This a NetMan Task Group P802.16i Baseline Document.

~~Draft Amendment to IEEE Standard~~ for Local and Metropolitan Area Networks - Part 16: Management Information Base Extensions

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and the
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Abstract: This document provides updates to IEEE Std 802.16's MIB for the MAC, PHY and associated management procedures in order to accommodate recent extensions to the standard. The project will use protocol-neutral methodologies for network management to develop resource models and related solution sets for the management of devices in a multi-vendor 802.16 network.

Keywords: fixed broadband wireless access network, mobile broadband wireless access network, metropolitan area network, microwave, millimeter wave, WirelessMAN™ standards, WMAN MIB

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Introduction

(This introduction is not part of IEEE Draft P802.16i, Draft Amendment to IEEE Standard for Local and Metropolitan Area Networks - Part 16: Management Information Base Extensions.)

Participants

This document was developed by the IEEE 802.16 Working Group on Broadband Wireless Access, which develops the WirelessMAN™ Standard for Wireless Metropolitan Area Networks.

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Roger B. Marks, *Chair*

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The following members of the IEEE 802.16 Working Group on Broadband Wireless Access participated in the Working Group Letter Ballot in which the draft of this standard was prepared and finalized for IEEE Ballot:

[to be determined]

The following participated as non-members in the Working Group Letter Ballot:

[to be determined]

The following members of the IEEE Balloting Committee voted on this standard, whether voting for approval or disapproval, or abstaining.

[to be determined]

The following persons, who were not members of the IEEE Balloting Committee, participated (without voting) in the IEEE Sponsor Ballot in which the draft of this standard was approved:

[to be determined]

When the IEEE-SA Standards Board approved this standard on *[date]*, it had the following membership:

[to be determined]

Also included is the following nonvoting IEEE-SA Standards Board liaison:

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This draft is intended for IEEE-SA Sponsor Ballot with individuals as the ballot group members.

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Baseline document for Draft Amendment to IEEE Standard forLocal and

metropolitan area networks

Part 16: Management Information Base Extensions

NOTE-The editing instructions contained in this amendment define how to merge the material contained herein into the existing base standard IEEE Std 802.16-2004.

The editing instructions are shown ***bold italic***. Four editing instructions are used: ***change***, ***delete***, ***insert***, and ***replace***. ***Change*** is used to make small corrections in existing text or tables. The editing instruction specifies the location of the change and describes what is being changed by using strike through (to remove old material) and underscore (to add new material). ***Delete*** removes existing material. ***Insert*** adds new material without disturbing the existing material. Insertions may require renumbering. If so, renumbering instructions are given in the editing instruction. ***Replace*** is used to make large changes in existing text, subclauses, tables, or figures by removing existing material and replacing it with new material. Editorial notes will not be carried over into future editions because the changes will be incorporated into the base standard.

1. Overview

1.1 Scope

This document provides mobility enhancements to the IEEE Std 802.16 Management Information Base for the medium access control layer, physical layer, and associated management procedures. It uses protocol-neutral methodologies for network management to specify resource models and related solution sets for the management of devices in a multivendor 802.16 mobile network.

1.2 Purpose

This amendment provides a definition of managed objects to enhance the standards-based management of 802.16 devices.

1.3 Reference Models

1.3.1 Management Reference Models

Figure 1 illustrates the Management Reference Model (see also [01]). It shows the Operation System interfacing with other systems. A number of management interfaces are identified in Figure 1, namely:

1. Between the Network Elements (NEs) and the Element Manager (EM)
2. Between the Element Manager (EM) and the Network Manager (NM)
3. Between the Network Managers and the Enterprise Systems
4. Between Network Managers (NMs)
5. Between Enterprise Systems & Network Managers of different Organisations
6. Between Network Elements (NEs).

The resource model defined within this section focuses primarily on serving management interface "2" and to a lesser extent on management interface "1" from the above list.
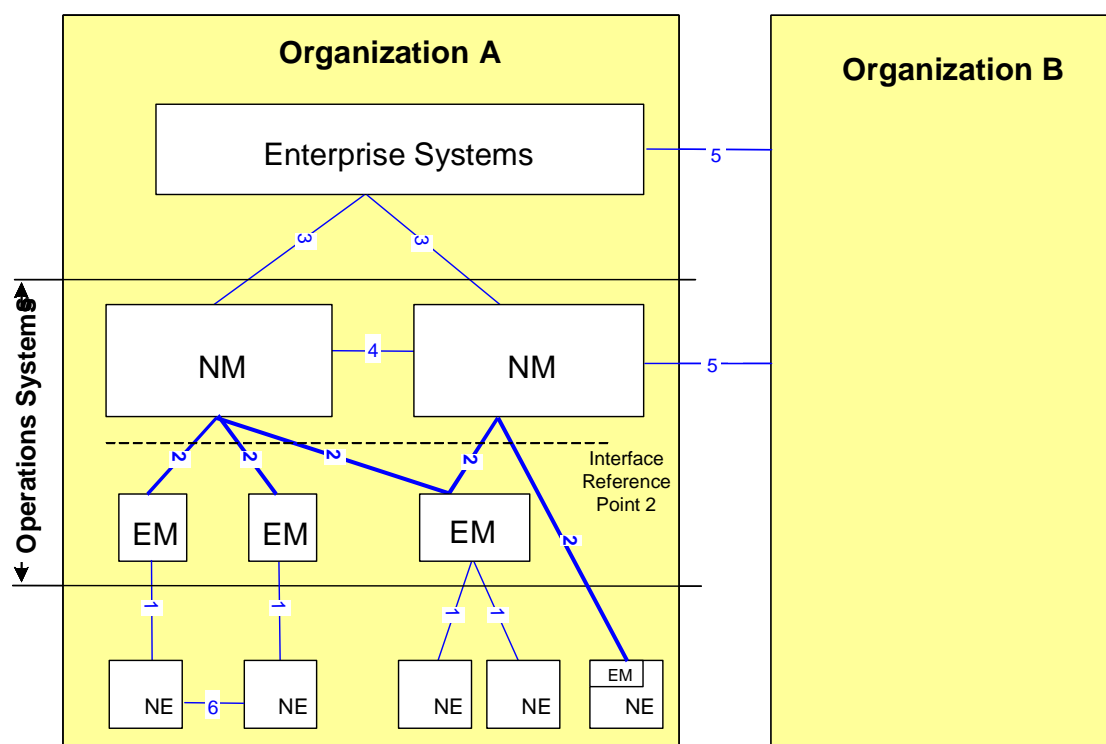
Figure 1—Mobile BWA Network Management Reference Model

Figure 2 and Figure 3 identify system contexts of the Management Interface "2" in terms of its implementation, called IRPAgent, and the user of the IRPAgent, called IRPManager (for a definition of IRPManager and IRPAgent see [2]). An NE can be managed either

- Via System Context A (element management function and IRP Agent are a standalone system) or

- Via System Context B (element management function and IRP Agent embedded within the NE).

The criterion for choosing System Context A or B to manage a particular NE is implementation dependent. An IRPAgent shall support one of the two System Contexts.
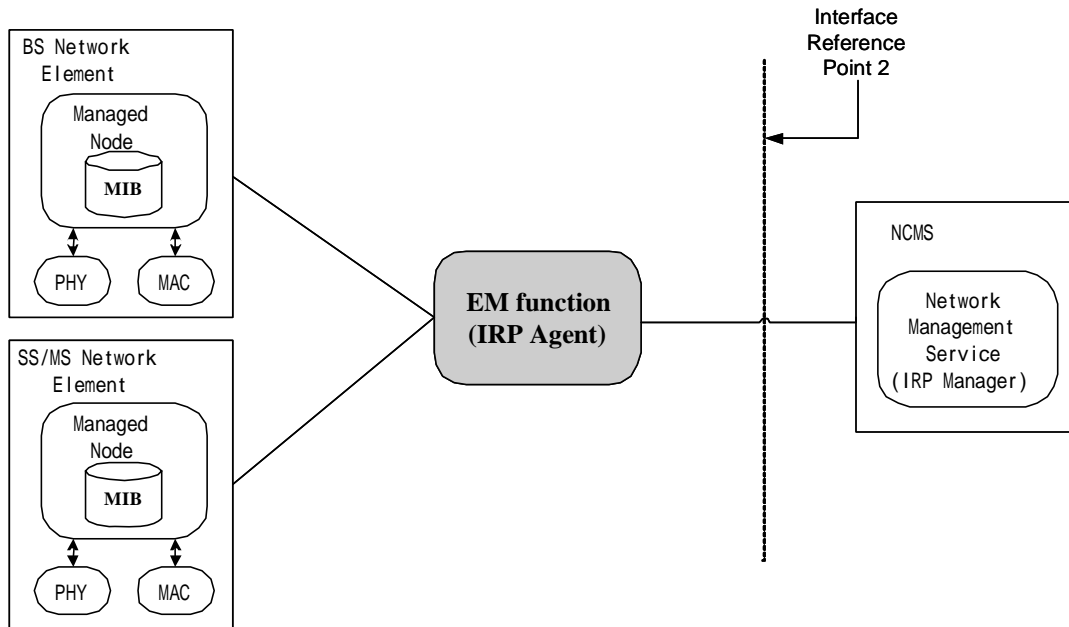
Figure 2—Mobile BWA Network Management Architecture - Context A

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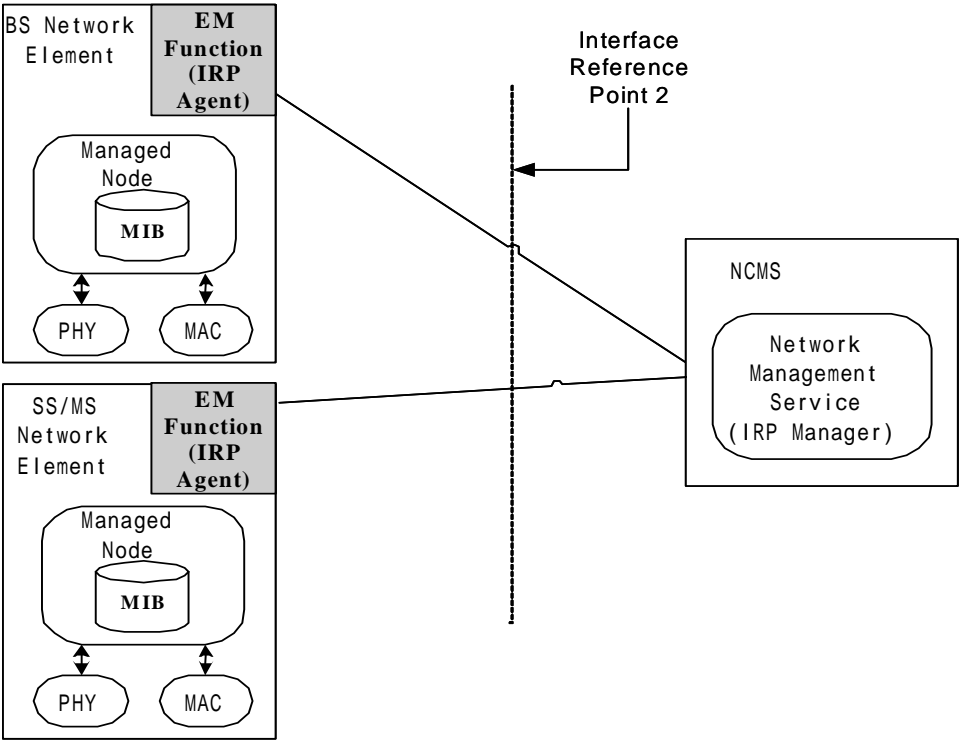
Figure 3—Mobile BWA Network Management Architecture - Context B

2. References

This standard shall be used in conjunction with the following publications. When the following specifications are superseded by an approved revision, the revision shall apply.

[Replace the following references]

~~IETF RFC1902, "Structure of Management Information for version 2 of the Simple Network Management Protocol (SNMPv2)", January 1996~~

IETF RFC2578 "Structure of Management Information Version 2 (SMIv2) " April 1999

~~IETF RFC1903, "Textual Convention for Version 2 of the Simple Network Management Protocol (SNMPv2)", January 1996~~

IETF RFC2579 "Textual Conventions for SMIv2 " April 1999

~~IETF RFC2576, "Coexistence between Version 1, Version 2, and Version 3of the Internet-standard Network Management Framework", March 2000~~

IETF RFC3584 "TCoexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network Management Framework " August 2003

[Insert the following new references]

3GPP TS 32.101, "Principles and High Level Requirements"; V6.1.0 (Release 6) http://www.3gpp.org/ftp/specs/archive/32_series

3GPP TS 32.150, "Integration Reference Point (IRP) Concept and Definitions", V6.4.0 (Release 6) http://www.3gpp.org/ftp/specs/archive/32_series

3GPP TS 32.151, "Integration Reference Point (IRP) Information Service (IS) Template", V6.1.1 (Release 6) http://www.3gpp.org/ftp/specs/archive/32_series

3GPP TS 32.152, "Integration Reference Point (IRP) Information Service (IS) Unified Modelling Language (UML) Repertoire", V6.3.0 (Release 6) http://www.3gpp.org/ftp/specs/archive/32_series

3GPP TS 32.622, "Configuration Management (CM); Generic Network Resources Integration Reference Point (IRP); Network Resource Model (NRM)"; V6.5.0 (Release 6) http://www.3gpp.org/ftp/specs/archive/32_series

3GPP2 S.S0028-002-C, "OAM&P for cdma2000 (3GPP2 Generic NRM IRP)" http://www.3gpp2.org/Public_html/specs/index.cfm

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4. Abbreviations and Acronyms

[Insert a new definition in this sunclause]

RDN Relative Distinguished Name

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9. Configuration

[Insert a new subclause 9.4]

9.4 Mobile MIB for SNMP

9.4.1 MIB-II integration

wman2IfMib is located under MIB-II subtree. A submission will be sent to the Internet Assigned Numbers Authority (IANA) to assign ieee80216WMAN for wman2IfMib.

```
IANAifType ::= TEXTUAL-CONVENTION
SYNTAX INTEGER
{
        ieee80216WMAN (???)     -- IEEE 802.16 WirelessMAN standard to be assigned
                                -- by IANA
}
```

Pending on IETF approval, wman2IfMib will be accessed through

iso.org.dod.internet.mgmt.mib-2.transmission.ifType (1.3.6.1.2.1.10.???)

9.4.2 Usage of MIB-II tables

"Interfaces" group of MIB-II, in RFC2863, has been designed to manage various sub-layers (e.g. MAC and PHY) beneath the internetwork-layer for numerous media-specific interfaces. The implementation of ifTable in SNMP managed BS and SS is mandatory.

The implementation of the ifTable for BS must create one row for each BS sector. Each BS sector may support different standards (e.g. IEEE 802.16-2004, IEEE 802.16e). The following recommendations must be applied to each row defining BS sector:

• ifIndex value is implementation specific
• ifType must be set to ieee80216WMAN
• ifSpeed must be null
• ifPhysAddress must be set to the MAC Address of the BS sector
• All other columnar objects must be initialized as specified in RFC2863

Table 1—Example of the Usage of ifTable objects for BS

ifTable	ifIndex	ifType (IANA)	ifSpeed	ifPhysAddress	ifAdminStatus	ifOperStatus
BS Sector 1	1	ieee80216WMAN	Null	MAC address of BS sector	Administration Status	Operational Status
BS Sector 2	2	ieee80216WMAN	Null	MAC address of BS sector	Administration Status	Operational Status
BS Sector 3	3	ieee80216WMAN	Null	MAC address of BS sector	Administration Status	Operational Status
BS Sector 4	4	ieee80216WMAN	Null	MAC address of BS sector	Administration Status	Operational Status
Ethernet			Null	MAC address	Administration Status	Operational Status

Table 1 shows an example of the usage of ifTable for BS that supports multiple sectors. Each sector may support one of the following MAC / PHY interfaces:

- IEEE 802.16-2004, OFDM 256
- IEEE 802.16-2004, OFDMA 2048
- IEEE 802.16e, OFDM 128
- IEEE 802.16e, OFDM 512
- IEEE 802.16e, OFDM 1024

The implementation of the ifTable for SS must create one row for each SS WirelessMAN interface. Additional rows may be necessary to support other network interfaces, such as Ethernet. The following recommendations must be applied to each row:

- IEEE 802.16-2004, OFDM 256
- ifIndex value is implementation specific
- ifType must be set to ieee80216WMAN
- ifSpeed must be null
- ifPhysAddress must be set to the SS MAC Address (of the WirelessMAN interface)
- All other columnar objects must be initialized as specified in RFC286

Table 2—Example of the Usage of ifTable objects for SS

fTable	ifIndex	ifType (IANA)	ifSpeed	ifPhysAddress	ifAdminStatus	ifOperStatus
SS	An ifEntry for SS	ieee80216WMAN	Null	MAC address of SS	Administration Status	Operational Status
Ethernet			Null	MAC address	Administration Status	Operational Status

Table 2 shows an example of the usage of ifTable for SS that may support one of the following MAC / PHY interfaces:

- IEEE 802.16-2004, OFDM 256

- IEEE 802.16-2004, OFDMA 2048
- IEEE 802.16e, OFDMA 128
- IEEE 802.16e, OFDMA 512
- IEEE 802.16e, OFDMA 102

Figure 4 shows a procedure describing how MS can determine the FFT size of a BS during DL synchronization.
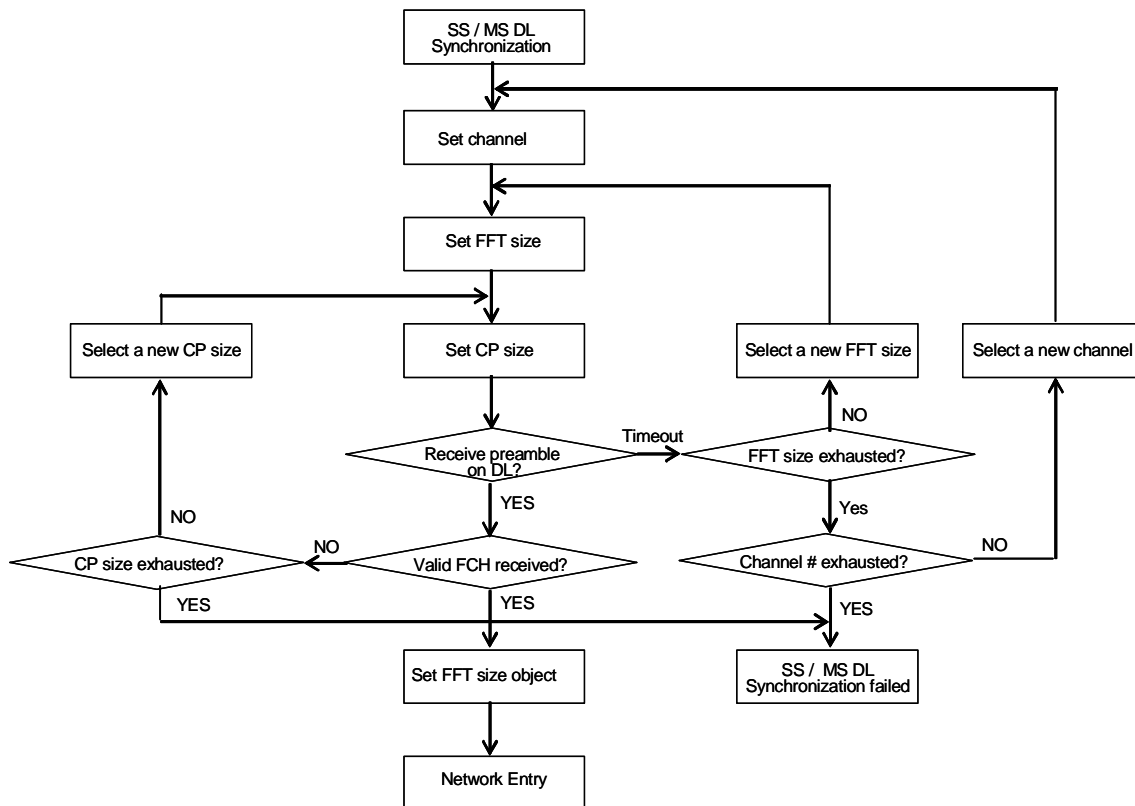
Figure 4—SS / MS DL Synchronization

7. Set the Rx channel (Select a frequency for receiving DL channel)
8. Set the FFT size
9. Set the CP size
10. If a preamble is received successfully, then go to step 5; otherwise,

    a) If FFT size is not exhausted, then select a new FFT size, and go to step 2; otherwise,

        1) If channel to be scanned is exhausted, then declare SS / MS DL synchronization failed; otherwise, select a new channel, and go step 1

11. Set the CP size
12. If a FCH (Frame Control Header) is received successfully, then go to network entry; otherwise,

    a) If CP size is not exhausted, then select a new CP size, and go to step 3; otherwise, declare SS / MS DL synchronization failed

    a) b) Set FFT size object

Figure 5 shows a procedure describing how BS can determine the MAC / PHY standard interface and capability a SS / MS can support.

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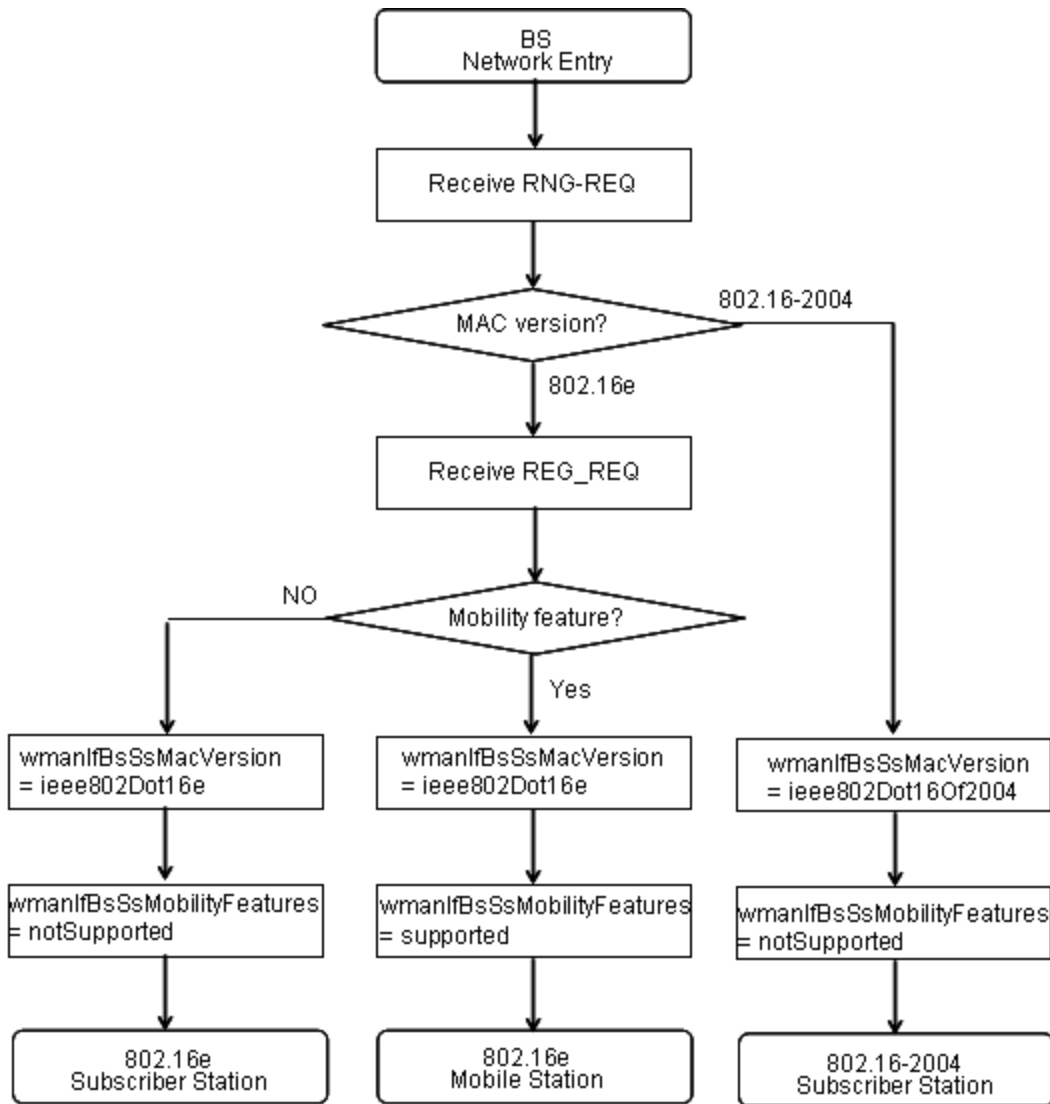
Figure 5—SS / MS Network Entry

1. Receive RNG-REQ from SS / MS
2. If MAC version is 802.16-2004, then

   a)   wmanIfBsSsMacVersion = ieee802Dot16Of2004

   b)   wmanIfBsSsMobilityFeatures = No Supported

   c)   Go to step 5

3. Receive REG-REQ from SS / MS
4. If Mobility Feature is supported, then

   a)   wmanIfBsSsMacVersion = ieee802Dot16e

   b)   wmanIfBsSsMobilityFeatures = Supported

   otherwise

a) wmanIfBsSsMacVersion = ieee802Dot16e

b) wmanIfBsSsMobilityFeatures = Not Supported

5. Continue network entry procedure

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[Insert a new subclause 15]

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15. IRP Definitions

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For the purpose of Management Interface development an Interface Methodology known as Integration Reference Point (IRP) was developed to promote the wider adoption of standardized Management interfaces in telecommunication networks. The IRP methodology employs Protocol & Technology Neutral modeling methods as well as protocol specific solution sets to help achieve its goals. The Integration Reference Point is a methodology to aid a modular approach to the development of standards interfaces.

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There are three cornerstones to the IRP approach:

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1.Top-down, process-driven modeling approach

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The process begins with a requirements phase, the aim at this step is to provide conceptual and use case definitions for a specific interface aspect as well as defining subsequent requirements for this IRP.

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2.Technology-independent modeling

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The second phase of the process is the development of a protocol independent model of the interface. This protocol independent model is specified in the IRP Information Service.

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3. Standards-based technology-dependent modeling

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The third phase of the process is to create one or more interface technology and protocol dependent models from the Information Service model. This is specified in the IRP Solution Set(s).

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This document encompases phases 2 and 3 only.

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15.1 NRM IRP IS

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This subclause defines the NRM IRP IS for 802.16 Mobile & Fixed Network, and is based on the IS Template defined in [03] as well as the UML Repertoire defined in [04] - refer to these specifications for details on how to interpret the information defined below.

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15.1.1 Information Service Models

15.1.1.1 Information entities imported and local labels:

Table 3—Information entities imported and local labels

Label reference	Local label
3GPP TS 32.622 [05], information object class, `ManagedElement`	`ManagedElement`
3GPP TS 32.622 [05], information object class, `ManagedFunction`	`ManagedFunction`
3GPP TS 32.622 [05], information object class, `SubNetwork`	`SubNetwork`
3GPP TS 32.622 [05], information object class, `Top`	`Top`
3GPP2 S.S0028-002-C-[06], information object class, `ExternalIOC`	`ExternalIOC`

15.1.1.2 Class diagram

15.1.1.2.1 Attributes and relationships

This clause provides the overview of all information object classes in UML. Subsequent clauses provide more detailed specification of various aspects of these information object classes.

The naming and containment for the protocol neutral network management models of the 802.16 standard are shown in the following figures. They are split in several figures only for a readability purpose.

15.1.1.2.1.1 WmanSubNetwork Relationships
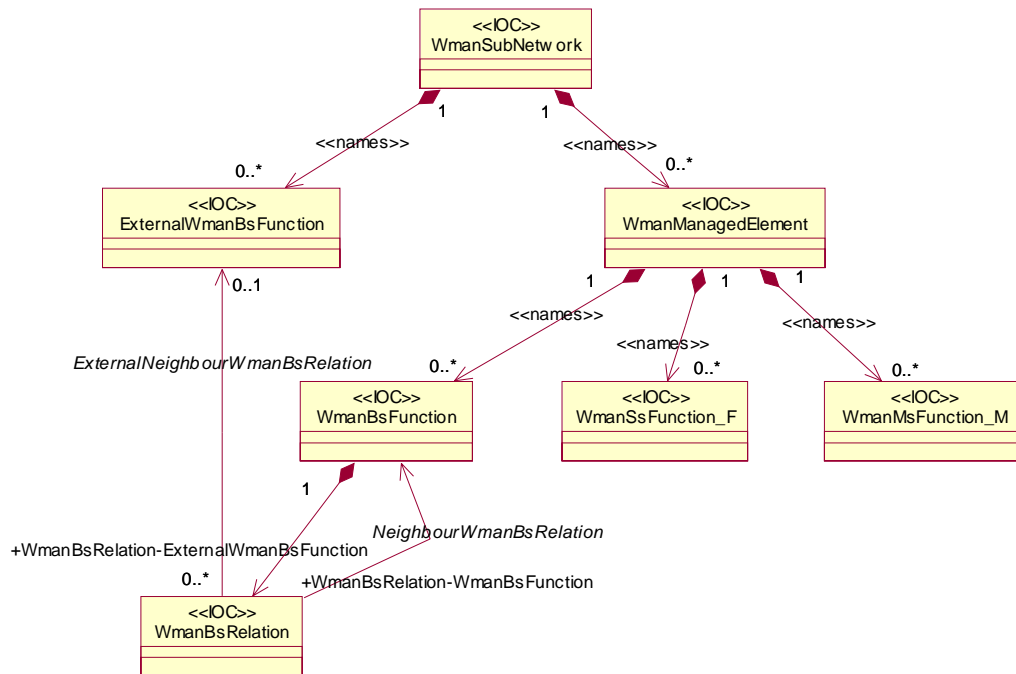
Figure 6—WmanSubNetwork Containment/Naming and Association Diagram

15.1.1.2.1.2 Bs Object Relationships
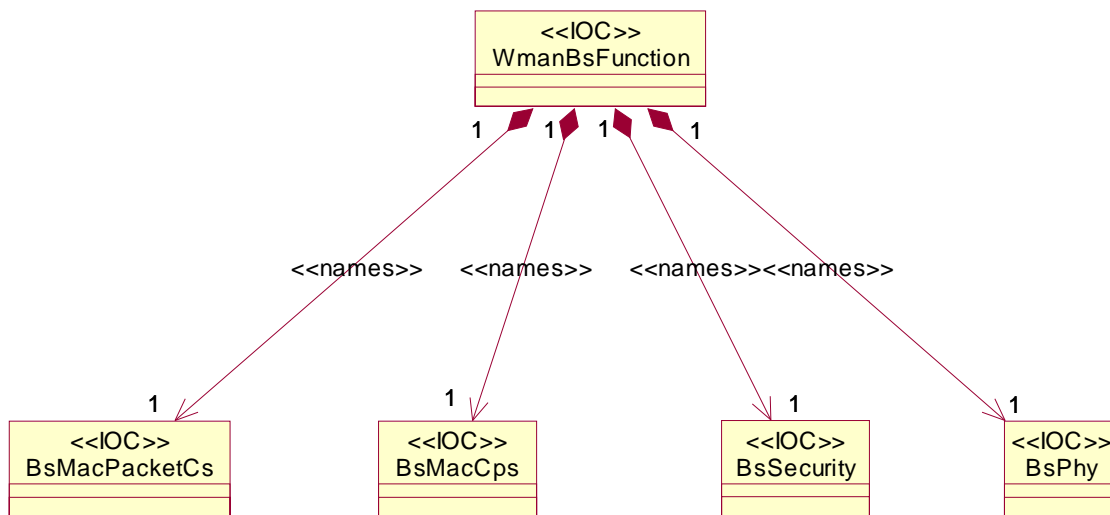
Figure 7—WmanBsFunction Containment/Naming and Association Diagram

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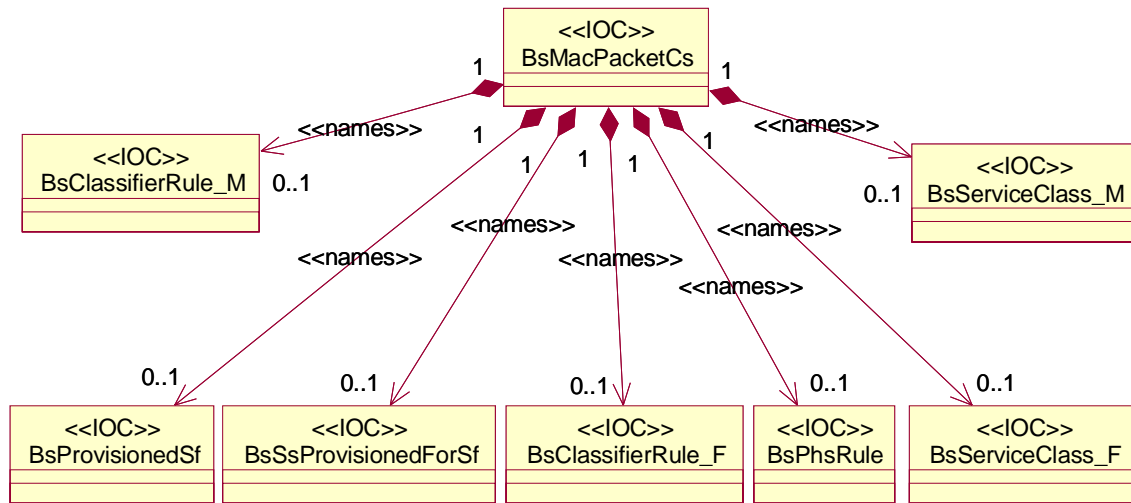
Figure 8—BsMacPacketCs Containment/Naming and Association Diagram

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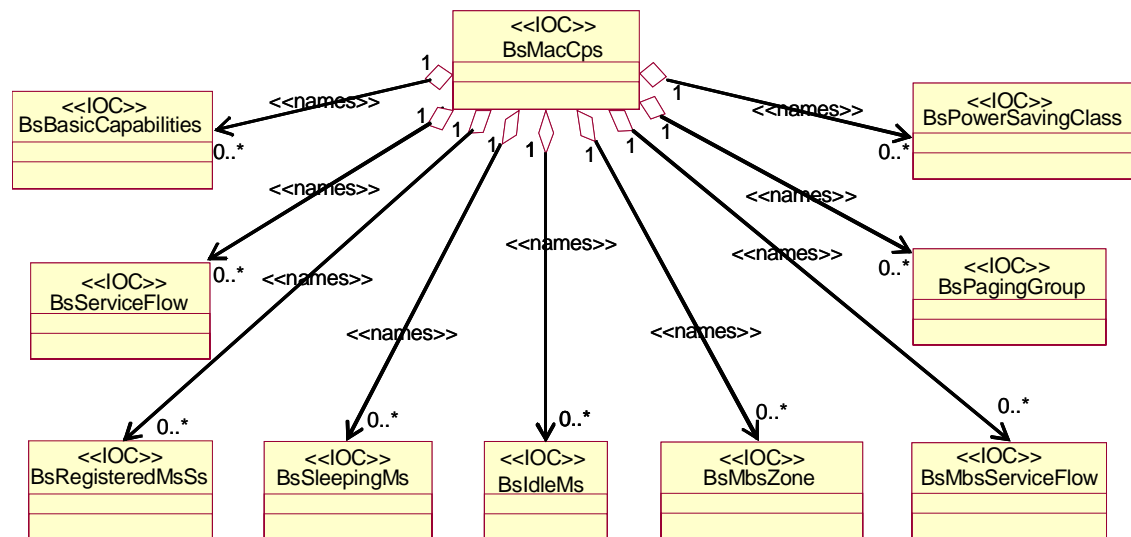
Figure 9—BsMacCps Containment/Naming and Association Diagram

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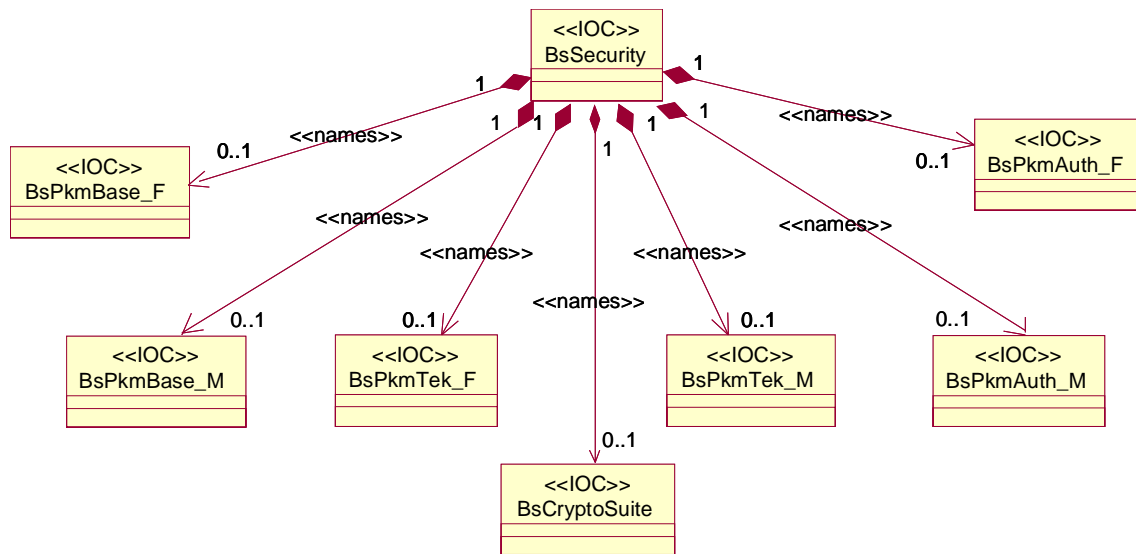
Figure 10—BsSecurity Containment/Naming and Association Diagram

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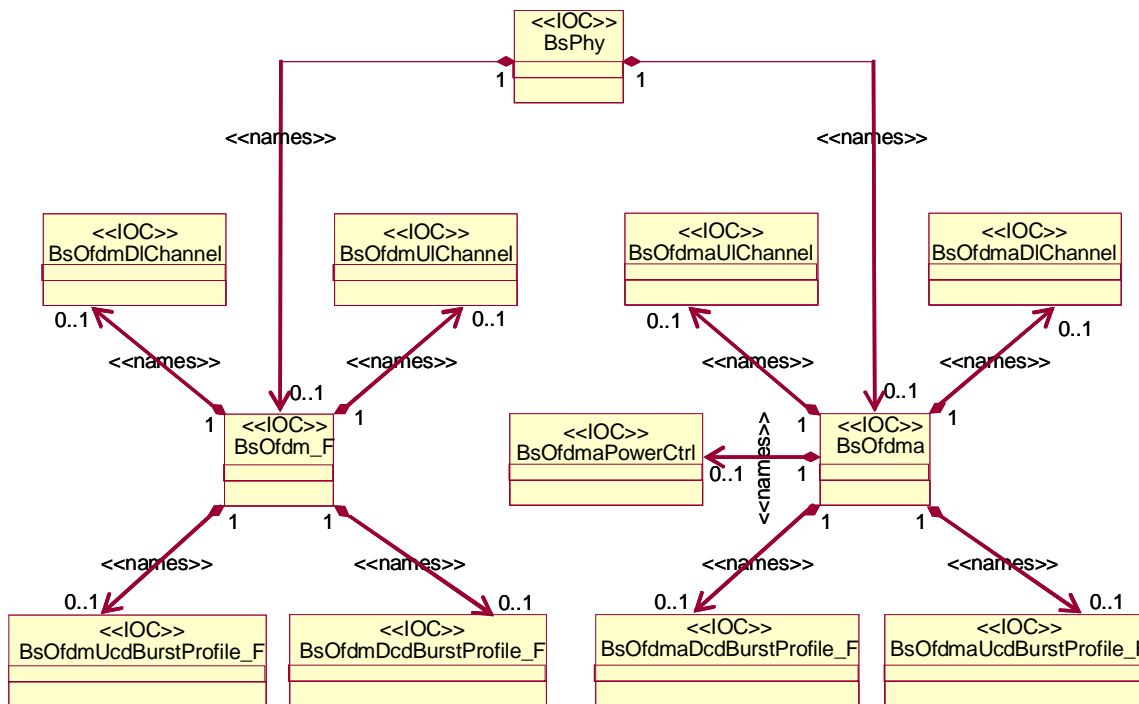
Figure 11—BsPhy Containment/Naming and Association Diagram

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15.1.1.2.1.3 Ss Object Relationships

TBD

15.1.1.2.2 Inheritance

This subclause depicts the inheritance relationships that exist between information object classes.

15.1.1.2.2.1 TOP Inheritance
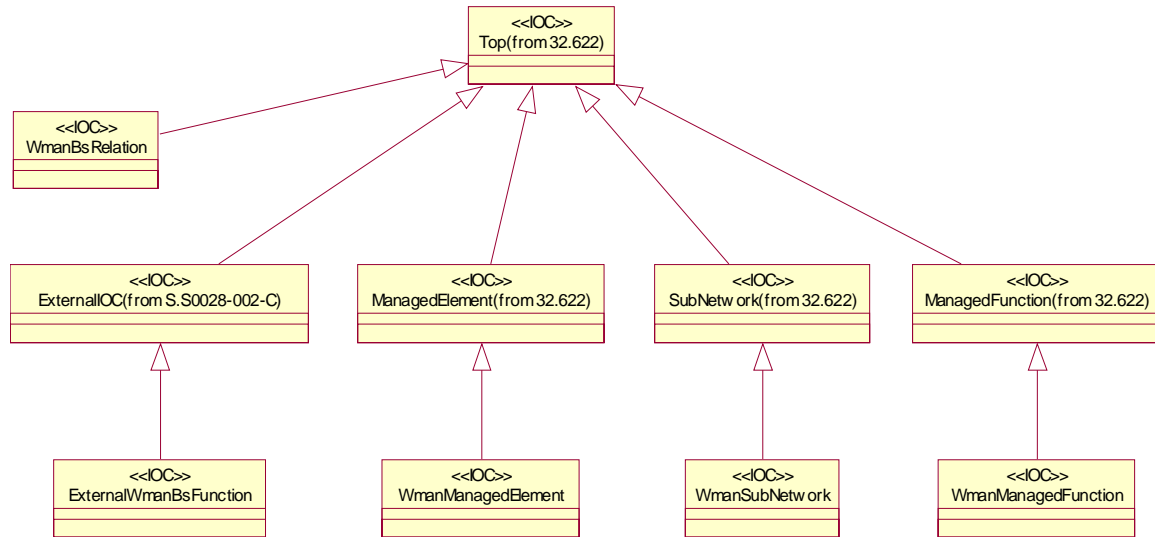
Figure 12—Top Inheritance Hierarchy Diagram
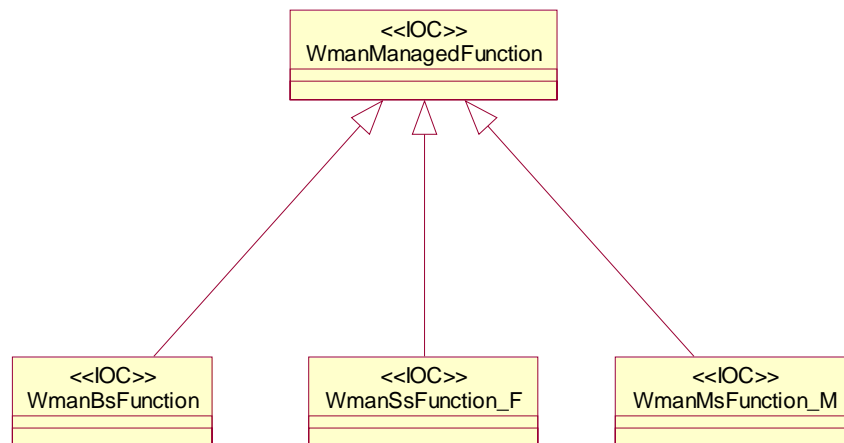
Figure 13—WmanManagedFunction Inheritance Hierarchy Diagram

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15.1.1.2.2.2 Bs Object Inheritance
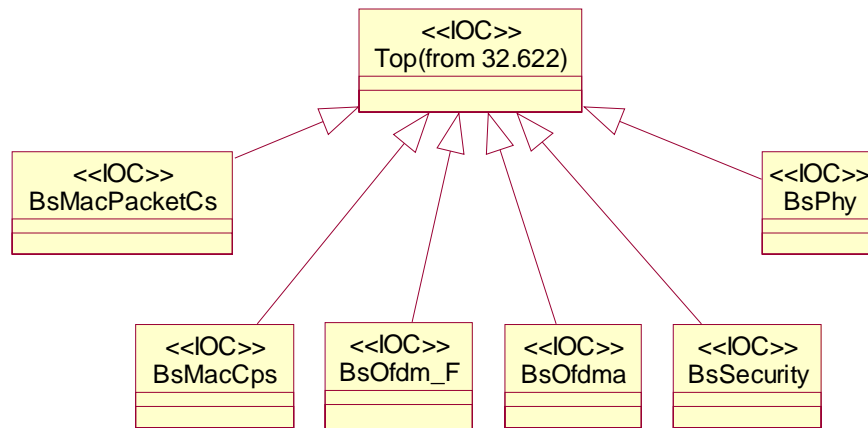
Figure 14—Bs Inheritance Hierarchy Diagram
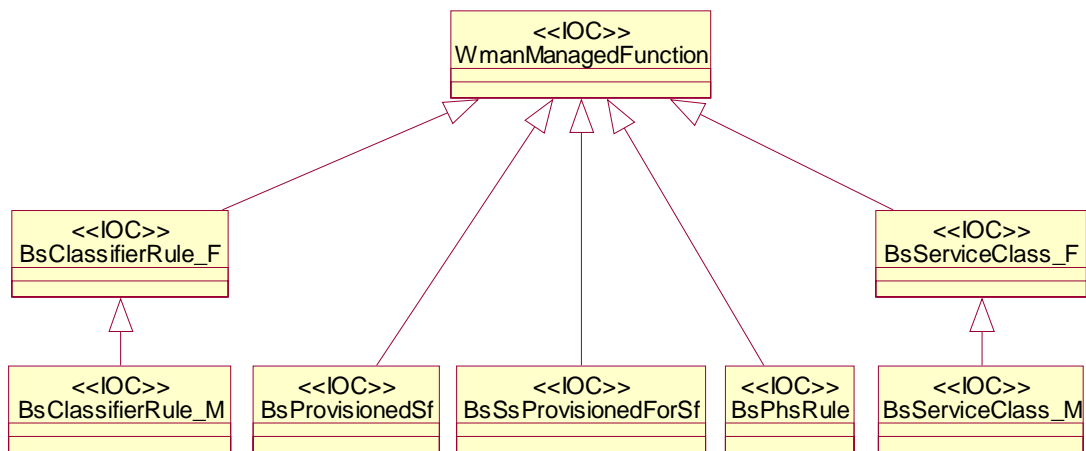
Figure 15—Bs PacketCs Inheritance Hierarchy Diagra

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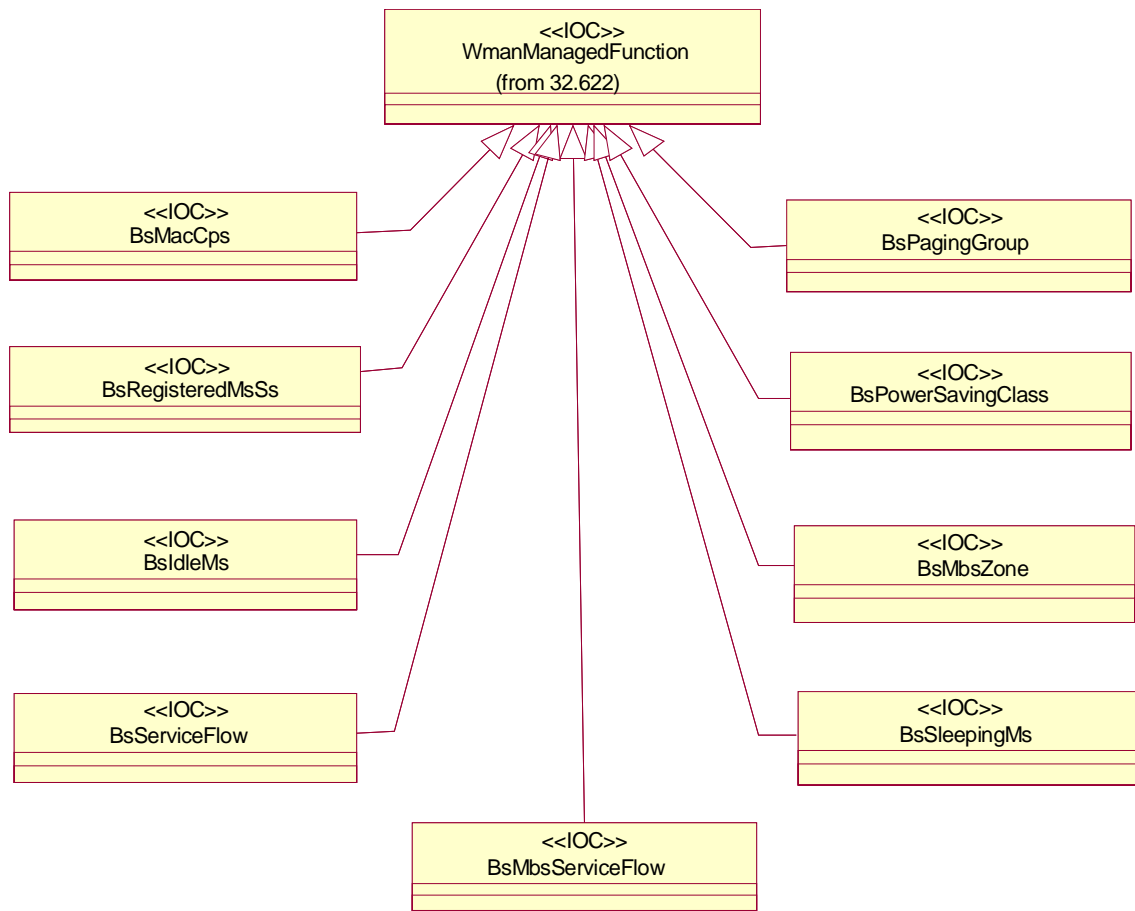
Figure 16—Bs MacCps Inheritance Hierarchy Diagram

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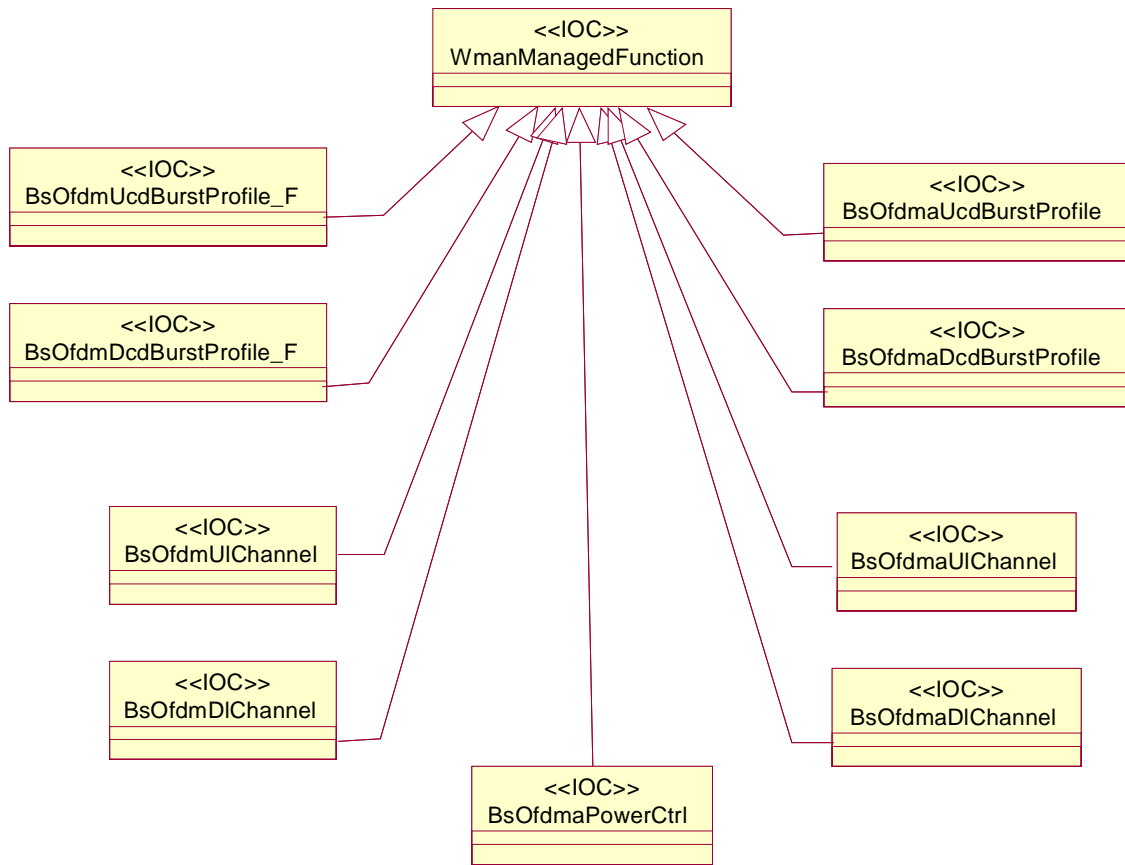
Figure 17—Bs Phy Inheritance Hierarchy Diagram

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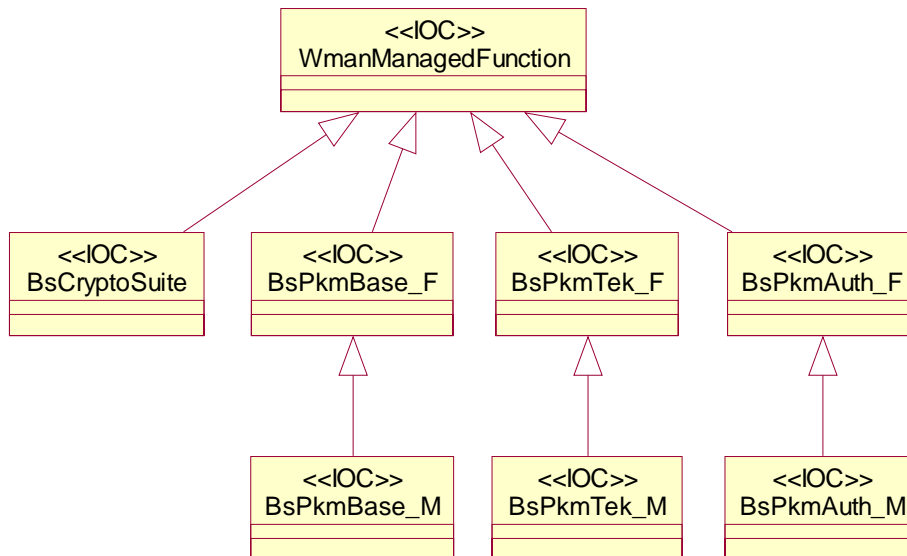
Figure 18—Bs Security Inheritance Hierarchy Diagram

15.1.1.2.2.3 Ss Object Inheritance

TBD

15.1.1.3 Information object classes definition

15.1.1.3.1 IOC WmanBsFunction

15.1.1.3.1.1 Definition

This IOC represents a WMAN Base Station. It is derived from WmanManagedFunction

15.1.1.3.1.2 Attributes

Table 4—Attributes of WmanBsFunction

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
OperatorID	+	M	M	M
BSID	+	M	M	M
HandoverSupportedType	+	M	M	M
SystemResourceRetainTime	+	M	M	M
HOOptimizationMSTimer	+	M	M	M
MSHORetransmissionTimer	+	M	M	M
MobilitySupportedIndication	+	M	M	M
MSHOConnectionProcessTime	+	M	M	M
MSHOTEKProcessTime	+	M	M	M
ULPermutationBase	+	M	M	M
DLPermutationBase	+	M	M	M
PreambleIndex	+	M	M	M
SegmentNumber	+	M	M	M

15.1.1.3.2 IOC ExternalWmanBsFunction

15.1.1.3.2.1 Definition

This IOC represents a WMAN base station which belongs to the other subnetwork. It is derived from WmanManagedFunction

15.1.1.3.2.2 Attributes

Table 5—Attributes of ExternalWmanBsFunction

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
ExternalBSId	+	M	M	-
FAIndex	+	M	M	M
BSEIRP	+	M	M	M
SchedulingServiceSupported	+	M	M	M
HOProcessOptimization	+	M	M	M
Bandwidth	+	M	M	M
FFTSize	+	M	M	M
CyclePrefix	+	M	M	M
FramDurationCode	+	M	M	M
ULPermutationBase	+	M	M	M
DLPermutationBase	+	M	M	M
SegmentNumber	+	M	M	M
PreambleIndex	+	M	M	M

15.1.1.3.3 IOC WmanBsRelation

15.1.1.3.3.1 Definition

This IOC represents the relation between two neighbor WMAN base stations. It is derived from WmanManagedFunction.

