
        SYNTAX      INTEGER {actionsResetSsNoAction(0),
                             actionsResetSs(1)}
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object should be implemented as follows:
             - When set to actionsResetSs value, instructs BS to send RES-CMD to SS
             - When set to value different than actionsResetSs it should be ignored
             - When read it should return actionsResetSsNoAction
             The RES-CMD message shall be transmitted by the BS on an SS's Basic CID
             to force the SS to reset itself, reinitialize its MAC, and repeat
             initial system access."
        REFERENCE   "Section 6.3.2.3.22 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsSsActionsEntry 2 }

wmanIfBsSsActionsAbortSs OBJECT-TYPE
        SYNTAX      INTEGER {actionsAbortSsNoAction(0),
                             actionsAbortSs(1),
                             actionAbortSsParams(2)}

        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object should be implemented as follows:
             - When set to actionsAbortSs value, it instructs BS to send unsolicited RNG-RSP
               with Ranging Status equal to 'abort' without override parameters
             - When set to actionAbortSsParams value, it instructs BS to send unsolicited
               RNG-RSP with Ranging Status equal to 'abort' and with
               'Downlink Frequency Override' and 'Uplink Channel ID Override' parameters.
             - When set to any other value it should be ignored
             - When read it should returned actionsAbortSsNoAction"
        REFERENCE   "Section 11.6, table 365 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsSsActionsEntry 3 }

wmanIfBsSsActionsOverrideDnFreq OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "kHz"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object is used as a parmeter of the AbortSs action with the code
             actionAbortSsParams. It is used for licenced bands only. It defines
             the Center frequency, in kHz, of new downlink channel
             where the SS should redo initial ranging."
        REFERENCE   "Section 11.6, table 365 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsSsActionsEntry 4 }

wmanIfBsSsActionsOverrideChannelId OBJECT-TYPE
        SYNTAX      INTEGER (0..199)
        MAX-ACCESS  read-create
```

```
        STATUS      current
        DESCRIPTION
            "This object is used as a parmeter of the AbortSs action with the code
             actionAbortSsParams. It is coded as follows:
             - Licensed bands: The identifier of the uplink channel with which
               the SS is to redo initial ranging (not used with PHYs without channelized
               uplinks).
             - License-exempt bands: The Channel Nr (see 8.5.1) where the SS should redo
               initial ranging."
        REFERENCE   "Section 11.6, table 365 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsSsActionsEntry 5 }

wmanIfBsSsActionsDeReRegSs OBJECT-TYPE
        SYNTAX      INTEGER {actionsDeReRegSsNoAction(0),
                             actionsDeReRegSs(1)}
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object should be implemented as follows:
             - When set to actionsDeReRegSs value, instructs BS to send DREG-CMD to SS
               with specified action code
             - When set to value different than actionsDeReRegSs it should be ignored
             - When read it should return actionsDeReRegSsNoAction
             The DREG-CMD message shall be transmitted by the BS on an SS's Basic CID
             to force the SS to change its access state. Upon receiving a DREG-CMD,
             the SS shall take the action indicated by the action code defined
             by wmanIfBsSsActionsDeReRegSsCode."
        REFERENCE   "Section 6.3.2.3.26 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsSsActionsEntry 6 }

wmanIfBsSsActionsDeReRegSsCode OBJECT-TYPE
        SYNTAX      INTEGER {actionsDeReRegSsCodeChangeChan(0),
                             actionsDeReRegSsCodeNoTransmit(1),
                             actionsDeReRegSsCodeLtdTransmit(2),
                             actionsDeReRegSsCodeResume(3)}
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object defined the action code for wmanIfBsSsActionsDeReRegSs action.
             The codes are defined as follows:
             actionsDeReRegSsCodeChangeChan - SS shall leave the current channel
                 and attempt to access another channel.
             actionsDeReRegSsCodeNoTransmit - SS shall listen to the current channel
                 but shall not transmit until an RES-CMD message or DREG_CMD
                 with an Action Code that allows transmission is received.
             actionsDeReRegSsCodeLtdTransmit - SS shall listen to the current channel
                 but only transmit on the Basic, Primary Management
                 and Secondary Management Connections.
             actionsDeReRegSsCodeResume - SS shall return to normal operation
                 and may transmit on any of its active connections."
        REFERENCE   "Section 6.3.2.3.26, table 55 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsSsActionsEntry 7 }