15.1.1.3.3.2 Attributes

Table 6—Attributes of WmanBsRelation

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
BSRelationId	+	M	M	-
adjacentBS	+	M	M	M
FAIndex	+	M	M	M
BSEIRP	+	M	M	M
SchedulingServiceSupported	+	M	M	M
HOProcessOptimization	+	M	M	M
Bandwidth	+	M	M	M
FFTSize	+	M	M	M
CyclePrefix	+	M	M	M
FramDurationCode	+	M	M	M
ULPermutationBase	+	M	M	M
DLPermutationBase	+	M	M	M
SegmentNumber	+	M	M	M
PreambleIndex	+	M	M	M

15.1.1.3.4 IOC BsPagingGroup

15.1.1.3.4.1 Definition

This IOC represents the BS related paging group information. It is derived from WmanManagedFunction.

15.1.1.3.4.2 Attributes

Table 7—Attributes of BsPagingGroup

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
PagingControlId	+	M	M	M
PagingGroupId	+	M	M	M
MgmtResourceHoldingTimer	+	M	M	M
T46Timer	+	M	M	M
PagingRetryCount	+	M	M	M
REQDuration	+	M	M	M
MACHashSkipThreshold	+	M	M	M
BsCDMATransmissionOpportunityAssignment	+	M	M	M
PagingResponseWindow	+	M	M	M
IdleModeTimer	+	M	M	M
IdleModeSystemTimer	+	M	M	M
PagingIntervalLength	+	M	M	M
PagingCycle	+	M	M	M

15.1.1.3.5 IOC BsOfdmaPowerCtrl

15.1.1.3.5.1 Definition

This Information Object Class represents the power control entity of 802.16 BS. For more information about the BS, see subclause 8.4.10.3 of 802.16-2004 and 802.16e-2005.

PowerCtrl is an object which is derived from the WmanManagedFunction.

15.1.1.3.5.2 Attributes

Table 8—Attributes of BsOfdmaPowerCtrl

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
powerCtrlId	--	+	M	M	--
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanMan-agedFunction	+inherited	Minherited	Minherited	Minherited
msUpPwrAdjStep	--	+	M	M	O
msDownPwrAdjStep	--	+	M	M	O
minPwrAdjLever	--	+	M	M	O
maxPwrAdjLever	--	+	M	M	O
txPwrRepThreshold	--	+	M	M	O
txPwrRepInterval	--	+	M	M	O
alphaPAvg	--	+	M	M	O
txPwrRepThresholdCQI	--	+	M	M	O
txPwrRepIntervalCQI	--	+	M	M	O
alphaPAvgCQI	--	+	M	M	O

15.1.1.3.6 IOC BsSecurity

15.1.1.3.6.1 Definition

This IOC represents a SecurityManagmentFunction object. It is derived from WmanManagedFunction

15.1.1.3.6.2 Attributes

Table 9—Attributes of BsSecurity

Attribute name					
Defined in	Visibility	Support Qualifier	Read Quali-fier	Write Quali-fier	
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanMan-agedFunction	+inherited	Minherited	Minherited	Minherited
securityManagementId	-	+	M	M	-

15.1.1.3.7 IOC PkmBase_F

15.1.1.3.7.1 Definition

This IOC represents a PkmBase object. It is derived from WmanManagedFunction.

15.1.1.3.7.2 Attributes

Table 10—Attributes of PkmBase_F

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanMan-agedFunc-tion	+inherited	Minherited	Minherited	Minherited
wmanIfBsPkmBaseId	-	+	M	M	-
wmanIfBsPkmDefaultAuthLife-time	-	+	M	M	M
wmanIfBsPkmDefaultTekLifetime	-	+	M	M	M
wmanIfBsPkmDefaultSelfSig-ManufCertTrust	-	+	M	M	M
wmanIfBsPkmCheckCertValidity-Periods	-	+	M	M	M
wmanIfBsPMKDefaultPreHand-shakeLifetime	-	+	M	M	M
wmanIfBsPMKDefaultLifetime	-	+	M	M	M
wmanIfBsDefaultSAChallengeT-imer	-	+	M	M	M
wmanIfBsDefaultSaChallenge-MaxResends	-	+	M	M	M
wmanIfBsDefaultSATEKTimer	-	+	M	M	M
wmanIfBsDefaultSATEKRequest-MaxResends	-	+	M	M	M

15.1.1.3.8 IOC PkmTek_F

15.1.1.3.8.1 Definition

This IOC represents a PkmTek object. It is derived from WmanManagedFunction.

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15.1.1.3.8.2 Attributes

Table 11—Attributes of PkmTek_F

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanMan-agedFunc-tion	+inherited	Minherited	Minherited	Minherited
wmanIfBsPkmTekId	-	+	M	M	-
wmanIfBsPkmTekSAId	-	+	M	-	-
wmanIfBsPkmTekSAType	-	+	M	M	-
wmanIfBsPkmTekDataEncrypt-Alg	-	+	M	M	-
wmanIfBsPkmTekDataAuthen-tAlg	-	+	M	M	-
wmanIfBsPkmTekEncryptAlg	-	+	M	M	-
wmanIfBsPkmTekLifetime	-	+	M	M	-
wmanIfBsPkmTekKeySequen-ceNumber	-	+	M	M	-
wmanIfBsPkmTekExpiresOld	-	+	M	M	-
wmanIfBsPkmTekExpiresNew	-	+	M	M	-
wmanIfBsPkmTekReset	-	+	M	M	M
wmanIfBsPkmAssociat-edGKEKSequenceNumber	-	+	M	M	-
wmanIfBsPkmSAServiceType	-	+	M	M	-

15.1.1.3.9 IOC BsPkmAuth_F

15.1.1.3.9.1 Definition

This IOC represents a MS/SSPkmAuth object. It is derived from WmanManagedFunction.

15.1.1.3.9.2 Attributes

Table 12—Attributes of BsPkmAuth_F

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanMan- agedFunc- tion	+inherited	Minherited	Minherited	Minherited
wmanIfBsMsPkmAuthID	-	+	M	M	-
wmanIfBsSsPkmAuthMacAd- dress	-	-	M	-	-
wmanIfBsSsPkmAuthKeySe- quenceNumber	-	+	M	M	-
wmanIfBsSsPkmAuthExpiresOld	-	+	M	M	-
wmanIfBsSsPkmAuthEx- piresNew	-	+	M	M	-
wmanIfBsSsPkmAuthLifetime	-	+	M	M	-
wmanIfBsSsPkmAuthReset	-	+	M	M	M
wmanIfBsSsPkmAuthPrimary- SAId	-	+	M	M	-
wmanIfBsSsPkmAuthValidStatus	-	+	M	M	-
wmanIfBsMsCMACPacketNum- bercounter	-	+	M	M	
wmanIfBsMsCMAC_PN_UL	-	+	M	M	
wmanIfBsMsCMAC_PN_DL	-	+	M	M	
wmanIfBsMsCMACValue	-	+	M	M	
wmanIfBsMsPkmAuthResult- Code	-	+	M	M	
wmanIfBsMsPkmAKId	-	+	M	M	
wmanIfBsKeyPushMode	-	+	O	M	
wmanIfBsKeyPushCounter	-	+	O	M	

15.1.1.3.10 IOC BsOfdmUlChannel

15.1.1.3.10.1 Definition

This IOC represents a BsOfdmUlChannel object. It is derived from WmanWmanManagedFunction.

15.1.1.3.10.2 Attributes

Table 13—Attributes of BsOfdmUlChannel

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanMan-agedFunction	+inherited	Minherited	Minherited	Minherited
BsOfdmUpLinkChannelId	-	+	M	M	M
BsOfdmCtBasedResvTimeout	-	+	O	M	M
BsOfdmBwReqOppSize	-	+	O	M	M
BsOfdmRangReqOppSize	-	+	O	M	M
BsOfdmUplinkCenterFreq	-	+	O	M	M
BsOfdmNumSubChReqRegion-Full	-	+	O	M	M
BsOfdmNumSymbolsReqRe-gionFull	-	+	O	M	M
BsOfdmSubChFocusCtCode	-	+	O	M	M

15.1.1.3.11 IOC BsOfdmDlChannel

15.1.1.3.11.1 Definition

This IOC represents a BsOfdmDlChannel object. It is derived from WmanManagedFunction.

15.1.1.3.11.2 Attributes

Table 14—Attributes of BsOfdmDlChannel

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanMan-agedFunction	+inherited	Minherited	Minherited	Minherited
BsOfdmDownLinkChannelId	-	+	M	M	M
BsOfdmBsEIRP	-	+	O	M	M
BsOfdmChannelNumber	-	+	O	M	M
BsOfdmTTG	-	+	O	M	M
BsOfdmRTG	-	+	O	M	M
BsOfdmInitRngMaxRSS	-	+	O	M	M
BsOfdmDownlinkCenterFreq	-	+	O	M	M
BsOfdmBsId	-	+	O	M	M
BsOfdmMacVersion	-	+	O	M	M
BsOfdmFrameDurationCode	-	+	O	M	M

15.1.1.3.12 IOC BsOfdmUcdBurstProfile_F

15.1.1.3.12.1 Definition

This IOC represents a BsOfdmUcdBurstProfile_F object. It is derived from WmanManagedFunction.

15.1.1.3.12.2 Attributes

Table 15—Attributes of BsOfdmUcdBurstProfile_F

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanMan-agedFunction	+inherited	Minherited	Minherited	Minherited
BsOfdmUcdBurstProfileId	-	+	M	M	M
BsOfdmUiucIndex	-	+	O	-	-
BsOfdmUcdFecCodeType	-	+	O	M	M
BsOfdmFocusCtPowerBoost	-	+	O	M	M
BsOfdmUcdTcsEnable	-	+	O	M	M

15.1.1.3.13 IOC BsOfdmDcdBurstProfile_F

15.1.1.3.13.1 Definition

This IOC represents a BsOfdmDcdBurstProfile_F object. It is derived from WmanManagedFunction.

15.1.1.3.13.2 Attributes

Table 16—Attributes of BsOfdmDcdBurstProfile_

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanMan-agedFunction	+inherited	Minherited	Minherited	Minherited
BsOfdmDcdBurstProfileId	-	+	M	M	-
BsOfdmDiucIndex	-	+	O	-	-
BsOfdmDownlinkFrequency	-	+	O	M	M
BsOfdmDcdFecCodeType	-	+	O	M	M
BsOfdmDiucMandatoryExit-Thresh	-	+	O	M	M
BsOfdmDiucMinEntryThresh	-	+	O	M	M
BsOfdmTcsEnable	-	+	O	M	M

15.1.1.3.14 IOC BsClassifierRule_F

15.1.1.3.14.1 Definition

This IOC represents a BsClassifierRule_F object . It is derived from WmanManagedFunction.

15.1.1.3.14.2 Attributes

Table 17—Attributes of BsClassifierRule_F

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanManagedFunction	+inherited	Minherited	Minherited	Minherited
BsClassifierRule_FId	-	+	M	M	M
BsClassifierRulePriority	-	+	M	M	O
BsClassifierRuleIpTosLow	-	+	M	M	O
BsClassifierRuleIpTosHigh	-	+	M	M	O
BsClassifierRuleIpTosMask	-	+	M	M	O
BsClassifierRuleIpProtocol	-	+	M	M	O
BsClassifierRuleIpSourceAddr	-	+	M	M	O
BsClassifierRuleIpSourceMask	-	+	M	M	O
BsClassifierRuleIpDestAddr	-	+	M	M	O
BsClassifierRuleIpDestMask	-	+	M	M	O
BsClassifierRuleSourcePortStart	-	+	M	M	O
BsClassifierRuleSourcePortEnd	-	+	M	M	O
BsClassifierRuleDestPortStart	-	+	M	M	O
BsClassifierRuleDestPortEnd	-	+	M	M	O
BsClassifierRuleDestMacAddr	-	+	M	M	O
BsClassifierRuleDestMacMask	-	+	M	M	O
BsClassifierRuleSourceMacAddr	-	+	M	M	O
BsClassifierRuleSourceMacMask	-	+	M	M	O
BsClassifierRuleEnetProtocolType	-	+	M	M	O
BsClassifierRuleEnetProtocol	-	+	M	M	O
BsClassifierRuleUserPriLow	-	+	M	M	O
BsClassifierRuleUserPriHigh	-	+	M	M	O
BsClassifierRuleVlanId	-	+	M	M	O
BsClassifierRuleState	-	+	M	M	O

Table 17—Attributes of BsClassifierRule_F

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
BsClassifierRulePhsSize	-	+	M	M	O
BsClassifierRulePhsMask	-	+	M	M	O
BsClassifierRulePhsVerify	-	+	M	M	O
BsClassifierRuleIpv6FlowLabel	-	+	M	M	O

15.1.1.3.15 IOC BsClassifierRule_M

15.1.1.3.15.1 Definition

This IOC represents a BsClassifierRule_M object . It is derived from WmanManagedFunction.

15.1.1.3.15.2 Attributes

Table 18—Attributes of BsClassifierRule_M

Attribute name	Defined in	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	Top	+inherited	Minherited	Minherited	--inherited
objectInstance	Top	+inherited	Minherited	Minherited	--inherited
userLabel	WmanManagedFunction	+inherited	Minherited	Minherited	Minherited
BsClassifierRule_MId	-	+	M	M	M
BsClassifierContextId	-	+	M	M	O
BsClassifierActionRule	-	+	M	M	O
BsClassifierShortFormatContextId	-	+	M	M	O

15.1.1.4 Information relationships definition

15.1.1.4.1 ExternalNeighbourWmanBsRelation

15.1.1.4.1.1 Definition

This represents a unidirectional relation from BSRelation to the ExternalBSFunction. The role of the relation shall be mapped to a reference attribute, named adjacentBS, of the IOC.

15.1.1.4.1.2 Roles

Table 19—Roles of the relation ExternalNeighbourWmanBsRelation

Name	Definition
BSRelation -ExternalBSFunction	This role (when present) represents BSRelation capability to identify one ExternalBSFunction. When this role is present, the BSRelation.adjacentBS shall contain one ExternalBS DN.

15.1.1.4.1.3 Constraints

This role (for a particular WmanBsRelation) shall be present if the NeighbourWmanBsRelation of this particular WmanBsRelation is absent. This role shall be absent if the NeighbourWmanBsRelation of this particular WmanBsRelation is present.

15.1.1.5 Notifications

15.1.1.6 Information attributes definition

15.1.1.6.1 Definition and legal values

The following table defines the attributes that are present in several Information Object Classes (IOCs) of the present document.

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
OperatorID	Operator Identifier	
BSID	BS Identifier	
HandoverSupportedType	The Handover supported field indicates what type(s) of HO the BS and the MS support.	Type: Enumerated value Range: (MDHO/FBSS HO not supported (0), FBSS/MDHO DLRF combining supported(1), MDHO DL soft combining supported monitoring single MAP from anchor BS(2), MDHO DL soft combining supported monitoring MAPS from active BSs(3))
SystemResourceRetain-Time	The Resource_Retain_Time is the duration for MS s connection information that will be retained in serving BS. BS shall start Resource_Retain_Time timer at MS notification of pending HO attempt through MOB_HO-IND or by detecting an MS drop. The unit of this value is 100 milliseconds.	
HOOptimizationMSTimer	the duration in frames MS shall wait until receipt of the next unsolicited network re-entry MAC management message as indicated in the HO Process Optimization element of the RNG-RSP message.	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
MSHORetransmission-Timer	After a MS transmits MOB_MSHO-REQ to initiate a handover process, it shall start MS Handover Retransmission Timer and shall not transmit another MOB_MSHO-REQ until the expiration of the MS Handover Retransmission Timer.	
MobilitySupportedIndication	The Mobility features supported field indicates whether or not the MS supports mobility modes.	Type: Enumerated value Range :(Handover Support(0), Sleep-mode Support(1), Idle-mode Support(2))
MSHOConnectionProcess-Time	Time in ms the MS needs to process information on connections provided in RNGRSP or REG-RSP message during HO	
MSHOTEKProcessTime	Time in ms the MS needs to completely process TEK information during HO	
ULPermutationBase	Uplink subcarrier allocation	
DLPermutationBase	Downlink subcarrier allocation	
PreambleIndex	Downlink synchronization by MS	
SegmentNumber	An unique segment identifier	
ExternalBSId	External BS Identifier	
FAIndex	Frequency Assignment Index	
BSEIRP	Neighbour BS EIRP	
HOProcessOptimization	Identifies re-entry process management messages that may be omitted during the current HO attempt due to the availability of MS service and operational context information, and the MS service and operational status post-HO completion.	
SchedulingServiceSupported	Indicate neighbouring BS scheduling service type.	Type: Enumerated value Range: (Non-real-time Polling Service(0), Real-time Polling Service(0), Extended real-time Polling Service(0), Unsolicited Grant Service(0), Best Effort(3))
Bandwidth	Indicate neighbouring BS bandwidth.	
FFTSize	Indicate neighbouring BS FFT size	
CyclePrefix	indicate neighbouring BS Cycle Prefix	
FramDurationCode	Indicate neighbouring BS Frame duration code	
ULPermutationBase	Indicate neighbouring BS uplink permutation base.	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
DLPermutationBase	Indicate neighbouring BS uplink permutation base.	
SegmentNumber	Indicate neighbouring BS segment number.	
PreambleIndex	Indicate neighbouring BS preamble index.	
BSRelationId		
adjacentBS	It carries the DN of the BS or the ExternalBS.	
PagingControlId	indicate paging controller identifier connected by BS	
PagingGroupId	indicate the paging group identifier assigned to BS by network	
MgmtResourceHolding-Timer	Time the BS maintain connection information with the MS after the BS send DREG-CMD to the MS	
T46Timer	Time the BS waits for DREGREQ in case of unsolicited Idle Mode initiation from BS	
PagingRetryCount	Number of retries on paging transmission. If the BS does not receive RNG-REQ from the MS until this value decreases to zero, it determines that the MS is unavailable.	
REQDuration	Waiting value for the DREG-REQ message re-transmission(measured in frames)	
MACHashSkipThreshold	Maximum number of successive MOB_PAG-ADV messages that may be sent from a BS without individual notification for an MS for which BS is allowed to skip MS MAC address Hash when the Action Code for the MS is 0b00,'No Action Required'.	
BsCDMATransmissionOpportunityAssignment	The CDMA code and transmission opportunity assignment field indicates the assigned code and transmission opportunity for a MS who is paged to use over dedicated CDMA ranging region	
PagingResponseWindow	The Page-Response Window indicates the Page-Response window for a MS who is paged to transmit the assigned code for CDMA ranging channel.	
IdleModeTimer	MS timed interval to conduct Location Update. Set timer to MS Idle Mode Timeout capabilities setting. Timer recycles on successful Idle Mode Location Update.	Range: (128..65536)
IdleModeSystemTimer	For BS acting as Paging Controller, timed interval to receive notification of MS Idle Mode Location Update. Set timer to MS Idle Mode Timeout. Timer recycles on successful Idle Mode Location Update.	Range: (128..65536)
PagingIntervalLength	time duration of Paging Interval of the BS	Range: (2..5)
PagingCycle	Cycle in which the paging message is transmitted within the paging group.	

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Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
powerCtrlId	An attribute whose "name+value" can be used as an RDN when naming an instance of the object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
msUpPwrAdjStep	MS-specific up power offset adjustment step	
msDownPwrAdjStep	MS-specific down power offset adjustment step	
minPwrAdjLever	Minimum level of power offset adjustment	
maxPwrAdjLever	Maximum level of power offset adjustment	
txPwrRepThreshold	Tx Power Report Threshold	
txPwrRepInterval	Tx Power Report Interval	
alphaPAvg	Alpha of p_avg	
txPwrRepThresholdCQI	Tx Power Report Threshold,CQICH is allocated to the SS	
txPwrRepIntervalCQI	Tx Power Report Interval,CQICH is allocated to the SS	
alphaPAvgCQI	Alpha of p_avg,CQICH is allocated to the SS	
securityManagementId	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
wmanIfBsPkmBaseId	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
wmanIfBsPkmTekId	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
wmanIfBsMsPkmAuthID	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
wmanIfBsPkmDefaultAuthLifetime	The value of this object is the default lifetime, in seconds, the BS assigns to a new authorization key.	
wmanIfBsPkmDefaultTekLifetime	The value of this object is the default lifetime, in seconds, the BS assigns to a new Traffic Encryption Key(TEK).	
wmanIfBsPkmDefaultSelfSigManufCertTrust	This object determines the default trust of all (new) self-signed manufacturer certificates obtained after setting the object.	trusted (1), untrusted (2)

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
wmanIfBsPkmCheck-CertValidityPeriods	Setting this object to TRUE causes all certificates received thereafter to have their validity periods (and their chain's validity periods) checked against the current time of day. A FALSE setting will cause all certificates received Thereafter to not have their validity periods (nor their chain's validity periods) checked against the current time of day.	TRUE, FALSE
wmanIfBsPMKDefault-PreHandshakeLifetime	The lifetime assigned to PMK when created	
wmanIfBsPMKDefault-Lifetime	If MSK lifetime is unspecified (i.e. by AAA server), PMK lifetime shall be set to this value.(in seconds)	
wmanIfBsDefaultSAChal-lengeTimer	Time prior to re-send of SA-TEK-Challenge (in seconds)	
wmanIfBsDefaultSaChal-lengeMaxResends	Maximum number of transmissions of SATEK-Challenge	
wmanIfBsDefaultSATEK-Timer	Time prior to re-send of SA-TEK-Request (in seconds)	
wmanIfBsDefault-SATEKRequestMaxRe-sends	Maximum number of transmissions of SATEK-Request	
wmanIfBsPkmTekSAId	The value of this object is the Security Association ID (SAID).	
wmanIfBsPkmTekSAType	The value of this object is the type of security association. Dynamic does not apply to SSs running in PKM mode.	primarySA (0) staticSA (1) dynamicSA (2)
wmanIfBsPkmTekDataEn-cryptAlg	The value of this object is the data encryption algorithm being utilized.	No Data Encryption(0) CBC-Mode(1) AES, CCM Mode(2)
wmanIfBsPkmTek-DataAuthentAlg	The value of this object is the data authentication algo-rithm being utilized.	No Data Authentica-tion(0)
wmanIfBsPkmTekEncryp-tAlg	The value of this object is the TEK key encryption algo-rithm being utilized.	3-DES EDE with 128-bit key(1) RSA with 1024-bit key(2) AES with 128-bit key(3)
wmanIfBsPkmTekLife-time	The value of this object is the lifetime, in seconds, the BS assigns to keys for this TEK association.	
wmanIfBsPkmTekKeySe-quenceNumber	The value of this object is the most recent TEK key sequence number for this SAID.	
wmanIfBsPkmTekExpire-sOld	The value of this object is the actual clock time for expi-ration of the immediate predecessor of the most recent TEK for this FSM. If this FSM has only one TEK, then the value is the time of activation of this FSM.	
wmanIfBsPkmTekEx-piresNew	The value of this object is the actual clock time for expi-ration of the most recent TEK for this FSM.	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
wmanIfBsPkmTekReset	Setting this object to TRUE causes the BS to invalidate the current active TEK(s) (plural due to key transition periods), and to generate a new TEK for the associated SAID; the BS MAY also generate an unsolicited TEK Invalid message, to optimize the TEK synchronization between the BS and the SS. Reading this object always returns FALSE.	TRUE FALSE
wmanIfBsPkmAssociatedGKEKSequenceNumber	Associated GKEK sequence number with this TEK-Parameters	
wmanIfBsPkmSAServiceType	This attribute indicates service types of the corresponding SA type.	0: Unicast service 1: Group multicast service 2: MBS service 3-255: Reserved.
wmanIfBsSsPkmAuthMacAddress	The value of this object is the physical address of the SS to which the authorization association applies.	
wmanIfBsSsPkmAuthKeySequenceNumber	The value of this object is the most recent authorization key sequence number for this SS.	
wmanIfBsSsPkmAuthExpiresOld	The value of this object is the actual clock time for expiration of the immediate predecessor of the most recent authorization key for this FSM. If this FSM has only one authorization key, then the value is the time of activation of this FSM.	
wmanIfBsSsPkmAuthExpiresNew	The value of this object is the actual clock time for expiration of the most recent authorization key for this FSM	
wmanIfBsSsPkmAuthLifetime	The vaue of this object is the lifetime, in seconds, the BS assigns to an authorization key for this SS.	
wmanIfBsSsPkmAuthReset	Setting this object to invalidateAuth(2) causes the BS to invalidate the current SS authorization key(s), but not to transmit an Authorization Invalid message nor to invalidate unicast TEKs. Setting this object to sendAuthInvalid(3) causes the BS to invalidate the current SS authorization key(s), and to transmit an Authorization Invalid message to the SS, but not to invalidate unicast TEKs. Setting this object to invalidateTeks(4) causes the BS to invalidate the current SS authorization key(s), to transmit an Authorization Invalid message to the SS, and to invalidate all unicast TEKs associated with this SS authorization. Reading this object returns the most-recently-set value of this object, or returns noResetRequested(1) if the object has not been set since the last BS reboot.	noResetRequested(1), invalidateAuth(2), sendAuthInvalid(3), invalidateTeks(4)
wmanIfBsSsPkmAuthPrimarySAId	The value of this object is the Primary Security Association identifier.	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
wmanIfBsSsPkmAuthVa- lidStatus	Contains the reason why a SS's certificate is deemed valid or invalid. Return unknown if the SS is running PKM mode. ValidSsChained means the certificate is valid because it chains to a valid certificate. ValidSsTrusted means the certificate is valid because it has been provisioned to be trusted. InvalidSsUntrusted means the certificate is invalid because it has been provisioned to be untrusted. InvalidCAUntrusted means the certificate is invalid because it chains to an untrusted certificate. InvalidSsOther and InvalidCAOther refer to errors in parsing, validity periods, etc, which are attributable to the SS certificate or its chain respectively.	unknown (0), validSsChained (1), validSsTrusted (2), invalidSsUntrusted (3), invalidCAUntrusted (4), invalidSsOther (5), invalidCAOther (6)
wmanIfBsMsCMACPack- etNumbercounter		
wmanIfBsMsCMAC_PN_ UL		
wmanIfBsMsCMAC_PN_ DL		
wmanIfBsMsCMACValue		
wmanIfBsMsPkmAu- thResultCode	Contains the result code of the RSA-based authoriza- tion(only for PKMv2)	
wmanIfBsMsPkmAKId	Identify the AK as defined in Table 133	
wmanIfBsKeyPushMode	Distinguish usage code of a PKMv2 Group Key Update Command message	
wmanIfBsKeyPush- Counter	Protect for replay attack.	
BsOfdmUpLinkChannelId	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
BsOfdmDownLinkChan- nelId	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
BsOfdmUcdBurstProfileId	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
BsOfdmDcdBurstProfileId	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
BsOfdmCtBasedResvTim- eout	The number of UL-MAPs to receive before contention- based reservation is attempted again for the same connec- tion.	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
BsOfdmBwReqOppSize	Size (in units of PS) of PHY payload that SS may use to format and transmit a bandwidth request message in a contention request opportunity. The value includes all PHY overhead as well as allowance for the MAC data the message may hold.	
BsOfdmRangReqOppSize	Size (in units of PS) of PHY payload that SS may use to format and transmit a RNG-REQ message in a contention request opportunity. The value includes all PHY over-head as well as allowance for the MAC data the message may hold and the maxiumum SS/BS roundtrip propagation delay.	
BsOfdmUplinkCenterFreq	Uplink center frequency (kHz)	
BsOfdmNumSub-ChReqRegionFull	Number of subchannels used by each transmit opportunity when REQ Region-Full is allocated in subchannelization region.	oneSubchannel(0), twoSubchannels(1), fourSubchannels(2), eightSubchannels(3), sixteenSubchannels(4)
BsOfdmNumSym-bolsReqRegionFull	Number of OFDM symbols used by each transmit opportunity when REQ Region-Full is allocated in subchannelization region.	
BsOfdmSubChFocusCt-Code	Number of contention codes (CSE) that shall only be used to request a subchannelized allocation.	Default value 0. Allowed values 0-8.
BsOfdmBsEIRP	The EIRP is the equivalent isotropic radiated power of the base station, which is computed for a simple single-antenna transmitter.	
BsOfdmChannelNumber	Downlink channel number as defined in 8.5. Used for license-exempt operation only.	
BsOfdmTTG	Transmit / Receive Transition Gap.	
BsOfdmRTG	Receive / Transmit Transition Gap.	
BsOfdmInitRngMaxRSS	Initial Ranging Max. Received Signal Strength at BS Signed in units of 1 dBm.	
BsOfdmDownlinkCenter-Freq	Downlink center frequency (kHz).	
BsOfdmBsId	Base station ID.	
BsOfdmMacVersion	This parameter specifies the version of 802.16 to which the message originator conforms.	
BsOfdmFrameDuration-Code	The duration of the frame. The frame duration code values are specified in Table 230.	
BsOfdmUiucIndex	The Uplink Interval Usage Code indicates the uplink burst profile in the UCD message, and is used along with ifIndex to identify an entry in the wmanIfBsOfdmUcd-BurstProfileTable.	
BsOfdmUcdFecCodeType	Uplink FEC code type and modulation type	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
BsOfdmFocusCtPower-Boost	The power boost in dB of focused contention carriers	
BsOfdmUcdTcsEnable	This parameter determines the transmission convergence sublayer, as described in 8.1.4.3, can be enabled on a per-burst basis for both uplink and downlink. Through DIUC/UIUC messages.	tcsDisabled(0), tcsEnabled(1)
BsOfdmDiucIndex	The Downlink Interval Usage Code indicates the downlink burst profile in the DCD message, and is used along with ifIndex to identify an entry in the wmanIfBsOfdmDcdBurstProfileTable.	
BsOfdmDownlinkFrequency	Downlink Frequency (kHz).	
BsOfdmDcdFecCodeType	Downlink FEC code type and modulation type	
BsOfdmDiucMandatoryExitThresh	DIUC mandatory exit threshold: 0 - 63.75 dB CINR at or below where this DIUC can no longer be used and where this change to a more robust DIUC is required in 0.25 dB units.	
BsOfdmDiucMinEntryThresh	DIUC minimum entry threshold: 0 - 63.75 dB The minimum CINR required to start using this DIUC when changing from a more robust DIUC is required, in 0.25 dB units.	
BsOfdmTcsEnable	Indicates whether Transmission Convergence Sublayer is enabled or disabled.	tcsDisabled(0), tcsEnabled(1)
BsClassifierRule_FId	It contains 'name+value' that is the RDN, when naming an instance, of this object class containing this attribute. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
BsClassifierRulePriority	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.	0..255
BsClassifierRuleIpTosLow	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.	
BsClassifierRuleIpTosHigh	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.	
BsClassifierRuleIpTosMask	The value of this object specifies the matching parameter for the IP type of service/DSCP [IETF RFC 2474] byte mask. An IP packet with IP type of service (ToS) byte value ip-tos matches this parameter if tos-low less than or equal (ip-tos AND tos-mask) less than or equal tos-high.	
BsClassifierRuleIpProtocol	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.	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
BsClassifierRuleIp-SourceAddr	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 bit-wise ANDed with the BsClassifierRuleIpSourceMask value equals the BsClassifierRuleIpSourceAddr value. If the referenced parameter is not present in a classifier, this object reports the value of 0.0.0.0.	
BsClassifierRuleIpSource-Mask	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 BsClassifierRuleIpSourceMask value equals the BsClassifierRuleIpSourceAddr value.If the referenced parameter is not present in a classifier, this object reports the value of 0.0.0.0.	
BsClassifierRuleIpDes-tAddr	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 BsClassifierRuleIpDest-Mask value equals the BsClassifierRuleIpDestAddr value. If the referenced parameter is not present in a clas-sifier, this object reports the value of 0.0.0.0.	
BsClassifierRuleIpDest-Mask	This object specifies which bits of a packet's IP Destina-tion Address that are compared to match this rule. An IP packet matches the rule when the packet destination address bitwise ANDed with the BsClassifierRuleIpDest-Mask value equals the BsClassifierRuleIpDestAddr value. If the referenced parameter is not present in a clas-sifier, this object reports the value of 0.0.0.0.	
BsClassifierRuleSource-PortStart	This object specifies the low end inclusive range of TCP/UDP source port numbers to which a packet is com-pared.This object is irrelevant for non-TCP/UDP IP pack-ets.If the referenced parameter is not present in a classifier, this object reports the value of 0.	
BsClassifierRuleSource-PortEnd	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.	
BsClassifierRuleDestPort-Start	This object specifies the low end inclusive range of TCP/UDP destination port numbers to which a packet is com-pared. If the referenced parameter is not present in a clas-sifier, this object reports the value of 0.	
BsClassifierRuleDestPor-tEnd	This object specifies the high end inclusive range of TCP/UDP destination port numbers to which a packet is com-pared. If the referenced parameter is not present in a clas-sifier, this object reports the value of 65535.	
BsClassifierRuleDestMac-Addr	An Ethernet packet matches an entry when its destination MAC address bitwise ANDed with BsClassifierRuleDes-tMacMask equals the value of BsClassifierRuleDestMac-Addr. If the referenced parameter is not present in a classifier, this object reports the value of '000000000000'H.	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
BsClassifierRuleDestMac-Mask	An Ethernet packet matches an entry when its destination MAC address bitwise ANDed with BsClassifierRuleDestMacMask equals the value of BsClassifierRuleDestMacAddr. If the referenced parameter is not present in a classifier, this object reports the value of '000000000000'H.	
BsClassifierRule-SourceMacAddr	An Ethernet packet matches this entry when its source MAC address bitwise ANDed with BsClassifierRuleSourceMacMask equals the value of BsClassifierRuleSourceMacAddr. If the referenced parameter is not present in a classifier, this object reports the value of '000000000000'H.	
BsClassifierRule-SourceMacMask	An Ethernet packet matches an entry when its source MAC address bitwise ANDed with BsClassifierRuleSourceMacMask equals the value of BsClassifierRuleSourceMacAddr. If the referenced parameter is not present in a classifier, this object reports the value of '000000000000'H.	
BsClassifierRuleEnetProtocolType	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.	none(0), ethertype(1), dsap(2)
BsClassifierRuleEnetProtocol	If BsClassifierRuleEnetProtocolType is none(0),this object is ignored when considering whether a packet matches the current rule. If BsClassifierRuleEnetProtocolType 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 BsClassifierRuleEnetProtocolType 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.	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
BsClassifierRuleUser-PriLow	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 BsClassifierRuleUserPriLow and BsClassifierRuleUserPriHigh 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.	
BsClassifierRuleUserPri-High	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 BsClassifierRuleUserPriLow and BsClassifierRuleUserPriHigh 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.	
BsClassifierRuleVlanId	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.	
BsClassifierRuleState	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).	active(1), inactive(2)
BsClassifierRulePhsSize	This object is used to configure the PHS rule for this classifier. 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 classifier. If flag phsMask in BsClassifierRuleBitMap is set to 0 and flag phsSize in BsClassifierRuleBitMap 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).	

Table 20—Information attributes definition

Attribute Name	Definition	Legal Values
BsClassifierRulePhsMask	This object is used to configure the PHS rule for this classifer. It is encoded as follows bit 0: 0 = don't suppress the 1st byte of the suppression field 1 = suppress first byte of the suppression field bit 1: 0 = don't suppress the 2nd byte of the suppression field 1 = suppress second byte of the suppression field bit x: 0 = don't suppress the (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 (BsClassifierRulePhsSize/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 BsClassifierRuleBitMap is set to 0 and flag phsSize in BsClassifierRuleBitMap 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).	
BsClassifierRulePhsVerify	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.	
BsClassifierRuleIpv6FlowLabel	The value of this field specifies the matching values for the IPv6 Flow label field.	
BsClassifierContextId	The values of the field specify the context ID for ROHC- or ECRTP-compressed packets. The CS will attempt to match the context ID with the payload packet's one-byte or two-byte embedded Context ID field according to the scheme described in RFC 3095 section 5.1.3.	
BsClassifierActionRule	The value of this field specifies an action associate with the classifier rule.	bit 0: 0 = none. 1 = Discard packet bit 1-7: Reserved.
BsClassifierShortFormat-ContextId	The values of the field specify a short-format context ID for ROHC- or ECRTP-compressed packets. The CS will attempt to match the context ID with the payload packet's zero- or one-byte prefix Context ID field according to the scheme described in RFC 3095 section 5.1.3.	

15.2 NRM IRP SNMP Solution Set

15.2.1 wman2IfMib

Figure 19 shows the high level MIB structure of wman2IfMib for 802.16. The MIB structure is organized based on the the reference model as defined in IEEE 802.16-2004 standard.

```
wman2IfMib
        └─ wman2IfBsObjects
                    ├─ wman2IfBsPacketCs
                    ├─ wman2IfBsCps
                    ├─ wman2IfBsPkmObjects
                    ├─ wman2IfBsNotification
                    └─ wman2IfBsPhy
        ├─ wman2IfSsObjects
                    ├─ wman2IfSsCps
                    ├─ wman2IfSsPkmObjects
                    ├─ wman2IfSsNotification
                    └─ wman2IfSsPhy
        └─ wman2IfCommonObjects
                    ├─ wman2IfCmnPacketCs
                    ├─ wman22IfCmnCps
                    └─ wman2IfCmnPkmObjects
```
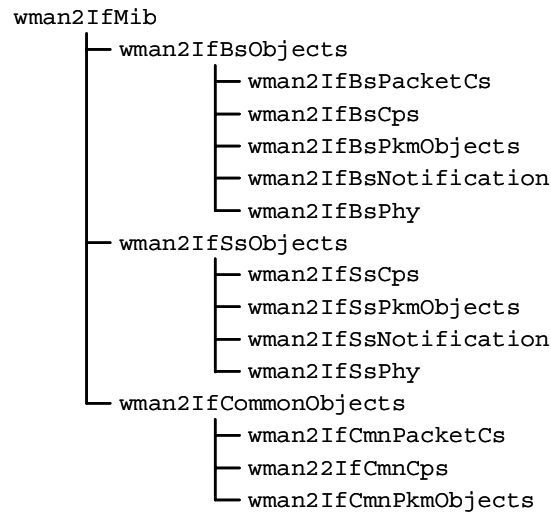
Figure 19—wman2IfMib structure

15.2.1.1 wman2IfBsObjects

15.2.1.1.1 wman2IfBsPacketCs

Figure 20 shows the structure of wman2IfBsPacketCs subtree that contains BS managed objects related to the Packet CS management entity layer.

```
wman2IfBsPacketCs
            ├─ wman2IfBsProvisionedSfTable
            ├─ wman2IfBsSsProvisionedForSfTable
            ├─ wman2IfBsServiceClassTable
            ├─ wman2IfBsClassifierRuleTable
            └─ wman2IfBsSsPacketCounterTable
```
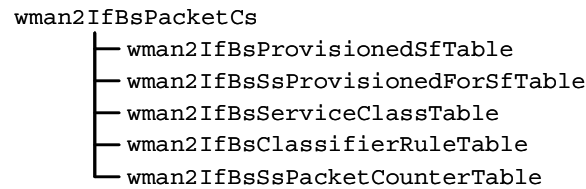
Figure 20—wman2IfBsPacketCs structure

15.2.1.1.1.1 wman2IfBsProvisionedSfTable

wman2IfBsProvisionedSfTable contains provisioned service flow profiles for SSs, and pointers to wman2IfBsServiceClassTable and wman2IfBsClassifierRuleTable for QoS parameters and classifier rules respectively.

15.2.1.1.1.2 wman2IfBsProvisionedForSfTable

wman2IfBsProvisionedForSfTable maps the MAC addresses of SSs to the service flows provisioned in wman2IfBsProvisionedSfTable. It enables downlink multicast services where MAC addresses of multiple SSs can be mapped to the same service flow.

15.2.1.1.1.3 wman2IfBsServiceClassTable

Each entry of the wman2IfBsServiceClassTable contains QoS parameter set, as defined in subclause 6.3.14 and 11.13 in IEEE 802.16-2004 standard.

15.2.1.1.1.4 wman2IfBsClassifierRuleTable

wman2IfBsClassifierRuleTable contains the packet classifier rules sassociated with service flows.

15.2.1.1.1.5 wman2IfBsSsPacketCounterTable

wman2IfBsSsPacketCounterTable contains counters to keep track of the number of packets and octets that have been received or transmitted on the per service flow basis.

15.2.1.1.2 wman2IfBsCps

Figure 21 shows the structure of wman2IfBsCps subtree that contains BS managed objects related to the MAC CPS management entity layer.

```
wman2IfBsCps
        ├─ wman2IfBsRegisteredSsTable
        ├─ wman2IfBsConfigurationTable
        ├─ wman2IfBsChannelMeasurementTable
        ├─ wman2IfBsCapabilities
        │       ├─ wman2IfBsSsReqCapabilitiesTable
        │       ├─ wman2IfBsSsRspCapabilitiesTable
        │       ├─ wman2IfBsBasicCapabilitiesTable
        │       └─ wman2IfBsCapabilitiesConfigTable
        ├─ wman2IfBsSsActionsTable
        ├─ wman2IfBsMsPowerSavingStatusTable
        ├─ wman2IfBsMsPowerSavingClassesTable
        └─ wman2IfBsMsSleepModeStatisticsTable
```

Figure 21—wman2IfBsCps structure

15.2.1.1.2.1 wman2IfBsRegisteredSsTable

Each entry in the wman2IfBsRegisteredSsTable contains the information of SS that has been registered through REG-REQ and REG-RSP messages.

15.2.1.1.2.2 wman2IfBsConfigurationTable

wman2IfBsConfigurationTable contains objects for BS system parameters and constants as defined in subclause 10.1 of IEEE 802.16-2004 standard. wman2IfBsConfigurationTable also contains objects that define the default behaviour of the BS for 2nd Management Channel scheduling and SFID allocation as well as configuration parameters of the CPS scheduler and AAS system.

15.2.1.1.2.3 wman2IfBsChannelMeasurementTable

wman2IfBsChannelMeasurementTable contains channel measurement information on the uplink signal that were received from SS, and the downlink signal were obtained from SS using REP-REQ/RSP messages..

15.2.1.1.2.4 wman2IfBsCapabilities

15.2.1.1.2.4.1 wman2IfBsSsReqCapabilitiesTable

wman2IfBsSsReqCapabilitiesTable contains the basic capability information of SSs that have been reported by SSs to BS using RNG-REQ, SBC-REQ and REG-REQ messages.

15.2.1.1.2.4.2 wman2IfBsSsRspCapabilitiesTable

wman2IfBsSsRspCapabilitiesTable 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.

15.2.1.1.2.4.3 wman2IfBsBasicCapabilitiesTable

wman2IfBsBasicCapabilitiesTable contains the basic capabilities of the BS as implemented in BS hardware and software. These capabilities along with the configuration for them (wman2IfBsCapabilitiesConfigTable) are used for negotiation of basic capabilities with SS using RNG-RSP, SBC-RSP and REG-RSP messages.

15.2.1.1.2.4.4 wman2IfBsCapabilitiesConfigTable

wman2IfBsCapabilitiesConfigTable 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 (wman2IfBsBasicCapabilitiesTable) for negotiation of basic capabilities with SS using RNG-RSP, SBC-RSP and REG-RSP messages.

15.2.1.1.2.5 wman2IfBsSsActionsTable

wman2IfBsSsActionsTable contains all the actions specified for SSs in the standard. The actions are routed down to SS using nsolicited 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.

15.2.1.1.2.6 wmanIfMsBsPowerSavingStatusTable

wmanIfMsBsPowerSavingClassesTable contains the power saving status for each CID in an MS.

15.2.1.1.2.7 wmanIfMsBsPowerSavingClassesTable

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

15.2.1.1.2.8 wmanIfBsMsSleepModeStatisticsTable

wmanIfMsBsPowerSavingClassesTable contains the sleep mode statistic for MS.

15.2.1.1.3 wman2IfBsPkmObjects

Figure 22 shows the structure of wman2IfBsPkmObjects subtree that contains BS managed objects related to the MAC privacy management entity.

```
                              wman2IfBsPkmObjects
                                    ├── wman2IfBsPkmBaseTable
                                    ├── wman2IfBsPkmAuthTable
                                    └── wman2IfBsPkmTekTable
```
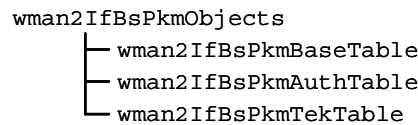
Figure 22—wman2IfBsPkmObjects structure

15.2.1.1.3.1 wman2IfBsPkmBaseTable

wman2IfBsPkmBaseTable contains base station PKM operational parameters described in subclause 10.2 of IEEE 802.16-2004 standard.

15.2.1.1.3.2 wman2IfBsSsPkmAuthTable

wman2IfBsSsPkmAuthTable contains runtime subscriber station authentication and authorization parameters for each base station.

15.2.1.1.3.3 wman2IfBsPkmTekTable

wman2IfBsPkmTekTable is double indexed by ifIndex and SAId and contains runtime Security association parameters for each base station.

15.2.1.1.4 wman2IfBsNotification

Figure 23 shows the structure of wman2IfBsNotification subtree that contains BS traps to report fault events and exceptions, such as power status, RSSI threshold crossing.

```
                    wman2IfBsNotification
                          ├── wman2IfBsTrapControl
                          │         ├── wman2IfBsTrapControlRegister
                          │         ├── wman2IfBsStatusTrapControlRegister
                          │         └── wman2IfBsThresholdConfigTable
                          └── wman2IfBsTrapDefinitions
```
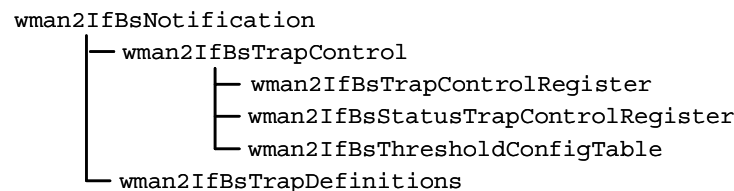
Figure 23—wman2IfBsNotification structure

15.2.1.1.4.1 wman2IfBsTrapControl

15.2.1.1.4.1.1 wman2IfBsTrapControlRegister

wman2IfBsTrapControlRegister is used to enable or disable Base traps independently.

15.2.1.1.4.1.2 wman2IfBsStatusTrapControlRegister

wman2IfBsStatusTrapControlRegister is used to enable or disable Base Station status notification traps.

15.2.1.1.4.1.3 wman2IfBsThresholdConfigTable

wman2IfBsThresholdConfigTable contains threshold objects that can be set to detect the threshold crossing events.