wmanIfBsSsActionsRowStatus OBJECT-TYPE
        SYNTAX      RowStatus
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This object is used to ensure that the write operation to multiple
             columns is guaranteed to be treated as atomic operation by agent."
        ::= { wmanIfBsSsActionsEntry 8 }


wmanIfBsPkmObjects OBJECT IDENTIFIER ::= { wmanIfBsObjects 3 }
wmanIfBsNotification OBJECT IDENTIFIER ::= { wmanIfBsObjects 4 }
--
-- wmanIfBsController contain objects related to the whole BS
wmanIfBsController OBJECT IDENTIFIER ::= { wmanIfBsObjects 5 }

wmanIfBsControllerStatusTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsControllerStatusEntry
```

```
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the status objects of the BS controller entity.
             BS should create a row in this table on initialisation."
        ::= { wmanIfBsController 1 }

wmanIfBsControllerStatusEntry OBJECT-TYPE
        SYNTAX      WmanIfBsControllerStatusEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table is indexed only by arbitrary index wmanIfBsControllerIndex.
             The table has one row only."
        INDEX { wmanIfBsControllerStatusIndex }
        ::= { wmanIfBsControllerStatusTable 1 }

WmanIfBsControllerStatusEntry ::= SEQUENCE {
        wmanIfBsControllerStatusIndex                INTEGER,
        wmanIfBsControllerStatusRunningSwVersion     OCTET STRING,
        wmanIfBsControllerStatusBackupSwVersion      OCTET STRING
        }

wmanIfBsControllerStatusIndex  OBJECT-TYPE
        SYNTAX      INTEGER (1..1)
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "An arbitrary index. Must have value of 1."
        ::= { wmanIfBsControllerStatusEntry 1 }

wmanIfBsControllerStatusRunningSwVersion  OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object identifies the software version of the software BS
             is currently running.
             The value should be defined by the vendor to be unique with respect
             to a given hardware type."
        ::= { wmanIfBsControllerStatusEntry 2 }

wmanIfBsControllerStatusBackupSwVersion  OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object identifies the software version BS has downloaded from
             the upgrade server and has ready for use on request.
             When wmanIfBsControllerSwVersionToRun matches this value the BS should
             switch to this software version automatically and following the switch
             report it as running version while the previously running version
             should become backup version.
             If a BS is capable of storing more than 2 images of software, it should report
             in this object the most receintly downloaded software version.
             The value should be defined by the vendor to be unique with respect
             to a given hardware type."
        ::= { wmanIfBsControllerStatusEntry 3 }

-- Bs Controller Config Table
wmanIfBsControllerConfigTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsControllerConfigEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the configuration objects for the
             BS controller entity."
        ::= { wmanIfBsController 2 }

wmanIfBsControllerConfigEntry OBJECT-TYPE
        SYNTAX      WmanIfBsControllerConfigEntry
```

```
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table augments the table wmanIfBsControllerStatusTable.
             The table has one row only."
        AUGMENTS { wmanIfBsControllerStatusEntry }
        ::= { wmanIfBsControllerConfigTable 1 }