15.2.1.1.4.2 wman2IfBsTrapDefinitions

wman2IfBsTrapDefinitions object group defines all the traps reported by BS.

15.2.1.1.5 wman2IfBsPhy

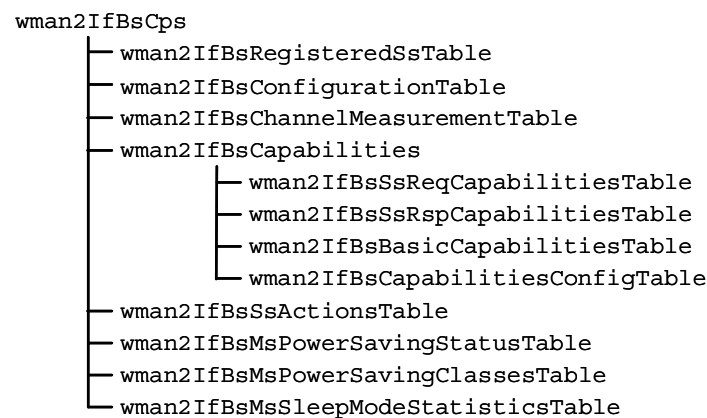Figure 24 shows the structure of wman2IfBsPhy subtree that contains BS managed objects related to the Physical layer.

```
wman2IfBsPhy
    ├── wman2IfBsOfdmPhy
    │           ├── wman2IfBsOfdmUplinkChannelTable
    │           ├── wman2IfBsOfdmDownlinkChannelTable
    │           ├── wman2IfBsOfdmUcdBurstProfileTable
    │           ├── wman2IfBsOfdmDcdBurstProfileTable
    │           ├── wman2IfBsOfdmConfigurationTable
    │           ├── wman2IfBsSsOfdmReqCapabilitiesTable
    │           ├── wman2IfBsSsOfdmReqCapabilitiesTable
    │           ├── wman2IfBsOfdmCapabilitiesTable
    │           └── wman2IfBsOfdmCapabilitiesConfigTable
    └── wman2IfBsOfdmaPhy
                ├── wman2IfBsOfdmaUplinkChannelTable
                ├── wman2IfBsOfdmaDownlinkChannelTable
                ├── wman2IfBsOfdmaUcdBurstProfileTable
                ├── wman2IfBsOfdmaDcdBurstProfileTable
                ├── wman2IfBsOfdmaConfigurationTable
                ├── wman2IfBsSsOfdmaReqCapabilitiesTable
                ├── wman2IfBsSsOfdmaRspCapabilitiesTable
                ├── wman2IfBsOfdmaCapabilitiesTable
                └── wman2IfBsOfdmaCapabilitiesConfigTable
```

Figure 24—wman2IfBsPhy structure

15.2.1.1.5.1 wman2IfBsOfdmPhy

wman2IfBsOfdmPhy is a group containing objects specific to OFDM PHY.

15.2.1.1.5.1.1 wman2IfBsOfdmUplinkChannelTable

wman2IfBsOfdmUplinkChannelTable contains OFDM UCD (Uplink Channel Descriptor) channel attributes, defining the transmission characteristics of uplink channels.

15.2.1.1.5.1.2 wman2IfBsOfdmDownlinkChannelTable

wman2IfBsOfdmDownlinkChannelTable contains OFDM DCD (Downlink Channel Descriptor) channel attributes, defining the transmission characteristics of downlink channels.

15.2.1.1.5.1.3 wman2IfBsOfdmUcdBurstProfileTable

wman2IfBsOfdmUcdBurstProfileTable contains OFDM UCD burst profiles for each uplink channel.

15.2.1.1.5.1.4 wman2IfBsOfdmDcdBurstProfileTable

wman2IfBsOfdmDcdBurstProfileTable provides one row for each OFDM DCD burst profile.

15.2.1.1.5.1.5 wman2IfBsOfdmConfigurationTable

wman2IfBsOfdmConfigurationTable contains BS configuration objects, specific to OFDM PHY.

15.2.1.1.5.1.6 wman2IfBsSsOfdmReqCapabilitiesTable

wman2IfBsSsOfdmReqCapabilitiesTable contains the basic capability information, specific to OFDM Phy, 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.

15.2.1.1.5.1.7 wman2IfBsSsOfdmRspCapabilitiesTable

wman2IfBsSsOfdmRspCapabilitiesTable contains the basic capability information, specific to OFDM Phy, 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 wman2IfBsRegisteredSsTable.

15.2.1.1.5.1.8 wman2IfBsOfdmCapabilitiesTable

wman2IfBsOfdmCapabilitiesTable contains the basic capabilities, specific to OFDM Phy, of the BS as implemented in BS hardware and software.

15.2.1.1.5.1.9 wman2IfBsOfdmCapabilitiesConfigTable

wman2IfBsOfdmCapabilitiesConfigTable contains the configuration for basic capabilities of BS, specific to OFDM Phy. The table is intended to be used to restrict the Capabilities implemented by BS.

15.2.1.1.5.2 wman2IfBsOfdmaPhy

wman2IfBsOfdmaPhy is a group containing objects specific to OFDMA PHY.

15.2.1.1.5.2.1 wman2IfBsOfdmaUplinkChannelTable

wman2IfBsOfdmaUplinkChannelTable contains OFDMA UCD channel attributes, defining the transmission characteristics of uplink channels.

15.2.1.1.5.2.2 wman2IfBsOfdmaDownlinkChannelTable

wman2IfBsOfdmaDownlinkChannelTable contains OFDMA DCD channel attributes, defining the transmission characteristics of downlink channels.

15.2.1.1.5.2.3 wman2IfBsOfdmaUcdBurstProfileTable

wman2IfBsOfdmaUcdBurstProfileTable contains OFDMA UCD burst profiles for each uplink channel.

15.2.1.1.5.2.4 wman2IfBsOfdmaDcdBurstProfileTable

wman2IfBsOfdmaDcdBurstProfileTable provides one row for each OFDMA DCD burst profile.

15.2.1.1.5.2.5 wman2IfBsOfdmaConfigurationTable

wman2IfBsOfdmaConfigurationTable contains BS configuration objects, specific to OFDMA PHY.

15.2.1.1.5.2.6 wman2IfBsSsOfdmaReqCapabilitiesTable

wman2IfBsSsOfdmaReqCapabilitiesTable contains the basic capability information, specific to OFDMA Phy, of SSs or MSs that have been reported by SSs to BS using RNG-REQ, SBC-REQ and REG-REQ messages. Entries in this table should be created when an SS registers with a BS.

15.2.1.1.5.2.7 wman2IfBsSsOfdmaRspCapabilitiesTable

wman2IfBsSsOfdmaRspCapabilitiesTable contains the basic capability information, specific to OFDMA Phy, of SSs or MSs that have been negotiated and agreed between BS and SS via RNG-REQ/RSP, SBC-REQ/RSP and REG-REQ/RSP messages. This table augments the wman2IfBsRegisteredSsTable.

15.2.1.1.5.2.8 wman2IfBsOfdmaCapabilitiesTable

wman2IfBsOfdmaCapabilitiesTable contains the basic capabilities, specific to OFDMA Phy, of the BS as implemented in BS hardware and software.

15.2.1.1.5.2.9 wman2IfBsOfdmaCapabilitiesConfigTable

wman2IfBsOfdmaCapabilitiesConfigTable contains the configuration for basic capabilities of BS, specific to OFDMA Phy. The table is intended to be used to restrict the Capabilities implemented by BS.

15.2.1.2 wman2IfSsObjects

15.2.1.2.1 wman2IfSsCps

Figure 25 shows the structure of wman2IfSsCps subtree that contains SS managed objects related to the MAC CPS management entity layer.

```
wman2IfSsCps
      ├── wman2IfSsConfigurationTable
      └── wman2IfSsChannelMeasurementTable
```
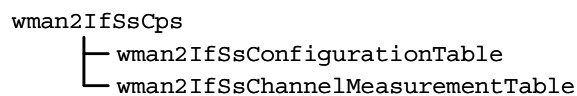
Figure 25—wman2IfSsCps structure

15.2.1.2.1.1 wman2IfSsConfigurationTable

wman2IfSsConfigurationTable contains objects for SS system parameters and constants as defined in subclause 10.1 of IEEE 802.16-2004 standard.

15.2.1.2.1.2 wman2IfSsChannelMeasurementTable

wman2IfSsChannelMeasurementTable contains downlink channel measurement information for each SS.

15.2.1.2.2 wman2IfSsPkmObjects

Figure 26 shows the structure of wman2IfSsPkmObjects subtree that contains subscriber station manageable objects related to the privacy management entity.

```
                            wman2IfBsPkmObjects
                                    ├── wman2IfSsPkmAuthTable
                                    ├── wman2IfSsPkmTekTable
                                    └── wman2IfSsDeviceCertTable
```
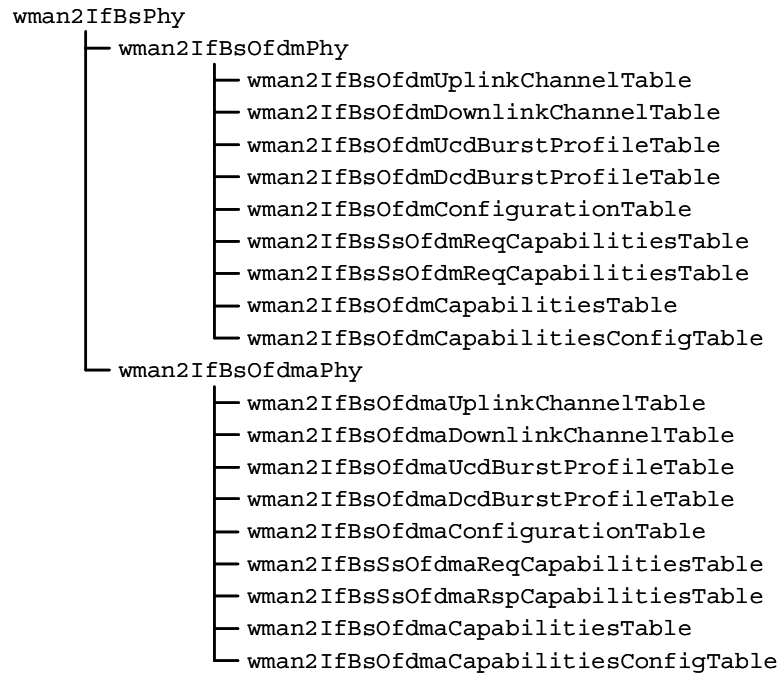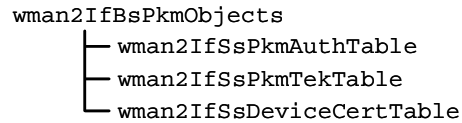
Figure 26—wman2IfSsPkmObjects structure

15.2.1.2.2.1 wman2IfSsPkmAuthTable

wman2IfSsPkmAuthTable contains subscriber station authentication and authorization parameters including those described in subclause 10.2 of IEEE 802.16-2004.

15.2.1.2.2.2 wman2IfSsPkmTekTable

wman2IfSsPkmTekTable contains subscriber station runtime parameters for each active security association.

15.2.1.2.2.3 wman2IfSsDeviceCertTable

wman2IfSsDeviceCertTable describes the PKM device certificates for each SS wireless interface.

15.2.1.2.3 wman2IfSsNotification

Figure 27 shows the structure of wman2IfSsNotification subtree that contains SS traps to report fault events and exceptions, such as RSSI threshold crossing.

```
                    wman2IfSsNotification
                            ├── wman2IfSsTrapControl
                            │          ├── wman2IfSsTrapControlRegister
                            │          └── wman2IfSsThresholdConfigTable
                            └── wman2IfSsTrapDefinitions
```
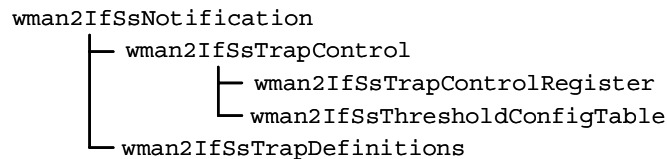
Figure 27—wman2IfSsNotification structure

15.2.1.2.3.1 wman2IfSsTrapControl

15.2.1.2.3.1.1 wman2IfSsTrapControlRegister

wman2IfSsTrapControlRegister is used to enable or disable Subscriber Station traps.

15.2.1.2.3.1.2 wman2IfSsThresholdConfigTable

wman2IfSsThresholdConfigTable contains threshold objects that can be set to detect the threshold crossing events.

15.2.1.2.3.2 wman2IfSsTrapDefinitions

wman2IfSsTrapDefinitions group defines all the traps reported by SS.

15.2.1.2.4 wman2IfSsPhy

Figure 28 shows the structure of wman2IfSsPhy subtree that contains SS managed objects related to the Physical layer.

```
wman2IfSsPhy
    └─ wman2IfSsOfdmPhy
                └─ wman2IfSsOfdmUplinkChannelTable
                ├─ wman2IfSsOfdmDownlinkChannelTable
                ├─ wman2IfSsOfdmUcdBurstProfileTable
                └─ wman2IfSsOfdmDcdBurstProfileTable
    └─ wman2IfSsOfdmaPhy
                └─ wman2IfSsOfdmaUplinkChannelTable
                ├─ wman2IfSsOfdmaDownlinkChannelTable
                ├─ wman2IfSsOfdmaUcdBurstProfileTable
                └─ wman2IfSsOfdmaDcdBurstProfileTable
```
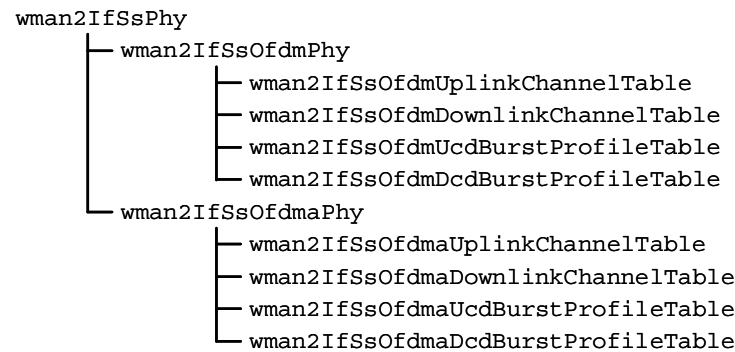
Figure 28—wman2IfSsPhy structure

15.2.1.2.4.1 wman2IfSsOfdmPhy

wman2IfSsOfdmPhy is a group containing objects specific to OFDM PHY.

15.2.1.2.4.1.1 wman2IfSsOfdmUplinkChannelTable

wman2IfSsOfdmUplinkChannelTable contains OFDM UCD channel attributes, defining the transmission characteristics of uplink channels.

15.2.1.2.4.1.2 wman2IfSsOfdmDownlinkChannelTable

wman2IfSsOfdmUplinkChannelTable contains OFDM DCD channel attributes, defining the transmission characteristics of downlink channels.

15.2.1.2.4.1.3 wman2IfSsOfdmUcdBurstProfileTable

wman2IfSsOfdmUcdBurstProfileTable contains OFDM UCD burst profiles for each uplink channel.

15.2.1.2.4.1.4 wman2IfSsOfdmDcdBurstProfileTable

wman2IfSsOfdmDcdBurstProfileTable provides one row for each OFDM DCD burst profile.

15.2.1.2.4.2 wman2IfSsOfdmaPhy

wman2IfSsOfdmaPhy is a group containing objects specific to OFDMA PHY.

15.2.1.2.4.2.1 wman2IfSsOfdmaUplinkChannelTable

wman2IfSsOfdmaUplinkChannelTable contains OFDMA UCD channel attributes, defining the transmission characteristics of uplink channels.

15.2.1.2.4.2.2 wman2IfSsOfdmaDownlinkChannelTable

wman2IfSsOfdmaDownlinkChannelTable contains OFDMA DCD channel attributes, defining the transmission characteristics of downlink channels.

15.2.1.2.4.2.3 wman2IfSsOfdmaUcdBurstProfileTable

wman2IfSsOfdmaUcdBurstProfileTable contains OFDMA UCD burst profiles for each uplink channel.

15.2.1.2.4.2.4 wman2IfSsOfdmaDcdBurstProfileTable

wman2IfSsOfdmaDcdBurstProfileTable provides one row for each OFDMA DCD burst profile.

15.2.1.3 wman2IfCommonObjects

15.2.1.3.1 wman2IfCmnPacketCs

Figure 29 shows the structure of wman2IfCmnPacketCs subtree that contains common managed objects related to the Packet CS management entity layer.

```
wman2IfCmnPacketCs
        ├── wman2IfCmnClassifierRuleTable
        └── wman2IfCmnPhsRuleTable
```
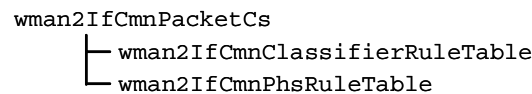
Figure 29—wman2IfCmnPacketCs structure

15.2.1.3.1.1 wman2IfCmnClassifierRuleTable

wman2IfCmnClassifierRuleTable contains runtime classifier rules screening criteria for each service flow.

15.2.1.3.1.2 wman2IfCmnPhsRuleTable

wman2IfCmnPhsRuleTable contains PHS rule dictionary entries. Each entry contains the data of the header to be suppressed along with its identification - PHSI.

15.2.1.3.2 wman2IfCmnCps

Figure 30 shows the structure of wman2IfCmnCps subtree that contains common managed objects related to the MAC CPS management entity.

```
wman2IfCmnCps
        ├── wman2IfCmnCpsServiceFlowTable
        └── wman2IfCmnBsSsConfigurationTable
```
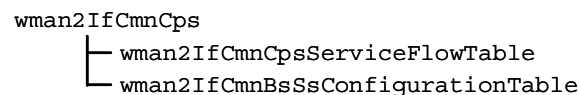
Figure 30—wman2IfCmnCps structure

15.2.1.3.2.1 wman2IfCmnCpsServiceFlowTable

wman2IfCmnCpsServiceFlowTable contains Service Flow managed objects that are common in BS and SS.

15.2.1.3.2.2 wman2IfCmnBsSsConfigurationTable

wman2IfCmnBsSsConfigurationTable provides one row for each BS sector that contains the system parameters common in both SS and BS. All SSs shall have the same parameters as the BS to which the SSs are associated.

15.2.1.3.3 wman2IfCmnPkmObjects

Figure 31 shows the structure of wman2IfCmnPkmObjects subtree that contains common PKM objects.

```
wman2IfCmnPkmObjects
     └─ wman2IfCmnCryptoSuiteTable
```
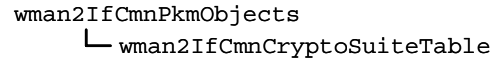
Figure 31—wman2IfCmnPkmObjects structure

15.2.1.3.3.1 wman2IfCmnCryptoSuiteTable

wman2IfCmnCryptoSuiteTable contains supported crypto suites for the particular SS and other crypto parameters such as key lifetimes.

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15.2.2 ASN.1 Definitions of 802.16 MIB for SNMP

```
WMAN2-IF-MIB DEFINITIONS ::= BEGIN

   IMPORTS
           MODULE-IDENTITY,
           OBJECT-TYPE,
           NOTIFICATION-TYPE,
           Unsigned32, Integer32, Counter32,
           Counter64, transmission
                   FROM SNMPv2-SMI
           SnmpAdminString
                   FROM SNMP-FRAMEWORK-MIB
           TEXTUAL-CONVENTION,
           MacAddress, RowStatus, TruthValue,
           TimeStamp, DateAndTime
                   FROM SNMPv2-TC
           InetAddressType, InetAddress
                   FROM INET-ADDRESS-MIB
           OBJECT-GROUP,
           MODULE-COMPLIANCE,
           NOTIFICATION-GROUP
                   FROM SNMPv2-CONF
           ifIndex
                   FROM IF-MIB;

   wman2IfMib MODULE-IDENTITY
           LAST-UPDATED    "200605230000Z" -- May 23, 2006
           ORGANIZATION    "IEEE 802.16"
           CONTACT-INFO
               "WG E-mail: stds-802-16@ieee.org
                WG Chair:  Roger B. Marks
                Postal:    (U.S.) National Institute
                            of Standards and Technology
                E-mail:    r.b.marks@ieee.org

                TGf Chair: Phillip Barber
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                E-mail:    pbarber@futurewei.com

                Editor:    Joey Chou
                Postal:    Intel Corporation
                           5000 W. Chandler Blvd,
                           Chandler, AZ 85227, USA
                E-mail:    joey.chou@intel.com"
           DESCRIPTION
               "This material is from IEEE Std 802.16i
                Copyright (c) 2006 IEEE.
                This MIB Module defines managed objects for
                IEEE 802.16e-2005 based Subscriber Station
                and Base Station."
           REVISION        "200605230000Z"
           DESCRIPTION
               "The first revision of WMAN2-IF-MIB module that is
```

```
                      enhanced to support IEEE 802.16e-2005 standard."
              ::= { transmission 184 }


   wman2IfMibObjects  OBJECT IDENTIFIER ::= { wman2IfMib 1 }
   wman2IfBsObjects OBJECT IDENTIFIER ::= { wman2IfMibObjects 1 }
   wman2IfSsObjects   OBJECT IDENTIFIER ::= { wman2IfMibObjects 2 }
   wman2IfCommonObjects OBJECT IDENTIFIER ::= { wman2IfMibObjects 3 }


   -- Textual Conventions
   Wman2IfSfSchedulingType ::= 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),
                                reserved(5),
                                unsolicitedGrantService(6)}


   Wman2IfPhsRuleVerify ::= 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
               "Subclause 11.13.19.3.7.5 in IEEE Std 802.16-2004"
           SYNTAX      INTEGER {phsVerifyEnable(0),
                                phsVerifyDisable(1)}


   Wman2IfClassifierBitMap ::= 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."
           REFERENCE
               "Subclause 11.13.19.3.4 in IEEE Std 802.16-2004"
           SYNTAX      BITS {priority(0),
                             ipTos(1),
                             ipProtocol(2),
                             ipMaskedSrcAddr(3),
```

```
1                                    ipMaskedDestAddr(4),
2                                    srcPort(5),
3                                    destPort(6),
4                                    destMacAddr(7),
5                                    srcMacAddr(8),
6                                    ethernetProtocol(9),
7                                    userPriority(10),
8                                    vlanId(11),
9                                    ipv6FlowLabel(12)}
10
11
12
13   Wman2IfSfState ::= TEXTUAL-CONVENTION
14           STATUS        current
15           DESCRIPTION
16               "Wman2IfSfState defines the state of a service flow."
17           SYNTAX        INTEGER {authorized(1),
18                                  admitted(2),
19                                  active(3)}
20
21
22
23   Wman2IfServClassName ::= TEXTUAL-CONVENTION
24           STATUS        current
25           DESCRIPTION
26               "Wman2IfServClassName defines the type of service
27                class name."
28           SYNTAX        OCTET STRING (SIZE(2..128))
29
30
31   Wman2IfCsSpecification ::= TEXTUAL-CONVENTION
32           STATUS        current
33           DESCRIPTION
34               "Wman2IfCsSpecification defines the types of convergence
35                sublayer."
36           REFERENCE
37               "Subclause 11.13.19.1 in IEEE Std 802.16e-2005"
38           SYNTAX        INTEGER {reserved(0),
39                                  packetIpV4(1),
40                                  packetIpV6(2),
41                                  packet802dot3Ethernet(3),
42                                  packet802dot1QVlan(4),
43                                  packetIpV4Over802dot3(5),
44                                  packetIpV6Over802dot3(6),
45                                  packetIpV4Over802dot1Q(7),
46                                  packetIpV6Over802dot1Q(8),
47                                  atm(9),
48                                  packet802dot3EthernetRohcHc(10),
49                                  packet802dot3EthernetEcrtpHc(11),
50                                  packetIp2RohcHc(12),
51                                  packetIp2EcrtpHc(13)}
52
53
54   Wman2IfMacVersion ::= TEXTUAL-CONVENTION
55           STATUS        current
56           DESCRIPTION
57               "Version number of IEEE 802.16."
58           SYNTAX        INTEGER {ieee802Dot16Of2001(1),
59                                  ieee802Dot16cOf2002(2),
60                                  ieee802Dot16aOf2003(3),
```

```
                                   ieee802Dot16Of2004(4),
                                   ieee802Dot16e(5),
                                   tbd(6)}

Wman2IfCidType ::= TEXTUAL-CONVENTION
        STATUS       current
        DESCRIPTION
            "Type of CID."
        SYNTAX       INTEGER (0 .. 65535)

Wman2IfDataEncryptAlgId ::= TEXTUAL-CONVENTION
        STATUS       current
        DESCRIPTION
            "Data encryption algorithm identifiers."
        REFERENCE
            "Table 375 in IEEE Std 802.16-2004"
        SYNTAX       INTEGER {none(0),
                              des56BitCbcMode(1),
                  aesCcmMode(2)}

Wman2IfDataAuthAlgId ::= TEXTUAL-CONVENTION
        STATUS       current
        DESCRIPTION
            "Data authentication algorithm identifiers."
        REFERENCE
            "Table 376 in IEEE Std 802.16-2004"
        SYNTAX       INTEGER {noDataAuthentication(0),
                              reserved(1)}

Wman2IfTekEncryptAlgId ::= TEXTUAL-CONVENTION
        STATUS       current
        DESCRIPTION
            "TEK encryption algorithm identifiers."
        REFERENCE
            "Table 377 in IEEE Std 802.16-2004"
        SYNTAX       INTEGER {tripleDes128BitKey(1),
                              rsa1024BitKey(2),
                              aes128BitKey(3)}

Wman2IfChannelNumber ::= TEXTUAL-CONVENTION
        STATUS       current
        DESCRIPTION
            "Physical channel number"
        SYNTAX       INTEGER (0 .. 199)

Wman2IfOfdmFecCodeType ::= TEXTUAL-CONVENTION
        STATUS       current
        DESCRIPTION
            "FEC code type and modulation type"
        REFERENCE
            "Table 356 and Table 362 in IEEE Std 802.16-2004"
        SYNTAX       INTEGER {bpskCc1Over2(0),
                              qpskRsCcCc1Over2(1),
                              qpskRsCcCc3Over4(2),
```

```
                                    sixteenQamRsCcCc1Over2(3),
                                    sixteenQamRsCcCc3Over4(4),
                                    sixtyFourQamRsCcCc2Over3(5),
                                    sixtyFourQamRsCcCc3Over4(6),
                                    qpskBtc1Over2(7),
                                    qpskBtc3Over4(8),
                                    sixteenQamBtc3Over4(9),
                                    sixteenQamBtc4Over5(10),
                                    sixtyFourQamBtc2Over3(11),
                                    sixtyFourQamBtc5Over6(12),
                                    qpskCtc1Over2(13),
                                    qpskCtc2Over3(14),
                                    qpskCtc3Over4(15),
                                    sixteenQamCtc1Over2(16),
                                    sixteenQamCtc3Over4(17),
                                    sixtyFourQamCtc2Over3(18),
                                    sixtyFourQamCtc3Over4(19)}

    Wman2IfOfdmaFecCodeType ::= TEXTUAL-CONVENTION
            STATUS        current
            DESCRIPTION
                "FEC code type and modulation type"
            REFERENCE
                "Table 356 and Table 362 in IEEE Std 802.16-2004"
            SYNTAX      INTEGER {qpskCc1Over2(0),
                                    qpskCc3Over4(1),
                                    sixteenQamCc1Over2(2),
                                    sixteenQamCc3Over4(3),
                                    sixtyFourQamCc2Over3(4),
                                    sixtyFourQamCc3Over4(5),
                                    qpskBtc1Over2(6),
                                    qpskBtc2Over3(7),
                                    sixteenQamBtc3Over5(8),
                                    sixteenQamBtc4Over5(9),
                                    sixtyFourQamBtc5Over8(10),
                                    sixtyFourQamBtc4Over5(11),
                                    qpskCtc1Over2(12),
                                    qpskCtc2Over3(13),
                                    qpskCtc3Over4(14),
                                    sixteenQamCtc1Over2(15),
                                    sixteenQamCtc3Over4(16),
                                    sixtyFourQamCtc2Over3(17),
                                    sixtyFourQamCtc3Over4(18),
                                    sixtyFourQamCtc5Over6(19),
                                    qpskZtCc1Over2(20),
                                    qpskZtCc3Over4(21),
                                    sixteenQamZtCc1Over2(22),
                                    sixteenQamZtCc3Over4(23),
                                    sixtyFourQamZtCc2Over3(24),
                                    sixtyFourQamZtCc3Over4(25)}

    -- Textual convention for capabilities encodings
    Wman2IfNumOfUplinkCid ::= TEXTUAL-CONVENTION
            STATUS        current
```

```
         DESCRIPTION
             "The object of this type shows the number of Uplink CIDs
              the SS can support."
         REFERENCE
             "Subclause 11.7.4 in IEEE Std 802.16-2004"
         SYNTAX      INTEGER (2..65535)


Wman2IfArqSupportType ::= TEXTUAL-CONVENTION
         STATUS      current
         DESCRIPTION
             "The object of this type indicates whether the SS support
              ARQ."
         REFERENCE
             "Subclause 11.7.8.1 in IEEE Std 802.16-2004"
         SYNTAX      INTEGER {arqNotSupported(0),
                              arqSupported(1)}


Wman2IfMaxDsxFlowType ::= 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
             "Subclause 11.7.8.2 in IEEE Std 802.16-2004"
         SYNTAX      INTEGER (0..255)


Wman2IfMacCrcSupport ::= TEXTUAL-CONVENTION
         STATUS      current
         DESCRIPTION
             "The object of this type indicates whether or not the SS
              supports MAC level CRC."
         REFERENCE
             "Subclause 11.7.8.3 in IEEE Std 802.16-2004"
         SYNTAX      INTEGER {noMacCrcSupport(0),
                              macCrcSupport(1)}


Wman2IfMaxMcaFlowType ::= TEXTUAL-CONVENTION
         STATUS      current
         DESCRIPTION
             "The object of this type specifies the maximum number of
              concurrent MCA transactions that may be outstanding."
         REFERENCE
             "Subclause 11.7.8.4 in IEEE Std 802.16-2004"
         SYNTAX      INTEGER (0..255)


Wman2IfMaxMcpGroupCid ::= 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
             "Subclause 11.7.8.5 in IEEE Std 802.16-2004"
```

```
                    SYNTAX        INTEGER (0..255)


    Wman2IfMaxPkmFlowType ::= TEXTUAL-CONVENTION
            STATUS        current
            DESCRIPTION
                "The object of this type specifies the maximum number of
                 concurrent PKM transactions that may be outstanding."
            REFERENCE
                "Subclause 11.7.8.6 in IEEE Std 802.16-2004"
            SYNTAX        INTEGER (0..255)


    Wman2IfAuthPolicyType ::= 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
                "Subclause 11.7.8.7 in IEEE Std 802.16-2004"
            SYNTAX        BITS {ieee802Dot16PrivacySupported(0),
                               reserved1(1),
                               reserved2(2),
                               reserved3(3),
                               reserved4(4),
                               reserved5(5),
                               reserved6(6),
                               reserved7(7)}


    Wman2IfMaxNumOfSaType ::= TEXTUAL-CONVENTION
            STATUS        current
            DESCRIPTION
                "This field specifies maximum number of supported
                 security association of the SS."
            REFERENCE
                "Subclause 11.7.8.8 in IEEE Std 802.16-2004"
            SYNTAX        INTEGER (0..255)


    Wman2IfIpVersionType ::= 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
                "Subclause 11.7.4 in IEEE Std 802.16-2004"
            SYNTAX        INTEGER {undefined(0),
                               ipv4(1),
                               ipv6(2)}


    Wman2IfMacCsBitMap ::= 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
                  "Subclause 11.7.7.1 in IEEE Std 802.16e-2005"
              SYNTAX        BITS {atm(0),
                                  packetIpv4(1),
                                  packetIpv6(2),
                                  packet802Dot3(3),
                                  packet802Dot1Q(4),
                                  packetIpv4Over802Dot3(5),
                                  packetIpv6Over802Dot3(6),
                                  packetIpv4Over802Dot1Q(7),
                                  packetIpv6Over802Dot1Q(8),
                                  packet802dot3EthernetRohcHc(10),
                                  packet802dot3EthernetEcrtpHc(11),
                                  packetIpv4Orv6RohcHc(12),
                                  packetIpv4Orv6EcrtpHc(13)}

Wman2IfMaxClassifiers ::= 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
                  "Subclause 11.7.7.2 in IEEE Std 802.16-2004"
              SYNTAX        INTEGER (0..65535)

Wman2IfPhsSupportType ::= TEXTUAL-CONVENTION
              STATUS        current
              DESCRIPTION
                  "The object of this type indicates the level
                   of PHS support."
              REFERENCE
                  "Subclause 11.7.7.3 in IEEE Std 802.16-2004"
              SYNTAX        INTEGER {noPhsSupport(0),
                                     atmPhsSupport(1),
                                     packetPhsSupport(2)}

Wman2IfBwAllocSupport ::= 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
                  "Subclause 11.8.1 in IEEE Std 802.16-2004"
              SYNTAX        BITS {reserved(0),
                                  halfDuplexFdd(1),
                                  fullDuplexFdd(2)}
```

```
Wman2IfPduConstruction ::= 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
            "Subclause 11.8.2 in IEEE Std 802.16-2004"
        SYNTAX      BITS {piggybackedRequests(0),
                          fsnValuesSize(1)}

Wman2IfSsTransitionGap ::= 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
            "Subclause 11.8.3.1 in IEEE Std 802.16-2004"
        SYNTAX      INTEGER (0..100)

Wman2IfMaxTxPowerType ::= 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
            "Subclause 11.8.3.2 in IEEE Std 802.16-2004"
        SYNTAX      INTEGER (0..255)

Wman2IfOfdmFftSizes ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates the FFT sizes supported by the SS/MS.
             It is used for describing OFDM or OFDMA capabilities,
             depending on context. For each FFT size, a bit value of 0
             indicates 'not supported' while 1 indicates 'supported'."
        REFERENCE
            "Subclause 11.8.3.7.1 in IEEE 802.16e-2005"
        SYNTAX      BITS {fft256(0),
                          fft2048(1),
                          fft128(2),
```

```
                                        fft512(3),
                                        fft1024(4)}


Wman2IfOfdmSsDeModType ::= 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
            "Subclause 11.8.3.6.2 in IEEE Std 802.16-2004"
        SYNTAX        BITS {qam64(0),
                            btc(1),
                            ctc(2),
                            stc(3),
                            aac(4)}


Wman2IfOfdmSsModType ::= 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
            "Subclause 11.8.3.6.3 in IEEE Std 802.16-2004"
        SYNTAX        BITS {qam64(0),
                            btc(1),
                            ctc(2),
                            subchanellization(3),
                            focusedCtBwReq(4)}


Wman2IfOfdmFocusedCt ::= 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
            "Subclause 11.8.3.6.4 in IEEE Std 802.16-2004"
        SYNTAX        BITS {focusedCtSupport(0)}


Wman2IfOfdmTcSublayer ::= 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
            "Subclause 11.8.3.6.5 in IEEE Std 802.16-2004"
        SYNTAX        BITS {tcSublayerSupport(0)}
```

```
Wman2IfBsIdType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "Defines the encoding of BSID. The BSID is a 6 byte number
             and follows the encoding rules of MacAddress textual
             convention, i.e. as if it were transmitted
             least-significant bit first. The value should be displayed
             with 2 parts clearly separated by a colon e.g:
             001DFF:00003A. The most significant part is representing
             the Operator ID. "
        SYNTAX      OCTET STRING (SIZE(6))

Wman2IfIpv6FlowLabel ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "The value of this field specifies the matching values for
             the IPv6 Flow label field. As the flow label field has a
             length of 20 bits, the first 4 bits of the most
             significant byte shall be set to 0x0 and disregarded."
        SYNTAX      OCTET STRING (SIZE(3))

Wman2IfOfdmaMsDeModType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates the different demodulator options
             supported by a WirelessMAN-OFDMA PHY SS for downlink.
             A bit value of 0 indicates 'not supported' while 1
             indicates 'supported'."
        REFERENCE
            "Subclause 11.8.3.7.2 in IEEE 802.16e"
        SYNTAX      BITS {qam64(0),
                          btc(1),
                          ctc(2),
                          stc(3),
                          aasDiversityMapScan(4),
                          harqChase(5),
                          harqCtcIr(6),
                          reserved(7),
                          harqCcIr(8),
                          ldpc(9)}

Wman2IfOfdmaMsModType ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
            "This field indicates the different modulator options
             supported by a WirelessMAN-OFDMA PHY SS for uplink. A bit
             value of 0 indicates 'not supported' while 1 indicates
             'supported'."
        REFERENCE
            "Subclause 11.8.3.7.3 in IEEE 802.16e"
        SYNTAX      BITS {qam64(0),
                          btc(1),
                          ctc(2),
```

```
                                        stc(3),
                                        harqChase(4),
                                        ctcIr(5),
                                        ccIr(6),
                                        ldpc(7)}

Wman2IfOfdmaPermutation ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
           "This field indicates the OFDMA SS Permutation support
            A bit value of 0 indicates 'not supported' while 1
            indicates 'supported'."
        REFERENCE
           "Subclause 11.8.3.7.5 in IEEE 802.16e"
        SYNTAX        BITS {optionalPuscSupport(0),
                            optionalFuscSupport(1),
                            amcOneBySixSupport(2),
                            amcTwoByThreeSupport(3),
                            amcThreeByTwoSupport(4),
                            amcSupportWithHarqMap(5),
                            tusc1Support(6),
                            tusc2(7)}

Wman2IfOfdmaMobility ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
           "This field indicates whether or not the MS supports
            mobility hand-over, Sleepmode, and Idle-mode. A bit
            value of 0 indicates 'not supported' while 1 indicates
            it is supported."
        REFERENCE
           "Subclause 11.8.3.7.5 in IEEE 802.16e"
        SYNTAX        BITS {handoverSupport(0),
                            sleepModeSupport(1),
                            idleModeSupport(2)}

Wman2IfPsClassId ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
           "Wman2IfPsClassId indicates the index to Power Saving
            Classes. The ID shall be unique within the group of Power
            Saving Classes associated with the MS. This ID may be
            used in further MOB_SLP-REQ/RSP messages for activation /
            deactivation of Power Saving Class."
        REFERENCE
           "Subclause 6.3.2.3.44 in IEEE Std 802.16e-2005"
        SYNTAX        INTEGER (0..63)

Wman2PsClassType ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
           "The types of power saving classes."
        REFERENCE
           "Table 374a in IEEE Std 802.16e-2005"
```

```
          SYNTAX        INTEGER {powerSavingClassTypeI(1),
                                 powerSavingClassTypeII(2),
                                 powerSavingClassTypeIII(3)}

Wman2PsClassCidDirection ::= TEXTUAL-CONVENTION
          STATUS        current
          DESCRIPTION
              "The direction of power saving class's CIDs.
                 0b00 = Unspecified. Each CID has its own direction
                        assign in its connection creation. Can be
                        DL, UL, or both (in the case of management
                        connections).
                 0b01 = Downlink direction only.
                 0b10 = Uplink direction only."
          REFERENCE
              "Subclause 6.3.2.3.44 in IEEE Std 802.16e-2005"
          SYNTAX        INTEGER {unspecified(0),
                                 downlink(1),
                                 uplink(2)}

Wman2IfPowerSavingMode ::= TEXTUAL-CONVENTION
          STATUS        current
          DESCRIPTION
              "Power saving class mode active or not active."
          REFERENCE
              "Subclause 6.3.2.3.44 in IEEE Std 802.16e-2005"
          SYNTAX        INTEGER {psNotActive(0),
                                 psActive(1)}

--
-- BS object group – containing tables and objects to be implemented in
-- the Base station
--
-- wman2IfBsPacketCs contain the Base Station Packet Convergence
-- Sublayer objects
--
wman2IfBsPacketCs OBJECT IDENTIFIER ::= { wman2IfBsObjects 1 }


wman2IfBsProvisionedSfTable OBJECT-TYPE
          SYNTAX        SEQUENCE OF Wman2IfBsProvisionedSfEntry
          MAX-ACCESS    not-accessible
          STATUS        current
          DESCRIPTION
              "This table contains service flow profiles provisioned by
               NMS. The service flow should be created with SS(s)
               following instruction given by wman2IfBsSfState object.
               1. The QoS parameters of the service flow are provisioned
                  in wman2IfBsServiceClassTable and referenced by
                  wman2IfBsServiceClassIndex.
               2. The classifier rules of the service flow are provisioned
                  in wman2IfBsClassifierRuleTable, where they refer to SF
                  via wman2IfBsSfId.

               The MAC addresses of SSs the service flow is created with
```

```
                    are provisioned in wman2IfBsSsProvisionedForSfTable, where
                    they refer to SF via wman2IfBsSfId."
              REFERENCE
                    "Subclause 6.3.13 and 6.3.14 in IEEE Std 802.16-2004"
              ::= { wman2IfBsPacketCs 1 }


    wman2IfBsProvisionedSfEntry OBJECT-TYPE
              SYNTAX        Wman2IfBsProvisionedSfEntry
              MAX-ACCESS    not-accessible
              STATUS        current
              DESCRIPTION
                    "This table provides one row for each service flow
                    provisioned by NMS. The table is indexed by ifIndex and
                    wman2IfBsSfId. ifIndex is associated with the BS sector."
              INDEX { ifIndex, wman2IfBsSfId }
              ::= { wman2IfBsProvisionedSfTable 1 }


    Wman2IfBsProvisionedSfEntry ::= SEQUENCE {
              wman2IfBsSfId                         Unsigned32,
              wman2IfBsSfDirection                  INTEGER,
              wman2IfBsServiceClassIndex            INTEGER,
              wman2IfBsSfState                      Wman2IfSfState,
              wman2IfBsSfProvisionedTime            TimeStamp,
              wman2IfBsSfCsSpecification            Wman2IfCsSpecification,
              wman2IfBsProvisionedSfRowStatus       RowStatus}


    wman2IfBsSfId 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)."
              ::= { wman2IfBsProvisionedSfEntry 1 }


    wman2IfBsSfDirection OBJECT-TYPE
              SYNTAX      INTEGER {downstream(1),
                                   upstream(2)}
              MAX-ACCESS  read-create
              STATUS      current
              DESCRIPTION
                    "An attribute indicating the service flow is downstream or
                    upstream."
              ::= { wman2IfBsProvisionedSfEntry 2 }


    wman2IfBsServiceClassIndex OBJECT-TYPE
              SYNTAX      INTEGER (1..65535)
              MAX-ACCESS  read-create
              STATUS      current
              DESCRIPTION
                    "The index in wman2IfBsServiceClassTable describing the
                    service class or QoS parameters for such service flow.
                    If no associated entry in wman2IfBsServiceClassTable
                    exists, this object returns a value of zero."
```

```
                    ::= { wman2IfBsProvisionedSfEntry 3 }


wman2IfBsSfState OBJECT-TYPE
        SYNTAX      Wman2IfSfState
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "wman2IfBsSfState determines the requested state of a service
              flow.
              - authorized state: A service flow is provisioned but
                not resource is reserved yet
              - admitted state: service flow has resources reserved.
              - active state: has resources committed by the BS (e.g., is
                actively sending maps containing unsolicited grants for a
                UGS-based service flow),"
        REFERENCE
            "Subclause 6.3.14.6, in IEEE Std 802.16-2004"
        ::= { wman2IfBsProvisionedSfEntry 4 }

wman2IfBsSfProvisionedTime OBJECT-TYPE
        SYNTAX      TimeStamp
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "Indicates the date and time when the service flow is
              provisioned."
        ::= { wman2IfBsProvisionedSfEntry 5 }

wman2IfBsSfCsSpecification OBJECT-TYPE
        SYNTAX      Wman2IfCsSpecification
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This parameter specifies the convergence sublayer
              encapsulation mode."
        REFERENCE
            "Subclause 11.13.19.1 in IEEE Std 802.16-2004"
        ::= { wman2IfBsProvisionedSfEntry 6 }

wman2IfBsProvisionedSfRowStatus 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."
        ::= { wman2IfBsProvisionedSfEntry 7 }


wman2IfBsSsProvisionedForSfTable OBJECT-TYPE
```

                                                                          75

```
        SYNTAX       SEQUENCE OF Wman2IfBsSsProvisionedForSfEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table maps the MAC addresses of SSs to the service
             flows provisioned in wman2IfBsProvisionedSfTable."
        REFERENCE
            "Subclause 6.3.14 in IEEE Std 802.16-2004"
        ::= { wman2IfBsPacketCs 2 }

wman2IfBsSsProvisionedForSfEntry OBJECT-TYPE
        SYNTAX       Wman2IfBsSsProvisionedForSfEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table is indexed by wman2IfBsSsProvMacAddress and
             wman2IfBsProvSfId."
        INDEX { wman2IfBsSsProvMacAddress, wman2IfBsProvSfId }
        ::= { wman2IfBsSsProvisionedForSfTable 1 }

Wman2IfBsSsProvisionedForSfEntry ::= SEQUENCE {
        wman2IfBsSsProvMacAddress               MacAddress,
        wman2IfBsProvSfId                       Unsigned32,
        wman2IfBsSsProvisionedForSfRowStatus    RowStatus}

wman2IfBsSsProvMacAddress OBJECT-TYPE
        SYNTAX       MacAddress
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "The MAC address of the SS, the service flow is created
             with."
        ::= { wman2IfBsSsProvisionedForSfEntry 1 }

wman2IfBsProvSfId OBJECT-TYPE
        SYNTAX       Unsigned32 (1 .. 4294967295)
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "A 32 bit quantity that uniquely identifies a service flow.
             The value of this object can be used by BS to index the
             wman2BsProvisionedSfTable."
        ::= { wman2IfBsSsProvisionedForSfEntry 2 }

wman2IfBsSsProvisionedForSfRowStatus OBJECT-TYPE
        SYNTAX        RowStatus
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
            "This object is used to ensure that the write, create,
             delete operation to multiple columns is guaranteed to
             be treated as atomic operation by agent."
        ::= { wman2IfBsSsProvisionedForSfEntry 3 }
```

```
wman2IfBsServiceClassTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF Wman2IfBsServiceClassEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table is provisioned and is indexed by
             wman2IfBsQoSProfileIndex. Each entry of the table contains
             corresponding service flow characteristic attributes
             (e.g. QoS parameter set). The value of
             wman2IfBsQoSProfileIndex is obtained from
             wman2IfBsServiceClassIndex in wman2IfBsProvisionedSfTable"
        REFERENCE
            "Subclause 6.3.14.4 in IEEE Std 802.16-2004"
        ::= { wman2IfBsPacketCs 3 }

wman2IfBsServiceClassEntry OBJECT-TYPE
        SYNTAX       Wman2IfBsServiceClassEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table provides one row for each service class"
        INDEX { ifIndex, wman2IfBsQoSProfileIndex }
        ::= { wman2IfBsServiceClassTable 1 }

Wman2IfBsServiceClassEntry ::= SEQUENCE {
        wman2IfBsQoSProfileIndex                INTEGER,
        wman2IfBsQosServiceClassName            Wman2IfServClassName,
        wman2IfBsQoSTrafficPriority             INTEGER,
        wman2IfBsQoSMaxSustainedRate            Unsigned32,
        wman2IfBsQoSMaxTrafficBurst             Unsigned32,
        wman2IfBsQoSMinReservedRate             Unsigned32,
        wman2IfBsQoSToleratedJitter             Unsigned32,
        wman2IfBsQoSMaxLatency                  Unsigned32,
        wman2IfBsQoSFixedVsVariableSduInd       INTEGER,
        wman2IfBsQoSSduSize                     Unsigned32,
        wman2IfBsQosScSchedulingType            Wman2IfSfSchedulingType,
        wman2IfBsQosScArqEnable                 TruthValue,
        wman2IfBsQosScArqWindowSize             INTEGER,
        wman2IfBsQosScArqBlockLifetime          INTEGER,
        wman2IfBsQosScArqSyncLossTimeout        INTEGER,
        wman2IfBsQosScArqDeliverInOrder         TruthValue,
        wman2IfBsQosScArqRxPurgeTimeout         INTEGER,
        wman2IfBsQosScArqBlockSize              INTEGER,
        wman2IfBsQosSCMinRsvdTolerableRate      Unsigned32,
        wman2IfBsQoSReqTxPolicy                 BITS,
        wman2IfBsQoSServiceClassRowStatus       RowStatus}

wman2IfBsQoSProfileIndex OBJECT-TYPE
        SYNTAX       INTEGER (1 .. 65535)
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "The index value which uniquely identifies an entry
             in the wman2IfBsServiceClassTable"
```

```
1              ::= { wman2IfBsServiceClassEntry 1 }
2
3
4    wman2IfBsQosServiceClassName  OBJECT-TYPE
5          SYNTAX       Wman2IfServClassName
6          MAX-ACCESS   read-create
7          STATUS       current
8          DESCRIPTION
9              "Refers to the Service Class Name"
10         REFERENCE
11             "Subclause 11.13.3 in IEEE Std 802.16-2004"
12         ::= { wman2IfBsServiceClassEntry 2 }
13
14
15   wman2IfBsQoSTrafficPriority OBJECT-TYPE
16         SYNTAX       INTEGER (0..7)
17         MAX-ACCESS   read-create
18         STATUS       current
19         DESCRIPTION
20             "The value of this parameter specifies the priority
21              assigned to a service flow. For uplink service flows,
22              the BS should use this parameter when determining
23              precedence in request service and grant generation,
24              and the SS shall preferentially select contention
25              Request opportunities for Priority Request CIDs
26              based on this priority. Higher numbers indicate higher
27              priority"
28         REFERENCE
29             "Subclause 11.13.5 in IEEE Std 802.16-2004"
30         ::= { wman2IfBsServiceClassEntry 3 }
31
32
33   wman2IfBsQoSMaxSustainedRate OBJECT-TYPE
34         SYNTAX       Unsigned32
35         UNITS        "b/s"
36         MAX-ACCESS   read-create
37         STATUS       current
38         DESCRIPTION
39             "This parameter defines the peak information rate
40              of the service. The rate is expressed in bits per
41              second and pertains to the SDUs at the input to
42              the system."
43         REFERENCE
44             "Subclause 11.13.6 in IEEE Std 802.16-2004"
45         ::= { wman2IfBsServiceClassEntry 4 }
46
47
48   wman2IfBsQoSMaxTrafficBurst OBJECT-TYPE
49         SYNTAX       Unsigned32
50         UNITS        "byte"
51         MAX-ACCESS   read-create
52         STATUS       current
53         DESCRIPTION
54             "This parameter defines the maximum burst size that
55              must be accommodated for the service."
56         REFERENCE
57             "Subclause 11.13.7 in IEEE Std 802.16-2004"
58         ::= { wman2IfBsServiceClassEntry 5 }
```

```
wman2IfBsQoSMinReservedRate OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "b/s"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This parameter specifies the minimum rate reserved
             for this service flow."
        REFERENCE
            "Subclause 11.13.8 in IEEE Std 802.16-2004"
        ::= { wman2IfBsServiceClassEntry 6 }

wman2IfBsQoSToleratedJitter OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "millisecond"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "This parameter defines the Maximum delay
             variation (jitter) for the connection."
        REFERENCE
            "Subclause 11.13.13 in IEEE Std 802.16-2004"
        ::= { wman2IfBsServiceClassEntry 7 }

wman2IfBsQoSMaxLatency OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "millisecond"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "The value of this parameter specifies the maximum
             latency between the reception of a packet by the BS
             or SS on its network interface and the forwarding
             of the packet to its RF Interface."
        REFERENCE
            "Subclause 11.13.14 in IEEE Std 802.16-2004"
        ::= { wman2IfBsServiceClassEntry 8 }

wman2IfBsQoSFixedVsVariableSduInd OBJECT-TYPE
        SYNTAX      INTEGER {variableLength(0),
                             fixedLength(1)}
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "The value of this parameter specifies whether the SDUs
             on the service flow are variable-length (0) or
             fixed-length (1). The parameter is used only if
             packing is on for the service flow. The default value
             is 0, i.e.,variable-length SDUs."
        REFERENCE
            "Subclause 11.13.15 in IEEE Std 802.16-2004"
        DEFVAL      { variableLength }
        ::= { wman2IfBsServiceClassEntry 9 }
```

```
wman2IfBsQoSSduSize OBJECT-TYPE
        SYNTAX        Unsigned32
        UNITS         "byte"
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
            "The value of this parameter specifies the length of the
             SDU for a fixed-length SDU service flow. This parameter
             is used only if packing is on and the service flow is
             indicated as carrying fixed-length SDUs. The default
             value is 49 bytes, i.e., VC-switched ATM cells with PHS.
             The parameter is relevant for both ATM and Packet
             Convergence Sublayers."
        REFERENCE
            "Subclause 11.13.16 in IEEE Std 802.16-2004"
        DEFVAL       { 49 }
        ::= { wman2IfBsServiceClassEntry 10 }

wman2IfBsQosScSchedulingType OBJECT-TYPE
        SYNTAX        Wman2IfSfSchedulingType
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
            "Specifies the upstream scheduling service used for
             upstream service flow. If the referenced parameter
             is not present in the corresponding 802.16 QOS
             Parameter Set of an upstream service flow, the
             default value of this object is bestEffort(2)."
        REFERENCE
            "Subclause 11.13.11 in IEEE Std 802.16-2004"
        DEFVAL     {bestEffort}
        ::= { wman2IfBsServiceClassEntry 11 }

wman2IfBsQosScArqEnable OBJECT-TYPE
        SYNTAX        TruthValue
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
            "True(1) ARQ enabling is requested for the connection."
        REFERENCE
            "Subclause 11.13.18 in IEEE Std 802.16-2004"
        ::= { wman2IfBsServiceClassEntry 12 }

wman2IfBsQosScArqWindowSize OBJECT-TYPE
        SYNTAX        INTEGER (1 .. 1024)
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
            "Indicates the maximum number of unacknowledged
             fragments at any time."
        REFERENCE
            "Subclause 11.13.18 in IEEE Std 802.16-2004"
        ::= { wman2IfBsServiceClassEntry 13 }
```

```
wman2IfBsQosScArqBlockLifetime OBJECT-TYPE
        SYNTAX    INTEGER (0 .. 65535)
        UNITS    "10 us"
        MAX-ACCESS  read-create
        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 fragment is discarded.
             A value of 0 means Infinite."
        REFERENCE
            "Subclause 11.13.18 in IEEE Std 802.16-2004"
        DEFVAL    {0}
        ::= { wman2IfBsServiceClassEntry 14 }

wman2IfBsQosScArqSyncLossTimeout OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 65535 )
        UNITS       "10 us"
        MAX-ACCESS  read-create
        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
            "Subclause 11.13.18 in IEEE Std 802.16-2004"
        DEFVAL    {0}
        ::= { wman2IfBsServiceClassEntry 15 }

wman2IfBsQosScArqDeliverInOrder  OBJECT-TYPE
        SYNTAX      TruthValue
        MAX-ACCESS  read-create
        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
            "Subclause 11.13.18 in IEEE Std 802.16-2004"
        ::= { wman2IfBsServiceClassEntry 16 }

wman2IfBsQosScArqRxPurgeTimeout  OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 65535)
        UNITS       "10 us"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "Indicates the time interval the ARQ window is advanced
             after a fragment is received. A value of 0 means
```

```
                         Infinite."
            REFERENCE
                "Subclause 11.13.18 in IEEE Std 802.16-2004"
            DEFVAL     {0}
            ::= { wman2IfBsServiceClassEntry 17 }


wman2IfBsQosScArqBlockSize OBJECT-TYPE
            SYNTAX      INTEGER (1..2040)
            UNITS       "byte"
            MAX-ACCESS  read-create
            STATUS      current
            DESCRIPTION
                "The value of this parameter specifies the size of an
                 ARQ block. This parameter shall be established by
                 negotiation during the connection creation dialog."
            REFERENCE
                "Subclause 11.13.18.8 in IEEE Std 802.16-2004"
            ::= { wman2IfBsServiceClassEntry 18 }


wman2IfBsQosSCMinRsvdTolerableRate OBJECT-TYPE
            SYNTAX      Unsigned32
            UNITS       "b/s"
            MAX-ACCESS  read-create
            STATUS      current
            DESCRIPTION
                "Minimum Tolerable Traffic Rate = R (bits/sec) with
                 time base T(sec) means the following. Let S denote
                 additional demand accumulated at the MAC SAP of the
                 transmitter during an arbitrary time interval of the
                 length T. Then the amount of data forwarded at the
                 receiver to CS (in bits) during this interval should
                 be not less than min {S, R * T}."
            REFERENCE
                "Subclause 11.13.9 in IEEE Std 802.16-2004"
            ::= { wman2IfBsServiceClassEntry 19 }


wman2IfBsQoSReqTxPolicy OBJECT-TYPE
            SYNTAX      BITS {noBroadcastBwReq(0),
                             reserved1(1),
                             noPiggybackReq(2),
                             noFragmentData(3),
                             noPHS(4),
                             noSduPacking(5),
                             noCrc(6),
                             reserved2(7)}
            MAX-ACCESS  read-create
            STATUS      current
            DESCRIPTION
                "The value of this parameter provides the capability to
                 specify certain attributes for the associated service
                 flow. An attribute is enabled by setting the
                 corresponding bit position to 1."
            REFERENCE    "Subclause 11.13.12 in IEEE Std 802.16-2004"
            ::= { wman2IfBsServiceClassEntry 20 }
```

```
wman2IfBsQoSServiceClassRowStatus 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."
        ::= { wman2IfBsServiceClassEntry 21 }

wman2IfBsClassifierRuleTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF Wman2IfBsClassifierRuleEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table contains packet classifier rules associated
             with service flows."
        REFERENCE
            "Subclause 11.13.19.3.4 in IEEE Std 802.16-2004"
        ::= { wman2IfBsPacketCs 4 }

wman2IfBsClassifierRuleEntry OBJECT-TYPE
        SYNTAX       Wman2IfBsClassifierRuleEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table provides one row for each packet classifier
             rule, and is indexed by ifIndex, wman2IfBsSfId, and
             wman2IfBsClassifierRuleIndex. IfIdex is associated with
             the BS sector. wman2IfBsSfId identifies the service flow,
             while wman2IfBsClassifierRuleIndex identifies the packet
             classifier rule."
        INDEX { ifIndex, wman2IfBsSfId, wman2IfBsClassifierRuleIndex }
        ::= { wman2IfBsClassifierRuleTable 1 }

Wman2IfBsClassifierRuleEntry::= SEQUENCE {
        wman2IfBsClassifierRuleIndex            Unsigned32,
        wman2IfBsClassifierRulePriority         INTEGER,
        wman2IfBsClassifierRuleIpTosLow         INTEGER,
        wman2IfBsClassifierRuleIpTosHigh        INTEGER,
        wman2IfBsClassifierRuleIpTosMask        INTEGER,
        wman2IfBsClassifierRuleIpProtocol       Integer32,
        wman2IfBsClassifierRuleIpSourceAddr     InetAddress,
        wman2IfBsClassifierRuleIpSourceMask     InetAddress,
        wman2IfBsClassifierRuleIpDestAddr       InetAddress,
        wman2IfBsClassifierRuleIpDestMask       InetAddress,
        wman2IfBsClassifierRuleSourcePortStart  Integer32,
        wman2IfBsClassifierRuleSourcePortEnd    Integer32,
        wman2IfBsClassifierRuleDestPortStart    Integer32,
```

```
        wman2IfBsClassifierRuleDestPortEnd       Integer32,
        wman2IfBsClassifierRuleDestMacAddr       MacAddress,
        wman2IfBsClassifierRuleDestMacMask       MacAddress,
        wman2IfBsClassifierRuleSourceMacAddr     MacAddress,
        wman2IfBsClassifierRuleSourceMacMask     MacAddress,
        wman2IfBsClassifierRuleEnetProtocolType  INTEGER,
        wman2IfBsClassifierRuleEnetProtocol      Integer32,
        wman2IfBsClassifierRuleUserPriLow        Integer32,
        wman2IfBsClassifierRuleUserPriHigh       Integer32,
        wman2IfBsClassifierRuleVlanId            Integer32,
        wman2IfBsClassifierRuleState             INTEGER,
        wman2IfBsClassifierRulePhsSize           Integer32,
        wman2IfBsClassifierRulePhsMask           OCTET STRING,
        wman2IfBsClassifierRulePhsVerify         Wman2IfPhsRuleVerify,
        wman2IfBsClassifierRuleIpv6FlowLabel     Wman2IfIpv6FlowLabel,
        wman2IfBsClassifierRuleBitMap            Wman2IfClassifierBitMap,
        wman2IfBsClassifierRuleRowStatus         RowStatus}

wman2IfBsClassifierRuleIndex  OBJECT-TYPE
        SYNTAX      Unsigned32 (1..4294967295)
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
           "An index is assigned to a classifier in BS classifiers
            table"
        ::= { wman2IfBsClassifierRuleEntry 1 }

wman2IfBsClassifierRulePriority 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
           "Subclause 11.13.19.3.4.1 in IEEE Std 802.16-2004"
        DEFVAL      { 0 }
        ::= { wman2IfBsClassifierRuleEntry 2 }

wman2IfBsClassifierRuleIpTosLow OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        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
           "Subclause 11.13.19.3.4.2 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 3 }

wman2IfBsClassifierRuleIpTosHigh OBJECT-TYPE
```

```
        SYNTAX      INTEGER (0..255)
        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
            "Subclause 11.13.19.3.4.2 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 4 }


wman2IfBsClassifierRuleIpTosMask OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "The value of this object specifies the matching parameter
             for the IP type of service/DSCP [IETF RFC 2474] byte mask.
             An IP packet with IP type of service (ToS) byte value
             ip-tos matches this parameter if tos-low less than or
             equal (ip-tos AND tos-mask) less than or equal tos-high."
        REFERENCE
            "Subclause 11.13.19.3.4.2 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 5 }


wman2IfBsClassifierRuleIpProtocol 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
            "Subclause 11.13.19.3.4.3 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 6 }


wman2IfBsClassifierRuleIpSourceAddr 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 wman2IfBsClassifierRuleIpSourceMask value
             equals the wman2IfBsClassifierRuleIpSourceAddr value.
             If the referenced parameter is not present in a classifier,
             this object reports the value of 0.0.0.0."
        REFERENCE
            "Subclause 11.13.19.3.4.4 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 7 }
```

```
wman2IfBsClassifierRuleIpSourceMask 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
             wman2IfBsClassifierRuleIpSourceMask value equals the
             wman2IfBsClassifierRuleIpSourceAddr value.
             If the referenced parameter is not present in a classifier,
             this object reports the value of 0.0.0.0."
        REFERENCE
            "Subclause 11.13.19.3.4.4 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 8 }

wman2IfBsClassifierRuleIpDestAddr 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
             wman2IfBsClassifierRuleIpDestMask value equals the
             wman2IfBsClassifierRuleIpDestAddr value.
             If the referenced parameter is not present in a
             classifier, this object reports the value of 0.0.0.0."
        REFERENCE
            "Subclause 11.13.19.3.4.5 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 9 }

wman2IfBsClassifierRuleIpDestMask 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
             wman2IfBsClassifierRuleIpDestMask value equals the
             wman2IfBsClassifierRuleIpDestAddr value.
             If the referenced parameter is not present in a classifier
             , this object reports the value of 0.0.0.0."
        REFERENCE
            "Subclause 11.13.19.3.4.5 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 10 }

wman2IfBsClassifierRuleSourcePortStart 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
               "Subclause 11.13.19.3.4.6 in IEEE Std 802.16-2004"
           ::= { wman2IfBsClassifierRuleEntry 11 }


wman2IfBsClassifierRuleSourcePortEnd 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
               "Subclause 11.13.19.3.4.6 in IEEE Std 802.16-2004"
           ::= { wman2IfBsClassifierRuleEntry 12 }


wman2IfBsClassifierRuleDestPortStart 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
               "Subclause 11.13.19.3.4.7 in IEEE Std 802.16-2004"
           ::= { wman2IfBsClassifierRuleEntry 13 }


wman2IfBsClassifierRuleDestPortEnd 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
               "Subclause 11.13.19.3.4.7 in IEEE Std 802.16-2004"
           ::= { wman2IfBsClassifierRuleEntry 14 }


wman2IfBsClassifierRuleDestMacAddr 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
             wman2IfBsClassifierRuleDestMacMask equals the value of
             wman2IfBsClassifierRuleDestMacAddr. If the referenced
             parameter is not present in a classifier, this object
             reports the value of '000000000000'H."
        REFERENCE
            "Subclause 11.13.19.3.4.8 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 15 }


wman2IfBsClassifierRuleDestMacMask 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
             wman2IfBsClassifierRuleDestMacMask equals the value of
             wman2IfBsClassifierRuleDestMacAddr. If the referenced
             parameter is not present in a classifier, this object
             reports the value of '000000000000'H."
        REFERENCE
            "Subclause 11.13.19.3.4.8 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 16 }


wman2IfBsClassifierRuleSourceMacAddr 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
             wman2IfBsClassifierRuleSourceMacMask equals the value
             of wman2IfBsClassifierRuleSourceMacAddr. If the
             referenced parameter is not present in a classifier,
             this object reports the value of '000000000000'H."
        REFERENCE
            "Subclause 11.13.19.3.4.9 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 17 }


wman2IfBsClassifierRuleSourceMacMask OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "An Ethernet packet matches an entry when its source
             MAC address bitwise ANDed with
             wman2IfBsClassifierRuleSourceMacMask equals the value of
             wman2IfBsClassifierRuleSourceMacAddr. If the referenced
             parameter is not present in a classifier, this object
             reports the value of '000000000000'H."
```

```
          REFERENCE
              "Subclause 11.13.19.3.4.9 in IEEE Std 802.16-2004"
          ::= { wman2IfBsClassifierRuleEntry 18 }


wman2IfBsClassifierRuleEnetProtocolType 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
              "Subclause 11.13.19.3.4.10 in IEEE Std 802.16-2004"
          ::= { wman2IfBsClassifierRuleEntry 19 }


wman2IfBsClassifierRuleEnetProtocol OBJECT-TYPE
          SYNTAX      Integer32 (0..65535)
          MAX-ACCESS  read-create
          STATUS      current
          DESCRIPTION
              "If wman2IfBsClassifierRuleEnetProtocolType is none(0),
               this object is ignored when considering whether a packet
               matches the current rule.
               If wman2IfBsClassifierRuleEnetProtocolType 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 wman2IfBsClassifierRuleEnetProtocolType 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
              "Subclause 11.13.19.3.4.10 in IEEE Std 802.16-2004"
          ::= { wman2IfBsClassifierRuleEntry 20 }
```

```
wman2IfBsClassifierRuleUserPriLow 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 wman2IfBsClassifierRuleUserPriLow and
             wman2IfBsClassifierRuleUserPriHigh 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
            "Subclause 11.13.19.3.4.11 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 21 }

wman2IfBsClassifierRuleUserPriHigh 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 wman2IfBsClassifierRuleUserPriLow
             and wman2IfBsClassifierRuleUserPriHigh 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
            "Subclause 11.13.19.3.4.11 in IEEE Std 802.16-2004"
        ::= { wman2IfBsClassifierRuleEntry 22 }

wman2IfBsClassifierRuleVlanId 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
```

```
                    "Subclause 11.13.19.3.4.12 in IEEE Std 802.16-2004"
              ::= { wman2IfBsClassifierRuleEntry 23 }


wman2IfBsClassifierRuleState 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)."
        ::= { wman2IfBsClassifierRuleEntry 24 }


wman2IfBsClassifierRulePhsSize 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 wman2IfBsClassifierRuleBitMap
             is set to 0 and flag phsSize in
            wman2IfBsClassifierRuleBitMap 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
            "Subclause 11.13.19.3.7.4 in IEEE Std 802.16-2004"
        DEFVAL      {0}
        ::= { wman2IfBsClassifierRuleEntry 25 }


wman2IfBsClassifierRulePhsMask OBJECT-TYPE
        SYNTAX      OCTET STRING (SIZE(0..65535))
        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 the 1st byte of the suppression field
                1 = suppress first byte of the suppression field
             bit 1:
                0 = don't suppress the 2nd byte of the suppression field
                1 = suppress second byte of the suppression field
             bit x:
                0 = don't suppress the (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
                       (wman2IfBsClassifierRulePhsSize/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
                       wman2IfBsClassifierRuleBitMap is set to 0 and flag phsSize
                       in wman2IfBsClassifierRuleBitMap 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
                   "Subclause 11.13.19.3.7.3 in IEEE Std 802.16-2004"
              ::= { wman2IfBsClassifierRuleEntry 26 }


    wman2IfBsClassifierRulePhsVerify OBJECT-TYPE
              SYNTAX      Wman2IfPhsRuleVerify
              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 }
              ::= { wman2IfBsClassifierRuleEntry 27 }


    wman2IfBsClassifierRuleIpv6FlowLabel OBJECT-TYPE
              SYNTAX      Wman2IfIpv6FlowLabel
              MAX-ACCESS  read-create
              STATUS      current
              DESCRIPTION
                   "The value of this field specifies the matching values for
                   the IPv6 Flow label field."
              ::= { wman2IfBsClassifierRuleEntry 28 }


    wman2IfBsClassifierRuleBitMap OBJECT-TYPE
              SYNTAX      Wman2IfClassifierBitMap
              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"
              ::= { wman2IfBsClassifierRuleEntry 29 }


    wman2IfBsClassifierRuleRowStatus 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."
             ::= { wman2IfBsClassifierRuleEntry 30 }


wman2IfBsSsPacketCounterTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfBsSsPacketCounterEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains counters to keep track of the number
             of packets and octets that have been received or
             transmitted on the per service flow basis."
        ::= { wman2IfBsPacketCs 5 }


wman2IfBsSsPacketCounterEntry OBJECT-TYPE
        SYNTAX      Wman2IfBsSsPacketCounterEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each service flow, and
             is indexed by ifIndex, wman2IfCmnCpsSfMacAddress, and
             wman2IfCmnCpsSfId."
        INDEX { ifIndex, wman2IfCmnCpsSfMacAddress,
                 wman2IfCmnCpsSfId }
        ::= { wman2IfBsSsPacketCounterTable 1 }


Wman2IfBsSsPacketCounterEntry::= SEQUENCE {
        wman2IfBsSsMacSduCount                 Counter64,
        wman2IfBsSsOctetCount                  Counter64,
        wman2IfBsSsResetCounter                INTEGER,
        wman2IfBsSsResetCounterTime            TimeStamp}


wman2IfBsSsMacSduCount OBJECT-TYPE
        SYNTAX      Counter64
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object counts the number of MAC SDUs that have
             been transmitted or received."
        ::= { wman2IfBsSsPacketCounterEntry 1 }


wman2IfBsSsOctetCount OBJECT-TYPE
        SYNTAX      Counter64
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object counts the number of octets of MAC SDUs
             that have been transmitted or received."
        ::= { wman2IfBsSsPacketCounterEntry 2 }


wman2IfBsSsResetCounter OBJECT-TYPE
        SYNTAX      INTEGER {null(0),
                             resetCounter(1)}
        MAX-ACCESS  read-write
        STATUS      current
```

```
        DESCRIPTION
            "When this attribute is SET to resetCounter(1), the
             corresponding entry of packet counters will be reset.
             A GET operation performed on this object will always
             return null(0). The counter is normally reset after
             the packet count information is retrieved. "
        ::= { wman2IfBsSsPacketCounterEntry 3 }

wman2IfBsSsResetCounterTime OBJECT-TYPE
        SYNTAX      TimeStamp
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Indicates the date and time when the counter is
             reset."
        ::= { wman2IfBsSsPacketCounterEntry 4 }

--
-- wman2IfBsCps contain the Base Station Common Part Sublayer objects
--
wman2IfBsCps OBJECT IDENTIFIER ::= { wman2IfBsObjects 2 }


wman2IfBsRegisteredSsTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfBsRegisteredSsEntry
        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 REG-REQ and REG-RSP messages. An entry
             in this table indicates the SS has entered and registered
             into the BS."
        REFERENCE
            "Subclause 6.3.2.3.7 in IEEE Std 802.16-2004"
        ::= { wman2IfBsCps 1 }

wman2IfBsRegisteredSsEntry OBJECT-TYPE
        SYNTAX      Wman2IfBsRegisteredSsEntry
        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
             wman2IfBsSsMacAddress. The primary index is the ifIndex
             with an ifType of propBWAp2Mp, indicating the BS sector
             with which the SS is associated. wman2IfBsSsMacAddress
             identifies the SS being registered."
        INDEX { ifIndex, wman2IfBsSsMacAddress }
        ::= { wman2IfBsRegisteredSsTable 1 }

Wman2IfBsRegisteredSsEntry ::= SEQUENCE {
        wman2IfBsSsMacAddress                   MacAddress,
        wman2IfBsSsBasicCid                     Wman2IfCidType,
        wman2IfBsSsPrimaryCid                   Wman2IfCidType,
```

```
            wman2IfBsSsSecondaryCid                    Wman2IfCidType,
            wman2IfBsSsManagementSupport               INTEGER,
            wman2IfBsSsIpManagementMode                INTEGER,
            wman2IfBsSs2ndMgmtArqEnable                TruthValue,
            wman2IfBsSs2ndMgmtArqWindowSize            INTEGER,
            wman2IfBsSs2ndMgmtArqDnLinkTxDelay         INTEGER,
            wman2IfBsSs2ndMgmtArqUpLinkTxDelay         INTEGER,
            wman2IfBsSs2ndMgmtArqDnLinkRxDelay         INTEGER,
            wman2IfBsSs2ndMgmtArqUpLinkRxDelay         INTEGER,
            wman2IfBsSs2ndMgmtArqBlockLifetime         INTEGER,
            wman2IfBsSs2ndMgmtArqSyncLossTimeout       INTEGER,
            wman2IfBsSs2ndMgmtArqDeliverInOrder        TruthValue,
            wman2IfBsSs2ndMgmtArqRxPurgeTimeout        INTEGER,
            wman2IfBsSs2ndMgmtArqBlockSize             INTEGER,
            wman2IfBsSsVendorIdEncoding                OCTET STRING,
            wman2IfBsSsAasBroadcastPermission          INTEGER,
            wman2IfBsSsMaxTxPowerBpsk                  Wman2IfMaxTxPowerType,
            wman2IfBsSsMaxTxPowerQpsk                  Wman2IfMaxTxPowerType,
            wman2IfBsSsMaxTxPower16Qam                 Wman2IfMaxTxPowerType,
            wman2IfBsSsMaxTxPower64Qam                 Wman2IfMaxTxPowerType,
            wman2IfBsSsMacVersion                      Wman2IfMacVersion}


wman2IfBsSsMacAddress OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  not-accessible
        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
            "Subclause 6.3.2.3.5 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 1 }


wman2IfBsSsBasicCid OBJECT-TYPE
        SYNTAX      Wman2IfCidType
        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
            "Subclause 6.3.2.3.6 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 2 }


wman2IfBsSsPrimaryCid OBJECT-TYPE
        SYNTAX      Wman2IfCidType
        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
            "Subclause 6.3.2.3.6 in IEEE Std 802.16-2004"
```

```
         ::= { wman2IfBsRegisteredSsEntry 3 }


wman2IfBsSsSecondaryCid OBJECT-TYPE
        SYNTAX      Wman2IfCidType
        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 connection is not
             available."
        REFERENCE
            "Subclause 6.4.2.3.8 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 4 }


wman2IfBsSsManagementSupport OBJECT-TYPE
        SYNTAX      INTEGER {unmanagedSs(0),
                            managedSs(1)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether or not the SS is managed."
        REFERENCE
            "Subclause 11.7.2 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 5 }


wman2IfBsSsIpManagementMode OBJECT-TYPE
        SYNTAX      INTEGER {unmanaged(0),
                            ipManaged(1)}
        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."
        REFERENCE
            "Subclause 11.7.3 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 6 }


wman2IfBsSs2ndMgmtArqEnable OBJECT-TYPE
        SYNTAX      TruthValue
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "True(1) ARQ enabling is requested for the 2nd
             management channel."
        REFERENCE
            "Subclause 11.13.18.1 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 7 }


wman2IfBsSs2ndMgmtArqWindowSize 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 connection."
        REFERENCE
            "Subclause 11.13.18.2 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 8 }

wman2IfBsSs2ndMgmtArqDnLinkTxDelay OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 65535)
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The object defines the ARQ transmitter delay for
             downlink transmission."
        REFERENCE
            "Subclause 11.13.18.3 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 9 }

wman2IfBsSs2ndMgmtArqUpLinkTxDelay OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 65535)
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The object defines the ARQ transmitter delay for
             uplink transmission."
        REFERENCE
            "Subclause 11.13.18.3 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 10 }

wman2IfBsSs2ndMgmtArqDnLinkRxDelay OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 65535)
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The object defines the ARQ receiver delay for
             downlink transmission."
        REFERENCE
            "Subclause 11.13.18.3 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 11 }

wman2IfBsSs2ndMgmtArqUpLinkRxDelay OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 65535)
        UNITS       "us"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The object defines the ARQ receiver delay for
             uplink transmission."
        REFERENCE
            "Subclause 11.13.18.3 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 12 }
```

```
wman2IfBsSs2ndMgmtArqBlockLifetime 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 fragment is discarded.
             A value of 0 means Infinite."
        REFERENCE
            "Subclause 11.13.18.4 in IEEE Std 802.16-2004"
        DEFVAL    {0}
        ::= { wman2IfBsRegisteredSsEntry 13 }

wman2IfBsSs2ndMgmtArqSyncLossTimeout 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
            "Subclause 11.13.18.5 in IEEE Std 802.16-2004"
        DEFVAL    {0}
        ::= { wman2IfBsRegisteredSsEntry 14 }

wman2IfBsSs2ndMgmtArqDeliverInOrder  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
            "Subclause 11.13.18.6 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 15 }

wman2IfBsSs2ndMgmtArqRxPurgeTimeout  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
            "Subclause 11.13.18.7 in IEEE Std 802.16-2004"
        DEFVAL     {0}
    ::= { wman2IfBsRegisteredSsEntry 16 }


wman2IfBsSs2ndMgmtArqBlockSize OBJECT-TYPE
        SYNTAX      INTEGER (1 .. 2040)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter specifies the size of a ARQ block. This
             parameter shall be established by negotiation during the
             connection setup. The requester includes its desired
             setting in the REQ message. The receiver of the REQ
             message shall take the smaller of the value it prefers and
             value in the REQ message. The minimum value is included in
             the RSP message."
        REFERENCE
            "Subclause 11.13.18.8 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 17 }


wman2IfBsSsVendorIdEncoding 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
            "Subclause 11.1.5 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 18 }


wman2IfBsSsAasBroadcastPermission OBJECT-TYPE
        SYNTAX    INTEGER {contBasedBwReqPermitted(0),
                           contBasedBwReqNotPermitted(1)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter specifies if SS can issue contention-based
             bandwidth request or not."
        REFERENCE
            "Subclause 11.6 in IEEE Std 802.16-2004"
        ::= { wman2IfBsRegisteredSsEntry 19 }


wman2IfBsSsMaxTxPowerBpsk OBJECT-TYPE
        SYNTAX      Wman2IfMaxTxPowerType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The maximum available power for BPSK. 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. This parameter is only applicable to
                    systems supporting the SCa, OFDM or OFDMA PHY."
            REFERENCE
                "Subclause 11.8.3.2 in IEEE Std 802.16-2004"
            ::= { wman2IfBsRegisteredSsEntry 20 }

    wman2IfBsSsMaxTxPowerQpsk OBJECT-TYPE
            SYNTAX      Wman2IfMaxTxPowerType
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "The maximum available power for QPSK. 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
                    to closest extreme. This parameter is only applicable to
                    systems supporting the SCa, OFDM or OFDMA PHY."
            REFERENCE
                "Subclause 11.8.3.2 in IEEE Std 802.16-2004"
            ::= { wman2IfBsRegisteredSsEntry 21 }

    wman2IfBsSsMaxTxPower16Qam OBJECT-TYPE
            SYNTAX      Wman2IfMaxTxPowerType
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "The maximum available power for 16-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. This parameter
                    is only applicable to systems supporting the SCa, OFDM or
                    OFDMA PHY."
            REFERENCE
                "Subclause 11.8.3.2 in IEEE Std 802.16-2004"
            ::= { wman2IfBsRegisteredSsEntry 22 }

    wman2IfBsSsMaxTxPower64Qam OBJECT-TYPE
            SYNTAX      Wman2IfMaxTxPowerType
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "The maximum available power for 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. This
                    parameter is only applicable to systems supporting the SCa,
                    OFDM or OFDMA PHY."
            REFERENCE
```

```
                        "Subclause 11.8.3.2 in IEEE Std 802.16-2004"
                ::= { wman2IfBsRegisteredSsEntry 23 }


    wman2IfBsSsMacVersion OBJECT-TYPE
            SYNTAX      Wman2IfMacVersion
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "This parameter specifies the version of 802.16 to which the
                 message originator conforms."
            REFERENCE
                "Subclause 11.1.3 in IEEE Std 802.16-2004"
                ::= { wman2IfBsRegisteredSsEntry 24 }


    --
    -- wman2IfBsConfigurationTable contains global parameters common in BS
    --
    wman2IfBsConfigurationTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF Wman2IfBsConfigurationEntry
            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 Subclause
                 10.1 of [3]. The objects in this table define the default
                 behaviour of the BS for 2nd Management connection
                 scheduling and SFID allocation as well as configuration
                 parameters of the CPS scheduler and AAS system."
            REFERENCE
                "Subclause 10.1 in IEEE Std 802.16-2004"
            ::= { wman2IfBsCps 2 }


    wman2IfBsConfigurationEntry OBJECT-TYPE
            SYNTAX      Wman2IfBsConfigurationEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                "This table is indexed by ifIndex with an ifType of
                 propBWAp2Mp."
            INDEX { ifIndex }
            ::= { wman2IfBsConfigurationTable 1 }


    Wman2IfBsConfigurationEntry ::= SEQUENCE {
            wman2IfBsDcdInterval                     INTEGER,
            wman2IfBsUcdInterval                     INTEGER,
            wman2IfBsUcdTransition                   INTEGER,
            wman2IfBsDcdTransition                   INTEGER,
            wman2IfBsInitialRangingInterval          INTEGER,
            wman2IfBsSsULMapProcTime                 Unsigned32,
            wman2IfBsSsRangRespProcTime              Unsigned32,
            wman2IfBsT5Timeout                       INTEGER,
            wman2IfBsT9Timeout                       INTEGER,
            wman2IfBsT13Timeout                      INTEGER,
            wman2IfBsT15Timeout                      INTEGER,
```

```
          wman2IfBsT17Timeout                        INTEGER,
          wman2IfBsT27IdleTimer                      Unsigned32,
          wman2IfBsT27ActiveTimer                    Unsigned32,
          wman2IfBs2ndMgmtDlQoSProfileIndex          INTEGER,
          wman2IfBs2ndMgmtUlQoSProfileIndex          INTEGER,
          wman2IfBsAutoSfidEnabled                   INTEGER,
          wman2IfBsAutoSfidRangeMin                  Unsigned32,
          wman2IfBsAutoSfidRangeMax                  Unsigned32,
          wman2IfBsAasChanFbckReqFreq                INTEGER,
          wman2IfBsAasBeamSelectFreq                 INTEGER,
          wman2IfBsAasChanFbckReqResolution          INTEGER,
          wman2IfBsAasBeamReqResolution              INTEGER,
          wman2IfBsAasNumOptDiversityZones           INTEGER,
          wman2IfBsResetSector                       INTEGER}


wman2IfBsDcdInterval OBJECT-TYPE
        SYNTAX       INTEGER (0..10000)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Time between transmission of DCD messages in ms."
        ::= { wman2IfBsConfigurationEntry 1 }


wman2IfBsUcdInterval OBJECT-TYPE
        SYNTAX       INTEGER (0..10000)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Time between transmission of UCD messages in ms."
        ::= { wman2IfBsConfigurationEntry 2 }


wman2IfBsUcdTransition OBJECT-TYPE
        SYNTAX       INTEGER (2..65535)
        UNITS        "Number of MAC Frames"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "The time the BS shall wait after transmitting a UCD message
             with an incremented Configuration Change Count before
             issuing a UL-MAP message referring to
             Uplink_Burst_Profiles defined in that UCD message."
        ::= { wman2IfBsConfigurationEntry 3 }


wman2IfBsDcdTransition OBJECT-TYPE
        SYNTAX       INTEGER (2..65535)
        UNITS        "Number of MAC Frames"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "The time the BS shall wait after transmitting a DCD message
             with an incremented Configuration Change Count before
             issuing a DL-MAP message referring to
```

```
                      Downlink_Burst_Profiles defined in that DCD message."
               ::= { wman2IfBsConfigurationEntry 4 }


       wman2IfBsInitialRangingInterval OBJECT-TYPE
               SYNTAX        INTEGER(0..2000)
               UNITS         "milliseconds"
               MAX-ACCESS    read-write
               STATUS        current
               DESCRIPTION
                   "Time between Initial Ranging regions assigned by the BS
                    in ms."
               ::= { wman2IfBsConfigurationEntry 5 }


       wman2IfBsSsULMapProcTime OBJECT-TYPE
               SYNTAX        Unsigned32 (200 .. 4294967295)
               UNITS         "micro seconds"
               MAX-ACCESS    read-write
               STATUS        current
               DESCRIPTION
                   "Time provided between arrival of the last bit of a UL-MAP
                    at an SS and effectiveness of that map in us."
               ::= { wman2IfBsConfigurationEntry 6 }


       wman2IfBsSsRangRespProcTime OBJECT-TYPE
               SYNTAX        Unsigned32 (10000 .. 4294967295)
               UNITS         "micro seconds"
               MAX-ACCESS    read-write
               STATUS        current
               DESCRIPTION
                   "Time allowed for an SS following receipt of a ranging
                    response before it is expected to reply to an invited
                    ranging request in us."
               ::= { wman2IfBsConfigurationEntry 7 }


       wman2IfBsT5Timeout OBJECT-TYPE
               SYNTAX        INTEGER (0 .. 2000)
               UNITS         "milliseconds"
               MAX-ACCESS    read-write
               STATUS        current
               DESCRIPTION
                   "Wait for Uplink Channel Change Response in ms."
               ::= { wman2IfBsConfigurationEntry 8 }


       wman2IfBsT9Timeout OBJECT-TYPE
               SYNTAX        INTEGER (300 .. 65535)
               UNITS         "milliseconds"
               MAX-ACCESS    read-write
               STATUS        current
               DESCRIPTION
                   "Registration Timeout, the time allowed between the BS
                    sending a RNG-RSP (success) to an SS, and receiving a
                    SBC-REQ from that same SS in ms."
               ::= { wman2IfBsConfigurationEntry 9 }
```

```
wman2IfBsT13Timeout OBJECT-TYPE
        SYNTAX       INTEGER (15 .. 65535)
        UNITS        "minutes"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "The time allowed for an SS, following receipt of a
             REG-RSP message to send a TFTP-CPLT message to the BS
             in min."
        ::= { wman2IfBsConfigurationEntry 10 }


wman2IfBsT15Timeout OBJECT-TYPE
        SYNTAX       INTEGER (20 .. 65535)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Wait for MCA-RSP in ms."
        ::= { wman2IfBsConfigurationEntry 11 }


wman2IfBsT17Timeout OBJECT-TYPE
        SYNTAX       INTEGER (5 .. 65535)
        UNITS        "minutes"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Time allowed for SS to complete SS Authorization and
               Key Exchange in minutes."
        ::= { wman2IfBsConfigurationEntry 12 }


wman2IfBsT27IdleTimer OBJECT-TYPE
        SYNTAX       Unsigned32 (10000 .. 4294967295)
        UNITS        "us"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Maximum time between unicast grants to SS when BS believes
              SS uplink transmission quality is good enough."
        ::= { wman2IfBsConfigurationEntry 13 }


wman2IfBsT27ActiveTimer OBJECT-TYPE
        SYNTAX       Unsigned32 (10000 .. 4294967295)
        UNITS        "us"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Maximum time between unicast grants to SS when BS believes
              SS uplink transmission quality is not good enough."
        ::= { wman2IfBsConfigurationEntry 14 }



wman2IfBs2ndMgmtDlQoSProfileIndex OBJECT-TYPE
        SYNTAX       INTEGER (1..65535)
        MAX-ACCESS   read-write
```

```
         STATUS        current
         DESCRIPTION
             "This object defines the index of a row in
              wman2IfBsServiceClassTable which is used to obtain all QoS
              parameters required for the BS downlink scheduler to
              properly allocate and manage the bandwidth and schedule
              the 2nd Management Connection traffic. The 2nd Management
              Connection traffic doesn't differ from Traffic Connection
              traffic in the area of QoS management."
          ::= { wman2IfBsConfigurationEntry 15 }


wman2IfBs2ndMgmtUlQoSProfileIndex OBJECT-TYPE
         SYNTAX        INTEGER (1..65535)
         MAX-ACCESS    read-write
         STATUS        current
         DESCRIPTION
             "This object defines the index of a row in
              wman2IfBsServiceClassTable which is used to obtain all QoS
              parameters required for the BS uplink scheduler to
              properly allocate and manage the bandwidth and schedule
              the 2nd Management Connection traffic. The 2nd Management
              Connection traffic doesn't differ from Traffic Connection
              traffic in the area of QoS management."
          ::= { wman2IfBsConfigurationEntry 16 }


wman2IfBsAutoSfidEnabled 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
              wman2IfBsConfigExtAutoSfidRangeMin and
              wman2IfBsConfigExtAutoSfidRangeMax. A SF is created
              autonomously when it has not been provisioned in the
              wman2IfBsProvisionedSfTable 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
              wman2IfBsProvisionedSfTable."
         REFERENCE
             "Subclause 11.13.1 in IEEE Std 802.16-2004"
          ::= { wman2IfBsConfigurationEntry 17 }


wman2IfBsAutoSfidRangeMin 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 wman2IfBsAutoSfidEnabled allows
                     autonomous creation of SFIDs."
            REFERENCE
                "Subclause 11.13.1 in IEEE Std 802.16-2004"
            ::= { wman2IfBsConfigurationEntry 18 }


wman2IfBsAutoSfidRangeMax 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 wman2IfBsAutoSfidEnabled allows
             autonomous creation of SFIDs."
        REFERENCE
            "Subclause 11.13.1 in IEEE Std 802.16-2004"
        ::= { wman2IfBsConfigurationEntry 19 }


wman2IfBsAasChanFbckReqFreq 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
            "Subclause 6.3.2.3.40 in IEEE Std 802.16-2004"
        ::= { wman2IfBsConfigurationEntry 20 }


wman2IfBsAasBeamSelectFreq 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
            "Subclause 6.3.2.3.41 in IEEE Std 802.16-2004"
        ::= { wman2IfBsConfigurationEntry 21 }


wman2IfBsAasChanFbckReqResolution 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
                  "Subclause 8.3.6.4 in IEEE Std 802.16-2004"
              ::= { wman2IfBsConfigurationEntry 22 }

    wman2IfBsAasBeamReqResolution 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
                  "Subclause 8.3.6.5 in IEEE Std 802.16-2004"
              ::= { wman2IfBsConfigurationEntry 23 }

    wman2IfBsAasNumOptDiversityZones 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 Std 802.16-2004"
              ::= { wman2IfBsConfigurationEntry 24 }

    wman2IfBsResetSector  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 ifIndex. 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"
          ::= { wman2IfBsConfigurationEntry 25 }


    --
    -- Base Station Channel Measurement Table
    --
    wman2IfBsChannelMeasurementTable OBJECT-TYPE
          SYNTAX      SEQUENCE OF   Wman2IfBsChannelMeasurementEntry
          MAX-ACCESS  not-accessible
          STATUS      current
          DESCRIPTION
              "This table contains channel measurement information as
               derived from BS measurement of uplink signal from SS,
               and the downlink signal as reported from SS using
               REP-REQ/RSP messages. The table shall be maintained as
               FIFO to store measurement samples that can be used to
               create RSSI and CINR histogram report. When the
               measurement entry for a SS reaches the limit, the oldest
               entry shall be deleted as the new entry is added to the
               table."
          REFERENCE
              "6.3.2.3.33 in IEEE Std 802.16-2004"
          ::= { wman2IfBsCps 3 }


    wman2IfBsChannelMeasurementEntry OBJECT-TYPE
          SYNTAX      Wman2IfBsChannelMeasurementEntry
          MAX-ACCESS  not-accessible
          STATUS      current
          DESCRIPTION
              "Each entry in the table contains RSSI and CINR
               signal quality measurement on signal received from the SS.
               The primary index is the ifIndex with ifType of propBWAp2Mp
               identifing the BS sector. wman2IfBsSsMacAddress identifies
               the SS from which the signal was received.
               wman2IfBsChannelDirection is the index to the direction of
               the channel. wman2IfBsHistogramIndex is the index to
               histogram samples. Since there is no time stamp in the
               table, wman2IfBsHistogramIndex should be increased
               monotonically, and wraps around when it reaches the
               implementation specific limit."
          INDEX       { ifIndex,
                        wman2IfBsSsMacAddress,
                        wman2IfBsChannelDirection,
                        wman2IfBsHistogramIndex }
          ::= { wman2IfBsChannelMeasurementTable  1 }


    Wman2IfBsChannelMeasurementEntry ::= SEQUENCE {
          wman2IfBsChannelDirection                 INTEGER,
          wman2IfBsHistogramIndex                   Unsigned32,
          wman2IfBsChannelNumber                    Wman2IfChannelNumber,
```

```
        wman2IfBsStartFrame                          INTEGER,
        wman2IfBsDuration                            INTEGER,
        wman2IfBsBasicReport                         BITS,
        wman2IfBsMeanCinrReport                      INTEGER,
        wman2IfBsMeanRssiReport                      INTEGER,
        wman2IfBsStdDeviationCinrReport              INTEGER,
        wman2IfBsStdDeviationRssiReport      INTEGER}


wman2IfBsChannelDirection OBJECT-TYPE
        SYNTAX      INTEGER {downstream(1),
                            upstream(2)}
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
           "wman2IfBsChannelDirection identifies the direction of a
            a channel where the measurement takes place."
        ::= { wman2IfBsChannelMeasurementEntry 1 }


wman2IfBsHistogramIndex OBJECT-TYPE
        SYNTAX      Unsigned32 (1 .. 4294967295)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "wman2IfBsHistogramIndex identifies the histogram samples
            in the table for each subscriber station."
        ::= { wman2IfBsChannelMeasurementEntry 2 }


wman2IfBsChannelNumber OBJECT-TYPE
        SYNTAX      Wman2IfChannelNumber
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "Physical channel number to be reported on is only
            applicable to license exempt band. For licensed band,
            this parameter should be null."
        REFERENCE
           "Subclause 11.12 in IEEE Std 802.16-2004"
        ::= { wman2IfBsChannelMeasurementEntry 3 }


wman2IfBsStartFrame OBJECT-TYPE
        SYNTAX      INTEGER (0..65535)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "Frame number in which measurement for this channel
            started."
        REFERENCE
           "Subclause 11.12 in IEEE Std 802.16-2004"
        ::= { wman2IfBsChannelMeasurementEntry 4 }


wman2IfBsDuration OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 16777215)
        MAX-ACCESS  read-only
        STATUS      current
```

```
           DESCRIPTION
               "Cumulative measurement duration on the channel in
                multiples of Ts. For any value exceeding 0xFFFFFF,
                report 0xFFFFFF."
           REFERENCE
               "Subclause 11.12 in IEEE Std 802.16-2004"
           ::= { wman2IfBsChannelMeasurementEntry 5 }


wman2IfBsBasicReport OBJECT-TYPE
           SYNTAX       BITS {wirelessHuman(0),
                             unknownTransmission(1),
                             primaryUser(2),
                             channelNotMeasured(3)}
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
               "Bit #0: WirelessHUMAN detected on the channel
                Bit #1: Unknown transmissions detected on the channel
                Bit #2: Primary User detected on the channel
                Bit #3: Unmeasured. Channel not measured"
           REFERENCE
               "Subclause 11.12 in IEEE Std 802.16-2004"
           ::= { wman2IfBsChannelMeasurementEntry 6 }


wman2IfBsMeanCinrReport OBJECT-TYPE
           SYNTAX       INTEGER (0 .. 41)
           UNITS        "dB"
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
               "Mean CINR report."
           REFERENCE
               "Subclause 8.2.2, 8.3.9 in IEEE Std 802.16-2004"
           ::= { wman2IfBsChannelMeasurementEntry 7 }


wman2IfBsMeanRssiReport OBJECT-TYPE
           SYNTAX       INTEGER (0 .. 83)
           UNITS        "dBm"
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
               "Mean RSSI report."
           REFERENCE
               "Subclause 8.2.2, 8.3.9 in IEEE Std 802.16-2004"
           ::= { wman2IfBsChannelMeasurementEntry 8 }


wman2IfBsStdDeviationCinrReport OBJECT-TYPE
           SYNTAX       INTEGER (0 .. 41)
           UNITS        "dB"
           MAX-ACCESS   read-only
           STATUS       current
           DESCRIPTION
                "Standard deviation CINR report."
           REFERENCE
```

```
                    "Subclause 8.2.2, 8.3.9 in IEEE Std 802.16-2004"
               ::= { wman2IfBsChannelMeasurementEntry 9 }


wman2IfBsStdDeviationRssiReport OBJECT-TYPE
       SYNTAX        INTEGER (0 .. 83)
       UNITS         "dB"
       MAX-ACCESS    read-only
       STATUS        current
       DESCRIPTION
           "Standard deviation RSSI report."
       REFERENCE
           "Subclause 8.2.2, 8.3.9 in IEEE Std 802.16-2004"
       ::= { wman2IfBsChannelMeasurementEntry 10 }


--
-- Base Station capabilities
--
wman2IfBsCapabilities OBJECT IDENTIFIER ::= { wman2IfBsCps 4 }


wman2IfBsSsReqCapabilitiesTable OBJECT-TYPE
       SYNTAX        SEQUENCE OF Wman2IfBsSsReqCapabilitiesEntry
       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."
       ::= { wman2IfBsCapabilities 1 }


wman2IfBsSsReqCapabilitiesEntry OBJECT-TYPE
       SYNTAX        Wman2IfBsSsReqCapabilitiesEntry
       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
            wman2IfBsRegisteredSsTable."
       AUGMENTS { wman2IfBsRegisteredSsEntry }
       ::= { wman2IfBsSsReqCapabilitiesTable 1 }


Wman2IfBsSsReqCapabilitiesEntry ::= SEQUENCE {
       wman2IfBsSsReqCapUplinkCidSupport         Wman2IfNumOfUplinkCid,
       wman2IfBsSsReqCapArqSupport               Wman2IfArqSupportType,
       wman2IfBsSsReqCapDsxFlowControl           Wman2IfMaxDsxFlowType,
       wman2IfBsSsReqCapMacCrcSupport            Wman2IfMacCrcSupport,
       wman2IfBsSsReqCapMcaFlowControl           Wman2IfMaxMcaFlowType,
       wman2IfBsSsReqCapMcpGroupCidSupport       Wman2IfMaxMcpGroupCid,
       wman2IfBsSsReqCapPkmFlowControl           Wman2IfMaxPkmFlowType,
       wman2IfBsSsReqCapAuthPolicyControl        Wman2IfAuthPolicyType,
       wman2IfBsSsReqCapMaxNumOfSupportedSA      Wman2IfMaxNumOfSaType,
       wman2IfBsSsReqCapIpVersion                Wman2IfIpVersionType,
       wman2IfBsSsReqCapMacCsSupportBitMap       Wman2IfMacCsBitMap,
       wman2IfBsSsReqCapMaxNumOfClassifier       Wman2IfMaxClassifiers,
```

```
            wman2IfBsSsReqCapPhsSupport                    Wman2IfPhsSupportType,
            wman2IfBsSsReqCapBandwidthAllocSupport  Wman2IfBwAllocSupport,
            wman2IfBsSsReqCapPduConstruction        Wman2IfPduConstruction,
            wman2IfBsSsReqCapTtgTransitionGap       Wman2IfSsTransitionGap,
            wman2IfBsSsReqCapRtgTransitionGap       Wman2IfSsTransitionGap}

wman2IfBsSsReqCapUplinkCidSupport OBJECT-TYPE
        SYNTAX      Wman2IfNumOfUplinkCid
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "This object shows the number of Uplink CIDs the SS can
            support."
        ::= { wman2IfBsSsReqCapabilitiesEntry 1 }

wman2IfBsSsReqCapArqSupport OBJECT-TYPE
        SYNTAX      Wman2IfArqSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether the SS supports ARQ."
        ::= { wman2IfBsSsReqCapabilitiesEntry 2 }

wman2IfBsSsReqCapDsxFlowControl OBJECT-TYPE
        SYNTAX      Wman2IfMaxDsxFlowType
        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 }
        ::= { wman2IfBsSsReqCapabilitiesEntry 3 }

wman2IfBsSsReqCapMacCrcSupport OBJECT-TYPE
        SYNTAX      Wman2IfMacCrcSupport
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates whether or not the SS supports MAC
             level CRC."
        DEFVAL    { macCrcSupport }
        ::= { wman2IfBsSsReqCapabilitiesEntry 4 }

wman2IfBsSsReqCapMcaFlowControl OBJECT-TYPE
        SYNTAX      Wman2IfMaxMcaFlowType
        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 }
        ::= { wman2IfBsSsReqCapabilitiesEntry 5 }
```

```
wman2IfBsSsReqCapMcpGroupCidSupport OBJECT-TYPE
        SYNTAX      Wman2IfMaxMcpGroupCid
        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 }
        ::= { wman2IfBsSsReqCapabilitiesEntry 6 }


wman2IfBsSsReqCapPkmFlowControl OBJECT-TYPE
        SYNTAX      Wman2IfMaxPkmFlowType
        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 }
        ::= { wman2IfBsSsReqCapabilitiesEntry 7 }


wman2IfBsSsReqCapAuthPolicyControl OBJECT-TYPE
        SYNTAX      Wman2IfAuthPolicyType
        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."
        ::= { wman2IfBsSsReqCapabilitiesEntry 8 }


wman2IfBsSsReqCapMaxNumOfSupportedSA OBJECT-TYPE
        SYNTAX      Wman2IfMaxNumOfSaType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field specifies the maximum number of supported
             security associations of the SS."
        DEFVAL    { 1 }
        ::= { wman2IfBsSsReqCapabilitiesEntry 9 }


wman2IfBsSsReqCapIpVersion OBJECT-TYPE
        SYNTAX      Wman2IfIpVersionType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the version of IP used on the 2nd
             Management Connection. The value should be undefined
             if the 2nd management CID doesn't exist."
    ::= { wman2IfBsSsReqCapabilitiesEntry 10 }
```