WmanIfBsControllerConfigEntry ::= SEQUENCE {
        wmanIfBsControllerConfigUpgradeServerIpAddrType   InetAddressType,
        wmanIfBsControllerConfigUpgradeServerIpAddr       InetAddress,
        wmanIfBsControllerConfigUpgradeFileName           OCTET STRING,
        wmanIfBsControllerConfigUpgradeSwVersion          OCTET STRING,
        wmanIfBsControllerConfigSwVersionToRun            OCTET STRING,
        wmanIfBsControllerConfigV1V2TrapDestIpAddrType    InetAddressType,
        wmanIfBsControllerConfigV1V2TrapDestIpAddr        InetAddress,
        wmanIfBsControllerConfigV1V2TrapDestPort          Integer32,
        wmanIfBsControllerConfigRowStatus                 RowStatus
        }

wmanIfBsControllerConfigUpgradeServerIpAddrType  OBJECT-TYPE
        SYNTAX      InetAddressType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The type of IP address used in the object wmanIfBsControllerConfigUpgradeServerIpAddr."
        DEFVAL      {ipv4}
        ::= { wmanIfBsControllerConfigEntry 1 }

wmanIfBsControllerConfigUpgradeServerIpAddr  OBJECT-TYPE
        SYNTAX      InetAddress
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "IP address of TFTP server with software upgrade images for this BS."
        ::= { wmanIfBsControllerConfigEntry 2 }

wmanIfBsControllerConfigUpgradeFileName  OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The filename of the software upgrade file for this BSS. The filename is
             a fully qualified directorypath name which is in a format appropriate
             to the server. The file is expected to reside on a TFTP server identified
             by wmanIfBsControllerConfigUpgradeServerIpAddr"
        ::= { wmanIfBsControllerConfigEntry 3 }

wmanIfBsControllerConfigUpgradeSwVersion  OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object identifies the software version of the software upgrade file.
             The value should be defined by the vendor to be unique with respect
             to a given hardware type."
        ::= { wmanIfBsControllerConfigEntry 4 }

wmanIfBsControllerConfigSwVersionToRun  OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object identifies the software version of the software to run by
             the BS. This object is used to separate operation of switching to new software
             version from the operation of downloading of the new software version.
             The value should be defined by the vendor to be unique with respect
             to a given hardware type."
        ::= { wmanIfBsControllerConfigEntry 5 }

wmanIfBsControllerConfigV1V2TrapDestIpAddrType OBJECT-TYPE
```

```
        SYNTAX      InetAddressType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The type of IP address used in the object wmanIfBsControllerConfigV1V2TrapDestIpAddr."
        ::= { wmanIfBsControllerConfigEntry 6 }

wmanIfBsControllerConfigV1V2TrapDestIpAddr OBJECT-TYPE
        SYNTAX      InetAddress
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "IP address of SNMP manager configured as a trap destination
             for versions V1 and V2 of SNMP. If this object is not created or empty
             the traps are not sent."
        ::= { wmanIfBsControllerConfigEntry 7 }

wmanIfBsControllerConfigV1V2TrapDestPort OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
             "Port number of SNMP manager configured as a trap destination
             for versions V1 and V2 of SNMP."
        REFERENCE
            "Section 11.13.19.3.4.6 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfBsControllerConfigEntry 8 }

wmanIfBsControllerConfigRowStatus  OBJECT-TYPE
        SYNTAX      RowStatus
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object is used to ensure that the write operation to multiple
             columns is guaranteed to be treated as atomic operation by agent."
        ::= { wmanIfBsControllerConfigEntry 9 }

-- Bs Controller Actions Table
wmanIfBsControllerActionsTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfBsControllerActionsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the actions objects for the BS controller
             entity."
        ::= { wmanIfBsController 3 }

wmanIfBsControllerActionsEntry OBJECT-TYPE
        SYNTAX      WmanIfBsControllerActionsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table augments the table wmanIfBsControllerStatusTable.
             The table has one row only."
        AUGMENTS { wmanIfBsControllerStatusEntry }
        ::= { wmanIfBsControllerActionsTable 1 }