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```
wman2IfBsSsReqCapMacCsSupportBitMap OBJECT-TYPE
        SYNTAX        Wman2IfMacCsBitMap
        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."
        ::= { wman2IfBsSsReqCapabilitiesEntry 11 }

wman2IfBsSsReqCapMaxNumOfClassifier OBJECT-TYPE
        SYNTAX        Wman2IfMaxClassifiers
        MAX-ACCESS   read-only
        STATUS        current
        DESCRIPTION
            "This object indicates the maximum number of admitted
             Classifiers that the SS can support."
        DEFVAL       { 0 }
        ::= { wman2IfBsSsReqCapabilitiesEntry 12 }

wman2IfBsSsReqCapPhsSupport OBJECT-TYPE
        SYNTAX        Wman2IfPhsSupportType
        MAX-ACCESS   read-only
        STATUS        current
        DESCRIPTION
            "This object indicates indicates the level of SS support
             for PHS."
        DEFVAL       { noPhsSupport }
        ::= { wman2IfBsSsReqCapabilitiesEntry 13 }

wman2IfBsSsReqCapBandwidthAllocSupport OBJECT-TYPE
        SYNTAX        Wman2IfBwAllocSupport
        MAX-ACCESS   read-only
        STATUS        current
        DESCRIPTION
            "This field indicates the bandwidth allocation
             capabilities of the SS. The usage is defined by
             Wman2IfBwAllocSupport."
        ::= { wman2IfBsSsReqCapabilitiesEntry 14 }

wman2IfBsSsReqCapPduConstruction OBJECT-TYPE
        SYNTAX        Wman2IfPduConstruction
        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 Wman2IfPduConstruction."
        ::= { wman2IfBsSsReqCapabilitiesEntry 15 }

wman2IfBsSsReqCapTtgTransitionGap OBJECT-TYPE
        SYNTAX        Wman2IfSsTransitionGap
        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
               Wman2IfSsTransitionGap."
          ::= { wman2IfBsSsReqCapabilitiesEntry 16 }


wman2IfBsSsReqCapRtgTransitionGap OBJECT-TYPE
          SYNTAX        Wman2IfSsTransitionGap
          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
               Wman2IfSsTransitionGap."
          ::= { wman2IfBsSsReqCapabilitiesEntry 17 }


wman2IfBsSsRspCapabilitiesTable OBJECT-TYPE
          SYNTAX        SEQUENCE OF Wman2IfBsSsRspCapabilitiesEntry
          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 wman2IfBsRegisteredSsTable."
          REFERENCE
              "Subclause 6.3.2.3.7 in IEEE Std 802.16-2004"
          ::= { wman2IfBsCapabilities 2 }


wman2IfBsSsRspCapabilitiesEntry OBJECT-TYPE
          SYNTAX        Wman2IfBsSsRspCapabilitiesEntry
          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
               wman2IfBsRegisteredSsTable. "
          AUGMENTS { wman2IfBsRegisteredSsEntry }
          ::= { wman2IfBsSsRspCapabilitiesTable 1 }


Wman2IfBsSsRspCapabilitiesEntry ::= SEQUENCE {
          wman2IfBsSsRspCapUplinkCidSupport        Wman2IfNumOfUplinkCid,
          wman2IfBsSsRspCapArqSupport              Wman2IfArqSupportType,
          wman2IfBsSsRspCapDsxFlowControl          Wman2IfMaxDsxFlowType,
          wman2IfBsSsRspCapMacCrcSupport           Wman2IfMacCrcSupport,
          wman2IfBsSsRspCapMcaFlowControl          Wman2IfMaxMcaFlowType,
          wman2IfBsSsRspCapMcpGroupCidSupport      Wman2IfMaxMcpGroupCid,
          wman2IfBsSsRspCapPkmFlowControl          Wman2IfMaxPkmFlowType,
          wman2IfBsSsRspCapAuthPolicyControl       Wman2IfAuthPolicyType,
          wman2IfBsSsRspCapMaxNumOfSupportedSA     Wman2IfMaxNumOfSaType,
          wman2IfBsSsRspCapIpVersion               Wman2IfIpVersionType,
          wman2IfBsSsRspCapMacCsSupportBitMap      Wman2IfMacCsBitMap,
```

```
        wman2IfBsSsRspCapMaxNumOfClassifier        Wman2IfMaxClassifiers,
        wman2IfBsSsRspCapPhsSupport                Wman2IfPhsSupportType,
        wman2IfBsSsRspCapBandwidthAllocSupport     Wman2IfBwAllocSupport,
        wman2IfBsSsRspCapPduConstruction           Wman2IfPduConstruction,
        wman2IfBsSsRspCapTtgTransitionGap          Wman2IfSsTransitionGap,
        wman2IfBsSsRspCapRtgTransitionGap          Wman2IfSsTransitionGap}


wman2IfBsSsRspCapUplinkCidSupport OBJECT-TYPE
        SYNTAX       Wman2IfNumOfUplinkCid
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Negotiated number of Uplink CIDs the SS can support."
        ::= { wman2IfBsSsRspCapabilitiesEntry 1 }


wman2IfBsSsRspCapArqSupport OBJECT-TYPE
        SYNTAX       Wman2IfArqSupportType
        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."
        ::= { wman2IfBsSsRspCapabilitiesEntry 2 }


wman2IfBsSsRspCapDsxFlowControl OBJECT-TYPE
        SYNTAX       Wman2IfMaxDsxFlowType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Negotiated maximum number of concurrent DSA, DSC, or DSD
             transactions that may be outstanding."
        ::= { wman2IfBsSsRspCapabilitiesEntry 3 }


wman2IfBsSsRspCapMacCrcSupport OBJECT-TYPE
        SYNTAX       Wman2IfMacCrcSupport
        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 }
        ::= { wman2IfBsSsRspCapabilitiesEntry 4 }


wman2IfBsSsRspCapMcaFlowControl OBJECT-TYPE
        SYNTAX       Wman2IfMaxMcaFlowType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Negotiated maximum number of concurrent
             MCA transactions that may be outstanding."
        DEFVAL    { 0 }
        ::= { wman2IfBsSsRspCapabilitiesEntry 5 }
```

```
wman2IfBsSsRspCapMcpGroupCidSupport OBJECT-TYPE
        SYNTAX      Wman2IfMaxMcpGroupCid
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated maximum number of simultaneous Multicast
            Polling Groups the SS is capable of belonging to."
        DEFVAL    { 0 }
        ::= { wman2IfBsSsRspCapabilitiesEntry 6 }

wman2IfBsSsRspCapPkmFlowControl OBJECT-TYPE
        SYNTAX      Wman2IfMaxPkmFlowType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated maximum number of concurrent PKM
            transactions that may be outstanding."
        DEFVAL    { 0 }
        ::= { wman2IfBsSsRspCapabilitiesEntry 7 }

wman2IfBsSsRspCapAuthPolicyControl OBJECT-TYPE
        SYNTAX      Wman2IfAuthPolicyType
        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."
        ::= { wman2IfBsSsRspCapabilitiesEntry 8 }

wman2IfBsSsRspCapMaxNumOfSupportedSA OBJECT-TYPE
        SYNTAX      Wman2IfMaxNumOfSaType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated maximum number of supported security
            association of the SS."
        DEFVAL    { 1 }
        ::= { wman2IfBsSsRspCapabilitiesEntry 9 }

wman2IfBsSsRspCapIpVersion OBJECT-TYPE
        SYNTAX      Wman2IfIpVersionType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Negotiated version of IP used on the 2nd Management
            Connection. The value should be undefined if the 2nd
            management CID doesn't exist."
    ::= { wman2IfBsSsRspCapabilitiesEntry 10 }

wman2IfBsSsRspCapMacCsSupportBitMap OBJECT-TYPE
```

```
 1              SYNTAX        Wman2IfMacCsBitMap
 2              MAX-ACCESS    read-only
 3              STATUS        current
 4              DESCRIPTION
 5                  "Negotiated set of MAC convergence sublayer support.
 6                   When a bit is set, it indicates the corresponding CS
 7                   feature is supported."
 8              ::= { wman2IfBsSsRspCapabilitiesEntry 11 }
 9
10
11     wman2IfBsSsRspCapMaxNumOfClassifier OBJECT-TYPE
12              SYNTAX        Wman2IfMaxClassifiers
13              MAX-ACCESS    read-only
14              STATUS        current
15              DESCRIPTION
16                  "Negotiated maximum number of admitted Classifiers
17                   that the SS is allowed to have."
18              DEFVAL        { 0 }
19              ::= { wman2IfBsSsRspCapabilitiesEntry 12 }
20
21
22     wman2IfBsSsRspCapPhsSupport OBJECT-TYPE
23              SYNTAX        Wman2IfPhsSupportType
24              MAX-ACCESS    read-only
25              STATUS        current
26              DESCRIPTION
27                  "This object indicates the negotiated level of PHS
28                   support."
29              DEFVAL        { noPhsSupport }
30              ::= { wman2IfBsSsRspCapabilitiesEntry 13 }
31
32
33     wman2IfBsSsRspCapBandwidthAllocSupport OBJECT-TYPE
34              SYNTAX        Wman2IfBwAllocSupport
35              MAX-ACCESS    read-only
36              STATUS        current
37              DESCRIPTION
38                  "This field indicates negotiated properties of the SS
39                   for bandwidth allocation purposes. The usage is defined
40                   by Wman2IfBwAllocSupport."
41              ::= { wman2IfBsSsRspCapabilitiesEntry 14 }
42
43
44     wman2IfBsSsRspCapPduConstruction OBJECT-TYPE
45              SYNTAX        Wman2IfPduConstruction
46              MAX-ACCESS    read-only
47              STATUS        current
48              DESCRIPTION
49                  "Specifies negotiated capabilities for construction and
50                   transmission of MAC PDUs. The usage is defined by
51                   Wman2IfPduConstruction."
52              ::= { wman2IfBsSsRspCapabilitiesEntry 15 }
53
54
55     wman2IfBsSsRspCapTtgTransitionGap OBJECT-TYPE
56              SYNTAX        Wman2IfSsTransitionGap
57              UNITS         "us"
58              MAX-ACCESS    read-only
59              STATUS        current
```

```
         DESCRIPTION
              "This field indicates the negotiated transition speed
               SSTTG for TDD and H-FDD SSs. The usage is defined by
               Wman2IfSsTransitionGap."
         ::= { wman2IfBsSsRspCapabilitiesEntry 16 }


wman2IfBsSsRspCapRtgTransitionGap OBJECT-TYPE
         SYNTAX       Wman2IfSsTransitionGap
         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
               Wman2IfSsTransitionGap."
         ::= { wman2IfBsSsRspCapabilitiesEntry 17 }


wman2IfBsBasicCapabilitiesTable OBJECT-TYPE
         SYNTAX       SEQUENCE OF Wman2IfBsBasicCapabilitiesEntry
         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
               (wman2IfBsCapabilitiesConfigTable) are used for negotiation
               of basic capabilities with SS using RNG-RSP, SBC-RSP and
               REG-RSP messages. The negotiated capabilities are obtained
               by interSubclause 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."
         ::= { wman2IfBsCapabilities 3 }


wman2IfBsBasicCapabilitiesEntry OBJECT-TYPE
         SYNTAX       Wman2IfBsBasicCapabilitiesEntry
         MAX-ACCESS   not-accessible
         STATUS       current
         DESCRIPTION
              "This table provides one row for each BS sector and is
               indexed by ifIndex."
         INDEX { ifIndex }
         ::= { wman2IfBsBasicCapabilitiesTable 1 }


Wman2IfBsBasicCapabilitiesEntry ::= SEQUENCE {
         wman2IfBsCapUplinkCidSupport                Wman2IfNumOfUplinkCid,
         wman2IfBsCapArqSupport                      Wman2IfArqSupportType,
         wman2IfBsCapDsxFlowControl                  Wman2IfMaxDsxFlowType,
         wman2IfBsCapMacCrcSupport                   Wman2IfMacCrcSupport,
         wman2IfBsCapMcaFlowControl                  Wman2IfMaxMcaFlowType,
         wman2IfBsCapMcpGroupCidSupport              Wman2IfMaxMcpGroupCid,
         wman2IfBsCapPkmFlowControl                  Wman2IfMaxPkmFlowType,
         wman2IfBsCapAuthPolicyControl               Wman2IfAuthPolicyType,
         wman2IfBsCapMaxNumOfSupportedSA             Wman2IfMaxNumOfSaType,
```

```
          wman2IfBsCapIpVersion                     Wman2IfIpVersionType,
          wman2IfBsCapMacCsSupportBitMap            Wman2IfMacCsBitMap,
          wman2IfBsCapMaxNumOfClassifier            Wman2IfMaxClassifiers,
          wman2IfBsCapPhsSupport                    Wman2IfPhsSupportType,
          wman2IfBsCapBandwidthAllocSupport         Wman2IfBwAllocSupport,
          wman2IfBsCapPduConstruction               Wman2IfPduConstruction,
          wman2IfBsCapTtgTransitionGap              Wman2IfSsTransitionGap,
          wman2IfBsCapRtgTransitionGap              Wman2IfSsTransitionGap}

wman2IfBsCapUplinkCidSupport OBJECT-TYPE
          SYNTAX       Wman2IfNumOfUplinkCid
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
              "This object shows the number of Uplink CIDs the BS can
               support per SS."
          ::= { wman2IfBsBasicCapabilitiesEntry 1 }

wman2IfBsCapArqSupport OBJECT-TYPE
          SYNTAX       Wman2IfArqSupportType
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
              "This object indicates whether the BS supports ARQ."
          ::= { wman2IfBsBasicCapabilitiesEntry 2 }

wman2IfBsCapDsxFlowControl OBJECT-TYPE
          SYNTAX       Wman2IfMaxDsxFlowType
          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 }
          ::= { wman2IfBsBasicCapabilitiesEntry 3 }

wman2IfBsCapMacCrcSupport OBJECT-TYPE
          SYNTAX       Wman2IfMacCrcSupport
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
              "This object indicates whether or not the BS supports MAC
               level CRC."
          DEFVAL    { macCrcSupport }
          ::= { wman2IfBsBasicCapabilitiesEntry 4 }

wman2IfBsCapMcaFlowControl OBJECT-TYPE
          SYNTAX       Wman2IfMaxMcaFlowType
          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 }
        ::= { wman2IfBsBasicCapabilitiesEntry 5 }


wman2IfBsCapMcpGroupCidSupport OBJECT-TYPE
        SYNTAX      Wman2IfMaxMcpGroupCid
        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 }
        ::= { wman2IfBsBasicCapabilitiesEntry 6 }


wman2IfBsCapPkmFlowControl OBJECT-TYPE
        SYNTAX      Wman2IfMaxPkmFlowType
        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 }
        ::= { wman2IfBsBasicCapabilitiesEntry 7 }


wman2IfBsCapAuthPolicyControl OBJECT-TYPE
        SYNTAX      Wman2IfAuthPolicyType
        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."
        ::= { wman2IfBsBasicCapabilitiesEntry 8 }


wman2IfBsCapMaxNumOfSupportedSA OBJECT-TYPE
        SYNTAX      Wman2IfMaxNumOfSaType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field specifies maximum number of supported security
             associations per SS that the BS allows."
        DEFVAL    { 1 }
        ::= { wman2IfBsBasicCapabilitiesEntry 9 }


wman2IfBsCapIpVersion OBJECT-TYPE
        SYNTAX      Wman2IfIpVersionType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the version of IP BS allows each SS
             to use on the 2nd Management Connection. The value
```

```
                        'undefined' should not be used for this field."
            REFERENCE
                "Subclause 11.7.4 in IEEE Std 802.16-2004"
     ::= { wman2IfBsBasicCapabilitiesEntry 10 }


wman2IfBsCapMacCsSupportBitMap OBJECT-TYPE
        SYNTAX      Wman2IfMacCsBitMap
        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."
        ::= { wman2IfBsBasicCapabilitiesEntry 11 }


wman2IfBsCapMaxNumOfClassifier OBJECT-TYPE
        SYNTAX      Wman2IfMaxClassifiers
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the maximum number of admitted
             Classifiers per SS that the BS allows."
        DEFVAL      { 0 }
        ::= { wman2IfBsBasicCapabilitiesEntry 12 }


wman2IfBsCapPhsSupport OBJECT-TYPE
        SYNTAX      Wman2IfPhsSupportType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the level of BS support for PHS.
             The usage is defined by Wman2IfPhsSupportType."
        DEFVAL      { noPhsSupport }
        ::= { wman2IfBsBasicCapabilitiesEntry 13 }


wman2IfBsCapBandwidthAllocSupport OBJECT-TYPE
        SYNTAX      Wman2IfBwAllocSupport
        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
             Wman2IfBwAllocSupport."
        ::= { wman2IfBsBasicCapabilitiesEntry 14 }


wman2IfBsCapPduConstruction OBJECT-TYPE
        SYNTAX      Wman2IfPduConstruction
        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 Wman2IfPduConstruction."
        ::= { wman2IfBsBasicCapabilitiesEntry 15 }
```

```
wman2IfBsCapTtgTransitionGap OBJECT-TYPE
        SYNTAX      Wman2IfSsTransitionGap
        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
             Wman2IfSsTransitionGap."
        ::= { wman2IfBsBasicCapabilitiesEntry 16 }

wman2IfBsCapRtgTransitionGap OBJECT-TYPE
        SYNTAX      Wman2IfSsTransitionGap
        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 Wman2IfSsTransitionGap."
        ::= { wman2IfBsBasicCapabilitiesEntry 17 }

wman2IfBsCapabilitiesConfigTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfBsCapabilitiesConfigEntry
        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 (wman2IfBsBasicCapabilitiesTable) for
             negotiation of basic capabilities with SS using RNG-RSP,
             SBC-RSP and REG-RSP messages. The negotiated capabilities
             are obtained by interSubclause 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 wman2IfBsBasicCapabilitiesTable
             and can be modified by NMS."
        ::= { wman2IfBsCapabilities 4 }

wman2IfBsCapabilitiesConfigEntry OBJECT-TYPE
        SYNTAX      Wman2IfBsCapabilitiesConfigEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each BS sector and is
             indexed by ifIndex."
        INDEX { ifIndex }
        ::= { wman2IfBsCapabilitiesConfigTable 1 }

Wman2IfBsCapabilitiesConfigEntry ::= SEQUENCE {
```

```
        wman2IfBsCapCfgUplinkCidSupport          Wman2IfNumOfUplinkCid,
        wman2IfBsCapCfgArqSupport                Wman2IfArqSupportType,
        wman2IfBsCapCfgDsxFlowControl            Wman2IfMaxDsxFlowType,
        wman2IfBsCapCfgMacCrcSupport             Wman2IfMacCrcSupport,
        wman2IfBsCapCfgMcaFlowControl            Wman2IfMaxMcaFlowType,
        wman2IfBsCapCfgMcpGroupCidSupport        Wman2IfMaxMcpGroupCid,
        wman2IfBsCapCfgPkmFlowControl            Wman2IfMaxPkmFlowType,
        wman2IfBsCapCfgAuthPolicyControl         Wman2IfAuthPolicyType,
        wman2IfBsCapCfgMaxNumOfSupportedSA       Wman2IfMaxNumOfSaType,
        wman2IfBsCapCfgIpVersion                 Wman2IfIpVersionType,
        wman2IfBsCapCfgMacCsSupportBitMap        Wman2IfMacCsBitMap,
        wman2IfBsCapCfgMaxNumOfClassifier        Wman2IfMaxClassifiers,
        wman2IfBsCapCfgPhsSupport                Wman2IfPhsSupportType,
        wman2IfBsCapCfgBandwidthAllocSupport     Wman2IfBwAllocSupport,
        wman2IfBsCapCfgPduConstruction           Wman2IfPduConstruction,
        wman2IfBsCapCfgTtgTransitionGap          Wman2IfSsTransitionGap,
        wman2IfBsCapCfgRtgTransitionGap          Wman2IfSsTransitionGap}

wman2IfBsCapCfgUplinkCidSupport OBJECT-TYPE
        SYNTAX      Wman2IfNumOfUplinkCid
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object shows the configured number of Uplink CIDs the
             BS can support per SS."
        ::= { wman2IfBsCapabilitiesConfigEntry 1 }

wman2IfBsCapCfgArqSupport OBJECT-TYPE
        SYNTAX      Wman2IfArqSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates whether the BS is configured to
             support ARQ."
        ::= { wman2IfBsCapabilitiesConfigEntry 2 }

wman2IfBsCapCfgDsxFlowControl OBJECT-TYPE
        SYNTAX      Wman2IfMaxDsxFlowType
        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 }
        ::= { wman2IfBsCapabilitiesConfigEntry 3 }

wman2IfBsCapCfgMacCrcSupport OBJECT-TYPE
        SYNTAX      Wman2IfMacCrcSupport
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates whether BS is configured to support
             MAC level CRC."
```

```
         DEFVAL     { macCrcSupport }
         ::= { wman2IfBsCapabilitiesConfigEntry 4 }


wman2IfBsCapCfgMcaFlowControl OBJECT-TYPE
         SYNTAX      Wman2IfMaxMcaFlowType
         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 }
         ::= { wman2IfBsCapabilitiesConfigEntry 5 }


wman2IfBsCapCfgMcpGroupCidSupport OBJECT-TYPE
         SYNTAX      Wman2IfMaxMcpGroupCid
         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 }
         ::= { wman2IfBsCapabilitiesConfigEntry 6 }


wman2IfBsCapCfgPkmFlowControl OBJECT-TYPE
         SYNTAX      Wman2IfMaxPkmFlowType
         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 }
         ::= { wman2IfBsCapabilitiesConfigEntry 7 }


wman2IfBsCapCfgAuthPolicyControl OBJECT-TYPE
         SYNTAX      Wman2IfAuthPolicyType
         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."
         ::= { wman2IfBsCapabilitiesConfigEntry 8 }


wman2IfBsCapCfgMaxNumOfSupportedSA OBJECT-TYPE
         SYNTAX      Wman2IfMaxNumOfSaType
         MAX-ACCESS  read-write
         STATUS      current
         DESCRIPTION
```

```
              "This field specifies configured maximum number of supported
                 security association per SS."
          DEFVAL    { 1 }
          ::= { wman2IfBsCapabilitiesConfigEntry 9 }


wman2IfBsCapCfgIpVersion OBJECT-TYPE
        SYNTAX      Wman2IfIpVersionType
        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 2nd Management Connection.
             The value 'undefined' should not be used in this field."
    ::= { wman2IfBsCapabilitiesConfigEntry 10 }


wman2IfBsCapCfgMacCsSupportBitMap OBJECT-TYPE
        SYNTAX      Wman2IfMacCsBitMap
        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."
          ::= { wman2IfBsCapabilitiesConfigEntry 11 }


wman2IfBsCapCfgMaxNumOfClassifier OBJECT-TYPE
        SYNTAX      Wman2IfMaxClassifiers
        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 }
          ::= { wman2IfBsCapabilitiesConfigEntry 12 }


wman2IfBsCapCfgPhsSupport OBJECT-TYPE
        SYNTAX      Wman2IfPhsSupportType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object indicates the configured level of BS support
             for PHS."
          DEFVAL    { noPhsSupport }
          ::= { wman2IfBsCapabilitiesConfigEntry 13 }


wman2IfBsCapCfgBandwidthAllocSupport OBJECT-TYPE
        SYNTAX      Wman2IfBwAllocSupport
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates configured properties of the BS for
             bandwidth allocation purposes. The usage is defined by
             Wman2IfCapBwAllocSupport."
          ::= { wman2IfBsCapabilitiesConfigEntry 14 }
```

```
wman2IfBsCapCfgPduConstruction OBJECT-TYPE
        SYNTAX       Wman2IfPduConstruction
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Specifies configured capabilities for construction and
             transmission of MAC PDUs. The usage is defined by
             Wman2IfPduConstruction."
        ::= { wman2IfBsCapabilitiesConfigEntry 15 }

wman2IfBsCapCfgTtgTransitionGap OBJECT-TYPE
        SYNTAX       Wman2IfSsTransitionGap
        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
             Wman2IfSsTransitionGap."
        ::= { wman2IfBsCapabilitiesConfigEntry 16 }

wman2IfBsCapCfgRtgTransitionGap OBJECT-TYPE
        SYNTAX       Wman2IfSsTransitionGap
        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
             Wman2IfSsTransitionGap."
        ::= { wman2IfBsCapabilitiesConfigEntry 17 }

wman2IfBsSsActionsTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF Wman2IfBsSsActionsEntry
        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."
        ::= { wman2IfBsCps 5 }

wman2IfBsSsActionsEntry OBJECT-TYPE
        SYNTAX       Wman2IfBsSsActionsEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table is indexed by wman2IfBsSsActionsMacAddress. 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
```

```
1                      it or skip it as defined in each action definition."
2              INDEX { wman2IfBsSsActionsMacAddress }
3              ::= { wman2IfBsSsActionsTable 1 }
4
5
6      Wman2IfBsSsActionsEntry ::= SEQUENCE {
7              wman2IfBsSsActionsMacAddress            MacAddress,
8              wman2IfBsSsActionsResetSs               INTEGER,
9              wman2IfBsSsActionsAbortSs               INTEGER,
10             wman2IfBsSsActionsOverrideDnFreq        Unsigned32,
11             wman2IfBsSsActionsOverrideChannelId     INTEGER,
12             wman2IfBsSsActionsDeReRegSs             INTEGER,
13             wman2IfBsSsActionsDeReRegSsCode         INTEGER,
14             wman2IfBsSsActionsRowStatus             RowStatus}
15
16
17
18     wman2IfBsSsActionsMacAddress OBJECT-TYPE
19             SYNTAX      MacAddress
20             MAX-ACCESS  not-accessible
21             STATUS      current
22             DESCRIPTION
23
24                 "This object uniquely identifies the SS as an action
25                  target."
26             ::= { wman2IfBsSsActionsEntry 1 }
27
28
29     wman2IfBsSsActionsResetSs OBJECT-TYPE
30             SYNTAX      INTEGER {actionsResetSsNoAction(0),
31                             actionsResetSs(1)}
32             MAX-ACCESS  read-create
33             STATUS      current
34             DESCRIPTION
35
36                 "This object should be implemented as follows:
37                  - When set to actionsResetSs value, instructs BS to send
38                    RES-CMD to SS
39                  - When set to value different than actionsResetSs it
40                    should be ignored
41                  - When read it should return actionsResetSsNoAction
42                  The RES-CMD message shall be transmitted by the BS on an
43                  SS Basic CID to force the SS to reset itself,
44                  reinitialize its MAC, and repeat initial system access."
45             REFERENCE
46                 "Subclause 6.3.2.3.22 in IEEE Std 802.16-2004"
47             ::= { wman2IfBsSsActionsEntry 2 }
48
49
50
51     wman2IfBsSsActionsAbortSs OBJECT-TYPE
52             SYNTAX      INTEGER {actionsAbortSsNoAction(0),
53                             actionsAbortSs(1),
54                             actionAbortSsParams(2)}
55
56
57             MAX-ACCESS  read-create
58             STATUS      current
59             DESCRIPTION
60                 "This object should be implemented as follows:
61                  - When set to actionsAbortSs value, it instructs BS to send
62                    unsolicited RNG-RSP with Ranging Status equal to 'abort'
63                    without override parameters
64
65
```

```
                          - 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
                      "Subclause 11.6, Table 365 in IEEE Std 802.16-2004"
                  ::= { wman2IfBsSsActionsEntry 3 }

          wman2IfBsSsActionsOverrideDnFreq 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 licensed
                       bands only. It defines the Center frequency, in kHz, of
                       new downlink channel where the SS should redo initial
                       ranging."
                  REFERENCE
                      "Subclause 11.6, Table 365 in IEEE Std 802.16-2004"
                  ::= { wman2IfBsSsActionsEntry 4 }

          wman2IfBsSsActionsOverrideChannelId 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
                      "Subclause 11.6, Table 365 in IEEE Std 802.16-2004"
                  ::= { wman2IfBsSsActionsEntry 5 }

          wman2IfBsSsActionsDeReRegSs 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 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
                    wman2IfBsSsActionsDeReRegSsCode."
            REFERENCE
                "Subclause 6.3.2.3.26 in IEEE Std 802.16-2004"
            ::= { wman2IfBsSsActionsEntry 6 }

wman2IfBsSsActionsDeReRegSsCode OBJECT-TYPE
        SYNTAX        INTEGER {actionsDeReRegSsCodeChangeChan(0),
                                actionsDeReRegSsCodeNoTransmit(1),
                                actionsDeReRegSsCodeLtdTransmit(2),
                                actionsDeReRegSsCodeResume(3)}
        MAX-ACCESS  read-create
        STATUS        current
        DESCRIPTION
            "This object defines the action code for
            wman2IfBsSsActionsDeReRegSs 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 2nd Management Connections.
            actionsDeReRegSsCodeResume - SS shall return to normal
                operation and may transmit on any of its active
                connections."
        REFERENCE
            "Subclause 6.3.2.3.26, Table 55 in IEEE Std 802.16-2004"
        ::= { wman2IfBsSsActionsEntry 7 }

wman2IfBsSsActionsRowStatus 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."
        ::= { wman2IfBsSsActionsEntry 8 }

--
-- wman2IfBsMsPowerSavingStatusTable contains the power saving status
--
wman2IfBsMsPowerSavingStatusTable OBJECT-TYPE
        SYNTAX        SEQUENCE OF Wman2IfBsMsPowerSavingStatusEntry
        MAX-ACCESS  not-accessible
        STATUS        current
        DESCRIPTION
            "This table contains the power saving status for each CID
```

```
                        in an MS. When the BS roams to a different BS, all entries
                        associated with such MS will be deleted."
                ::= { wman2IfBsCps 6 }


wman2IfBsMsPowerSavingStatusEntry OBJECT-TYPE
        SYNTAX      Wman2IfBsMsPowerSavingStatusEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each CID in an MS, and
                is indexed by ifIndex, wman2IfBsSsMacAddress, and
                wman2IfBsMsCid."
        INDEX     { ifIndex,
                    wman2IfBsSsMacAddress,
                    wman2IfBsMsCid  }
        ::= { wman2IfBsMsPowerSavingStatusTable 1 }


Wman2IfBsMsPowerSavingStatusEntry::= SEQUENCE {
        wman2IfBsMsCid                            Wman2IfCidType,
        wman2IfBsMsPowerSavingClassId       Wman2IfPsClassId}


wman2IfBsMsCid OBJECT-TYPE
        SYNTAX      Wman2IfCidType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "A 16 bit channel identifier to identify a connection."
        ::= { wman2IfBsMsPowerSavingStatusEntry 1 }


wman2IfBsMsPowerSavingClassId OBJECT-TYPE
        SYNTAX      Wman2IfPsClassId
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "wman2IfBsMsPowerSavingClassId identifies the power
             saving class associated with this CID. It maps to an
             entry in wman2IfBsMsPowerSavingClassesTable."
        ::= { wman2IfBsMsPowerSavingStatusEntry 2 }


--
-- wman2IfBsMsPowerSavingClassesTable contains the power saving classes
-- information
--
wman2IfBsMsPowerSavingClassesTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfBsMsPowerSavingClassesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the power saving classes definitions,
             and activation / deactivation information that are provided
             by MOB_SLP-REQ and MOB_SLP-RSP messages. When the BS roams
             to a different BS, all entries associated with such MS will
             be deleted."
        ::= { wman2IfBsCps 7 }
```

```
wman2IfBsMsPowerSavingClassesEntry OBJECT-TYPE
        SYNTAX        Wman2IfBsMsPowerSavingClassesEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "This table is indexed by ifIndex, wman2IfBsSsMacAddress,
             and wman2IfBsMsPsClassesId. It is intended to support both
             unicast and multicast service flows.
             wman2IfBsSsMacAddress contains the MAC address of the MS
             to which the power saving classes are associated."
        INDEX { ifIndex,
                wman2IfBsSsMacAddress,
                wman2IfBsMsPsClassId }
        ::= { wman2IfBsMsPowerSavingClassesTable 1 }

Wman2IfBsMsPowerSavingClassesEntry ::= SEQUENCE {
        wman2IfBsMsPsClassId                   Wman2IfPsClassId,
        wman2IfBsMsStartFrameNumber            INTEGER,
        wman2IfBsMsPowerSavingClassType        Wman2PsClassType,
       wman2IfBsMsPsClassCidDirection          Wman2PsClassCidDirection,
        wman2IfBsMsTrafficTrigeredWakening     INTEGER,
        wman2IfBsMsInitialSleepWindow          INTEGER,
        wman2IfBsMsFinalSleepWindowBase        INTEGER,
        wman2IfBsMsFinalSleepWindowExponent    INTEGER,
        wman2IfBsMsLinteningWindow             INTEGER,
        wman2IfBsMsPowerSavingMode             Wman2IfPowerSavingMode,
        wman2IfBsMsSlpId                       INTEGER}

wman2IfBsMsPsClassId OBJECT-TYPE
        SYNTAX        Wman2IfPsClassId
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "This object uniquely identifies the power saving classes
             in a MS."
        ::= { wman2IfBsMsPowerSavingClassesEntry 1 }

wman2IfBsMsStartFrameNumber OBJECT-TYPE
        SYNTAX        INTEGER
        MAX-ACCESS    read-write
        STATUS        current
        DESCRIPTION
            "Start frame number for first sleep window."
        REFERENCE
            "Subclause 6.3.2.3.44 in IEEE Std 802.16e-2005"
        ::= { wman2IfBsMsPowerSavingClassesEntry 2 }

wman2IfBsMsPowerSavingClassType OBJECT-TYPE
        SYNTAX        Wman2PsClassType
        MAX-ACCESS    read-write
        STATUS        current
        DESCRIPTION
            "Power saving classes type I - BE & NRT-VR,
```

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```
                    Power saving classes type II - UGS & RT-VR,
                    Power saving classes type III - multicast, management CID"
         REFERENCE
             "Subclause 6.3.21.2-4, in IEEE Std 802.16e-2005"
         ::= { wman2IfBsMsPowerSavingClassesEntry 3 }

wman2IfBsMsPsClassCidDirection OBJECT-TYPE
         SYNTAX      Wman2PsClassCidDirection
         MAX-ACCESS  read-write
         STATUS      current
         DESCRIPTION
             "The direction of power saving class's CIDs."
         REFERENCE
             "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
         ::= { wman2IfBsMsPowerSavingClassesEntry 4 }

wman2IfBsMsTrafficTrigeredWakening OBJECT-TYPE
         SYNTAX      INTEGER (0..1)
         MAX-ACCESS  read-write
         STATUS      current
         DESCRIPTION
             "0 = Power Saving Class shall not be deactivated if
              traffic appears at the connection as per 6.3.19.2.
              1 = Power Saving Class shall be deactivated if
              traffic appears at the connection as 6.3.19.2."
         REFERENCE
             "Subclause 6.3.19.2, in IEEE Std 802.16e-2005"
         ::= { wman2IfBsMsPowerSavingClassesEntry 5 }

wman2IfBsMsInitialSleepWindow OBJECT-TYPE
         SYNTAX      INTEGER (0..255)
         UNITS       "frame"
         MAX-ACCESS  read-write
         STATUS      current
         DESCRIPTION
             "The initial duration for the sleep window. It is not
              relevant for Power Saving Class type III, and shall
              return '0'."
         REFERENCE
             "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
         ::= { wman2IfBsMsPowerSavingClassesEntry 6 }

wman2IfBsMsFinalSleepWindowBase OBJECT-TYPE
         SYNTAX      INTEGER (0..1023)
         UNITS       "frame"
         MAX-ACCESS  read-write
         STATUS      current
         DESCRIPTION
             "The final value for the sleep interval. It is not
              relevant for Power Saving Class type II, and shall
              return '0'. For Power Saving Class type III, it is the
              base for duration of single sleep window request."
         REFERENCE
             "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
```

```
                     ::= { wman2IfBsMsPowerSavingClassesEntry 7 }


wman2IfBsMsFinalSleepWindowExponent OBJECT-TYPE
        SYNTAX      INTEGER (0..7)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The factor by which the final-sleep window base is
             multiplied in order to calculate the final-sleep window.
             The following formula is used:
             final-sleep window = final-sleep window base x
                                  2^(final-sleep window exponent)
             For Power Saving Class type III, it is the exponent for
             the duration of single sleep window request."
        REFERENCE
            "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
        ::= { wman2IfBsMsPowerSavingClassesEntry 8 }


wman2IfBsMsLinteningWindow OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        UNITS       "frame"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The Duration of MS listening window. It is not
             relevant for Power Saving Class type III, and shall
             return '0'."
        REFERENCE
            "Subclause 6.3.2.3.44, in IEEE Std 802.16e-2005"
        ::= { wman2IfBsMsPowerSavingClassesEntry 9 }


wman2IfBsMsPowerSavingMode OBJECT-TYPE
        SYNTAX      Wman2IfPowerSavingMode
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Indicate whether the power saving class mode of such
             CID is active or not.
             wman2IfBsMsPowerSavingMode = Sleep_Approved && Operation."
        REFERENCE
            "Subclause 6.3.2.3.45, in IEEE Std 802.16e-2005"
        ::= { wman2IfBsMsPowerSavingClassesEntry 10 }


wman2IfBsMsSlpId OBJECT-TYPE
        SYNTAX      INTEGER (0..1023)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "wman2IfBsMsSlpId is assigned by the BS whenever an MS is
             instructed to enter sleep mode. This number shall be unique
             among all MSs that are in sleep mode."
        REFERENCE
            "Subclause 6.3.2.3.45, in IEEE Std 802.16e-2005"
        ::= { wman2IfBsMsPowerSavingClassesEntry 11 }
```

```
         --
         -- Mobile Station Sleep Mode Statistics Table
         --
         wman2IfBsMsSleepModeStatisticsTable OBJECT-TYPE
                 SYNTAX       SEQUENCE OF   Wman2IfBsMsSleepModeStatisticsEntry
                 MAX-ACCESS   not-accessible
                 STATUS       current
                 DESCRIPTION
                     "This table contains the sleep mode statistic for MS. This
                      table shall be maintained as FIFO to store the sleep mode
                      statistics over a period of time that is subject to
                      implementation. This statistics information can be to
                      monitor, fine tuning, or debugging the power saving
                      performance of each MS. When the statistics entry for an
                      MS reaches the limit, it wraps around to the beginning, and
                      overwrites the oldest entry with the new entry. When the BS
                      roams to a different BS, all entries associated with such
                      MS will be deleted."
                 REFERENCE
                     "6.3.21 in IEEE Std 802.16e-2005"
                 ::= { wman2IfBsCps 8 }

         wman2IfBsMsSleepModeStatisticsEntry OBJECT-TYPE
                 SYNTAX       Wman2IfBsMsSleepModeStatisticsEntry
                 MAX-ACCESS   not-accessible
                 STATUS       current
                 DESCRIPTION
                     "Each entry in the table contains the event of an MS
                      entering the sleep mode. It is indexed by ifIndex,
                      wman2IfBsSsMacAddress, and wman2IfBsMsStatisticsIndex.
                      wman2IfBsMsStatisticsIndex is the index to sleep mode event
                      entry in the table, and should be increased monotonically,
                      and wraps around when it reaches the implementation
                      specific limit. A time stamp is provided in each entry to
                      indicate when the sleep mode event took place."
                 INDEX        { ifIndex,
                                wman2IfBsSsMacAddress,
                                wman2IfBsMsCid,
                                wman2IfBsMsStatisticsIndex }
                 ::= { wman2IfBsMsSleepModeStatisticsTable  1 }

         Wman2IfBsMsSleepModeStatisticsEntry ::= SEQUENCE {
                 wman2IfBsMsStatisticsIndex              Unsigned32,
                 wman2IfBsMsSleepWindowStarted           Unsigned32,
                 wman2IfBsMsListeningWindowStarted       Unsigned32,
                 wman2IfBsMsPendingMsdu                  INTEGER,
                 wman2IfBsMsSleepWindowTimeStamp         DateAndTime}

         wman2IfBsMsStatisticsIndex OBJECT-TYPE
                 SYNTAX       Unsigned32 (1 .. 4294967295)
                 MAX-ACCESS   read-only
                 STATUS       current
                 DESCRIPTION
```

```
                    "wman2IfBsMsStatisticsIndex identifies the entry in the
                     table where the latest sleep mode event took place."
              ::= { wman2IfBsMsSleepModeStatisticsEntry 1 }


wman2IfBsMsSleepWindowStarted OBJECT-TYPE
        SYNTAX      Unsigned32 (1 .. 166777215)
        UNITS       "frame"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "wman2IfBsMsSleepWindowStarted identifies when the sleep
             mode is activated.
             wman2IfBsMsSleepWindowStarted = current frame number +
                                             Start_frame_number.
            The frame number is provided in the DL-MAP, and is
            incremented by 1 MOD 2^24 each frame."
        ::= { wman2IfBsMsSleepModeStatisticsEntry 2 }


wman2IfBsMsListeningWindowStarted OBJECT-TYPE
        SYNTAX      Unsigned32 (1 .. 166777215)
        UNITS       "frame"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "wman2IfBsMsListeningWindowStarted identifies when the sleep
             mode is deactivated.
             wman2IfBsMsListeningWindowStarted =
             wman2IfBsMsListeningWindowStarted + sleep window
            The frame number is provided in the DL-MAP, and is
            incremented by 1 MOD 2^24 each frame."
        ::= { wman2IfBsMsSleepModeStatisticsEntry 3 }


wman2IfBsMsPendingMsdu OBJECT-TYPE
        SYNTAX      INTEGER
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Indicate the number of MAC SDU that are received from the
             network during the sleep window."
        ::= { wman2IfBsMsSleepModeStatisticsEntry 4 }


wman2IfBsMsSleepWindowTimeStamp OBJECT-TYPE
        SYNTAX      DateAndTime
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This is the time when sleep window is started in seconds.
             The definition of time is as in IETF RFC 868."
        ::= { wman2IfBsMsSleepModeStatisticsEntry 5 }


--
-- Base station PKM group
-- wman2IfBsPkmObjects contain the Base Station Privacy Sublayer objects
--
```

```
wman2IfBsPkmObjects OBJECT IDENTIFIER ::= { wman2IfBsObjects  3 }


--
-- Table wman2IfBsPkmBaseTable
--
wman2IfBsPkmBaseTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF   Wman2IfBsPkmBaseEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table describes the basic PKM attributes of each Base
             Station wireless interface."
        ::= { wman2IfBsPkmObjects  1 }

wman2IfBsPkmBaseEntry OBJECT-TYPE
        SYNTAX       Wman2IfBsPkmBaseEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "Each entry contains objects describing attributes of one
             BS wireless interface."
        INDEX        { ifIndex }
        ::= { wman2IfBsPkmBaseTable  1 }

Wman2IfBsPkmBaseEntry ::= SEQUENCE {
        wman2IfBsPkmDefaultAuthLifetime        Integer32,
        wman2IfBsPkmDefaultTekLifetime         Integer32,
        wman2IfBsPkmDefaultSelfSigManufCertTrust INTEGER,
        wman2IfBsPkmCheckCertValidityPeriods   TruthValue,
        wman2IfBsPkmAuthentInfos               Counter32,
        wman2IfBsPkmAuthRequests               Counter32,
        wman2IfBsPkmAuthReplies                Counter32,
        wman2IfBsPkmAuthRejects                Counter32,
        wman2IfBsPkmAuthInvalids               Counter32}

wman2IfBsPkmDefaultAuthLifetime OBJECT-TYPE
        SYNTAX       Integer32 (86400..6048000)
        UNITS        "seconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "The value of this object is the default lifetime, in
             seconds, the BS assigns to a new authorization key."
        REFERENCE
            "Table 341 in IEEE Std 802.16-2004"
        DEFVAL       { 604800 }
        ::= { wman2IfBsPkmBaseEntry 1 }

wman2IfBsPkmDefaultTekLifetime OBJECT-TYPE
        SYNTAX       Integer32 (1800..604800)
        UNITS        "seconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
```

```
                        "The value of this object is the default lifetime, in
                         seconds, the BS assigns to a new Traffic Encryption
                         Key(TEK)."
                REFERENCE
                    "Table 341 in IEEE Std 802.16-2004"
                DEFVAL          { 43200 }
                ::= { wman2IfBsPkmBaseEntry 2 }


wman2IfBsPkmDefaultSelfSigManufCertTrust OBJECT-TYPE
                SYNTAX      INTEGER {trusted (1),
                                    untrusted (2)}
                MAX-ACCESS  read-write
                STATUS      current
                DESCRIPTION
                    "This object determines the default trust of all (new)
                     self-signed manufacturer certificates obtained after
                     setting the object."
                ::= { wman2IfBsPkmBaseEntry 3 }

wman2IfBsPkmCheckCertValidityPeriods OBJECT-TYPE
                SYNTAX      TruthValue
                MAX-ACCESS  read-write
                STATUS      current
                DESCRIPTION
                    "Setting this object to TRUE causes all certificates
                     received thereafter to have their validity periods (and
                     their chain's validity periods) checked against the current
                     time of day. A FALSE setting will cause all certificates
                     received Thereafter to not have their validity periods
                     (nor their chain's validity periods) checked against the
                     current time of day."
                ::= { wman2IfBsPkmBaseEntry 4 }

wman2IfBsPkmAuthentInfos OBJECT-TYPE
                SYNTAX      Counter32
                MAX-ACCESS  read-only
                STATUS      current
                DESCRIPTION
                    "The value of this object is the count of times the BS has
                     received an Authentication Information message from any
                     SS."
                ::= { wman2IfBsPkmBaseEntry 5 }

wman2IfBsPkmAuthRequests OBJECT-TYPE
                SYNTAX      Counter32
                MAX-ACCESS  read-only
                STATUS      current
                DESCRIPTION
                    "The value of this object is the count of times the BS has
                     received an Authorization Request message from any SS"
                ::= { wman2IfBsPkmBaseEntry 6 }


wman2IfBsPkmAuthReplies OBJECT-TYPE
```

```
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
             "The value of this object is the count of times the BS has
              transmitted an Authorization Reply message to any SS."
          ::= { wman2IfBsPkmBaseEntry 7 }


wman2IfBsPkmAuthRejects OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
             "The value of this object is the count of times the BS has
              transmitted an Authorization Reject message to any SS."
          ::= { wman2IfBsPkmBaseEntry 8 }


wman2IfBsPkmAuthInvalids OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
             "The value of this object is the count of times the BS has
              transmitted an Authorization Invalid message to any SS."
          ::= { wman2IfBsPkmBaseEntry 9 }


--
-- Table wman2IfBsSsPkmAuthTable
--
wman2IfBsSsPkmAuthTable OBJECT-TYPE
          SYNTAX      SEQUENCE OF   Wman2IfBsSsPkmAuthEntry
          MAX-ACCESS  not-accessible
          STATUS      current
          DESCRIPTION
             "This table describes PKM attributes related
              to the authorization for each SS. The BS maintains one
              Primary Security Association with each Baseline
              Privacy-enabled SS on each BS wireless interface."
          ::= { wman2IfBsPkmObjects  2 }


wman2IfBsSsPkmAuthEntry OBJECT-TYPE
          SYNTAX      Wman2IfBsSsPkmAuthEntry
          MAX-ACCESS  not-accessible
          STATUS      current
          DESCRIPTION
             "The BS MUST create one entry per SS per wireless
              interface, based on the receipt of an Authorization
              Request message and MUST not delete the entry before
              the SS authorization permanently expires."
          INDEX       { ifIndex, wman2IfBsSsPkmAuthMacAddress }
          ::= { wman2IfBsSsPkmAuthTable  1 }


Wman2IfBsSsPkmAuthEntry ::= SEQUENCE {
          wman2IfBsSsPkmAuthMacAddress            MacAddress,
```

```
        wman2IfBsSsPkmAuthKeySequenceNumber    Integer32,
        wman2IfBsSsPkmAuthExpiresOld           DateAndTime,
        wman2IfBsSsPkmAuthExpiresNew           DateAndTime,
        wman2IfBsSsPkmAuthLifetime             Integer32,
        wman2IfBsSsPkmAuthReset                INTEGER,
        wman2IfBsSsPkmAuthInfos                Counter64,
        wman2IfBsSsPkmAuthRequests             Counter64,
        wman2IfBsSsPkmAuthReplies              Counter64,
        wman2IfBsSsPkmAuthRejects              Counter64,
        wman2IfBsSsPkmAuthInvalids             Counter64,
        wman2IfBsSsPkmAuthRejectErrorCode      INTEGER,
        wman2IfBsSsPkmAuthRejectErrorString    SnmpAdminString,
        wman2IfBsSsPkmAuthInvalidErrorCode     INTEGER,
        wman2IfBsSsPkmAuthInvalidErrorString   SnmpAdminString,
        wman2IfBsSsPkmAuthPrimarySAId          INTEGER,
        wman2IfBsSsPkmAuthValidStatus          INTEGER}


wman2IfBsSsPkmAuthMacAddress OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "The value of this object is the physical address of the SS
             to which the authorization association applies."
        ::= { wman2IfBsSsPkmAuthEntry 1 }


wman2IfBsSsPkmAuthKeySequenceNumber OBJECT-TYPE
        SYNTAX      Integer32 (0..15)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the most recent authorization
             key sequence number for this SS."
        ::= { wman2IfBsSsPkmAuthEntry 2 }


wman2IfBsSsPkmAuthExpiresOld OBJECT-TYPE
        SYNTAX      DateAndTime
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the actual clock time for
             expiration of the immediate predecessor of the most recent
             authorization key for this FSM. If this FSM has only one
             authorization key, then the value is the time of activation
             of this FSM."
        ::= { wman2IfBsSsPkmAuthEntry 3 }


wman2IfBsSsPkmAuthExpiresNew OBJECT-TYPE
        SYNTAX      DateAndTime
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the actual clock time for
             expiration of the most recent authorization key for this
```

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            FSM"
        ::= { wman2IfBsSsPkmAuthEntry 4 }


wman2IfBsSsPkmAuthLifetime OBJECT-TYPE
        SYNTAX      Integer32 (86400..6048000)
        UNITS       "seconds"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The vaue of this object is the lifetime, in seconds, the
            BS assigns to an authorization key for this SS."
        REFERENCE
            "Table 341 in IEEE Std 802.16-2004"
        DEFVAL      { 604800 }
        ::= { wman2IfBsSsPkmAuthEntry 5 }


wman2IfBsSsPkmAuthReset OBJECT-TYPE
        SYNTAX      INTEGER {noResetRequested(1),
                            invalidateAuth(2),
                            sendAuthInvalid(3),
                            invalidateTeks(4)}
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Setting this object to invalidateAuth(2) causes the BS to
            invalidate the current SS authorization key(s), but not to
            transmit an Authorization Invalid message nor to invalidate
            unicast TEKs. Setting this object to sendAuthInvalid(3)
            causes the BS to invalidate the current SS authorization
            key(s), and to transmit an Authorization Invalid message to
            the SS, but not to invalidate unicast TEKs. Setting this
            object to invalidateTeks(4) causes the BS to invalidate the
            current SS authorization key(s), to transmit an
            Authorization Invalid message to the SS, and to
            invalidate all unicast TEKs associated with this SS
            authorization. Reading this object returns the
            most-recently-set value of this object, or returns
            noResetRequested(1) if the object has not been set since
            the last BS reboot."
        ::= { wman2IfBsSsPkmAuthEntry 6 }


wman2IfBsSsPkmAuthInfos OBJECT-TYPE
        SYNTAX      Counter64
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the count of times the BS has
            received an Authentication Information message from this
            SS."
        ::= { wman2IfBsSsPkmAuthEntry 7 }


wman2IfBsSsPkmAuthRequests OBJECT-TYPE
        SYNTAX      Counter64
        MAX-ACCESS  read-only
```