WmanIfBsControllerActionsEntry ::= SEQUENCE {
        wmanIfBsControllerActionsResetBs                    INTEGER,
        wmanIfBsControllerActionsResetSector                INTEGER,
        wmanIfBsControllerActionsSectorIfToReset            InterfaceIndex,
        wmanIfBsControllerActionsRowStatus                  RowStatus
        }

wmanIfBsControllerActionsResetBs  OBJECT-TYPE
        SYNTAX      INTEGER {actionResetBsNoAction(0),
                             actionResetBs(1)}
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object should be implemented as follows:
```

```
             - When set to actionsResetBs value, instructs BS to reset itself
             - When set to value different than actionsResetBs it should be ignored
             - When read it should return actionsResetBsNoAction"
        ::= { wmanIfBsControllerActionsEntry 1 }

wmanIfBsControllerActionsResetSector  OBJECT-TYPE
        SYNTAX      INTEGER {actionResetSectorNoAction(0),
                             actionResetSector(1)}
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object should be implemented as follows:
             - When set to actionsResetSector value, instructs BS to reset the sector
               identified by wmanIfBsControllerConfigSectorIfToReset. As a result of
               this action the Phy and Mac of this sector should be reinitialised.
             - When set to value different than actionsResetSector it should be ignored
             - When read it should return actionsResetSectorNoAction"
        ::= { wmanIfBsControllerActionsEntry 2 }

wmanIfBsControllerActionsSectorIfToReset  OBJECT-TYPE
        SYNTAX      InterfaceIndex
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object identifies the sector to be reset when action actionsResetSector
             is requested using object wmanIfBsControllerConfigResetSector."
        ::= { wmanIfBsControllerActionsEntry 3 }

wmanIfBsControllerActionsRowStatus  OBJECT-TYPE
        SYNTAX      RowStatus
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object is used to ensure that the write operation to multiple
             columns is guaranteed to be treated as atomic operation by agent."
        ::= { wmanIfBsControllerActionsEntry 4 }

wmanIfSsCps OBJECT IDENTIFIER ::= { wmanIfSsObjects 1 }
wmanIfSsPkmObjects OBJECT IDENTIFIER ::= { wmanIfSsObjects  2 }
wmanIfSsNotification OBJECT IDENTIFIER ::= { wmanIfSsObjects  3 }
wmanIfCmnPacketCs OBJECT IDENTIFIER ::= { wmanIfCommonObjects 1 }


wmanIfCmnPhsRuleTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfCmnPhsRuleEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains PHS rule dictionary entries. Each entry contains
             the data of the header to be suppressed along with its identification - PHSI.
             The classifier uniquely maps packets to its associated PHS Rule.
             The receiving entity uses the CID and the PHSI to restore the PHSF.
             Once a PHSF has been assigned to a PHSI, it shall not be changed.
             To change the value of a PHSF on a service flow, a new PHS rule shall be defined,
             the old rule is removed from the service flow, and the new rule is added.
             When a classifier is deleted, any associated PHS rule shall also be deleted."
        REFERENCE   "Section 5.2.3 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfCmnPacketCs 2 }

wmanIfCmnPhsRuleEntry OBJECT-TYPE
        SYNTAX      WmanIfCmnPhsRuleEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each PHS rule created dynamically by the
             BS and SS on a given service flow.  The PHS rule is defined by the
             pair (PHSS, PHSM) for each distinct header data. It is indexed by
             wmanIfCmnCpsSfId and wmanIfCmnPhsIndex.
             The table is read-only for NMS. "
        INDEX { wmanIfCmnCpsSfId, wmanIfCmnPhsRulePhsIndex }
        ::= { wmanIfCmnPhsRuleTable 1 }
```