```
        STATUS        current
        DESCRIPTION
            "The value of this object is the count of times the BS has
             received an Authorization Request message from this SS."
        ::= { wman2IfBsSsPkmAuthEntry 8 }

wman2IfBsSsPkmAuthReplies OBJECT-TYPE
        SYNTAX        Counter64
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the count of times the BS has
             transmitted an Authorization Reply message to this SS."
        ::= { wman2IfBsSsPkmAuthEntry 9 }

wman2IfBsSsPkmAuthRejects OBJECT-TYPE
        SYNTAX        Counter64
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the count of times the BS has
             transmitted an Authorization Reject message to this SS."
        ::= { wman2IfBsSsPkmAuthEntry 10 }

wman2IfBsSsPkmAuthInvalids OBJECT-TYPE
        SYNTAX        Counter64
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the count of times the BS has
             transmitted an Authorization Invalid message to this SS."
        ::= { wman2IfBsSsPkmAuthEntry 11 }

wman2IfBsSsPkmAuthRejectErrorCode OBJECT-TYPE
        SYNTAX        INTEGER {noInformation(0),
                              unauthorizedSs(1),
                              unauthorizedSaid(2),
                              permanentAuthorizationFailure(6)}
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the enumerated description of
             the Error-Code in most recent Authorization Reject message
             transmitted to the SS."
        REFERENCE
            "IEEE Std 802.16-2004; Table 371"
        ::= { wman2IfBsSsPkmAuthEntry 12 }

wman2IfBsSsPkmAuthRejectErrorString OBJECT-TYPE
        SYNTAX        SnmpAdminString (SIZE (0..128))
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the Display-String in most
```

```
                     recent Authorization Reject message transmitted to the SS.
                     This is a zero length string if no Authorization Reject
                     message has been transmitted to the SS."
              ::= { wman2IfBsSsPkmAuthEntry 13 }


wman2IfBsSsPkmAuthInvalidErrorCode OBJECT-TYPE
        SYNTAX        INTEGER {noInformation(0),
                              unauthorizedSs(1),
                              unsolicited(3),
                              invalidKeySequence(4),
                              keyRequestAuthenticationFailure(5)}
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the enumerated description of
             the Error-Code in most recent Authorization Invalid message
             transmitted to the SS."
        REFERENCE
             "IEEE Std 802.16-2004; Table 371"
        ::= { wman2IfBsSsPkmAuthEntry 14 }

wman2IfBsSsPkmAuthInvalidErrorString OBJECT-TYPE
        SYNTAX        SnmpAdminString (SIZE (0..128))
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the Display-String in most
             recent Authorization Invalid message transmitted to the SS.
             This is a zero length string if no Authorization Invalid
             message has been transmitted to the SS."
        ::= { wman2IfBsSsPkmAuthEntry 15 }

wman2IfBsSsPkmAuthPrimarySAId OBJECT-TYPE
        SYNTAX        INTEGER (0..65535)
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the Primary Security
             Association identifier."
        REFERENCE
             "IEEE Std 802.16-2004; 11.9.7"
        ::= { wman2IfBsSsPkmAuthEntry 16 }


wman2IfBsSsPkmAuthValidStatus OBJECT-TYPE
        SYNTAX        INTEGER {unknown (0),
                              validSsChained (1),
                              validSsTrusted (2),
                              invalidSsUntrusted (3),
                              invalidCAUntrusted (4),
                              invalidSsOther (5),
                              invalidCAOther (6)}
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
```

```
                    "Contains the reason why a SS's certificate is deemed valid
                     or invalid. Return unknown if the SS is running PKM mode.
                     ValidSsChained means the certificate is valid because it
                     chains to a valid certificate. ValidSsTrusted means the
                     certificate is valid because it has been provisioned to be
                     trusted. InvalidSsUntrusted means the certificate is
                     invalid because it has been provisioned to be untrusted.
                     InvalidCAUntrusted means the certificate is invalid
                     because  it chains to an untrusted certificate.
                     InvalidSsOther and InvalidCAOther refer to errors in
                     parsing, validity periods, etc, which are attributable to
                     the SS certificate or its chain respectively."
             ::= { wman2IfBsSsPkmAuthEntry 17 }


--
-- Table wman2IfBsPkmTekTable
--
wman2IfBsPkmTekTable OBJECT-TYPE
         SYNTAX      SEQUENCE OF   Wman2IfBsPkmTekEntry
         MAX-ACCESS  not-accessible
         STATUS      current
         DESCRIPTION
            "This table describes the attributes of each Traffic
             Encryption Key (TEK) association. The BS maintains one TEK
             association per SAID on each BS wireless interface."
         ::= { wman2IfBsPkmObjects  3 }


wman2IfBsPkmTekEntry OBJECT-TYPE
         SYNTAX      Wman2IfBsPkmTekEntry
         MAX-ACCESS  not-accessible
         STATUS      current
         DESCRIPTION
            "Each entry contains objects describing attributes of one
             TEK association on a particular BS wireless interface. The
             BS MUST create one entry per SAID per wireless interface,
             based on the receipt of a Key Request message, and MUST not
             delete the entry before the SS authorization for the SAID
             permanently expires."
         INDEX     { ifIndex, wman2IfBsPkmTekSAId }
         ::= { wman2IfBsPkmTekTable  1 }


Wman2IfBsPkmTekEntry ::= SEQUENCE {
         wman2IfBsPkmTekSAId                  INTEGER,
         wman2IfBsPkmTekSAType                INTEGER,
         wman2IfBsPkmTekDataEncryptAlg        Wman2IfDataEncryptAlgId,
         wman2IfBsPkmTekDataAuthentAlg        Wman2IfDataAuthAlgId,
         wman2IfBsPkmTekEncryptAlg            Wman2IfTekEncryptAlgId,
         wman2IfBsPkmTekLifetime              Integer32,
         wman2IfBsPkmTekKeySequenceNumber     Integer32,
         wman2IfBsPkmTekExpiresOld            DateAndTime,
         wman2IfBsPkmTekExpiresNew            DateAndTime,
         wman2IfBsPkmTekReset                 TruthValue,
         wman2IfBsPkmKeyRequests              Counter32,
         wman2IfBsPkmKeyReplies               Counter32,
```

```
         wman2IfBsPkmKeyRejects                    Counter32,
         wman2IfBsPkmTekInvalids                   Counter32,
         wman2IfBsPkmKeyRejectErrorCode            INTEGER,
         wman2IfBsPkmKeyRejectErrorString          SnmpAdminString,
         wman2IfBsPkmTekInvalidErrorCode           INTEGER,
         wman2IfBsPkmTekInvalidErrorString         SnmpAdminString}


wman2IfBsPkmTekSAId OBJECT-TYPE
        SYNTAX        INTEGER (0..65535)
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "The value of this object is the Security Association
             ID (SAID)."
        REFERENCE
            "IEEE Std 802.16-2004; 11.9.7"
        ::= { wman2IfBsPkmTekEntry 1 }


wman2IfBsPkmTekSAType OBJECT-TYPE
        SYNTAX        INTEGER {primarySA(0),
                               staticSA(1),
                               dynamicSA(2)}
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the type of security
             association. Dynamic does not apply to SSs running in PKM
             mode."
        REFERENCE
            "IEEE Std 802.16-2004; subclause 11.9.18"
        ::= { wman2IfBsPkmTekEntry 2 }


wman2IfBsPkmTekDataEncryptAlg OBJECT-TYPE
        SYNTAX        Wman2IfDataEncryptAlgId
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the data encryption algorithm
             being utilized."
        REFERENCE
            "Table 375, IEEE Std 802.16-2004"
        ::= { wman2IfBsPkmTekEntry 3 }


wman2IfBsPkmTekDataAuthentAlg OBJECT-TYPE
        SYNTAX        Wman2IfDataAuthAlgId
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the data authentication
             algorithm being utilized."
        REFERENCE
            "Table 376, IEEE Std 802.16-2004"
        ::= { wman2IfBsPkmTekEntry 4 }
```

```
wman2IfBsPkmTekEncryptAlg OBJECT-TYPE
        SYNTAX      Wman2IfTekEncryptAlgId
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the TEK key encryption
             algorithm being utilized."
        REFERENCE
            "Table 377, IEEE Std 802.16-2004"
        ::= { wman2IfBsPkmTekEntry 5 }


wman2IfBsPkmTekLifetime OBJECT-TYPE
        SYNTAX      Integer32 (1800..604800)
        UNITS       "seconds"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the lifetime, in seconds, the
             BS assigns to keys for this TEK association."
        REFERENCE
            "Table 341 in IEEE Std 802.16-2004"
        DEFVAL      { 43200 }
        ::= { wman2IfBsPkmTekEntry 6 }


wman2IfBsPkmTekKeySequenceNumber OBJECT-TYPE
        SYNTAX      Integer32 (0..3)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the most recent TEK key
             sequence number for this SAID."
        REFERENCE
            "IEEE Std 802.16-2004; subclause 11.9.5"
        ::= { wman2IfBsPkmTekEntry 7 }


wman2IfBsPkmTekExpiresOld OBJECT-TYPE
        SYNTAX      DateAndTime
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the actual clock time for
             expiration of the immediate predecessor of the most recent
             TEK for this FSM. If this FSM has only one TEK, then the
             value is the time of activation of this FSM."
        ::= { wman2IfBsPkmTekEntry 8 }


wman2IfBsPkmTekExpiresNew OBJECT-TYPE
        SYNTAX      DateAndTime
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the actual clock time for
             expiration of the most recent TEK for this FSM."
        ::= { wman2IfBsPkmTekEntry 9 }
```

```
wman2IfBsPkmTekReset OBJECT-TYPE
        SYNTAX       TruthValue
        MAX-ACCESS  read-write
        STATUS       current
        DESCRIPTION
            "Setting this object to TRUE causes the BS to invalidate
             the current active TEK(s) (plural due to key transition
             periods), and to generate a new TEK for the associated
             SAID; the BS MAY also generate an unsolicited TEK Invalid
             message, to optimize the TEK synchronization between the BS
             and the SS. Reading this object always returns   FALSE."
        ::= { wman2IfBsPkmTekEntry 10 }

wman2IfBsPkmKeyRequests OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS  read-only
        STATUS       current
        DESCRIPTION
            "The value of this object is the count of times the BS has
             received a Key Request message."
        ::= { wman2IfBsPkmTekEntry 11 }

wman2IfBsPkmKeyReplies OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS  read-only
        STATUS       current
        DESCRIPTION
            "The value of this object is the count of times the BS has
             transmitted a Key Reply message."
        ::= { wman2IfBsPkmTekEntry 12 }

wman2IfBsPkmKeyRejects OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS  read-only
        STATUS       current
        DESCRIPTION
            "The value of this object is the count of times the BS has
             transmitted a Key Reject message."
        ::= { wman2IfBsPkmTekEntry 13 }

wman2IfBsPkmTekInvalids OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS  read-only
        STATUS       current
        DESCRIPTION
            "The value of this object is the count of times the BS has
             transmitted a TEK Invalid message."
        ::= { wman2IfBsPkmTekEntry 14 }

wman2IfBsPkmKeyRejectErrorCode OBJECT-TYPE
        SYNTAX       INTEGER {noInformation(0),
                              unauthorizedSaid(2)}
        MAX-ACCESS  read-only
```

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```
            STATUS      current
            DESCRIPTION
                "The value of this object is the enumerated; description of
                 the Error-Code in the most recent Key Reject message sent
                 in response to a Key Request for this SAID."
            REFERENCE
                "IEEE Std 802.16-2004; Table 371"
            ::= { wman2IfBsPkmTekEntry 15 }


wman2IfBsPkmKeyRejectErrorString OBJECT-TYPE
            SYNTAX      SnmpAdminString (SIZE (0..128))
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "The value of this object is the Display-String in the most
                 recent Key Reject message sent in response to a Key Request
                 for this SAID. This is a zero length string if no Key
                 Reject message has been received since reboot."
            ::= { wman2IfBsPkmTekEntry 16 }


wman2IfBsPkmTekInvalidErrorCode OBJECT-TYPE
            SYNTAX      INTEGER  {noInformation(0),
                                  invalidKeySequence(4)}
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "The value of this object is the enumerated description of
                 the Error-Code in the most recent TEK Invalid message sent
                 in association with this SAID."
            REFERENCE
                "IEEE Std 802.16-2004; Table 371"
            ::= { wman2IfBsPkmTekEntry 17 }


wman2IfBsPkmTekInvalidErrorString OBJECT-TYPE
            SYNTAX      SnmpAdminString (SIZE (0..128))
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "The value of this object is the Display-String in the most
                 recent TEK Invalid message sent in association with this
                 SAID.  This is a zero length string if no TEK Invalid
                 message has been received since reboot."
            ::= { wman2IfBsPkmTekEntry 18 }


--
-- Base station Notification Group
-- wman2IfBsNotificationObjects contains the BS SNMP Trap objects
--
wman2IfBsNotification OBJECT IDENTIFIER ::= { wman2IfBsObjects  4 }
wman2IfBsTrapControl    OBJECT IDENTIFIER ::= { wman2IfBsNotification 1
}
wman2IfBsTrapDefinitions OBJECT IDENTIFIER ::= { wman2IfBsNotification 2
}
```

```
1      -- This object groups all NOTIFICATION-TYPE objects for BS.
2      -- It is defined following RFC2758 sections 8.5 and 8.6
3      -- for the compatibility with SNMPv1.
4      wman2IfBsTrapPrefix OBJECT IDENTIFIER ::= { wman2IfBsTrapDefinitions 0 }
5
6
7      wman2IfBsTrapControlRegister    OBJECT-TYPE
8          SYNTAX        BITS {wman2IfBsSsStatusNotification    (0),
9                                wman2IfBsSsDynamicServiceFail    (1),
10                               wman2IfBsSsRssiStatusChange      (2),
11                               wman2IfBsSsRegistrer             (3),
12                               wman2IfBsSsPkmFail               (4)}
13         MAX-ACCESS read-write
14         STATUS     current
15         DESCRIPTION
16             "The object is used to enable or disable Base Station traps.
17              From left to right, the set bit indicates the corresponding
18              Base Station trap is enabled."
19         ::= { wman2IfBsTrapControl 1 }
20
21
22     wman2IfBsStatusTrapControlRegister    OBJECT-TYPE
23         SYNTAX        BITS {unused(0),
24                               ssInitRangingSucc(1),
25                               ssInitRangingFail(2),
26                               ssRegistered(3),
27                               ssRegistrationFail(4),
28                               ssDeregistered(5),
29                               ssBasicCapabilitySucc(6),
30                               ssBasicCapabilityFail(7),
31                               ssAuthorizationSucc(8),
32                               ssAuthorizationFail(9),
33                               tftpSucc(10),
34                               tftpFail(11),
35                               sfCreationSucc(12),
36                               sfCreationFail(13)}
37         MAX-ACCESS read-write
38         STATUS     current
39         DESCRIPTION
40             "The object is used to enable or disable Base Station status
41              notification traps. The set bit indicates the corresponding
42              Base Station trap is enabled."
43         ::= { wman2IfBsTrapControl 2 }
44
45     --
46     -- BS threshold Definitions
47     --
48     wman2IfBsThresholdConfigTable OBJECT-TYPE
49         SYNTAX        SEQUENCE OF Wman2IfBsThresholdConfigEntry
50         MAX-ACCESS not-accessible
51         STATUS     current
52         DESCRIPTION
53             "This table contains threshold objects that can be set
54              to detect the threshold crossing events."
55         ::= { wman2IfBsTrapControl 3 }
```

```
1    wman2IfBsThresholdConfigEntry OBJECT-TYPE
2            SYNTAX        Wman2IfBsThresholdConfigEntry
3            MAX-ACCESS    not-accessible
4            STATUS        current
5            DESCRIPTION
6                "This table provides one row for each BS sector, and is
7                 indexed by ifIndex."
8            INDEX        { ifIndex }
9            ::= { wman2IfBsThresholdConfigTable 1 }
10
11
12   Wman2IfBsThresholdConfigEntry ::= SEQUENCE {
13           wman2IfBsRssiLowThreshold                Integer32,
14           wman2IfBsRssiHighThreshold               Integer32}
15
16
17   wman2IfBsRssiLowThreshold OBJECT-TYPE
18           SYNTAX        Integer32
19           UNITS         "dBm"
20           MAX-ACCESS    read-write
21           STATUS        current
22           DESCRIPTION
23               "Low threshold for generating the RSSI alarm."
24           ::= { wman2IfBsThresholdConfigEntry 1 }
25
26
27   wman2IfBsRssiHighThreshold OBJECT-TYPE
28           SYNTAX        Integer32
29           UNITS         "dBm"
30           MAX-ACCESS    read-write
31           STATUS        current
32           DESCRIPTION
33               "High threshold for clearing the RSSI alarm."
34           ::= { wman2IfBsThresholdConfigEntry 2 }
35
36
37   --
38   -- Subscriber station Notification Objects Definitions
39   --
40   wman2IfBsSsNotificationObjectsTable OBJECT-TYPE
41           SYNTAX        SEQUENCE OF Wman2IfBsSsNotificationObjectsEntry
42           MAX-ACCESS    not-accessible
43           STATUS        current
44           DESCRIPTION
45               "This table contains SS notification objects that have been
46                reported by the trap."
47           ::= { wman2IfBsTrapDefinitions 1 }
48
49
50   wman2IfBsSsNotificationObjectsEntry OBJECT-TYPE
51           SYNTAX        Wman2IfBsSsNotificationObjectsEntry
52           MAX-ACCESS    not-accessible
53           STATUS        current
54           DESCRIPTION
55               "This table provides one row for each SS that has
56                generated traps, and is double indexed by
57                wman2IfBsSsNotificationMacAddr and ifIndex for BS sector."
58           INDEX        { ifIndex, wman2IfBsSsNotificationMacAddr }
59           ::= { wman2IfBsSsNotificationObjectsTable 1 }
```

```
Wman2IfBsSsNotificationObjectsEntry ::= SEQUENCE {
        wman2IfBsSsNotificationMacAddr          MacAddress,
        wman2IfBsSsStatusValue                  INTEGER,
        wman2IfBsSsStatusInfo                   OCTET STRING,
        wman2IfBsDynamicServiceType             INTEGER,
        wman2IfBsDynamicServiceFailReason       OCTET STRING,
        wman2IfBsSsRssiStatus                   INTEGER,
        wman2IfBsSsRssiStatusInfo               OCTET STRING,
        wman2IfBsSsRegisterStatus               INTEGER}

wman2IfBsSsNotificationMacAddr OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The MAC address of the SS, reporing the notofiation."
        ::= { wman2IfBsSsNotificationObjectsEntry 1 }

wman2IfBsSsStatusValue  OBJECT-TYPE
        SYNTAX      INTEGER {ssInitRangingSucc(1),
                            ssInitRangingFail(2),
                            ssRegistered(3),
                            ssRegistrationFail(4),
                            ssDeregistered(5),
                            ssBasicCapabilitySucc(6),
                            ssBasicCapabilityFail(7),
                            ssAuthorizationSucc(8),
                            ssAuthorizationFail(9),
                            tftpSucc(10),
                            tftpFail(11),
                            sfCreationSucc(12),
                            sfCreationFail(13)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the status of a SS, as it goes
             through network entry and initialization procedure."
        ::= { wman2IfBsSsNotificationObjectsEntry 2 }

wman2IfBsSsStatusInfo  OBJECT-TYPE
        SYNTAX      OCTET STRING (SIZE(0..255))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object indicates the reason of SS's status change."
        ::= { wman2IfBsSsNotificationObjectsEntry 3 }

wman2IfBsDynamicServiceType  OBJECT-TYPE
        SYNTAX      INTEGER {bsSfCreationReq(1),
                            bsSfCreationRsp(2),
                            bsSfCreationAck(3)}
        MAX-ACCESS  read-only
        STATUS      current
```

```
           DESCRIPTION
               "This object indicates the dynamic service flow
                creation command type."
           ::= { wman2IfBsSsNotificationObjectsEntry 4 }

wman2IfBsDynamicServiceFailReason  OBJECT-TYPE
       SYNTAX       OCTET STRING (SIZE(0..255))
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
           "This object indicates the reason why the service flow
            creation has failed."
       ::= { wman2IfBsSsNotificationObjectsEntry 5 }

wman2IfBsSsRssiStatus  OBJECT-TYPE
       SYNTAX       INTEGER {bsRssiAlarm(1),
                             bsRssiNoAlarm(2)}
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
           "A RSSI alarm is generated when RSSI becomes lower than
            wman2IfBsLowRssiThreshold and is cleared when RSSI becomes
            higher than wman2IfBsLowRssiThreshold."
       ::= { wman2IfBsSsNotificationObjectsEntry 6 }

wman2IfBsSsRssiStatusInfo  OBJECT-TYPE
       SYNTAX       OCTET STRING (SIZE(0..255))
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
           "This object indicates the reason why RSSI alarm is
            generated."
       ::= { wman2IfBsSsNotificationObjectsEntry 7 }

wman2IfBsSsRegisterStatus OBJECT-TYPE
       SYNTAX       INTEGER {ssRegister(1),
                             ssDeregister(2)}
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
           "This object indicates the status of SS registration."
       ::= { wman2IfBsSsNotificationObjectsEntry 8 }


--
-- Subscriber station Notification Trap Definitions
--
wman2IfBsSsStatusNotificationTrap NOTIFICATION-TYPE
       OBJECTS      {ifIndex,
                      wman2IfBsSsNotificationMacAddr,
                      wman2IfBsSsStatusValue,
                      wman2IfBsSsStatusInfo}
       STATUS       current
       DESCRIPTION
           "This trap reports the status of a SS. Based on this
```

```
                        notification the NMS will issue an alarm with certain
                        severity depending on the status and the reason received."
                ::= { wman2IfBsTrapPrefix 1 }


wman2IfBsSsDynamicServiceFailTrap NOTIFICATION-TYPE
        OBJECTS      {ifIndex,
                        wman2IfBsSsNotificationMacAddr,
                        wman2IfBsDynamicServiceType,
                        wman2IfBsDynamicServiceFailReason}
        STATUS       current
        DESCRIPTION
            "An event to report the failure of a dynamic service
             operation happened during the dynamic services process
             and detected in the Bs side."
        ::= { wman2IfBsTrapPrefix 2 }


wman2IfBsSsRssiStatusChangeTrap NOTIFICATION-TYPE
        OBJECTS      {ifIndex,
                        wman2IfBsSsNotificationMacAddr,
                        wman2IfBsSsRssiStatus,
                        wman2IfBsSsRssiStatusInfo}
        STATUS       current
        DESCRIPTION
            "An event to report that the uplink RSSI is below
             wman2IfBsLowRssiThreshold, or above
             wman2IfBsHighRssiThreshold after restore."
        ::= { wman2IfBsTrapPrefix 3 }


wman2IfBsSsPkmFailTrap NOTIFICATION-TYPE
        OBJECTS      {wman2IfBsSsNotificationMacAddr}
        STATUS       current
        DESCRIPTION
            "An event to report the failure of a Pkm operation."
        ::= { wman2IfBsTrapPrefix 4 }


wman2IfBsSsRegistrerTrap NOTIFICATION-TYPE
        OBJECTS      {wman2IfBsSsNotificationMacAddr,
                        wman2IfBsSsRegisterStatus}
        STATUS       current
        DESCRIPTION
            "An event to report SS registration status."
        ::= { wman2IfBsTrapPrefix 5 }


--
-- Base station PHY Group
--
wman2IfBsPhy OBJECT IDENTIFIER ::= { wman2IfBsObjects  6 }


--
-- BS OFDM PHY objects
--
wman2IfBsOfdmPhy OBJECT IDENTIFIER ::= { wman2IfBsPhy 1 }


wman2IfBsOfdmUplinkChannelTable OBJECT-TYPE
```

```
        SYNTAX      SEQUENCE OF Wman2IfBsOfdmUplinkChannelEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains UCD channel attributes, defining the
             transmission characteristics of uplink channels"
        REFERENCE
            "Table 349 and Table 352, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmPhy 1 }


wman2IfBsOfdmUplinkChannelEntry OBJECT-TYPE
        SYNTAX      Wman2IfBsOfdmUplinkChannelEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each uplink channel of
             multi-sector BS, and is indexed by BS ifIndex. An entry
             in this table exists for each ifEntry of BS with an
             ifType of propBWAp2Mp."
        INDEX { ifIndex }
        ::= { wman2IfBsOfdmUplinkChannelTable 1 }


Wman2IfBsOfdmUplinkChannelEntry ::= SEQUENCE {
        wman2IfBsOfdmCtBasedResvTimeout         INTEGER,
        wman2IfBsOfdmBwReqOppSize               INTEGER,
        wman2IfBsOfdmRangReqOppSize             INTEGER,
        wman2IfBsOfdmUplinkCenterFreq           Unsigned32,
        wman2IfBsOfdmNumSubChReqRegionFull      INTEGER,
        wman2IfBsOfdmNumSymbolsReqRegionFull    INTEGER,
        wman2IfBsOfdmSubChFocusCtCode           INTEGER,
        wman2IfBsOfdmUpLinkChannelId            INTEGER}


wman2IfBsOfdmCtBasedResvTimeout OBJECT-TYPE
        SYNTAX      INTEGER (1..255)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The number of UL-MAPs to receive before contention-based
             reservation is attempted again for the same connection."
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmUplinkChannelEntry 1 }


wman2IfBsOfdmBwReqOppSize OBJECT-TYPE
        SYNTAX      INTEGER (1..65535)
        UNITS       "PS"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Size (in units of PS) of PHY payload that SS may use to
             format and transmit a bandwidth request message in a
             contention request opportunity. The value includes all
             PHY overhead as well as allowance for the MAC data the
             message may hold."
```

```
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmUplinkChannelEntry 2 }


wman2IfBsOfdmRangReqOppSize OBJECT-TYPE
        SYNTAX      INTEGER (1..65535)
        UNITS       "PS"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Size (in units of PS) of PHY payload that SS may use to
             format and transmit a RNG-REQ message in a contention
             request opportunity. The value includes all PHY overhead
             as well as allowance for the MAC data the message may
             hold and the maxiumum SS/BS roundtrip propagation delay."
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmUplinkChannelEntry 3 }


wman2IfBsOfdmUplinkCenterFreq OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "kHz"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            " Uplink center frequency (kHz)"
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmUplinkChannelEntry 4 }


wman2IfBsOfdmNumSubChReqRegionFull OBJECT-TYPE
        SYNTAX      INTEGER {oneSubchannel(0),
                             twoSubchannels(1),
                             fourSubchannels(2),
                             eightSubchannels(3),
                             sixteenSubchannels(4)}
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Number of subchannels used by each transmit
             opportunity when REQ Region-Full is allocated in
             subchannelization region."
        REFERENCE
            "Table 352, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmUplinkChannelEntry 5 }


wman2IfBsOfdmNumSymbolsReqRegionFull OBJECT-TYPE
        SYNTAX      INTEGER (0..31)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Number of OFDM symbols used by each transmit
             opportunity when REQ Region-Full is allocated in
             subchannelization region."
```

```
           REFERENCE
                "Table 352, in IEEE Std 802.16-2004"
           ::= { wman2IfBsOfdmUplinkChannelEntry 6 }


wman2IfBsOfdmSubChFocusCtCode OBJECT-TYPE
           SYNTAX      INTEGER (0..8)
           MAX-ACCESS  read-write
           STATUS      current
           DESCRIPTION
               "Number of contention codes (CSE) that shall only be used to
                request a subchannelized allocation. Default value 0.
                Allowed values 0-8."
           REFERENCE
               "Table 352, in IEEE Std 802.16-2004"
           DEFVAL       { 0 }
           ::= { wman2IfBsOfdmUplinkChannelEntry 7 }


wman2IfBsOfdmUpLinkChannelId OBJECT-TYPE
           SYNTAX      INTEGER (0..255)
           MAX-ACCESS  read-write
           STATUS      current
           DESCRIPTION
               "The identifier of the uplink channel to which the relevant
                RNG-RSP or RNG-REQ message refers."
           REFERENCE
               "Subclause 6.3.2.3.4. Table 16, in IEEE Std 802.16-2004"
           ::= { wman2IfBsOfdmUplinkChannelEntry 8 }


wman2IfBsOfdmDownlinkChannelTable OBJECT-TYPE
           SYNTAX      SEQUENCE OF Wman2IfBsOfdmDownlinkChannelEntry
           MAX-ACCESS  not-accessible
           STATUS      current
           DESCRIPTION
               "This table contains DCD channel attributes, defining the
                transmission characteristics of downlink channels"
           REFERENCE
               "Table 358, in IEEE Std 802.16-2004"
           ::= { wman2IfBsOfdmPhy 2 }


wman2IfBsOfdmDownlinkChannelEntry OBJECT-TYPE
           SYNTAX      Wman2IfBsOfdmDownlinkChannelEntry
           MAX-ACCESS  not-accessible
           STATUS      current
           DESCRIPTION
               "This table provides one row for each downlink channel of
                multi-sector BS, and is indexed by BS ifIndex. An entry
                in this table exists for each ifEntry of BS with an
                ifType of propBWAp2Mp."
           INDEX { ifIndex }
           ::= { wman2IfBsOfdmDownlinkChannelTable 1 }


Wman2IfBsOfdmDownlinkChannelEntry ::= SEQUENCE {
           wman2IfBsOfdmBsEIRP                    INTEGER,
           wman2IfBsOfdmChannelNumber            Wman2IfChannelNumber,
```

```
 1              wman2IfBsOfdmTTG                            INTEGER,
 2              wman2IfBsOfdmRTG                            INTEGER,
 3              wman2IfBsOfdmInitRngMaxRSS                  INTEGER,
 4              wman2IfBsOfdmDownlinkCenterFreq             Unsigned32,
 5              wman2IfBsOfdmBsId                           Wman2IfBsIdType,
 6              wman2IfBsOfdmMacVersion                     Wman2IfMacVersion,
 7              wman2IfBsOfdmFrameDurationCode              INTEGER,
 8              wman2IfBsOfdmDownLinkChannelId              INTEGER}
 9
10
11
12   wman2IfBsOfdmBsEIRP OBJECT-TYPE
13           SYNTAX        INTEGER (0..65535)
14           UNITS         "dBm"
15           MAX-ACCESS    read-write
16           STATUS        current
17           DESCRIPTION
18               "The EIRP is the equivalent isotropic radiated power of
19                the base station, which is computed for a simple
20                single-antenna transmitter."
21           REFERENCE
22               "Table 358, in IEEE Std 802.16-2004"
23           ::= { wman2IfBsOfdmDownlinkChannelEntry 1 }
24
25
26
27   wman2IfBsOfdmChannelNumber OBJECT-TYPE
28           SYNTAX        Wman2IfChannelNumber
29           MAX-ACCESS    read-write
30           STATUS        current
31           DESCRIPTION
32               "Downlink channel number as defined in 8.5.
33                Used for license-exempt operation only."
34           REFERENCE
35               "Table 358, in IEEE Std 802.16-2004"
36           ::= { wman2IfBsOfdmDownlinkChannelEntry 2 }
37
38
39
40   wman2IfBsOfdmTTG OBJECT-TYPE
41           SYNTAX        INTEGER (0..255)
42           MAX-ACCESS    read-write
43           STATUS        current
44           DESCRIPTION
45               "Transmit / Receive Transition Gap."
46           REFERENCE
47               "Table 358, in IEEE Std 802.16-2004"
48           ::= { wman2IfBsOfdmDownlinkChannelEntry 3 }
49
50
51
52   wman2IfBsOfdmRTG OBJECT-TYPE
53           SYNTAX        INTEGER (0..255)
54           MAX-ACCESS    read-write
55           STATUS        current
56           DESCRIPTION
57               "Receive / Transmit Transition Gap."
58           REFERENCE
59               "Table 358, in IEEE Std 802.16-2004"
60           ::= { wman2IfBsOfdmDownlinkChannelEntry 4 }
61
62
63
64
65   wman2IfBsOfdmInitRngMaxRSS OBJECT-TYPE
```

```
          SYNTAX      INTEGER (0..65535)
          UNITS       "dBm"
          MAX-ACCESS  read-write
          STATUS      current
          DESCRIPTION
              "Initial Ranging Max. Received Signal Strength at BS
               Signed in units of 1 dBm."
          REFERENCE
              "Table 358, in IEEE Std 802.16-2004"
          ::= { wman2IfBsOfdmDownlinkChannelEntry 5 }

wman2IfBsOfdmDownlinkCenterFreq OBJECT-TYPE
          SYNTAX      Unsigned32
          UNITS       "kHz"
          MAX-ACCESS  read-write
          STATUS      current
          DESCRIPTION
              "Downlink center frequency (kHz)."
          REFERENCE
              "Table 358, in IEEE Std 802.16-2004"
          ::= { wman2IfBsOfdmDownlinkChannelEntry 6 }

wman2IfBsOfdmBsId OBJECT-TYPE
          SYNTAX      Wman2IfBsIdType
          MAX-ACCESS  read-write
          STATUS      current
          DESCRIPTION
              "Base station ID."
          REFERENCE
              "Table 358, in IEEE Std 802.16-2004"
          ::= { wman2IfBsOfdmDownlinkChannelEntry 7 }

wman2IfBsOfdmMacVersion OBJECT-TYPE
          SYNTAX      Wman2IfMacVersion
          MAX-ACCESS  read-write
          STATUS      current
          DESCRIPTION
              "This parameter specifies the version of 802.16 to which
               the message originator conforms."
          REFERENCE
              "Table 358, in IEEE Std 802.16-2004"
          ::= { wman2IfBsOfdmDownlinkChannelEntry 8 }

wman2IfBsOfdmFrameDurationCode OBJECT-TYPE
          SYNTAX      INTEGER {duration2dot5ms(0),
                               duration4ms(1),
                               duration5ms(2),
                               duration8ms(3),
                               duration10ms(4),
                               duration12dot5ms(5),
                               duration20ms(6)}
          MAX-ACCESS  read-write
          STATUS      current
          DESCRIPTION
```

```
                    "The duration of the frame. The frame duration code
                     values are specified in Table 230."
              REFERENCE
                 "Subclause 11.4.1, Table 230, in IEEE Std 802.16-2004"
              ::= { wman2IfBsOfdmDownlinkChannelEntry 9 }


    wman2IfBsOfdmDownLinkChannelId OBJECT-TYPE
              SYNTAX       INTEGER (0..255)
              MAX-ACCESS   read-write
              STATUS       current
              DESCRIPTION
                 "The identifier of the downlink channel to which this
                  message refers."
              REFERENCE
                 "Subclause 6.3.2.3.1. Table 15, in IEEE Std 802.16-2004"
              ::= { wman2IfBsOfdmDownlinkChannelEntry 10 }


    wman2IfBsOfdmUcdBurstProfileTable OBJECT-TYPE
              SYNTAX       SEQUENCE OF Wman2IfBsOfdmUcdBurstProfileEntry
              MAX-ACCESS   not-accessible
              STATUS       current
              DESCRIPTION
                 "This table contains UCD burst profiles for each uplink
                  channel"
              REFERENCE
                 "Table 356, in IEEE Std 802.16-2004"
              ::= { wman2IfBsOfdmPhy 3 }


    wman2IfBsOfdmUcdBurstProfileEntry OBJECT-TYPE
              SYNTAX       Wman2IfBsOfdmUcdBurstProfileEntry
              MAX-ACCESS   not-accessible
              STATUS       current
              DESCRIPTION
                 "This table provides one row for each UCD burst profile.
                  This table is double indexed. The primary index is an
                  ifIndex with an ifType of propBWAp2Mp. The secondary index
                  is wman2IfBsOfdmUiucIndex."
              INDEX { ifIndex, wman2IfBsOfdmUiucIndex }
              ::= { wman2IfBsOfdmUcdBurstProfileTable 1 }


    Wman2IfBsOfdmUcdBurstProfileEntry ::= SEQUENCE {
              wman2IfBsOfdmUiucIndex                   INTEGER,
              wman2IfBsOfdmUcdFecCodeType              Wman2IfOfdmFecCodeType,
              wman2IfBsOfdmFocusCtPowerBoost           INTEGER,
              wman2IfBsOfdmUcdTcsEnable                INTEGER,
              wman2IfBsOfdmUcdBurstProfileRowStatus    RowStatus}


    wman2IfBsOfdmUiucIndex OBJECT-TYPE
              SYNTAX       INTEGER (5 .. 12)
              MAX-ACCESS   not-accessible
              STATUS       current
              DESCRIPTION
                 "The Uplink Interval Usage Code indicates the uplink burst
                  profile in the UCD message, and is used along with ifIndex
```

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```
                   to identify an entry in the
                   wman2IfBsOfdmUcdBurstProfileTable."
           REFERENCE
               "Subclause 8.3.6.3.1, in IEEE Std 802.16-2004"
           ::= { wman2IfBsOfdmUcdBurstProfileEntry 1 }


wman2IfBsOfdmUcdFecCodeType OBJECT-TYPE
           SYNTAX       Wman2IfOfdmFecCodeType
           MAX-ACCESS   read-create
           STATUS       current
           DESCRIPTION
               "Uplink FEC code type and modulation type"
           REFERENCE
               "Table 356, in IEEE Std 802.16-2004"
           ::= { wman2IfBsOfdmUcdBurstProfileEntry 2 }


wman2IfBsOfdmFocusCtPowerBoost OBJECT-TYPE
           SYNTAX       INTEGER (0 .. 255)
           MAX-ACCESS   read-create
           STATUS       current
           DESCRIPTION
               "The power boost in dB of focused contention carriers, as
                described in 8.3.6.3.3."
           REFERENCE
               "Table 356, in IEEE Std 802.16-2004"
           ::= { wman2IfBsOfdmUcdBurstProfileEntry 3 }


wman2IfBsOfdmUcdTcsEnable OBJECT-TYPE
           SYNTAX       INTEGER {tcsDisabled(0),
                                 tcsEnabled(1)}
           MAX-ACCESS   read-create
           STATUS       current
           DESCRIPTION
               "This parameter determines the transmission convergence
                sublayer, as described in 8.1.4.3, can be enabled on a
                per-burst basis for both uplink and downlink. through
                DIUC/UIUC messages."
           REFERENCE
               "Table 356, in IEEE Std 802.16-2004"
           ::= { wman2IfBsOfdmUcdBurstProfileEntry 4 }


wman2IfBsOfdmUcdBurstProfileRowStatus 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."
           ::= { wman2IfBsOfdmUcdBurstProfileEntry 5 }
```

```
wman2IfBsOfdmDcdBurstProfileTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF Wman2IfBsOfdmDcdBurstProfileEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table provides one row for each DCD burst profile.
             This table is double indexed. The primary index is an
             ifIndex with an ifType of propBWAp2Mp. The secondary
             index is wman2IfBsOfdmDiucIndex."
        REFERENCE
            "Table 362, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmPhy 4 }

wman2IfBsOfdmDcdBurstProfileEntry OBJECT-TYPE
        SYNTAX       Wman2IfBsOfdmDcdBurstProfileEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table provides one row for each DCD burst profile.
             This table is double indexed. The primary index is an
             ifIndex with an ifType of propBWAp2Mp. The secondary index
             is wman2IfBsOfdmDiucIndex."
        INDEX { ifIndex, wman2IfBsOfdmDiucIndex }
        ::= { wman2IfBsOfdmDcdBurstProfileTable 1 }

Wman2IfBsOfdmDcdBurstProfileEntry ::= SEQUENCE {
        wman2IfBsOfdmDiucIndex                   INTEGER,
        wman2IfBsOfdmDownlinkFrequency           Unsigned32,
        wman2IfBsOfdmDcdFecCodeType              Wman2IfOfdmFecCodeType,
        wman2IfBsOfdmDiucMandatoryExitThresh     INTEGER,
        wman2IfBsOfdmDiucMinEntryThresh          INTEGER,
        wman2IfBsOfdmTcsEnable                   INTEGER,
        wman2IfBsOfdmDcdBurstProfileRowStatus    RowStatus}

wman2IfBsOfdmDiucIndex OBJECT-TYPE
        SYNTAX       INTEGER (1..11)
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "The Downlink Interval Usage Code indicates the downlink
             burst profile in the DCD message, and is used along with
             ifIndex to identify an entry in the
             wman2IfBsOfdmDcdBurstProfileTable."
        REFERENCE
            "Subclause 8.3.6.3.1, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmDcdBurstProfileEntry 1 }

wman2IfBsOfdmDownlinkFrequency OBJECT-TYPE
        SYNTAX       Unsigned32
        UNITS        "kHz"
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
```

```
                      "Downlink Frequency (kHz)."
            REFERENCE
                "Table 359, in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmDcdBurstProfileEntry 2 }


wman2IfBsOfdmDcdFecCodeType OBJECT-TYPE
        SYNTAX       Wman2IfOfdmFecCodeType
        MAX-ACCESS  read-create
        STATUS       current
        DESCRIPTION
            "Downlink FEC code type and modulation type"
        REFERENCE
            "Table 362, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmDcdBurstProfileEntry 3 }


wman2IfBsOfdmDiucMandatoryExitThresh OBJECT-TYPE
        SYNTAX       INTEGER (0..255)
        MAX-ACCESS  read-create
        STATUS       current
        DESCRIPTION
            "DIUC mandatory exit threshold: 0 - 63.75 dB CINR at or
             below where this DIUC can no longer be used and where this
             change to a more robust DIUC is required in 0.25 dB units."
        REFERENCE
            "Table 362, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmDcdBurstProfileEntry 4 }


wman2IfBsOfdmDiucMinEntryThresh OBJECT-TYPE
        SYNTAX       INTEGER (0..255)
        MAX-ACCESS  read-create
        STATUS       current
        DESCRIPTION
            "DIUC minimum entry threshold: 0 - 63.75 dB The minimum CINR
             required to start using this DIUC when changing from a more
             robust DIUC is required, in 0.25 dB units."
        REFERENCE
            "Table 362, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmDcdBurstProfileEntry 5 }


wman2IfBsOfdmTcsEnable OBJECT-TYPE
        SYNTAX       INTEGER {tcsDisabled (0),
                              tcsEnabled (1)}
        MAX-ACCESS  read-create
        STATUS       current
        DESCRIPTION
            "Indicates whether Transmission COnvergence Sublayer
             is enabled or disabled."
        REFERENCE
            "Table 362, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmDcdBurstProfileEntry 6 }


wman2IfBsOfdmDcdBurstProfileRowStatus 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."
        ::= { wman2IfBsOfdmDcdBurstProfileEntry 7 }


wman2IfBsOfdmConfigurationTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF Wman2IfBsOfdmConfigurationEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table contains BS configuration objects, specific to
             OFDM PHY."
        ::= { wman2IfBsOfdmPhy 5 }


wman2IfBsOfdmConfigurationEntry OBJECT-TYPE
        SYNTAX       Wman2IfBsOfdmConfigurationEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table is indexed by ifIndex with an ifType of
                propBWAp2Mp."
        INDEX { ifIndex }
        ::= { wman2IfBsOfdmConfigurationTable 1 }


Wman2IfBsOfdmConfigurationEntry ::= SEQUENCE {
        wman2IfBsOfdmMinReqRegionFullTxOpp        INTEGER,
        wman2IfBsOfdmMinFocusedCtTxOpp            INTEGER,
        wman2IfBsOfdmMaxRoundTripDelay            INTEGER,
        wman2IfBsOfdmRangeAbortTimingThold        INTEGER,
        wman2IfBsOfdmRangeAbortPowerThold         INTEGER,
        wman2IfBsOfdmRangeAbortFreqThold          INTEGER,
        wman2IfBsOfdmDnlkRateId                   INTEGER,
        wman2IfBsOfdmRatioG                       INTEGER}


wman2IfBsOfdmMinReqRegionFullTxOpp 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
            "Subclause 6.3.7.4.3 in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmConfigurationEntry 1 }


wman2IfBsOfdmMinFocusedCtTxOpp 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
                "Subclauses 6.3.6.4 and 8.3.7.3.3 in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmConfigurationEntry 2 }

    wman2IfBsOfdmMaxRoundTripDelay 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
                "Subclause 8.3.5.1 in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmConfigurationEntry 3 }

    wman2IfBsOfdmRangeAbortTimingThold 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 Std 802.16-2004"
            ::= { wman2IfBsOfdmConfigurationEntry 4 }

    wman2IfBsOfdmRangeAbortPowerThold 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 Std 802.16-2004"
            ::= { wman2IfBsOfdmConfigurationEntry 5 }

    wman2IfBsOfdmRangeAbortFreqThold 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 Std 802.16-2004"
        ::= { wman2IfBsOfdmConfigurationEntry 6 }

wman2IfBsOfdmDnlkRateId OBJECT-TYPE
        SYNTAX       INTEGER {dnlkRateIdBpsk1Over2(0),
                             dnlkRateIdQpsk1Over2(1),
                             dnlkRateIdQpsk3Over4(2),
                             dnlkRateId16Qam1Over2(3),
                             dnlkRateId16Qam3Over4(4),
                             dnlkRateId64Qam2Over3(5),
                             dnlkRateId64Qam3Over4(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
            "Subclause 8.3.3.4.3 in IEEE Std 802.16-2004"
        DEFVAL       { dnlkRateIdBpsk1Over2 }
        ::= { wman2IfBsOfdmConfigurationEntry 7 }

wman2IfBsOfdmRatioG OBJECT-TYPE
        SYNTAX INTEGER {ratio1To4(0),
                        ratio1To8(1),
                        ratio1To16(2),
                        ratio1To32(3)}
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "The ratio of CP time to 'useful' time.Values
             are 1/4, 1/8, 1/16 or 1/32."
        REFERENCE
            "Subclause 8.3.1.1.1 in IEEE Std 802.16-2004"
        DEFVAL       { ratio1To4 }
        ::= { wman2IfBsOfdmConfigurationEntry 8 }

wman2IfBsSsOfdmReqCapabilitiesTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF Wman2IfBsSsOfdmReqCapabilitiesEntry
        MAX-ACCESS   not-accessible
        STATUS       current
```

```
          DESCRIPTION
              "This table contains the basic capability information,
               specific to OFDM Phy, 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."
          ::= { wman2IfBsOfdmPhy 6 }

  wman2IfBsSsOfdmReqCapabilitiesEntry OBJECT-TYPE
          SYNTAX       Wman2IfBsSsOfdmReqCapabilitiesEntry
          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
               wman2IfBsRegisteredSsTable."
          AUGMENTS { wman2IfBsRegisteredSsEntry }
          ::= { wman2IfBsSsOfdmReqCapabilitiesTable 1 }

  Wman2IfBsSsOfdmReqCapabilitiesEntry ::= SEQUENCE {
          wman2IfBsSsOfdmReqCapFftSizes           Wman2IfOfdmFftSizes,
          wman2IfBsSsOfdmReqCapSsDemodulator      Wman2IfOfdmSsDeModType,
          wman2IfBsSsOfdmReqCapSsModulator        Wman2IfOfdmSsModType,
          wman2IfBsSsOfdmReqCapFocusedCtSupport   Wman2IfOfdmFocusedCt,
          wman2IfBsSsOfdmReqCapTcSublayerSupport  Wman2IfOfdmTcSublayer}

  wman2IfBsSsOfdmReqCapFftSizes OBJECT-TYPE
          SYNTAX       Wman2IfOfdmFftSizes
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
              "This field indicates the FFT sizes supported by SS.
               The usage is defined by Wman2IfOfdmFftSizes."
          ::= { wman2IfBsSsOfdmReqCapabilitiesEntry 1 }

  wman2IfBsSsOfdmReqCapSsDemodulator OBJECT-TYPE
          SYNTAX       Wman2IfOfdmSsDeModType
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
              "This field indicates the different demodulator options
               supported by SS for downlink.
               The usage is defined by Wman2IfOfdmSsDeModType."
          ::= { wman2IfBsSsOfdmReqCapabilitiesEntry 2 }

  wman2IfBsSsOfdmReqCapSsModulator OBJECT-TYPE
          SYNTAX       Wman2IfOfdmSsModType
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
              "This field indicates the different modulator options
               supported by SS for uplink.
               The usage is defined by Wman2IfOfdmSsModType."
          ::= { wman2IfBsSsOfdmReqCapabilitiesEntry 3 }
```

```
wman2IfBsSsOfdmReqCapFocusedCtSupport OBJECT-TYPE
        SYNTAX      Wman2IfOfdmFocusedCt
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates whether the SS supports Focused
             Contention. The usage is defined by
             Wman2IfOfdmFocusedCt."
        ::= { wman2IfBsSsOfdmReqCapabilitiesEntry 4 }

wman2IfBsSsOfdmReqCapTcSublayerSupport OBJECT-TYPE
        SYNTAX      Wman2IfOfdmTcSublayer
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates whether or not the SS supports
             the TC sublayer. The usage is defined by
             Wman2IfOfdmTcSublayer."
        ::= { wman2IfBsSsOfdmReqCapabilitiesEntry 5 }

wman2IfBsSsOfdmRspCapabilitiesTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfBsSsOfdmRspCapabilitiesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the basic capability information,
             specific to OFDM Phy, 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 wman2IfBsRegisteredSsTable."
        REFERENCE
            "Subclause 6.3.2.3.7 in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmPhy 7 }

wman2IfBsSsOfdmRspCapabilitiesEntry OBJECT-TYPE
        SYNTAX      Wman2IfBsSsOfdmRspCapabilitiesEntry
        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
              wman2IfBsRegisteredSsTable. "
        AUGMENTS { wman2IfBsRegisteredSsEntry }
        ::= { wman2IfBsSsOfdmRspCapabilitiesTable 1 }

Wman2IfBsSsOfdmRspCapabilitiesEntry ::= SEQUENCE {
        wman2IfBsSsOfdmRspCapFftSizes           Wman2IfOfdmFftSizes,
        wman2IfBsSsOfdmRspCapSsDemodulator      Wman2IfOfdmSsDeModType,
        wman2IfBsSsOfdmRspCapSsModulator        Wman2IfOfdmSsModType,
        wman2IfBsSsOfdmRspCapFocusedCtSupport   Wman2IfOfdmFocusedCt,
        wman2IfBsSsOfdmRspCapTcSublayerSupport  Wman2IfOfdmTcSublayer}

wman2IfBsSsOfdmRspCapFftSizes OBJECT-TYPE
```

```
        SYNTAX      Wman2IfOfdmFftSizes
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the FFT sizes negotiated with the
             SS. The usage is defined by Wman2IfOfdmFftSizes."
        ::= { wman2IfBsSsOfdmRspCapabilitiesEntry 1 }


wman2IfBsSsOfdmRspCapSsDemodulator OBJECT-TYPE
        SYNTAX      Wman2IfOfdmSsDeModType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the different demodulator options
             negotiated for SS for downlink. The usage is defined by
             Wman2IfOfdmSsDeModType."
        ::= { wman2IfBsSsOfdmRspCapabilitiesEntry 2 }


wman2IfBsSsOfdmRspCapSsModulator OBJECT-TYPE
        SYNTAX      Wman2IfOfdmSsModType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the different modulator options
             negotiated for SS for uplink. The usage is defined by
             Wman2IfOfdmSsModType."
        ::= { wman2IfBsSsOfdmRspCapabilitiesEntry 3 }


wman2IfBsSsOfdmRspCapFocusedCtSupport OBJECT-TYPE
        SYNTAX      Wman2IfOfdmFocusedCt
        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
             Wman2IfOfdmFocusedCt."
        ::= { wman2IfBsSsOfdmRspCapabilitiesEntry 4 }


wman2IfBsSsOfdmRspCapTcSublayerSupport OBJECT-TYPE
        SYNTAX      Wman2IfOfdmTcSublayer
        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
             Wman2IfOfdmTcSublayer."
        ::= { wman2IfBsSsOfdmRspCapabilitiesEntry 5 }


wman2IfBsOfdmCapabilitiesTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfBsOfdmCapabilitiesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains the basic capabilities, specific to
```

```
              OFDM Phy, of the BS as implemented in BS hardware and
              software. These capabilities along with the configuration
              for them (wman2IfBsOfdmCapabilitiesConfigTable) are used
              for negotiation of basic capabilities with SS using
              RNG-RSP, SBC-RSP and REG-RSP messages. The negotiated
              capabilities are obtained by interSubclause 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."
        ::= { wman2IfBsOfdmPhy 8 }


wman2IfBsOfdmCapabilitiesEntry OBJECT-TYPE
        SYNTAX      Wman2IfBsOfdmCapabilitiesEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each BS sector and is
             indexed by ifIndex."
        INDEX { ifIndex }
        ::= { wman2IfBsOfdmCapabilitiesTable 1 }