```
WmanIfCmnPhsRuleEntry::= SEQUENCE {
        wmanIfCmnPhsRulePhsIndex    INTEGER,
        wmanIfCmnPhsRulePhsField    OCTET STRING,
        wmanIfCmnPhsRulePhsMask     OCTET STRING,
        wmanIfCmnPhsRulePhsSize     Integer32,
        wmanIfCmnPhsRulePhsVerify   WmanIfBsPhsRulePhsVerifyType
        }

wmanIfCmnPhsRulePhsIndex OBJECT-TYPE
        SYNTAX      INTEGER (1..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The PHSI (PHS Index) has a value between 1 and 255, which uniquely references
             the suppressed byte string. The index is unique per service flow.
             The uplink and downlink PHSI values are independent of each other."
        REFERENCE   "Section 11.13.19.3.7.1 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfCmnPhsRuleEntry 1 }

wmanIfCmnPhsRulePhsField OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The PHSF (PHS Field) is a string of bytes containing the header information
             to be suppressed by the sending CS and reconstructed by the receiving CS.
             The most significant byte of the string corresponds to the first byte of the CS-SDU."
        REFERENCE   "Section 11.13.19.3.7.2 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfCmnPhsRuleEntry 2 }

wmanIfCmnPhsRulePhsMask OBJECT-TYPE
        SYNTAX      OCTET STRING
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The PHSM An 8-bit mask that indicates which bytes in the PHS Field (PHSF)
             to suppress and which bytes to not suppress. The PHSM allows fields,
             such as sequence numbers or checksums (which vary in value),
             to be excluded from suppression with the constant bytes around them suppressed.
             It is encodded as follows:
             bit 0: 0 = don't suppress first byte of the suppression field
                    1 = suppress first byte of the suppression field
             bit 1: 0 = don't suppress second byte of the suppression field
                    1 = suppress second byte of the suppression field
             bit x: 0 = don't suppress (x+1) byte of the suppression field
                    1 = suppress (x+1) byte of the suppression field
             where the length of the octet string is ceiling (wmanIfCmnPhsRulePhsSize/8)."

        REFERENCE   "Section 11.13.19.3.7.3 in IEEE 802.16REVd/D5-2004"
        ::= { wmanIfCmnPhsRuleEntry 3 }

wmanIfCmnPhsRulePhsSize OBJECT-TYPE
        SYNTAX      Integer32
        UNITS       "byte"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this field - PHSS is the total number of bytes
             in the header to be suppressed and then restored in a service
             flow that uses PHS."
        REFERENCE
            "Section 11.13.19.3.7.4 in IEEE 802.16REVd/D5-2004"
        DEFVAL      {0}
        ::= { wmanIfCmnPhsRuleEntry 4 }

wmanIfCmnPhsRulePhsVerify OBJECT-TYPE
        SYNTAX      WmanIfBsPhsRulePhsVerifyType
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
```

```
            "The value of this field indicates to the sending entity
             whether or not the packet header contents are to be verified
             prior to performing suppression."
        DEFVAL      { phsVerifyEnable }
        ::= { wmanIfCmnPhsRuleEntry 5 }


wmanIfCmnCps OBJECT IDENTIFIER ::= { wmanIfCommonObjects 2 }

wmanIfCmnCpsServiceFlowTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF WmanIfCmnCpsServiceFlowEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains Service Flows that are created in
             both BS and SS."
        ::= { wmanIfCmnCps 1 }

wmanIfCmnCpsServiceFlowEntry OBJECT-TYPE
        SYNTAX      WmanIfCmnCpsServiceFlowEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each service flow, and is
            indexed by wmanIfCmnCpsSfId. The value of wmanIfCmnCpsSfId
            is obtained from wmanIfBsSfId."
        INDEX     { wmanIfCmnCpsSfId }
        ::= { wmanIfCmnCpsServiceFlowTable 1 }

WmanIfCmnCpsServiceFlowEntry::= SEQUENCE {
        wmanIfCmnCpsSfId                        Unsigned32
        }

wmanIfCmnCpsSfId OBJECT-TYPE
        SYNTAX      Unsigned32 ( 1 .. 4294967295)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "A 32 bit quantity that uniquely identifies a service flow
            to both the subscriber station and base station (BS)."
        ::= { wmanIfCmnCpsServiceFlowEntry 1 }

END
```