Wman2IfBsOfdmCapabilitiesEntry ::= SEQUENCE {
        wman2IfBsOfdmCapFftSizes                 Wman2IfOfdmFftSizes,
        wman2IfBsOfdmCapSsDemodulator            Wman2IfOfdmSsDeModType,
        wman2IfBsOfdmCapSsModulator              Wman2IfOfdmSsModType,
        wman2IfBsOfdmCapFocusedCtSupport         Wman2IfOfdmFocusedCt,
        wman2IfBsOfdmCapTcSublayerSupport        Wman2IfOfdmTcSublayer}


wman2IfBsOfdmCapFftSizes OBJECT-TYPE
        SYNTAX      Wman2IfOfdmFftSizes
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the FFT sizes supported by the BS.
             The usage is defined by Wman2IfOfdmCapFftSizes."
        ::= { wman2IfBsOfdmCapabilitiesEntry 1 }


wman2IfBsOfdmCapSsDemodulator OBJECT-TYPE
        SYNTAX      Wman2IfOfdmSsDeModType
        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
             Wman2IfOfdmSsDeModType."
        ::= { wman2IfBsOfdmCapabilitiesEntry 2 }


wman2IfBsOfdmCapSsModulator OBJECT-TYPE
        SYNTAX      Wman2IfOfdmSsModType
        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
```

```
                    Wman2IfOfdmSsModType."
            ::= { wman2IfBsOfdmCapabilitiesEntry 3 }


    wman2IfBsOfdmCapFocusedCtSupport OBJECT-TYPE
            SYNTAX      Wman2IfOfdmFocusedCt
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "This field indicates the BS support for Focused
                 Contention. The usage is defined by
                 Wman2IfOfdmFocusedCt."
            ::= { wman2IfBsOfdmCapabilitiesEntry 4 }


    wman2IfBsOfdmCapTcSublayerSupport OBJECT-TYPE
            SYNTAX      Wman2IfOfdmTcSublayer
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "This field indicates the BS supports for TC sublayer. The
                 usage is defined by Wman2IfOfdmTcSublayer."
            ::= { wman2IfBsOfdmCapabilitiesEntry 5 }


    wman2IfBsOfdmCapabilitiesConfigTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF Wman2IfBsOfdmCapabilitiesConfigEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                "This table contains the configuration for basic
                 capabilities of BS, specific to OFDM Phy. 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
                 (wman2IfBsOfdmPhyTable) for negotiation of basic
                 capabilities with SS using RNG-RSP, SBC-RSP and REG-RSP
                 messages. The negotiated capabilities are obtained by
                 interSubclause 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 wman2IfBsBasicCapabilitiesTable
                 and can be modified by NMS."
            ::= { wman2IfBsOfdmPhy 9 }


    wman2IfBsOfdmCapabilitiesConfigEntry OBJECT-TYPE
            SYNTAX      Wman2IfBsOfdmCapabilitiesConfigEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                "This table provides one row for each BS sector and is
                 indexed by ifIndex."
            INDEX { ifIndex }
            ::= { wman2IfBsOfdmCapabilitiesConfigTable 1 }


    Wman2IfBsOfdmCapabilitiesConfigEntry ::= SEQUENCE {
```

```
         wman2IfBsOfdmCapCfgFftSizes                  Wman2IfOfdmFftSizes,
         wman2IfBsOfdmCapCfgSsDemodulator             Wman2IfOfdmSsDeModType,
         wman2IfBsOfdmCapCfgSsModulator               Wman2IfOfdmSsModType,
         wman2IfBsOfdmCapCfgFocusedCtSupport          Wman2IfOfdmFocusedCt,
         wman2IfBsOfdmCapCfgTcSublayerSupport     Wman2IfOfdmTcSublayer}

wman2IfBsOfdmCapCfgFftSizes OBJECT-TYPE
        SYNTAX      Wman2IfOfdmFftSizes
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the FFT sizes support configured for
             the BS. The usage is defined by
             Wman2IfOfdmCapFftSizes."
        ::= { wman2IfBsOfdmCapabilitiesConfigEntry 1 }

wman2IfBsOfdmCapCfgSsDemodulator OBJECT-TYPE
        SYNTAX      Wman2IfOfdmSsDeModType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the different BS demodulator options
             configured for uplink. The usage is defined by
             Wman2IfOfdmSsDeModType."
        ::= { wman2IfBsOfdmCapabilitiesConfigEntry 2 }

wman2IfBsOfdmCapCfgSsModulator OBJECT-TYPE
        SYNTAX      Wman2IfOfdmSsModType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the different BS modulator options
             configured for downlink. The usage is defined by
             Wman2IfOfdmSsModType."
        ::= { wman2IfBsOfdmCapabilitiesConfigEntry 3 }

wman2IfBsOfdmCapCfgFocusedCtSupport OBJECT-TYPE
        SYNTAX      Wman2IfOfdmFocusedCt
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the BS support configured for
             Focused Contention. The usage is defined by
             Wman2IfOfdmFocusedCt."
        ::= { wman2IfBsOfdmCapabilitiesConfigEntry 4 }

wman2IfBsOfdmCapCfgTcSublayerSupport OBJECT-TYPE
        SYNTAX      Wman2IfOfdmTcSublayer
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This field indicates the BS support configured for TC
             sublayer. The usage is defined by
             Wman2IfOfdmTcSublayer."
```

```
            ::= { wman2IfBsOfdmCapabilitiesConfigEntry 5 }


--
-- BS OFDMA PHY objects
--
wman2IfBsOfdmaPhy OBJECT IDENTIFIER ::= { wman2IfBsPhy 2 }

wman2IfBsOfdmaUplinkChannelTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfBsOfdmaUplinkChannelEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains UCD channel attributes, defining the
             transmission characteristics of uplink channels"
        REFERENCE
            "Table 349 and Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaPhy 1 }

wman2IfBsOfdmaUplinkChannelEntry OBJECT-TYPE
        SYNTAX      Wman2IfBsOfdmaUplinkChannelEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each uplink channel of
             multi-sector BS, and is indexed by BS ifIndex. An entry
             in this table exists for each ifEntry of BS with an
             ifType of propBWAp2Mp."
        INDEX      { ifIndex }
        ::= { wman2IfBsOfdmaUplinkChannelTable 1 }

Wman2IfBsOfdmaUplinkChannelEntry ::= SEQUENCE {
        wman2IfBsOfdmaCtBasedResvTimeout       INTEGER,
        wman2IfBsOfdmaBwReqOppSize             INTEGER,
        wman2IfBsOfdmaRangReqOppSize           INTEGER,
        wman2IfBsOfdmaUplinkCenterFreq         Unsigned32,
        wman2IfBsOfdmaInitRngCodes             INTEGER,
        wman2IfBsOfdmaPeriodicRngCodes         INTEGER,
        wman2IfBsOfdmaBWReqCodes               INTEGER,
        wman2IfBsOfdmaPerRngBackoffStart       INTEGER,
        wman2IfBsOfdmaPerRngBackoffEnd         INTEGER,
        wman2IfBsOfdmaStartOfRngCodes          INTEGER,
        wman2IfBsOfdmaPermutationBase          INTEGER,
        wman2IfBsOfdmaULAllocSubchBitmap       OCTET STRING,
        wman2IfBsOfdmaOptPermULAllocSubchBitmap OCTET STRING,
        wman2IfBsOfdmaBandAMCAllocThreshold    INTEGER,
        wman2IfBsOfdmaBandAMCReleaseThreshold  INTEGER,
        wman2IfBsOfdmaBandAMCAllocTimer        INTEGER,
        wman2IfBsOfdmaBandAMCReleaseTimer      INTEGER,
        wman2IfBsOfdmaBandStatRepMAXPeriod     INTEGER,
        wman2IfBsOfdmaBandAMCRetryTimer        INTEGER,
        wman2IfBsOfdmaSafetyChAllocThreshold   INTEGER,
        wman2IfBsOfdmaSafetyChReleaseThreshold INTEGER,
        wman2IfBsOfdmaSafetyChAllocTimer       INTEGER,
        wman2IfBsOfdmaSafetyChReleaseTimer     INTEGER,
```

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 1              wman2IfBsOfdmaBinStatRepMAXPeriod        INTEGER,
 2              wman2IfBsOfdmaSafetyChaRetryTimer        INTEGER,
 3              wman2IfBsOfdmaHARQAackDelayULBurst       INTEGER,
 4              wman2IfBsOfdmaCQICHBandAMCTranaDelay     INTEGER}
 5
 6
 7      wman2IfBsOfdmaCtBasedResvTimeout OBJECT-TYPE
 8              SYNTAX      INTEGER (1..255)
 9              MAX-ACCESS  read-write
10              STATUS      current
11              DESCRIPTION
12                  "The number of UL-MAPs to receive before contention-based
13                   reservation is attempted again for the same connection."
14              REFERENCE
15                  "Table 349, in IEEE Std 802.16-2004"
16              ::= { wman2IfBsOfdmaUplinkChannelEntry 1 }
17
18
19      wman2IfBsOfdmaBwReqOppSize OBJECT-TYPE
20              SYNTAX      INTEGER (1..65535)
21              UNITS       "PS"
22              MAX-ACCESS  read-write
23              STATUS      current
24              DESCRIPTION
25                  "Size (in units of PS) of PHY payload that SS may use to
26                   format and transmit a bandwidth request message in a
27                   contention request opportunity. The value includes all
28                   PHY overhead as well as allowance for the MAC data the
29                   message may hold."
30              REFERENCE
31                  "Table 349, in IEEE Std 802.16-2004"
32              ::= { wman2IfBsOfdmaUplinkChannelEntry 2 }
33
34
35      wman2IfBsOfdmaRangReqOppSize OBJECT-TYPE
36              SYNTAX      INTEGER (1..65535)
37              UNITS       "PS"
38              MAX-ACCESS  read-write
39              STATUS      current
40              DESCRIPTION
41                  "Size (in units of PS) of PHY payload that SS may use to
42                   format and transmit a RNG-REQ message in a contention
43                   request opportunity. The value includes all PHY overhead
44                   as well as allowance for the MAC data the message may
45                   hold and the maxiumum SS/BS roundtrip propagation delay."
46              REFERENCE
47                  "Table 349, in IEEE Std 802.16-2004"
48              ::= { wman2IfBsOfdmaUplinkChannelEntry 3 }
49
50
51      wman2IfBsOfdmaUplinkCenterFreq OBJECT-TYPE
52              SYNTAX      Unsigned32
53              UNITS       "kHz"
54              MAX-ACCESS  read-write
55              STATUS      current
56              DESCRIPTION
57                  " Uplink center frequency (kHz)"
58              REFERENCE
```

```
              "Table 349, in IEEE Std 802.16-2004"
          ::= { wman2IfBsOfdmaUplinkChannelEntry 4 }


wman2IfBsOfdmaInitRngCodes OBJECT-TYPE
      SYNTAX      INTEGER (0..255)
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
          "Number of initial ranging CDMA codes. Possible values are
             0..255. The total number of wman2IfBsOfdmaInitRngCodes,
             wman2IfBsOfdmaPeriodicRngCodes and wman2IfBsOfdmaBWReqCodes
             shall be equal or less than 256."
      REFERENCE
          "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
      DEFVAL     { 30 }
      ::= { wman2IfBsOfdmaUplinkChannelEntry 5 }


wman2IfBsOfdmaPeriodicRngCodes OBJECT-TYPE
      SYNTAX      INTEGER (0..255)
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
          "Number of periodic ranging CDMA codes. Possible values are
             0..255. The total number of wman2IfBsOfdmaInitRngCodes,
             wman2IfBsOfdmaPeriodicRngCodes and wman2IfBsOfdmaBWReqCodes
             shall be equal or less than 256."
      REFERENCE
          "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
      DEFVAL     { 30 }
      ::= { wman2IfBsOfdmaUplinkChannelEntry 6 }


wman2IfBsOfdmaBWReqCodes OBJECT-TYPE
      SYNTAX      INTEGER (0..255)
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
          "Number of bandwidth request codes. Possible values are
             0..255. The total number of wman2IfBsOfdmaInitRngCodes,
             wman2IfBsOfdmaPeriodicRngCodes and wman2IfBsOfdmaBWReqCodes
             shall be equal or less than 256."
      REFERENCE
          "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
      DEFVAL     { 30 }
          ::= { wman2IfBsOfdmaUplinkChannelEntry 7 }


wman2IfBsOfdmaPerRngBackoffStart OBJECT-TYPE
      SYNTAX      INTEGER (0..15)
      MAX-ACCESS read-write
      STATUS      current
      DESCRIPTION
          "Initial backoff window size for periodic ranging contention,
             , expressed as a power of 2. Range: 0..15 (the highest order
             bits shall be unused and set to 0)."
      REFERENCE
```

```
                    "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
            DEFVAL      { 0 }
            ::= { wman2IfBsOfdmaUplinkChannelEntry 8 }


wman2IfBsOfdmaPerRngBackoffEnd OBJECT-TYPE
            SYNTAX       INTEGER (0 .. 15)
            MAX-ACCESS   read-write
            STATUS       current
            DESCRIPTION
                "Final backoff window size for periodic ranging contention,
                 expressed as a power of 2. Range: 0..15 (the highest order
                 bits shall be unused and set to 0)."
            REFERENCE
                "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
            DEFVAL      { 15 }
            ::= { wman2IfBsOfdmaUplinkChannelEntry 9 }


wman2IfBsOfdmaStartOfRngCodes OBJECT-TYPE
            SYNTAX       INTEGER (0..255)
            MAX-ACCESS   read-write
            STATUS       current
            DESCRIPTION
                "Indicates the starting number, S, of the group of codes
                 used for this uplink.All the ranging codes used on this
                 uplink will be between S and ((S+N+M+L) mod 256). Where,
                 N is the number of initial-ranging codes M is the number
                 of periodic-ranging codes L is the number of
                 bandwidth-request codes The range of values is 0 S255"
            REFERENCE
                "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
            DEFVAL      { 0 }
            ::= { wman2IfBsOfdmaUplinkChannelEntry 10 }


wman2IfBsOfdmaPermutationBase OBJECT-TYPE
            SYNTAX       INTEGER (0..255)
            MAX-ACCESS   read-write
            STATUS       current
            DESCRIPTION
                "Determines the UL_IDcell parameter for the subcarrier
                 permutation to be used on this uplink channel"
            REFERENCE
                "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
            DEFVAL      { 0 }
            ::= { wman2IfBsOfdmaUplinkChannelEntry 11 }


wman2IfBsOfdmaULAllocSubchBitmap OBJECT-TYPE
            SYNTAX       OCTET STRING (SIZE (9))
            MAX-ACCESS   read-write
            STATUS       current
            DESCRIPTION
                "This is a bitmap describing the sub-channels allocated
                 to the segment in the UL, when using the uplink PUSC
                 permutation. The LSB of the first byte shall corrspond to
                 subchannel 0. For any bit that is not set,
```

```
                         the corresponding subchannel shall not be used by the SS
                         on that segment"
                REFERENCE
                    "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
                ::= { wman2IfBsOfdmaUplinkChannelEntry 12 }


wman2IfBsOfdmaOptPermULAllocSubchBitmap OBJECT-TYPE
                SYNTAX       OCTET STRING (SIZE (13))
                MAX-ACCESS   read-write
                STATUS       current
                DESCRIPTION
                    "This is a bitmap describing the sub-channels allocated to
                     the segment in the UL, when using the uplink optional PUSC
                     permutation (see 8.4.6.2.5 in IEEE Std 802.16-2004). The
                     LSB of the first byte shall correspond to subchannel 0.
                     For any bit that is not set, the corresponding subchannel
                     shall not be used by the SS on that segment"
                REFERENCE
                    "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
                ::= { wman2IfBsOfdmaUplinkChannelEntry 13 }


wman2IfBsOfdmaBandAMCAllocThreshold OBJECT-TYPE
                SYNTAX       INTEGER (0 .. 255)
                UNITS        "dB"
                MAX-ACCESS   read-write
                STATUS       current
                DESCRIPTION
                    "dB unit"
                REFERENCE
                    "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
                ::= { wman2IfBsOfdmaUplinkChannelEntry 14 }


wman2IfBsOfdmaBandAMCReleaseThreshold OBJECT-TYPE
                SYNTAX       INTEGER (0 .. 255)
                UNITS        "dB"
                MAX-ACCESS   read-write
                STATUS       current
                DESCRIPTION
                    "This object defines the OFDMA band AMC release
                     threshold."
                REFERENCE
                    "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
                ::= { wman2IfBsOfdmaUplinkChannelEntry 15 }


wman2IfBsOfdmaBandAMCAllocTimer OBJECT-TYPE
                SYNTAX       INTEGER (0 .. 255)
                UNITS        "Frame"
                MAX-ACCESS   read-write
                STATUS       current
                DESCRIPTION
                    "This object defines the OFDMA band AMC allocation
                     timer."
                REFERENCE
                    "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
```

```
        ::= { wman2IfBsOfdmaUplinkChannelEntry 16 }


wman2IfBsOfdmaBandAMCReleaseTimer OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 255)
        UNITS        "Frame"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "This object defines the OFDMA band AMC release
             timer."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaUplinkChannelEntry 17 }

wman2IfBsOfdmaBandStatRepMAXPeriod OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 255)
        UNITS        "Frame"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "This object defines the OFDMA band status reporting
             maximum period."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaUplinkChannelEntry 18 }

wman2IfBsOfdmaBandAMCRetryTimer OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 255)
        UNITS        "Frame"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "This object defines the OFDMA band AMC retry
             timer."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaUplinkChannelEntry 19 }

wman2IfBsOfdmaSafetyChAllocThreshold OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 255)
        UNITS        "dB"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "This object defines the OFDMA safety channel allocation
             threshold."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaUplinkChannelEntry 20 }

wman2IfBsOfdmaSafetyChReleaseThreshold OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 255)
        UNITS        "dB"
        MAX-ACCESS   read-write
```

```
        STATUS     current
        DESCRIPTION
            "This object defines the OFDMA safety channel release
             threshold."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaUplinkChannelEntry 21 }


wman2IfBsOfdmaSafetyChAllocTimer OBJECT-TYPE
        SYNTAX     INTEGER (0 .. 255)
        UNITS      "Frame"
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
            "This object defines the OFDMA safety channel allocation
             timer."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaUplinkChannelEntry 22 }


wman2IfBsOfdmaSafetyChReleaseTimer OBJECT-TYPE
        SYNTAX     INTEGER (0 .. 255)
        UNITS      "Frame"
        MAX-ACCESS  read-write
        STATUS     current
        DESCRIPTION
            "This object defines the OFDMA safety channel release
             timer."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaUplinkChannelEntry 23 }


wman2IfBsOfdmaBinStatRepMAXPeriod OBJECT-TYPE
        SYNTAX     INTEGER (0 .. 255)
        UNITS      "Frame"
        MAX-ACCESS  read-write
        STATUS     current
        DESCRIPTION
            "This object defines the OFDMA bin status reporting
             maximum period."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaUplinkChannelEntry 24 }


wman2IfBsOfdmaSafetyChaRetryTimer OBJECT-TYPE
        SYNTAX     INTEGER (0 .. 255)
        UNITS      "Frame"
        MAX-ACCESS  read-write
        STATUS     current
        DESCRIPTION
            "This object defines the OFDMA safety channel retry
             timer."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
```

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```
 1                    ::= { wman2IfBsOfdmaUplinkChannelEntry 25 }
 2
 3     wman2IfBsOfdmaHARQAackDelayULBurst OBJECT-TYPE
 4           SYNTAX      INTEGER {oneframeoffset(1),
 5                                  twoframesoffset(2),
 6                                  threeframesoffset(3)}
 7
 8           MAX-ACCESS  read-write
 9           STATUS      current
10           DESCRIPTION
11              "This object defines the OFDMA H-ARQ ACK delay for UL burst.
12                 1 = one frame offset
13                 2 = two frames offset
14                 3 = three frames offset"
15           REFERENCE
16              "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
17                    ::= { wman2IfBsOfdmaUplinkChannelEntry 26 }
18
19     wman2IfBsOfdmaCQICHBandAMCTranaDelay OBJECT-TYPE
20           SYNTAX      INTEGER (0 .. 255)
21           UNITS       "Frame"
22           MAX-ACCESS  read-write
23           STATUS      current
24           DESCRIPTION
25              "This object defines the OFDMA CQICH band AMC transition
26               delay."
27           REFERENCE
28              "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
29           ::= { wman2IfBsOfdmaUplinkChannelEntry 27 }
30
31     wman2IfBsOfdmaDownlinkChannelTable OBJECT-TYPE
32           SYNTAX      SEQUENCE OF Wman2IfBsOfdmaDownlinkChannelEntry
33           MAX-ACCESS  not-accessible
34           STATUS      current
35           DESCRIPTION
36              "This table contains DCD channel attributes, defining the
37               transmission characteristics of downlink channels"
38           REFERENCE
39              "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
40           ::= { wman2IfBsOfdmaPhy 2 }
41
42     wman2IfBsOfdmaDownlinkChannelEntry OBJECT-TYPE
43           SYNTAX      Wman2IfBsOfdmaDownlinkChannelEntry
44           MAX-ACCESS  not-accessible
45           STATUS      current
46           DESCRIPTION
47              "This table provides one row for each downlink channel of
48               multi-sector BS, and is indexed by BS ifIndex. An entry in
49               this table exists for each ifEntry of BS with an ifType of
50               propBWAp2Mp."
51           INDEX       { ifIndex }
52           ::= { wman2IfBsOfdmaDownlinkChannelTable 1 }
53
54     Wman2IfBsOfdmaDownlinkChannelEntry ::= SEQUENCE {
55           wman2IfBsOfdmaBsEIRP                    INTEGER,
```

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```
          wman2IfBsOfdmaChannelNumber              Wman2IfChannelNumber,
          wman2IfBsOfdmaTTG                        INTEGER,
          wman2IfBsOfdmaRTG                        INTEGER,
          wman2IfBsOfdmaInitRngMaxRSS              INTEGER,
          wman2IfBsOfdmaDownlinkCenterFreq         Unsigned32,
          wman2IfBsOfdmaBsId                       Wman2IfBsIdType,
          wman2IfBsOfdmaMacVersion                 Wman2IfMacVersion,
          wman2IfBsOfdmaFrameDurationCode          INTEGER,
          wman2IfBsOfdmaSizeCqichIdField           INTEGER,
          wman2IfBsOfdmaHARQAackDelayBurst         INTEGER}

wman2IfBsOfdmaBsEIRP OBJECT-TYPE
          SYNTAX       INTEGER (0..65535)
          UNITS        "dBm"
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
              "The EIRP is the equivalent isotropic radiated power of
               the base station, which is computed for a simple
               single-antenna transmitter."
          REFERENCE
              "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
          ::= { wman2IfBsOfdmaDownlinkChannelEntry 1 }

wman2IfBsOfdmaChannelNumber OBJECT-TYPE
          SYNTAX       Wman2IfChannelNumber
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
              "Downlink channel number as defined in 8.5. Used for
               license-exempt operation only."
          REFERENCE
              "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
          ::= { wman2IfBsOfdmaDownlinkChannelEntry 2 }

wman2IfBsOfdmaTTG OBJECT-TYPE
          SYNTAX       INTEGER (0..255)
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
              "Transmit / Receive Transition Gap."
          REFERENCE
              "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
          ::= { wman2IfBsOfdmaDownlinkChannelEntry 3 }

wman2IfBsOfdmaRTG OBJECT-TYPE
          SYNTAX       INTEGER (0..255)
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
              "Receive / Transmit Transition Gap."
          REFERENCE
              "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
          ::= { wman2IfBsOfdmaDownlinkChannelEntry 4 }
```

```
wman2IfBsOfdmaInitRngMaxRSS OBJECT-TYPE
        SYNTAX       INTEGER (0..65535)
        UNITS        "dBm"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Initial Ranging Max. Received Signal Strength at BS
             Signed in units of 1 dBm."
        REFERENCE
            "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaDownlinkChannelEntry 5 }

wman2IfBsOfdmaDownlinkCenterFreq OBJECT-TYPE
        SYNTAX       Unsigned32
        UNITS        "kHz"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Downlink center frequency (kHz)."
        REFERENCE
            "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaDownlinkChannelEntry 6 }

wman2IfBsOfdmaBsId OBJECT-TYPE
        SYNTAX       Wman2IfBsIdType
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Base station ID."
        REFERENCE
            "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaDownlinkChannelEntry 7 }

wman2IfBsOfdmaMacVersion OBJECT-TYPE
        SYNTAX       Wman2IfMacVersion
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "This parameter specifies the version of 802.16 to which
             the message originator conforms."
        REFERENCE
            "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfBsOfdmaDownlinkChannelEntry 8 }

wman2IfBsOfdmaFrameDurationCode OBJECT-TYPE
        SYNTAX       INTEGER {aASGap(0),
                              duration2ms(1),
                              duration2dot5ms(2),
                              duration4ms(3),
                              duration5ms(4),
                              duration8ms(5),
                              duration10ms(6),
                              duration12dot5ms(7),
```

```
                                            duration20ms(8)}
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "The duration of the frame. The frame duration code values
                 are specified in Table 274."
            REFERENCE
                "Table 273, in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmaDownlinkChannelEntry 9 }

wman2IfBsOfdmaSizeCqichIdField OBJECT-TYPE
            SYNTAX      INTEGER {threebits(1),
                                 fourbits(2),
                                 fivebits(3),
                                 sixbits(4),
                                 sevenbits(5),
                                 eightbits(6),
                                 ninebits(7)}
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "This object defines the size of CQICH ID field.
                 0 = Reserved
                 1 = 3 bits
                 2 = 4 bits
                 3 = 5 bits
                 4 = 6 bits
                 5 = 7 bits
                 6 = 8 bits
                 7 = 9 bits
                 8...255 = Reserved"
            REFERENCE
                "Subclause 11.3.1, Table 358, in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmaDownlinkChannelEntry 10 }

wman2IfBsOfdmaHARQAackDelayBurst OBJECT-TYPE
            SYNTAX      INTEGER {oneframeoffset(1),
                                 twoframesoffset(2),
                                 threeframesoffset(3)}
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "This object defines the OFDMA H-ARQ ACK delay for DL burst.
                 1 = one frame offset
                 2 = two frames offset
                 3 = three frames offset"
            REFERENCE
                "Subclause 11.3.1, Table 358, in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmaDownlinkChannelEntry 11 }

wman2IfBsOfdmaUcdBurstProfileTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF Wman2IfBsOfdmaUcdBurstProfileEntry
            MAX-ACCESS  not-accessible
            STATUS      current
```

```
             DESCRIPTION
                 "This table contains UCD burst profiles for each uplink
                  channel"
             REFERENCE
                 "Table 356, in IEEE Std 802.16-2004"
             ::= { wman2IfBsOfdmaPhy 3 }

 wman2IfBsOfdmaUcdBurstProfileEntry OBJECT-TYPE
         SYNTAX      Wman2IfBsOfdmaUcdBurstProfileEntry
         MAX-ACCESS  not-accessible
         STATUS      current
         DESCRIPTION
             "This table provides one row for each UCD burst profile.
              This table is double indexed. The primary index is an
              ifIndex with an ifType of propBWAp2Mp. The secondary index
              is wman2IfBsOfdmaUiucIndex."
         INDEX       { ifIndex, wman2IfBsOfdmaUiucIndex }
         ::= { wman2IfBsOfdmaUcdBurstProfileTable 1 }

 Wman2IfBsOfdmaUcdBurstProfileEntry ::= SEQUENCE {
         wman2IfBsOfdmaUiucIndex                 INTEGER,
         wman2IfBsOfdmaUcdFecCodeType            Wman2IfOfdmaFecCodeType,
         wman2IfBsOfdmaRangingDataRatio          INTEGER,
         wman2IfBsOfdmaNorCOverNOverride         OCTET STRING,
         wman2IfBsOfdmaUcdBurstProfileRowStatus  RowStatus}

 wman2IfBsOfdmaUiucIndex OBJECT-TYPE
         SYNTAX      INTEGER (1 .. 10)
         MAX-ACCESS not-accessible
         STATUS      current
         DESCRIPTION
             "The Uplink Interval Usage Code indicates the uplink burst
              profile in the UCD message, and is used along with ifIndex
              to identify an entry in the
              wman2IfBsOfdmaUcdBurstProfileTable."
         REFERENCE
             "Subclause 8.4.5.4.1, in IEEE Std 802.16-2004"
         ::= { wman2IfBsOfdmaUcdBurstProfileEntry 1 }

 wman2IfBsOfdmaUcdFecCodeType OBJECT-TYPE
         SYNTAX      Wman2IfOfdmaFecCodeType
         MAX-ACCESS  read-create
         STATUS      current
         DESCRIPTION
             "Uplink FEC code type and modulation type"
         REFERENCE
             "Subclause 11.3.1.1, Table 357, in IEEE Std 802.16-2004"
         ::= { wman2IfBsOfdmaUcdBurstProfileEntry 2 }

 wman2IfBsOfdmaRangingDataRatio OBJECT-TYPE
         SYNTAX      INTEGER (0 .. 255)
         MAX-ACCESS  read-create
         STATUS      current
         DESCRIPTION
```

```
                         "Reducing factor in units of 1 dB, between the power used
                             for this burst and power should be used for CDMA Ranging."
                     REFERENCE
                     "Subclause 11.3.1.1, Table 357, in IEEE Std 802.16-2004"
                     ::= { wman2IfBsOfdmaUcdBurstProfileEntry 3 }

    wman2IfBsOfdmaNorCOverNOverride OBJECT-TYPE
            SYNTAX OCTET STRING (SIZE (5))
            MAX-ACCESS read-create
            STATUS current
            DESCRIPTION
                "This is a list of numbers, where each number is encoded by
                    one nibble, and interpeted as a signed integer. The nibbles
                    correspond in order to the list define by Table 334 in IEEE
                    Std 802.16-2004 starting from the second line, such that
                    the LS nibble of the first byte corresponds to the second
                    line in the table. The number encoded by each nibble
                    represents the difference in normalized C/N relative to the
                    previous line in the table"
            REFERENCE
                "Subclause 11.3.1.1, Table 357, in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmaUcdBurstProfileEntry 4 }

    wman2IfBsOfdmaUcdBurstProfileRowStatus 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."
            ::= { wman2IfBsOfdmaUcdBurstProfileEntry 5 }

    wman2IfBsOfdmaDcdBurstProfileTable OBJECT-TYPE
            SYNTAX       SEQUENCE OF Wman2IfBsOfdmaDcdBurstProfileEntry
            MAX-ACCESS   not-accessible
            STATUS       current
            DESCRIPTION
                "This table provides one row for each DCD burst profile.
                    This table is double indexed. The primary index is an
                    ifIndex with an ifType of propBWAp2Mp. The secondary index
                    is wman2IfBsOfdmaDiucIndex."
            ::= { wman2IfBsOfdmaPhy 4 }

    wman2IfBsOfdmaDcdBurstProfileEntry OBJECT-TYPE
            SYNTAX       Wman2IfBsOfdmaDcdBurstProfileEntry
            MAX-ACCESS   not-accessible
            STATUS       current
            DESCRIPTION
                "This table provides one row for each DCD burst profile.
                    This table is double indexed. The primary index is an
                    ifIndex with an ifType of propBWAp2Mp. The secondary index
```

```
                               is wman2IfBsOfdmaDiucIndex."
               INDEX        { ifIndex, wman2IfBsOfdmaDiucIndex }
               ::= { wman2IfBsOfdmaDcdBurstProfileTable 1 }


    Wman2IfBsOfdmaDcdBurstProfileEntry ::= SEQUENCE {
            wman2IfBsOfdmaDiucIndex                   INTEGER,
            wman2IfBsOfdmaDownlinkFrequency           Unsigned32,
            wman2IfBsOfdmaDcdFecCodeType              Wman2IfOfdmaFecCodeType,
            wman2IfBsOfdmaDiucMandatoryExitThresh     INTEGER,
            wman2IfBsOfdmaDiucMinEntryThresh          INTEGER,
            wman2IfBsOfdmaDcdBurstProfileRowStatus    RowStatus}


    wman2IfBsOfdmaDiucIndex OBJECT-TYPE
            SYNTAX        INTEGER (0 .. 12)
            MAX-ACCESS    not-accessible
            STATUS        current
            DESCRIPTION
                "The Downlink Interval Usage Code indicates the downlink
                 burst profile in the DCD message, and is used along with
                 ifIndex to identify an entry in the
                 wman2IfBsOfdmaDcdBurstProfileTable."
            REFERENCE
                "Subclause 8.4.5.3.1, in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmaDcdBurstProfileEntry 1 }


    wman2IfBsOfdmaDownlinkFrequency OBJECT-TYPE
            SYNTAX        Unsigned32
            UNITS         "kHz"
            MAX-ACCESS    read-create
            STATUS        current
            DESCRIPTION
                "Downlink Frequency (kHz)."
            REFERENCE
                "Subclause 11.4.2, Table 359, in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmaDcdBurstProfileEntry 2 }


    wman2IfBsOfdmaDcdFecCodeType OBJECT-TYPE
            SYNTAX        Wman2IfOfdmaFecCodeType
            MAX-ACCESS    read-create
            STATUS        current
            DESCRIPTION
                "Downlink FEC code type and modulation type"
            REFERENCE
                "Subclause 11.4.2, Table 363, in IEEE Std 802.16-2004"
            ::= { wman2IfBsOfdmaDcdBurstProfileEntry 3 }


    wman2IfBsOfdmaDiucMandatoryExitThresh OBJECT-TYPE
            SYNTAX        INTEGER (0..255)
            MAX-ACCESS    read-create
            STATUS        current
            DESCRIPTION
                "DIUC mandatory exit threshold: 0 - 63.75 dB CINR at or
                 below where this DIUC can no longer be used and where
                 this change to a more robust DIUC is required, in 0.25
```

```
                    dB units."
           REFERENCE
               "Subclause 11.4.2, Table 363, in IEEE Std 802.16-2004"
           ::= { wman2IfBsOfdmaDcdBurstProfileEntry 4 }


wman2IfBsOfdmaDiucMinEntryThresh OBJECT-TYPE
           SYNTAX       INTEGER (0..255)
           MAX-ACCESS   read-create
           STATUS       current
           DESCRIPTION
               "DIUC minimum entry threshold: 0 - 63.75 dB The minimum
                CINR required to start using this DIUC when changing from
                a more robust DIUC is required, in 0.25 dB units."
           REFERENCE
               "Subclause 11.4.2, Table 363, in IEEE Std 802.16-2004"
           ::= { wman2IfBsOfdmaDcdBurstProfileEntry 5 }


wman2IfBsOfdmaDcdBurstProfileRowStatus 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."
           ::= { wman2IfBsOfdmaDcdBurstProfileEntry 6 }


wman2IfBsMsOfdmaReqCapabilitiesTable OBJECT-TYPE
           SYNTAX       SEQUENCE OF Wman2IfBsMsOfdmaReqCapabilitiesEntry
           MAX-ACCESS   not-accessible
           STATUS       current
           DESCRIPTION
               "This table contains the basic capability information,
                specific to OFDMA Phy, of MSs that have been reported by
                MSs to BS using RNG-REQ, SBC-REQ and REG-REQ messages.
                Entries in this table should be created when an MS
                registers with a BS."
           ::= { wman2IfBsOfdmaPhy 5 }


wman2IfBsMsOfdmaReqCapabilitiesEntry OBJECT-TYPE
           SYNTAX       Wman2IfBsMsOfdmaReqCapabilitiesEntry
           MAX-ACCESS   not-accessible
           STATUS       current
           DESCRIPTION
               "This table provides one row for each MS that has been
                registered in the BS. This table augments the table
                wman2IfBsRegisteredSsTable."
           AUGMENTS { wman2IfBsRegisteredSsEntry }
           ::= { wman2IfBsMsOfdmaReqCapabilitiesTable 1 }


Wman2IfBsMsOfdmaReqCapabilitiesEntry ::= SEQUENCE {
           wman2IfBsMsOfdmaReqCapFftSizes           Wman2IfOfdmFftSizes,
```

```
            wman2IfBsMsOfdmaReqCapDemodulator        Wman2IfOfdmaMsDeModType,
            wman2IfBsMsOfdmaReqCapModulator          Wman2IfOfdmaMsModType,
            wman2IfBsMsOfdmaReqCapPermutation        Wman2IfOfdmaPermutation,
            wman2IfBsMsOfdmaReqCapMobilityFeature    Wman2IfOfdmaMobility}


wman2IfBsMsOfdmaReqCapFftSizes OBJECT-TYPE
        SYNTAX       Wman2IfOfdmFftSizes
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the FFT sizes supported by MS."
        ::= { wman2IfBsMsOfdmaReqCapabilitiesEntry 1 }


wman2IfBsMsOfdmaReqCapDemodulator OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaMsDeModType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the different demodulator options
             supported by MS for downlink."
        ::= { wman2IfBsMsOfdmaReqCapabilitiesEntry 2 }


wman2IfBsMsOfdmaReqCapModulator OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaMsModType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the different modulator options
             supported by MS for uplink."
        ::= { wman2IfBsMsOfdmaReqCapabilitiesEntry 3 }


wman2IfBsMsOfdmaReqCapPermutation OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaPermutation
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the OFDMA MS Permutation support"
        ::= { wman2IfBsMsOfdmaReqCapabilitiesEntry 4 }


wman2IfBsMsOfdmaReqCapMobilityFeature OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaMobility
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The field indicates whether or not the MS supports
             mobility hand-over, Sleepmode, and Idle-mode."
        ::= { wman2IfBsMsOfdmaReqCapabilitiesEntry 5 }


wman2IfBsMsOfdmaRspCapabilitiesTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF Wman2IfBsMsOfdmaRspCapabilitiesEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table contains the basic capability information,
```

```
                    specific to OFDMA Phy, of MSs that have been reported by
                    MSs to BS using RNG-REQ, SBC-REQ and REG-REQ messages.
                    Entries in this table should be created when an MS
                    registers with a BS."
            ::= { wman2IfBsOfdmaPhy 6 }


wman2IfBsMsOfdmaRspCapabilitiesEntry OBJECT-TYPE
        SYNTAX       Wman2IfBsMsOfdmaRspCapabilitiesEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table provides one row for each MS that has been
             registered in the BS. This table augments the table
             wman2IfBsRegisteredSsTable."
        AUGMENTS { wman2IfBsRegisteredSsEntry }
        ::= { wman2IfBsMsOfdmaRspCapabilitiesTable 1 }


Wman2IfBsMsOfdmaRspCapabilitiesEntry ::= SEQUENCE {
        wman2IfBsMsOfdmaRspCapFftSizes          Wman2IfOfdmFftSizes,
        wman2IfBsMsOfdmaRspCapDemodulator       Wman2IfOfdmaMsDeModType,
        wman2IfBsMsOfdmaRspCapModulator         Wman2IfOfdmaMsModType,
        wman2IfBsMsOfdmaRspCapPermutation       Wman2IfOfdmaPermutation,
        wman2IfBsMsOfdmaRspCapMobilityFeature   Wman2IfOfdmaMobility}


wman2IfBsMsOfdmaRspCapFftSizes OBJECT-TYPE
        SYNTAX       Wman2IfOfdmFftSizes
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the FFT sizes negotiated with the
             MS."
        ::= { wman2IfBsMsOfdmaRspCapabilitiesEntry 1 }


wman2IfBsMsOfdmaRspCapDemodulator OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaMsDeModType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the different demodulator options
             negotiated for MS for downlink."
        ::= { wman2IfBsMsOfdmaRspCapabilitiesEntry 2 }


wman2IfBsMsOfdmaRspCapModulator OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaMsModType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the different modulator options
             negotiated for MS for uplink."
        ::= { wman2IfBsMsOfdmaRspCapabilitiesEntry 3 }


wman2IfBsMsOfdmaRspCapPermutation OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaPermutation
        MAX-ACCESS   read-only
```

```
          STATUS          current
          DESCRIPTION
              "This field indicates the OFDMA MS Permutation support
               negotiated for MS."
          ::= { wman2IfBsMsOfdmaRspCapabilitiesEntry 4 }


wman2IfBsMsOfdmaRspCapMobilityFeature OBJECT-TYPE
          SYNTAX          Wman2IfOfdmaMobility
          MAX-ACCESS  read-only
          STATUS          current
          DESCRIPTION
              "The field indicates the mobility hand-over, Sleepmode,
               and Idle-mode negotiated for MS."
          ::= { wman2IfBsMsOfdmaRspCapabilitiesEntry 5 }


wman2IfBsOfdmaCapabilitiesTable OBJECT-TYPE
          SYNTAX          SEQUENCE OF Wman2IfBsOfdmaCapabilitiesEntry
          MAX-ACCESS  not-accessible
          STATUS          current
          DESCRIPTION
              "This table contains the basic capabilities, specific to
               OFDMA Phy, of the BS as implemented in BS hardware and
               software. These capabilities along with the configuration
               for them (wman2IfBsOfdmaCapabilitiesConfigTable) are used
               for negotiation of basic capabilities with SS using
               RNG-RSP, SBC-RSP and REG-RSP messages. The negotiated
               capabilities are obtained by interSubclause of MS 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."
          ::= { wman2IfBsOfdmaPhy 7 }


wman2IfBsOfdmaCapabilitiesEntry OBJECT-TYPE
          SYNTAX          Wman2IfBsOfdmaCapabilitiesEntry
          MAX-ACCESS  not-accessible
          STATUS          current
          DESCRIPTION
              "This table provides one row for each BS sector and is
               indexed by ifIndex."
          INDEX { ifIndex }
          ::= { wman2IfBsOfdmaCapabilitiesTable 1 }


Wman2IfBsOfdmaCapabilitiesEntry ::= SEQUENCE {
          wman2IfBsOfdmaCapFftSizes                Wman2IfOfdmFftSizes,
          wman2IfBsOfdmaCapDemodulator             Wman2IfOfdmaMsDeModType,
          wman2IfBsOfdmaCapModulator               Wman2IfOfdmaMsModType,
          wman2IfBsOfdmaCapPermutation             Wman2IfOfdmaPermutation,
          wman2IfBsOfdmaCapMobilityFeature         Wman2IfOfdmaMobility}


wman2IfBsOfdmaCapFftSizes OBJECT-TYPE
          SYNTAX          Wman2IfOfdmFftSizes
          MAX-ACCESS  read-only
          STATUS          current
          DESCRIPTION
```

```
                   "This field indicates the FFT sizes supported by BS."
            ::= { wman2IfBsOfdmaCapabilitiesEntry 1 }


wman2IfBsOfdmaCapDemodulator OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaMsDeModType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the different demodulator options
             supported by BS."
            ::= { wman2IfBsOfdmaCapabilitiesEntry 2 }


wman2IfBsOfdmaCapModulator OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaMsModType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the different modulator options
             supported by BS."
            ::= { wman2IfBsOfdmaCapabilitiesEntry 3 }


wman2IfBsOfdmaCapPermutation OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaPermutation
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This field indicates the OFDMA MS Permutation support
             supported by BS."
            ::= { wman2IfBsOfdmaCapabilitiesEntry 4 }


wman2IfBsOfdmaCapMobilityFeature OBJECT-TYPE
        SYNTAX       Wman2IfOfdmaMobility
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The field indicates the mobility hand-over, Sleepmode,
             and Idle-mode supported by BS."
            ::= { wman2IfBsOfdmaCapabilitiesEntry 5 }


wman2IfBsOfdmaCapabilitiesConfigTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF Wman2IfBsOfdmaCapabilitiesConfigEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table contains the configuration for basic
             capabilities of BS, specific to OFDMA Phy. 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
             (wman2IfBsOfdmaPhyTable) for negotiation of basic
             capabilities with SS using RNG-RSP, SBC-RSP and REG-RSP
             messages. The negotiated capabilities are obtained by
             interSubclause of MS 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 wman2IfBsBasicCapabilitiesTable
                        and can be modified by NMS."
             ::= { wman2IfBsOfdmaPhy 8 }


wman2IfBsOfdmaCapabilitiesConfigEntry OBJECT-TYPE
        SYNTAX      Wman2IfBsOfdmaCapabilitiesConfigEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each BS sector and is
             indexed by ifIndex."
        INDEX { ifIndex }
        ::= { wman2IfBsOfdmaCapabilitiesConfigTable 1 }


Wman2IfBsOfdmaCapabilitiesConfigEntry ::= SEQUENCE {
        wman2IfBsOfdmaCapCfgFftSizes            Wman2IfOfdmFftSizes,
        wman2IfBsOfdmaCapCfgDemodulator         Wman2IfOfdmaMsDeModType,
        wman2IfBsOfdmaCapCfgModulator           Wman2IfOfdmaMsModType,
        wman2IfBsOfdmaCapCfgPermutation         Wman2IfOfdmaPermutation,
        wman2IfBsOfdmaCapCfgMobilityFeature     Wman2IfOfdmaMobility}


wman2IfBsOfdmaCapCfgFftSizes OBJECT-TYPE
        SYNTAX      Wman2IfOfdmFftSizes
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the FFT sizes configured for the BS."
        ::= { wman2IfBsOfdmaCapabilitiesConfigEntry 1 }


wman2IfBsOfdmaCapCfgDemodulator OBJECT-TYPE
        SYNTAX      Wman2IfOfdmaMsDeModType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the different demodulator options
             configured for the BS."
        ::= { wman2IfBsOfdmaCapabilitiesConfigEntry 2 }


wman2IfBsOfdmaCapCfgModulator OBJECT-TYPE
        SYNTAX      Wman2IfOfdmaMsModType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This field indicates the different modulator options
             configured for the BS."
        ::= { wman2IfBsOfdmaCapabilitiesConfigEntry 3 }


wman2IfBsOfdmaCapCfgPermutation OBJECT-TYPE
        SYNTAX      Wman2IfOfdmaPermutation
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
```

```
                    "This field indicates the OFDMA MS Permutation support
                     configured for the BS."
             ::= { wman2IfBsOfdmaCapabilitiesConfigEntry 4 }


wman2IfBsOfdmaCapCfgMobilityFeature OBJECT-TYPE
        SYNTAX      Wman2IfOfdmaMobility
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The field indicates the mobility hand-over, Sleepmode,
             and Idle-mode configured for the BS."
             ::= { wman2IfBsOfdmaCapabilitiesConfigEntry 5 }

--
-- SS object group – containing tables and objects to be implemented in
-- the Subscriber station


--
-- wman2IfSsCps contain the SS Common Part Sublayer objects
--
wman2IfSsCps OBJECT IDENTIFIER ::= { wman2IfSsObjects 1 }


--
-- wman2IfSsConfigurationTable contains global parameters for SS
--
wman2IfSsConfigurationTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfSsConfigurationEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains one row for the SS system
             parameters."
        REFERENCE
            "Subclause 10.1 in IEEE Std 802.16-2004"
             ::= { wman2IfSsCps 1 }

wman2IfSsConfigurationEntry OBJECT-TYPE
        SYNTAX      Wman2IfSsConfigurationEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table is indexed by ifIndex."
        INDEX { ifIndex }
             ::= { wman2IfSsConfigurationTable 1 }

Wman2IfSsConfigurationEntry ::= SEQUENCE {
        wman2IfSsLostDLMapInterval                  INTEGER,
        wman2IfSsLostULMapInterval                  INTEGER,
        wman2IfSsContentionRangRetries              INTEGER,
        wman2IfSsRequestRetries                     INTEGER,
        wman2IfSsRegRequestRetries                  INTEGER,
        wman2IfSsTftpBackoffStart                   INTEGER,
        wman2IfSsTftpBackoffEnd                     INTEGER,
        wman2IfSsTftpRequestRetries                 INTEGER,
```

```
        wman2IfSsTftpDownloadRetries                INTEGER,
        wman2IfSsTftpWait                           INTEGER,
        wman2IfSsToDRetries                         INTEGER,
        wman2IfSsToDRetryPeriod                     INTEGER,
        wman2IfSsT1Timeout                          INTEGER,
        wman2IfSsT2Timeout                          INTEGER,
        wman2IfSsT3Timeout                          INTEGER,
        wman2IfSsT4Timeout                          INTEGER,
        wman2IfSsT6Timeout                          INTEGER,
        wman2IfSsT12Timeout                         INTEGER,
        wman2IfSsT14Timeout                         INTEGER,
        wman2IfSsT16Timeout                         INTEGER,
        wman2IfSsT18Timeout                         INTEGER,
        wman2IfSsT19Timeout                         INTEGER,
        wman2IfSsT20Timeout                         INTEGER,
        wman2IfSsT21Timeout                         INTEGER,
        wman2IfSsSBCRequestRetries                  INTEGER,
        wman2IfSsTftpCpltRetries                    INTEGER,
        wman2IfSsT26Timeout                         INTEGER,
        wman2IfSsDLManagProcTime                    INTEGER}

wman2IfSsLostDLMapInterval OBJECT-TYPE
        SYNTAX       INTEGER (0..600)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Time since last received DL-MAP message before downlink
             synchronization is considered lost in ms."
        ::= { wman2IfSsConfigurationEntry 1 }

wman2IfSsLostULMapInterval OBJECT-TYPE
        SYNTAX       INTEGER (0..600)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Time since last received UL-MAP message before uplink
             synchronization is considered lost in ms."
        ::= { wman2IfSsConfigurationEntry 2 }

wman2IfSsContentionRangRetries OBJECT-TYPE
        SYNTAX       INTEGER (16..65535)
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Number of retries on contention Ranging Requests."
        ::= { wman2IfSsConfigurationEntry 3 }

wman2IfSsRequestRetries OBJECT-TYPE
        SYNTAX       INTEGER (16..65535)
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
```

```
                         "Number of retries on bandwidth allocation requests."
                 ::= { wman2IfSsConfigurationEntry 4 }


wman2IfSsRegRequestRetries OBJECT-TYPE
         SYNTAX       INTEGER (3..65535)
         MAX-ACCESS   read-write
         STATUS       current
         DESCRIPTION
             "Number of retries on registration requests."
         ::= { wman2IfSsConfigurationEntry 5 }


wman2IfSsTftpBackoffStart OBJECT-TYPE
         SYNTAX       INTEGER (1..65535)
         UNITS        "seconds"
         MAX-ACCESS   read-write
         STATUS       current
         DESCRIPTION
             "Initial value for TFTP backoff in second."
         ::= { wman2IfSsConfigurationEntry 6 }


wman2IfSsTftpBackoffEnd OBJECT-TYPE
         SYNTAX       INTEGER (16..65535)
         UNITS        "seconds"
         MAX-ACCESS   read-write
         STATUS       current
         DESCRIPTION
             "Last value for TFTP backoff in second."
         ::= { wman2IfSsConfigurationEntry 7 }


wman2IfSsTftpRequestRetries OBJECT-TYPE
         SYNTAX       INTEGER (16..65535)
         MAX-ACCESS   read-write
         STATUS       current
         DESCRIPTION
             "Number of retries on TFTP request."
         ::= { wman2IfSsConfigurationEntry 8 }


wman2IfSsTftpDownloadRetries OBJECT-TYPE
         SYNTAX       INTEGER (3..65535)
         MAX-ACCESS   read-write
         STATUS       current
         DESCRIPTION
             "Number of retries on entire TFTP downloads."
         ::= { wman2IfSsConfigurationEntry 9 }


wman2IfSsTftpWait OBJECT-TYPE
         SYNTAX       INTEGER (2..65535)
         UNITS        "minutes"
         MAX-ACCESS   read-write
         STATUS       current
         DESCRIPTION
             "The duration between two consecutive Transfer
              operational parameters (TFTP) retries in min."
         ::= { wman2IfSsConfigurationEntry 10 }
```

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```
wman2IfSsToDRetries OBJECT-TYPE
        SYNTAX       INTEGER (3..65535)
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Number of Retries to establisg the Time of Day."
        ::= { wman2IfSsConfigurationEntry 11 }

wman2IfSsToDRetryPeriod OBJECT-TYPE
        SYNTAX       INTEGER (5..65535)
        UNITS        "minutes"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "The retry period to re-establisg the Time of Day, as
             describe in the network entry procedure."
        ::= { wman2IfSsConfigurationEntry 12 }

wman2IfSsT1Timeout OBJECT-TYPE
        SYNTAX       INTEGER (0..50000)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Wait for DCD timeout in ms."
        ::= { wman2IfSsConfigurationEntry 13 }

wman2IfSsT2Timeout OBJECT-TYPE
        SYNTAX       INTEGER (0..10000)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Wait for broadcast ranging timeout in ms."
        ::= { wman2IfSsConfigurationEntry 14 }

wman2IfSsT3Timeout OBJECT-TYPE
        SYNTAX       INTEGER (0..200)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Ranging Response reception timeout following the
             transmission of a Ranging Request in ms."
        ::= { wman2IfSsConfigurationEntry 15 }

wman2IfSsT4Timeout OBJECT-TYPE
        SYNTAX       INTEGER (30..35)
        UNITS        "seconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Wait for unicast ranging opportunity. If the pending until
```

```
                    complete field was used earlier by this SS, then the value
                    of that field shall be added to this interval in second."
             ::= { wman2IfSsConfigurationEntry 16 }


    wman2IfSsT6Timeout OBJECT-TYPE
            SYNTAX      INTEGER (0..3000)
            UNITS       "milliseconds"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Wait for registration response in ms."
             ::= { wman2IfSsConfigurationEntry 17 }


    wman2IfSsT12Timeout OBJECT-TYPE
            SYNTAX      INTEGER (0..50000)
            UNITS       "milliseconds"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Wait for UCD descriptor in ms."
             ::= { wman2IfSsConfigurationEntry 18 }


    wman2IfSsT14Timeout OBJECT-TYPE
            SYNTAX      INTEGER (0..200)
            UNITS       "milliseconds"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "Wait for DSX-RVD Timeout in ms."
             ::= { wman2IfSsConfigurationEntry 19 }


    wman2IfSsT16Timeout OBJECT-TYPE
            SYNTAX      INTEGER (10..65535)
            UNITS       "milliseconds"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "wait for bandwidth request grant in ms."
             ::= { wman2IfSsConfigurationEntry 20 }


    wman2IfSsT18Timeout OBJECT-TYPE
            SYNTAX      INTEGER (0..65535)
            UNITS       "milliseconds"
            MAX-ACCESS  read-write
            STATUS      current
            DESCRIPTION
                "wait for SBC-RSP timeout in ms."
             ::= { wman2IfSsConfigurationEntry 21 }


    wman2IfSsT19Timeout OBJECT-TYPE
            SYNTAX      INTEGER (0..1048575)
            UNITS       "milliseconds"
            MAX-ACCESS  read-write
            STATUS      current
```

```
        DESCRIPTION
            "Time DL-channel remains unusable in ms."
        ::= { wman2IfSsConfigurationEntry 22 }


wman2IfSsT20Timeout OBJECT-TYPE
        SYNTAX       INTEGER (0..65535)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Time SS searches for preambles on a given channel in ms."
        ::= { wman2IfSsConfigurationEntry 23 }


wman2IfSsT21Timeout OBJECT-TYPE
        SYNTAX       INTEGER (0..10000)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Time SS searches for DL-MAP on a given channel in ms."
        ::= { wman2IfSsConfigurationEntry 24 }


wman2IfSsSBCRequestRetries OBJECT-TYPE
        SYNTAX       INTEGER (3..16)
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Number of retries on SBC Request."
        ::= { wman2IfSsConfigurationEntry 25 }


wman2IfSsTftpCpltRetries OBJECT-TYPE
        SYNTAX       INTEGER (3..16)
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Number of retries on TFTP-CPLT."
        ::= { wman2IfSsConfigurationEntry 26 }


wman2IfSsT26Timeout OBJECT-TYPE
        SYNTAX       INTEGER (10..200)
        UNITS        "milliseconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Wait for TFTP-RSP in ms."
        ::= { wman2IfSsConfigurationEntry 27 }


wman2IfSsDLManagProcTime OBJECT-TYPE
        SYNTAX       INTEGER (0..200)
        UNITS        "micro seconds"
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
            "Max. time between reception of Fast Power Control
```

```
                    management message and compliance to its instructions
                    by SS in us."
                ::= { wman2IfSsConfigurationEntry 28 }


    --
    -- Subscriber Channel Measurement Table
    --
    wman2IfSsChannelMeasurementTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF   Wman2IfSsChannelMeasurementEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                "This table contains downlink channel measurement
                 information for each SS."
            REFERENCE
                "6.3.2.3.33 in IEEE Std 802.16-2004"
            ::= { wman2IfSsCps 2 }


    wman2IfSsChannelMeasurementEntry OBJECT-TYPE
            SYNTAX      Wman2IfSsChannelMeasurementEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                "Each entry in the table contains RSSI and CINR
                 signal quality measurement taken from the SS. The primary
                 index is the ifIndex pointing to SS.
                 wman2IfCmnHistogramIndex is the index to histogram
                 samples. Since there is no time stamp in the table,
                 wman2IfSsHistogramIndex should be increased monotonically,
                 and wraps around when it reaches the limit.
                 When the measurement entry for a SS reaches the limit,
                 the oldest entry shall be deleted as the new entry is
                 added to the table."
            INDEX       { ifIndex, wman2IfSsHistogramIndex }
            ::= { wman2IfSsChannelMeasurementTable  1 }


    Wman2IfSsChannelMeasurementEntry ::= SEQUENCE {
            wman2IfSsHistogramIndex              Unsigned32,
            wman2IfSsChannelNumber               Wman2IfChannelNumber,
            wman2IfSsStartFrame                  INTEGER,
            wman2IfSsDuration                    INTEGER,
            wman2IfSsBasicReport                 BITS,
            wman2IfSsMeanCinrReport              INTEGER,
            wman2IfSsStdDeviationCinrReport      INTEGER,
            wman2IfSsMeanRssiReport              INTEGER,
            wman2IfSsStdDeviationRssiReport      INTEGER}


    wman2IfSsHistogramIndex OBJECT-TYPE
            SYNTAX      Unsigned32 (1 .. 4294967295)
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                "wman2IfSsHistogramIndex identifies the histogram samples
                 in the table for each subscriber station."
```

```
                    ::= { wman2IfSsChannelMeasurementEntry 1 }


wman2IfSsChannelNumber OBJECT-TYPE
        SYNTAX      Wman2IfChannelNumber
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Physical channel number to be reported on."
        REFERENCE
            "Subclause 8.5.1 in IEEE Std 802.16-2004"
        ::= { wman2IfSsChannelMeasurementEntry 2 }


wman2IfSsStartFrame OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 65535)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Frame number in which measurement for this channel
             started."
        REFERENCE
            "Subclause 11.12 in IEEE Std 802.16-2004"
        ::= { wman2IfSsChannelMeasurementEntry 3 }


wman2IfSsDuration OBJECT-TYPE
        SYNTAX      INTEGER (0..16777215)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Cumulative measurement duration on the channel in
             multiples of Ts. For any value exceeding 0xFFFFFF,
             report 0xFFFFFF."
        REFERENCE
            "Subclause 11.12 in IEEE Std 802.16-2004"
        ::= { wman2IfSsChannelMeasurementEntry 4 }


wman2IfSsBasicReport OBJECT-TYPE
        SYNTAX      BITS {wirelessHuman(0),
                          unknownTransmission(1),
                          primaryUser(2),
                         channelNotMeasured(3)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Bit #0: WirelessHUMAN detected on the channel
             Bit #1: Unknown transmissions detected on the channel
             Bit #2: Primary User detected on the channel
             Bit #3: Unmeasured. Channel not measured"
        REFERENCE
            "Subclause 11.12 in IEEE Std 802.16-2004"
        ::= { wman2IfSsChannelMeasurementEntry 5 }


wman2IfSsMeanCinrReport OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 41)
        UNITS       "dB"
```

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```
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Mean CINR report."
        REFERENCE
            "Subclause 8.2.2, 8.3.9 in IEEE Std 802.16-2004"
        ::= { wman2IfSsChannelMeasurementEntry 6 }

wman2IfSsStdDeviationCinrReport OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 41)
        UNITS        "dB"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Standard deviation CINR report."
        REFERENCE
            "Subclause 8.2.2 and Subclause 8.3.9 in IEEE Std 802.16-2004"
        ::= { wman2IfSsChannelMeasurementEntry 7 }

wman2IfSsMeanRssiReport OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 83)
        UNITS        "dBm"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Mean RSSI report."
        REFERENCE
            "Subclause 8.2.2 and Subclause 8.3.9 in IEEE Std 802.16-2004"
        ::= { wman2IfSsChannelMeasurementEntry 8 }

wman2IfSsStdDeviationRssiReport OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 83)
        UNITS        "dB"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Standard deviation RSSI report."
        REFERENCE
            "Subclause 8.2.2 and Subclause 8.3.9 in IEEE Std 802.16-2004"
        ::= { wman2IfSsChannelMeasurementEntry 9 }

--
-- Subscriber station PKM group
-- wman2IfSsPkmObjects contain the Subscriber Station Privacy Sublayer
-- objects
--
wman2IfSsPkmObjects OBJECT IDENTIFIER ::= { wman2IfSsObjects  2 }


--
-- Table wman2IfSsPkmAuthTable
--
wman2IfSsPkmAuthTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF   Wman2IfSsPkmAuthEntry
        MAX-ACCESS   not-accessible
```

```
            STATUS        current
            DESCRIPTION
                "This table describes the PKM attributes related
                 to the authorization for each SS wireless interface."
            ::= { wman2IfSsPkmObjects  1 }


wman2IfSsPkmAuthEntry OBJECT-TYPE
            SYNTAX        Wman2IfSsPkmAuthEntry
            MAX-ACCESS    not-accessible
            STATUS        current
            DESCRIPTION
                "Each entry contains objects describing attributes of one
                 SS wireless interface."
            INDEX        { ifIndex }
            ::= { wman2IfSsPkmAuthTable  1 }


Wman2IfSsPkmAuthEntry ::= SEQUENCE {
            wman2IfSsPkmAuthState                  INTEGER,
            wman2IfSsPkmAuthKeySequenceNumber      Integer32,
            wman2IfSsPkmAuthExpiresOld             DateAndTime,
            wman2IfSsPkmAuthExpiresNew             DateAndTime,
            wman2IfSsPkmAuthReset                  TruthValue,
            wman2IfSsPkmAuthentInfos               Counter32,
            wman2IfSsPkmAuthRequests               Counter32,
            wman2IfSsPkmAuthReplies                Counter32,
            wman2IfSsPkmAuthRejects                Counter32,
            wman2IfSsPkmAuthInvalids               Counter32,
            wman2IfSsPkmAuthRejectErrorCode        INTEGER,
            wman2IfSsPkmAuthRejectErrorString      SnmpAdminString,
            wman2IfSsPkmAuthInvalidErrorCode       INTEGER,
            wman2IfSsPkmAuthInvalidErrorString     SnmpAdminString,
            wman2IfSsPkmAuthGraceTime              Integer32,
            wman2IfSsPkmTekGraceTime               Integer32,
            wman2IfSsPkmAuthWaitTimeout            Integer32,
            wman2IfSsPkmReauthWaitTimeout          Integer32,
            wman2IfSsPkmOpWaitTimeout              Integer32,
            wman2IfSsPkmRekeyWaitTimeout           Integer32,
            wman2IfSsPkmAuthRejectWaitTimeout      Integer32}


wman2IfSsPkmAuthState OBJECT-TYPE
            SYNTAX        INTEGER {start(1),
                                  authWait(2),
                                  authorized(3),
                                  reauthWait(4),
                                  authRejectWait(5),
                                  silent(6)}
            MAX-ACCESS    read-only
            STATUS        current
            DESCRIPTION
                "The value of this object is the state of the SS
                 authorization FSM.  The start state indicates that FSM is
                 in its initial state."
            ::= { wman2IfSsPkmAuthEntry 1 }
```

```
wman2IfSsPkmAuthKeySequenceNumber OBJECT-TYPE
        SYNTAX      Integer32 (0..15)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the most recent authorization
             key sequence number for this FSM."
        ::= { wman2IfSsPkmAuthEntry 2 }

wman2IfSsPkmAuthExpiresOld OBJECT-TYPE
        SYNTAX      DateAndTime
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the actual clock time for
             expiration of the immediate predecessor of the most recent
             authorization key for this FSM.  If this FSM has only one
             authorization key, then the value is the time of activation
             of this FSM."
        ::= { wman2IfSsPkmAuthEntry 3 }

wman2IfSsPkmAuthExpiresNew OBJECT-TYPE
        SYNTAX      DateAndTime
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the actual clock time for
             expiration of the most recent authorization key for this
             FSM."
        ::= { wman2IfSsPkmAuthEntry 4 }

wman2IfSsPkmAuthReset OBJECT-TYPE
        SYNTAX      TruthValue
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Setting this object to TRUE generates a Reauthorize event
             in the authorization FSM. Reading this object always
             returns FALSE."
        ::= { wman2IfSsPkmAuthEntry 5 }

wman2IfSsPkmAuthentInfos OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the count of times the SS has
             transmitted an Authentication Information message."
        ::= { wman2IfSsPkmAuthEntry 6 }

wman2IfSsPkmAuthRequests OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS  read-only
        STATUS      current
```

```
        DESCRIPTION
            "The value of this object is the count of times the SS has
             transmitted an Authorization Request message."
        ::= { wman2IfSsPkmAuthEntry 7 }

wman2IfSsPkmAuthReplies OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the count of times the SS has
             received an Authorization Reply message."
        ::= { wman2IfSsPkmAuthEntry 8 }

wman2IfSsPkmAuthRejects OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the count of times the SS has
             received an Authorization Reject message."
        ::= { wman2IfSsPkmAuthEntry 9 }

wman2IfSsPkmAuthInvalids OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the count of times the SS has
             received an Authorization Invalid message."
        ::= { wman2IfSsPkmAuthEntry 10 }

wman2IfSsPkmAuthRejectErrorCode OBJECT-TYPE
        SYNTAX      INTEGER {none(1),
                             unknown(2),
                             unauthorizedSs(3),
                             unauthorizedSaid(4),
                             permanentAuthorizationFailure(8),
                             timeOfDayNotAcquired(11)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the enumerated description of
             the Error-Code in most recent Authorization Reject message
             received by the SS.  This has value unknown(2)if the last
             Error-Code value was 0, and none(1) if no Authorization
             Reject message has been received since reboot."
        ::= { wman2IfSsPkmAuthEntry 11 }

wman2IfSsPkmAuthRejectErrorString OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE (0..128))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
```

```
                    "The value of this object is the Display-String in most
                     recent Authorization Reject message received by the SS.
                     This is a zero length string if no Authorization Reject
                     message has been received since reboot."
             ::= { wman2IfSsPkmAuthEntry 12 }


wman2IfSsPkmAuthInvalidErrorCode OBJECT-TYPE
        SYNTAX        INTEGER {none(1),
                               unknown(2),
                               unauthorizedSs(3),
                               unsolicited(5),
                               invalidKeySequence(6),
                               keyRequestAuthenticationFailure(7)}
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The value of this object is the enumerated description of
             the Error-Code in most recent Authorization Invalid message
             received by the SS.  This has value unknown(2) if the last
             Error-Code value was 0, and none(1) if no Authorization
             Invalid message has been received since reboot."
        ::= { wman2IfSsPkmAuthEntry 13 }


wman2IfSsPkmAuthInvalidErrorString OBJECT-TYPE
        SYNTAX        SnmpAdminString (SIZE (0..128))
        MAX-ACCESS   read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the Display-String in most
             recent Authorization Invalid message received by the SS.
             This is a zero length string if no Authorization Invalid
             message has been received since reboot."
        ::= { wman2IfSsPkmAuthEntry 14 }


wman2IfSsPkmAuthGraceTime OBJECT-TYPE
        SYNTAX        Integer32 (300..3024000)
        UNITS         "seconds"
        MAX-ACCESS   read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the grace time for an
             authorization key.  A SS is expected to start trying to get
             a new authorization key beginning AuthGraceTime seconds
             before the authorization key actually expires."
        REFERENCE
            "Table 341 in IEEE Std 802.16-2004"
        DEFVAL        { 600 }
        ::= { wman2IfSsPkmAuthEntry 15 }


wman2IfSsPkmTekGraceTime OBJECT-TYPE
        SYNTAX        Integer32 (300..3024000)
        UNITS         "seconds"
        MAX-ACCESS   read-only
        STATUS        current
```

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```
                DESCRIPTION
                    "The value of this object is the grace time for the TEK in
                     seconds. The SS is expected to start trying to acquire a
                     new TEK beginning TEK GraceTime seconds before the
                     expiration of the most recent TEK."
                REFERENCE
                    "Table 341 in IEEE Std 802.16-2004"
                DEFVAL      { 3600 }
                ::= { wman2IfSsPkmAuthEntry 16 }


        wman2IfSsPkmAuthWaitTimeout OBJECT-TYPE
                SYNTAX      Integer32 (2..30)
                UNITS       "seconds"
                MAX-ACCESS  read-only
                STATUS      current
                DESCRIPTION
                    "The value of this object is the Authorize Wait Timeout."
                REFERENCE
                    "Table 341 in IEEE Std 802.16-2004"
                DEFVAL      { 10 }
                ::= { wman2IfSsPkmAuthEntry 17 }


        wman2IfSsPkmReauthWaitTimeout OBJECT-TYPE
                SYNTAX      Integer32 (2..30)
                UNITS       "seconds"
                MAX-ACCESS  read-only
                STATUS      current
                DESCRIPTION
                    "The value of this object is the Reauthorize Wait Timeout
                     in seconds."
                REFERENCE
                    "Table 341 in IEEE Std 802.16-2004"
                DEFVAL      { 10 }
                ::= { wman2IfSsPkmAuthEntry 18 }


        wman2IfSsPkmOpWaitTimeout OBJECT-TYPE
                SYNTAX      Integer32 (1..10)
                UNITS       "seconds"
                MAX-ACCESS  read-only
                STATUS      current
                DESCRIPTION
                    "The value of this object is the Operational Wait Timeout
                     in seconds."
                REFERENCE
                    "Table 341 in IEEE Std 802.16-2004"
                DEFVAL      { 1 }
                ::= { wman2IfSsPkmAuthEntry 19 }


        wman2IfSsPkmRekeyWaitTimeout OBJECT-TYPE
                SYNTAX      Integer32 (1..10)
                UNITS       "seconds"
                MAX-ACCESS  read-only
                STATUS      current
                DESCRIPTION
```

```
                    "The value of this object is the Rekey Wait Timeout in
                       seconds."
            REFERENCE
                "Table 341 in IEEE Std 802.16-2004"
            DEFVAL      { 1 }
            ::= { wman2IfSsPkmAuthEntry 20 }


wman2IfSsPkmAuthRejectWaitTimeout OBJECT-TYPE
            SYNTAX      Integer32 (10..600)
            UNITS       "seconds"
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "The value of this object is the Authorization Reject Wait
                   Timeout in seconds."
            REFERENCE
                "Table 341 in IEEE Std 802.16-2004"
            DEFVAL      { 60 }
            ::= { wman2IfSsPkmAuthEntry 21 }


--
-- Table wman2IfSsPkmTekTable
--
wman2IfSsPkmTekTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF   Wman2IfSsPkmTekEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                "This table describes the attributes of each SS Traffic
                   Encryption Key(TEK) association. The SS maintains (no more
                   than) one TEK association per SAID per SS wireless
                   interface."
            ::= { wman2IfSsPkmObjects  2 }


wman2IfSsPkmTekEntry OBJECT-TYPE
            SYNTAX      Wman2IfSsPkmTekEntry
            MAX-ACCESS  not-accessible
            STATUS      current
            DESCRIPTION
                "Each entry contains objects describing the TEK association
                   attributes of one SAID. The SS MUST create one entry per
                   SAID, regardless of whether the SAID was obtained from a
                   Registration Response message, from an Authorization Reply
                   message, or from any dynamic SAID establishment
                   mechanisms."
            INDEX      { ifIndex, wman2IfSsPkmTekSAId }
            ::= { wman2IfSsPkmTekTable  1 }


Wman2IfSsPkmTekEntry ::= SEQUENCE {
            wman2IfSsPkmTekSAId                        INTEGER,
            wman2IfSsPkmTekSAType                      INTEGER,
            wman2IfSsPkmTekDataEncryptAlg             Wman2IfDataEncryptAlgId,
            wman2IfSsPkmTekDataAuthentAlg             Wman2IfDataAuthAlgId,
            wman2IfSsPkmTekEncryptAlg                 Wman2IfTekEncryptAlgId,
```

```
            wman2IfSsPkmTekState                        INTEGER,
            wman2IfSsPkmTekKeySequenceNumber            Integer32,
            wman2IfSsPkmTekExpiresOld                   DateAndTime,
            wman2IfSsPkmTekExpiresNew                   DateAndTime,
            wman2IfSsPkmTekKeyRequests                  Counter32,
            wman2IfSsPkmTekKeyReplies                   Counter32,
            wman2IfSsPkmTekKeyRejects                   Counter32,
            wman2IfSsPkmTekInvalids                     Counter32,
            wman2IfSsPkmTekAuthPends                    Counter32,
            wman2IfSsPkmTekKeyRejectErrorCode           INTEGER,
            wman2IfSsPkmTekKeyRejectErrorString         SnmpAdminString,
            wman2IfSsPkmTekInvalidErrorCode             INTEGER,
            wman2IfSsPkmTekInvalidErrorString           SnmpAdminString}


wman2IfSsPkmTekSAId OBJECT-TYPE
        SYNTAX      INTEGER (0..65535)
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "The value of this object is the Security Association
             ID (SAID)."
        ::= { wman2IfSsPkmTekEntry 1 }


wman2IfSsPkmTekSAType OBJECT-TYPE
        SYNTAX      INTEGER {primarySA(0),
                             staticSA(1),
                             dynamicSA(2)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the type of security
             association."
        REFERENCE
            "IEEE Std 802.16-2004; 11.9.18"
        ::= { wman2IfSsPkmTekEntry 2 }


wman2IfSsPkmTekDataEncryptAlg OBJECT-TYPE
        SYNTAX      Wman2IfDataEncryptAlgId
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the data encryption algorithm
             being utilized."
        REFERENCE
            "Table 375, IEEE Std 802.16-2004"
        ::= { wman2IfSsPkmTekEntry 3 }


wman2IfSsPkmTekDataAuthentAlg OBJECT-TYPE
        SYNTAX      Wman2IfDataAuthAlgId
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the data authentication
             algorithm being utilized."
```

```
             REFERENCE
                 "Table 376, IEEE Std 802.16-2004"
             ::= { wman2IfSsPkmTekEntry 4 }


wman2IfSsPkmTekEncryptAlg OBJECT-TYPE
        SYNTAX        Wman2IfTekEncryptAlgId
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the TEK key encryption
             algorithm for this cryptographic suite capability."
        REFERENCE
            "Table 377, IEEE Std 802.16-2004"
        ::= { wman2IfSsPkmTekEntry 5 }


wman2IfSsPkmTekState OBJECT-TYPE
        SYNTAX        INTEGER {start(1),
                               opWait(2),
                               opReauthWait(3),
                               operational(4),
                               rekeyWait(5),
                               rekeyReauthWait(6)}
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the state of the indicated TEK
             FSM. The start(1) state indicates that FSM is in its
             initial state."
        ::= { wman2IfSsPkmTekEntry 6 }


wman2IfSsPkmTekKeySequenceNumber OBJECT-TYPE
        SYNTAX        Integer32 (0..3)
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the most recent TEK key
             sequence number for this TEK FSM."
        REFERENCE
            "IEEE Std 802.16-2004; 11.9.5"
        ::= { wman2IfSsPkmTekEntry 7 }


wman2IfSsPkmTekExpiresOld OBJECT-TYPE
        SYNTAX        DateAndTime
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "The value of this object is the actual clock time for
             expiration of the immediate predecessor of the most recent
             TEK for this FSM.  If this FSM has only one TEK, then the
             value is the time of activation of this FSM."
        ::= { wman2IfSsPkmTekEntry 8 }


wman2IfSsPkmTekExpiresNew OBJECT-TYPE
        SYNTAX        DateAndTime
```

```
              MAX-ACCESS  read-only
              STATUS      current
              DESCRIPTION
                  "The value of this object is the actual clock time for
                   expiration of the most recent TEK for this FSM."
              ::= { wman2IfSsPkmTekEntry 9 }

wman2IfSsPkmTekKeyRequests OBJECT-TYPE
              SYNTAX      Counter32
              MAX-ACCESS  read-only
              STATUS      current
              DESCRIPTION
                  "The value of this object is the count of times the SS has
                   transmitted a Key Request message."
              ::= { wman2IfSsPkmTekEntry 10 }

wman2IfSsPkmTekKeyReplies OBJECT-TYPE
              SYNTAX      Counter32
              MAX-ACCESS  read-only
              STATUS      current
              DESCRIPTION
                  "The value of this object is the count of times the SS has
                   received a Key Reply message, including a message whose
                   authentication failed."
              ::= { wman2IfSsPkmTekEntry 11 }

wman2IfSsPkmTekKeyRejects OBJECT-TYPE
              SYNTAX      Counter32
              MAX-ACCESS  read-only
              STATUS      current
              DESCRIPTION
                  "The value of this object is the count of times the SS has
                   received a Key Reject message, including a message whose
                   authentication failed."
              ::= { wman2IfSsPkmTekEntry 12 }

wman2IfSsPkmTekInvalids OBJECT-TYPE
              SYNTAX      Counter32
              MAX-ACCESS  read-only
              STATUS      current
              DESCRIPTION
                  "The value of this object is the count of times the SS has
                   received a TEK Invalid message, including a message whose
                   authentication failed."
              ::= { wman2IfSsPkmTekEntry 13 }

wman2IfSsPkmTekAuthPends OBJECT-TYPE
              SYNTAX      Counter32
              MAX-ACCESS  read-only
              STATUS      current
              DESCRIPTION
                  "The value of this object is the count of times an
                   Authorization Pending (Auth Pend) event occurred in this
                   FSM."
```

```
        ::= { wman2IfSsPkmTekEntry 14 }


wman2IfSsPkmTekKeyRejectErrorCode OBJECT-TYPE
        SYNTAX      INTEGER {none(1),
                            unknown(2),
                            unauthorizedSaid(4)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the enumerated description of
             the Error-Code in most recent Key Reject message received
             by the SS. This has value unknown(2) if the last Error-Code
             value was 0, and none(1) if no Key Reject message has been
             received since reboot."
        ::= { wman2IfSsPkmTekEntry 15 }

wman2IfSsPkmTekKeyRejectErrorString OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE (0..128))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the Display-String in most
             recent Key Reject message received by the SS. This is a
             zero length string if no Key Reject message has been
             received since reboot."
        ::= { wman2IfSsPkmTekEntry 16 }

wman2IfSsPkmTekInvalidErrorCode OBJECT-TYPE
        SYNTAX      INTEGER {none(1),
                            unknown(2),
                            invalidKeySequence(6)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the enumerated description of
             the Error-Code in most recent TEK Invalid message received
             by the SS.  This has value unknown(2) if the last
             Error-Code value was 0, and  none(1) if no TEK Invalid
             message has been received since reboot."
        ::= { wman2IfSsPkmTekEntry 17 }

wman2IfSsPkmTekInvalidErrorString OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE (0..128))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this object is the Display-String in most
             recent TEK Invalid message received by the SS. This is a
             zero length string if no TEK Invalid message has been
             received since reboot."
        ::= { wman2IfSsPkmTekEntry 18 }

--
-- Table wman2IfSsDeviceCertTable
```

2006-05-26   IEEE 802.16i-06/001r2, May 2006

```
1      --
2      wman2IfSsDeviceCertTable OBJECT-TYPE
3              SYNTAX      SEQUENCE OF   Wman2IfSsDeviceCertEntry
4              MAX-ACCESS  not-accessible
5              STATUS      current
6              DESCRIPTION
7                  "This table describes the PKM device certificates for each
8                   SS wireless interface."
9              ::= { wman2IfSsPkmObjects  3 }
10
11
12     wman2IfSsDeviceCertEntry OBJECT-TYPE
13             SYNTAX      Wman2IfSsDeviceCertEntry
14             MAX-ACCESS  not-accessible
15             STATUS      current
16             DESCRIPTION
17                 "Each entry contains the device certificate of one SS."
18             INDEX      { ifIndex }
19             ::= { wman2IfSsDeviceCertTable  1 }
20
21
22     Wman2IfSsDeviceCertEntry ::= SEQUENCE {
23             wman2IfSsDeviceCert                     OCTET STRING,
24             wman2IfSsDeviceManufCert            OCTET STRING}
25
26     wman2IfSsDeviceCert OBJECT-TYPE
27             SYNTAX      OCTET STRING (SIZE(0..65535))
28             MAX-ACCESS  read-only
29             STATUS      current
30             DESCRIPTION
31                 "The X509 DER-encoded subscriber station certificate."
32             ::= { wman2IfSsDeviceCertEntry 1 }
33
34     wman2IfSsDeviceManufCert OBJECT-TYPE
35             SYNTAX      OCTET STRING (SIZE(0..65535))
36             MAX-ACCESS  read-only
37             STATUS      current
38             DESCRIPTION
39                 "The X509 DER-encoded manufacturer certificate which is
40                  signed by the CA root authority certificate."
41             ::= { wman2IfSsDeviceCertEntry 2 }
42
43     --
44     -- Subscriber station Notification Group
45     -- wman2IfSsNotificationObjects contains the SS SNMP Trap objects
46     --
47     wman2IfSsNotification OBJECT IDENTIFIER ::= { wman2IfSsObjects  3 }
48     wman2IfSsTrapControl OBJECT IDENTIFIER ::= { wman2IfSsNotification 1 }
49     wman2IfSsTrapDefinitions OBJECT IDENTIFIER ::= { wman2IfSsNotification 2
50     }
51
52     -- This object groups all NOTIFICATION-TYPE objects for SS.
53     -- It is defined following RFC2758 sections 8.5 and 8.6
54     -- for the compatibility with SNMPv1.
55     wman2IfSsTrapPrefix OBJECT IDENTIFIER ::= { wman2IfSsTrapDefinitions 0 }
```

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```
1    wman2IfSsTrapControlRegister    OBJECT-TYPE
2          SYNTAX       BITS {wman2IfSsTlvUnknown(0),
3                              wman2IfSsDynamicServiceFail(1),
4                              wman2IfSsDhcpSuccess(2),
5                              wman2IfSsRssiStatusChange(3)}
6
7          MAX-ACCESS   read-write
8          STATUS       current
9          DESCRIPTION
10             "The object is used to enable Subscriber Station traps.
11              From left to right, the set bit indicates the corresponding
12              Subscriber Station trap is enabled."
13
14          ::= { wman2IfSsTrapControl  1 }
15
16
17   wman2IfSsThresholdConfigTable OBJECT-TYPE
18          SYNTAX       SEQUENCE OF Wman2IfSsThresholdConfigEntry
19          MAX-ACCESS   not-accessible
20          STATUS       current
21          DESCRIPTION
22             "This table contains threshold objects that can be set to
23              detect the threshold crossing events."
24
25          ::= { wman2IfSsTrapControl 2 }
26
27   wman2IfSsThresholdConfigEntry OBJECT-TYPE
28          SYNTAX       Wman2IfSsThresholdConfigEntry
29          MAX-ACCESS   not-accessible
30          STATUS       current
31          DESCRIPTION
32             "This table provides one row for each Ss, and is indexed
33              by ifIndex."
34
35          INDEX        { ifIndex }
36          ::= { wman2IfSsThresholdConfigTable 1 }
37
38
39   Wman2IfSsThresholdConfigEntry ::= SEQUENCE {
40          wman2IfSsRssiLowThreshold               Integer32,
41          wman2IfSsRssiHighThreshold              Integer32}
42
43
44   wman2IfSsRssiLowThreshold OBJECT-TYPE
45          SYNTAX       Integer32
46          UNITS        "dBm"
47          MAX-ACCESS   read-write
48          STATUS       current
49          DESCRIPTION
50             "Low RSSI threshold for generating the RSSI alarm trap."
51
52          ::= { wman2IfSsThresholdConfigEntry 1 }
53
54
55   wman2IfSsRssiHighThreshold OBJECT-TYPE
56          SYNTAX       Integer32
57          UNITS        "dBm"
58          MAX-ACCESS   read-write
59          STATUS       current
60          DESCRIPTION
61             "High RSSI threshold for generating a trap to indicate
62              the RSSI is restored."
63
64          ::= { wman2IfSsThresholdConfigEntry 2 }
65
```

```
wman2IfSsTlvUnknownTrap NOTIFICATION-TYPE
        OBJECTS     {ifIndex,
                     wman2IfSsMacAddress,
                     wman2IfSsUnknownTlv}
        STATUS      current
        DESCRIPTION
            "Event that notifies detection of unknown TLV during
             the TLV parsing process."
        ::= { wman2IfSsTrapPrefix 1 }

wman2IfSsDynamicServiceFailTrap NOTIFICATION-TYPE
        OBJECTS     {ifIndex,
                     wman2IfSsMacAddress,
                     wman2IfSsDynamicServiceType,
                     wman2IfSsDynamicServiceFailReason}
        STATUS      current
        DESCRIPTION
            "An event to report the failure of a dynamic service
             operation happened during the dynamic services process
             and detected in the BS side."
        ::= { wman2IfSsTrapPrefix 2 }

wman2IfSsDhcpSuccessTrap    NOTIFICATION-TYPE
        OBJECTS     {ifIndex,
                     wman2IfSsMacAddress}
        STATUS      current
        DESCRIPTION
            "An event to report a successful Handshake to establish IP
             connectivity."
        ::= { wman2IfSsTrapPrefix 3 }

wman2IfSsRssiStatusChangeTrap NOTIFICATION-TYPE
        OBJECTS     {ifIndex,
                     wman2IfSsMacAddress,
                     wman2IfSsRssiStatus,
                     wman2IfSsRssiStatusInfo}
        STATUS      current
        DESCRIPTION
            "An event to report that the downlink RSSI is below
             wman2IfSsRssiLowThreshold, or above
             wman2IfSsRssiHighThreshold after restore."
        ::= { wman2IfSsTrapPrefix 4 }

wman2IfSsNotificationObjectsTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfSsNotificationObjectsEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains SS notification objects that have been
             reported by the trap."
        ::= { wman2IfSsTrapDefinitions 1 }

wman2IfSsNotificationObjectsEntry OBJECT-TYPE
```

```
           SYNTAX        Wman2IfSsNotificationObjectsEntry
           MAX-ACCESS    not-accessible
           STATUS        current
           DESCRIPTION
               "This table provides one row for each SS that has
                generated traps, and is indexed by ifIndex."
           INDEX         { ifIndex }
           ::= { wman2IfSsNotificationObjectsTable 1 }


   Wman2IfSsNotificationObjectsEntry ::= SEQUENCE {
           wman2IfSsMacAddress                      MacAddress,
           wman2IfSsUnknownTlv                      OCTET STRING,
           wman2IfSsDynamicServiceType              INTEGER,
           wman2IfSsDynamicServiceFailReason        OCTET STRING,
           wman2IfSsRssiStatus                      INTEGER,
           wman2IfSsRssiStatusInfo                  OCTET STRING}


   wman2IfSsMacAddress  OBJECT-TYPE
           SYNTAX        MacAddress
           MAX-ACCESS    read-only
           STATUS        current
           DESCRIPTION
               "The MAC address of the SS generating the trap."
           ::= { wman2IfSsNotificationObjectsEntry 1 }


   wman2IfSsUnknownTlv  OBJECT-TYPE
           SYNTAX        OCTET STRING (SIZE(0..65535))
           MAX-ACCESS    read-only
           STATUS        current
           DESCRIPTION
               "Indicating the value of the unknown TLV."
           ::= { wman2IfSsNotificationObjectsEntry 2 }


   wman2IfSsDynamicServiceType  OBJECT-TYPE
           SYNTAX        INTEGER {ssSfCreationReq(1),
                                  ssSfCreationRsp(2),
                                  ssSfCreationAck(3)}
           MAX-ACCESS    read-only
           STATUS        current
           DESCRIPTION
               "This object indicates the dynamic service flow
                creation command type."
           ::= { wman2IfSsNotificationObjectsEntry 3 }


   wman2IfSsDynamicServiceFailReason  OBJECT-TYPE
           SYNTAX        OCTET STRING (SIZE(0..255))
           MAX-ACCESS    read-only
           STATUS        current
           DESCRIPTION
               "This object indicates the reason why the service flow
                creation has failed."
           ::= { wman2IfSsNotificationObjectsEntry 4 }


   wman2IfSsRssiStatus  OBJECT-TYPE
```

```
 1              SYNTAX       INTEGER {ssRssiAlarm(1),
 2                                    ssRssiNoAlarm(2)}
 3              MAX-ACCESS   read-only
 4              STATUS       current
 5              DESCRIPTION
 6
 7                  "A RSSI alarm is generated if the RSSI is lower than
 8                   wman2IfSsRssiLowThreshold, or above
 9                   wman2IfSsRssiHighThreshold after alarm is restored."
10              ::= { wman2IfSsNotificationObjectsEntry 5 }
11
12
13      wman2IfSsRssiStatusInfo  OBJECT-TYPE
14              SYNTAX       OCTET STRING (SIZE(0..255))
15              MAX-ACCESS   read-only
16              STATUS       current
17              DESCRIPTION
18
19                  "This object provides additional information about RSSI
20                   alarm. It is implementation specific"
21              ::= { wman2IfSsNotificationObjectsEntry 6 }
22
23
24      --
25      -- Subscriber station PHY Group
26      --
27      wman2IfSsPhy OBJECT IDENTIFIER ::= { wman2IfSsObjects  5 }
28
29
30      --
31      -- SS OFDM PHY objects
32      --
33      wman2IfSsOfdmPhy OBJECT IDENTIFIER ::= { wman2IfSsPhy 1 }
34
35
36      wman2IfSsOfdmUplinkChannelTable OBJECT-TYPE
37              SYNTAX       SEQUENCE OF Wman2IfSsOfdmUplinkChannelEntry
38              MAX-ACCESS   not-accessible
39              STATUS       current
40              DESCRIPTION
41
42                  "This table contains UCD channel attributes, defining the
43                   transmission characteristics of uplink channels"
44              REFERENCE
45                  "Table 349 and Table 352, in IEEE Std 802.16-2004"
46              ::= { wman2IfSsOfdmPhy 1 }
47
48
49      wman2IfSsOfdmUplinkChannelEntry OBJECT-TYPE
50              SYNTAX       Wman2IfSsOfdmUplinkChannelEntry
51              MAX-ACCESS   not-accessible
52              STATUS       current
53              DESCRIPTION
54
55                  "This table provides one row for each uplink channel of
56                   multi-sector BS, and is indexed by BS ifIndex. An entry
57                   in this table exists for each ifEntry of BS with an
58                   ifType of propBWAp2Mp."
59              INDEX { ifIndex }
60              ::= { wman2IfSsOfdmUplinkChannelTable 1 }
61
62
63      Wman2IfSsOfdmUplinkChannelEntry ::= SEQUENCE {
64              wman2IfSsOfdmCtBasedResvTimeout          INTEGER,
65
```

```
            wman2IfSsOfdmBwReqOppSize                      INTEGER,
            wman2IfSsOfdmRangReqOppSize                    INTEGER,
            wman2IfSsOfdmUplinkCenterFreq                  Unsigned32,
            wman2IfSsOfdmNumSubChReqRegionFull             INTEGER,
            wman2IfSsOfdmNumSymbolsReqRegionFull           INTEGER,
            wman2IfSsOfdmSubChFocusCtCode                  INTEGER,
            wman2IfSsOfdmUpLinkChannelId                   INTEGER}


wman2IfSsOfdmCtBasedResvTimeout OBJECT-TYPE
        SYNTAX      INTEGER (1..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The number of UL-MAPs to receive before contention-based
             reservation is attempted again for the same connection."
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmUplinkChannelEntry 1 }


wman2IfSsOfdmBwReqOppSize OBJECT-TYPE
        SYNTAX      INTEGER (1..65535)
        UNITS       "PS"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Size (in units of PS) of PHY payload that SS may use to
             format and transmit a bandwidth request message in a
             contention request opportunity. The value includes all
             PHY overhead as well as allowance for the MAC data the
             message may hold."
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmUplinkChannelEntry 2 }


wman2IfSsOfdmRangReqOppSize OBJECT-TYPE
        SYNTAX      INTEGER (1..65535)
        UNITS       "PS"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Size (in units of PS) of PHY payload that SS may use to
             format and transmit a RNG-REQ message in a contention
             request opportunity. The value includes all PHY overhead
             as well as allowance for the MAC data the message may
             hold and the maxiumum SS/BS roundtrip propagation delay."
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmUplinkChannelEntry 3 }


wman2IfSsOfdmUplinkCenterFreq OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "kHz"
        MAX-ACCESS  read-only
        STATUS      current
```

216

```
         DESCRIPTION
             " Uplink center frequency (kHz)"
         REFERENCE
             "Table 349, in IEEE Std 802.16-2004"
         ::= { wman2IfSsOfdmUplinkChannelEntry 4 }


wman2IfSsOfdmNumSubChReqRegionFull OBJECT-TYPE
         SYNTAX       INTEGER {oneSubchannel(0),
                              twoSubchannels(1),
                              fourSubchannels(2),
                              eightSubchannels(3),
                              sixteenSubchannels(4)}
         MAX-ACCESS  read-only
         STATUS       current
         DESCRIPTION
             "Number of subchannels used by each transmit
              opportunity when REQ Region-Full is allocated in
              subchannelization region."
         REFERENCE
             "Table 352, in IEEE Std 802.16-2004"
         ::= { wman2IfSsOfdmUplinkChannelEntry 5 }


wman2IfSsOfdmNumSymbolsReqRegionFull OBJECT-TYPE
         SYNTAX       INTEGER (0..31)
         MAX-ACCESS  read-only
         STATUS       current
         DESCRIPTION
             "Number of OFDM symbols used by each transmit
              opportunity when REQ Region-Full is allocated in
              subchannelization region."
         REFERENCE
             "Table 352, in IEEE Std 802.16-2004"
         ::= { wman2IfSsOfdmUplinkChannelEntry 6 }


wman2IfSsOfdmSubChFocusCtCode OBJECT-TYPE
         SYNTAX       INTEGER (0..8)
         MAX-ACCESS  read-only
         STATUS       current
         DESCRIPTION
             "Number of contention codes (CSE) that shall only be used to
              request a subchannelized allocation. Default value 0.
              Allowed values 0-8."
         REFERENCE
             "Table 352, in IEEE Std 802.16-2004"
         DEFVAL         { 0 }
         ::= { wman2IfSsOfdmUplinkChannelEntry 7 }


wman2IfSsOfdmUpLinkChannelId OBJECT-TYPE
         SYNTAX       INTEGER (0..255)
         MAX-ACCESS  read-only
         STATUS       current
         DESCRIPTION
             "The identifier of the uplink channel to which this
              message refers."
```

```
        REFERENCE
            "Subclause 6.3.2.3.4. Table 16, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmUplinkChannelEntry 8 }


wman2IfSsOfdmDownlinkChannelTable OBJECT-TYPE
        SYNTAX        SEQUENCE OF Wman2IfSsOfdmDownlinkChannelEntry
        MAX-ACCESS  not-accessible
        STATUS        current
        DESCRIPTION
            "This table contains DCD channel attributes, defining the
             transmission characteristics of downlink channels"
        REFERENCE
            "Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmPhy 2 }


wman2IfSsOfdmDownlinkChannelEntry OBJECT-TYPE
        SYNTAX        Wman2IfSsOfdmDownlinkChannelEntry
        MAX-ACCESS  not-accessible
        STATUS        current
        DESCRIPTION
            "This table provides one row for each downlink channel of
             multi-sector BS, and is indexed by BS ifIndex. An entry
             in this table exists for each ifEntry of BS with an
             ifType of propBWAp2Mp."
        INDEX { ifIndex }
        ::= { wman2IfSsOfdmDownlinkChannelTable 1 }


Wman2IfSsOfdmDownlinkChannelEntry ::= SEQUENCE {
        wman2IfSsOfdmBsEIRP                    INTEGER,
        wman2IfSsOfdmChannelNumber            Wman2IfChannelNumber,
        wman2IfSsOfdmTTG                      INTEGER,
        wman2IfSsOfdmRTG                      INTEGER,
        wman2IfSsOfdmInitRngMaxRSS            INTEGER,
        wman2IfSsOfdmDownlinkCenterFreq       Unsigned32,
        wman2IfSsOfdmBsId                     Wman2IfBsIdType,
        wman2IfSsOfdmMacVersion               Wman2IfMacVersion,
        wman2IfSsOfdmFrameDurationCode        INTEGER,
        wman2IfSsOfdmDownLinkChannelId        INTEGER}


wman2IfSsOfdmBsEIRP OBJECT-TYPE
        SYNTAX        INTEGER (0..65535)
        UNITS         "dBm"
        MAX-ACCESS  read-only
        STATUS        current
        DESCRIPTION
            "The EIRP is the equivalent isotropic radiated power of
             the base station, which is computed for a simple
             single-antenna transmitter."
        REFERENCE
            "Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmDownlinkChannelEntry 1 }


wman2IfSsOfdmChannelNumber OBJECT-TYPE
        SYNTAX        Wman2IfChannelNumber
```

```
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "Downlink channel number as defined in 8.5.
                 Used for license-exempt operation only."
            REFERENCE
                "Table 358, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmDownlinkChannelEntry 2 }

wman2IfSsOfdmTTG OBJECT-TYPE
            SYNTAX      INTEGER (0..255)
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "Transmit / Receive Transition Gap."
            REFERENCE
                "Table 358, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmDownlinkChannelEntry 3 }

wman2IfSsOfdmRTG OBJECT-TYPE
            SYNTAX      INTEGER (0..255)
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "Receive / Transmit Transition Gap."
            REFERENCE
                "Table 358, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmDownlinkChannelEntry 4 }

wman2IfSsOfdmInitRngMaxRSS OBJECT-TYPE
            SYNTAX      INTEGER (0..65535)
            UNITS       "dBm"
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "Initial Ranging Max. Received Signal Strength at BS
                 Signed in units of 1 dBm."
            REFERENCE
                "Table 358, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmDownlinkChannelEntry 5 }

wman2IfSsOfdmDownlinkCenterFreq OBJECT-TYPE
            SYNTAX      Unsigned32
            UNITS       "kHz"
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "Downlink center frequency (kHz)."
            REFERENCE
                "Table 358, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmDownlinkChannelEntry 6 }

wman2IfSsOfdmBsId OBJECT-TYPE
            SYNTAX      Wman2IfBsIdType
```

```
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Base station ID."
        REFERENCE
            "Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmDownlinkChannelEntry 7 }

wman2IfSsOfdmMacVersion OBJECT-TYPE
        SYNTAX      Wman2IfMacVersion
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter specifies the version of 802.16 to which
             the message originator conforms."
        REFERENCE
            "Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmDownlinkChannelEntry 8 }

wman2IfSsOfdmFrameDurationCode OBJECT-TYPE
        SYNTAX      INTEGER {duration2dot5ms(0),
                             duration4ms(1),
                             duration5ms(2),
                             duration8ms(3),
                             duration10ms(4),
                             duration12dot5ms(5),
                             duration20ms(6)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The duration of the frame. The frame duration code
             values are specified in Table 230."
        REFERENCE
            "Subclause 11.4.1, Table 230, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmDownlinkChannelEntry 9 }

wman2IfSsOfdmDownLinkChannelId OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The identifier of the downlink channel to which this
             message refers."
        REFERENCE
            "Subclause 6.3.2.3.1, Table 15, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmDownlinkChannelEntry 10 }

wman2IfSsOfdmUcdBurstProfileTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfSsOfdmUcdBurstProfileEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains UCD burst profiles for each uplink
             channel"
```

```
        REFERENCE
            "Table 356, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmPhy 3 }


wman2IfSsOfdmUcdBurstProfileEntry OBJECT-TYPE
        SYNTAX      Wman2IfSsOfdmUcdBurstProfileEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each UCD burst profile.
             This table is double indexed. The primary index is an
             ifIndex with an ifType of propBWAp2Mp. The secondary index
             is wman2IfSsOfdmOfdmUcdBurstProfIndex."
        INDEX { ifIndex, wman2IfSsOfdmUiucIndex }
        ::= { wman2IfSsOfdmUcdBurstProfileTable 1 }


Wman2IfSsOfdmUcdBurstProfileEntry ::= SEQUENCE {
        wman2IfSsOfdmUiucIndex                  INTEGER,
        wman2IfSsOfdmUcdFecCodeType             Wman2IfOfdmFecCodeType,
        wman2IfSsOfdmFocusCtPowerBoost          INTEGER,
        wman2IfSsOfdmUcdTcsEnable               INTEGER}


wman2IfSsOfdmUiucIndex OBJECT-TYPE
        SYNTAX      INTEGER (5 .. 12)
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "The Uplink Interval Usage Code indicates the uplink burst
             profile in the UCD message, and is used along with ifIndex
             to identify an entry in the
             wman2IfSsOfdmUcdBurstProfileTable."
        REFERENCE
            "Subclause 8.3.6.3.1, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmUcdBurstProfileEntry 1 }


wman2IfSsOfdmUcdFecCodeType OBJECT-TYPE
        SYNTAX      Wman2IfOfdmFecCodeType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Uplink FEC code type and modulation type"
        REFERENCE
            "Table 356, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmUcdBurstProfileEntry 2 }


wman2IfSsOfdmFocusCtPowerBoost OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The power boost in dB of focused contention carriers, as
             described in 8.3.6.3.3."
        REFERENCE
            "Table 356, in IEEE Std 802.16-2004"
```

```
            ::= { wman2IfSsOfdmUcdBurstProfileEntry 3 }


wman2IfSsOfdmUcdTcsEnable OBJECT-TYPE
        SYNTAX      INTEGER {tcsDisabled(0),
                             tcsEnabled(1)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter determines the transmission convergence
             sublayer, as described in 8.1.4.3, can be enabled on a
             per-burst basis for both uplink and downlink. through
             DIUC/UIUC messages."
        REFERENCE
            "Table 356, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmUcdBurstProfileEntry 4 }


wman2IfSsOfdmDcdBurstProfileTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfSsOfdmDcdBurstProfileEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each DCD burst profile.
             This table is double indexed. The primary index is an
             ifIndex with an ifType of propBWAp2Mp. The secondary
             index is wman2IfSsOfdmDiucIndex."
        REFERENCE
            "Table 362, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmPhy 4 }


wman2IfSsOfdmDcdBurstProfileEntry OBJECT-TYPE
        SYNTAX      Wman2IfSsOfdmDcdBurstProfileEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each DCD burst profile.
             This table is double indexed. The primary index is an
             ifIndex with an ifType of propBWAp2Mp. The secondary index
             is wman2IfSsOfdmDcdBurstProfIndex."
        INDEX { ifIndex, wman2IfSsOfdmDiucIndex }
        ::= { wman2IfSsOfdmDcdBurstProfileTable 1 }


Wman2IfSsOfdmDcdBurstProfileEntry ::= SEQUENCE {
        wman2IfSsOfdmDiucIndex                  INTEGER,
        wman2IfSsOfdmDownlinkFrequency          Unsigned32,
        wman2IfSsOfdmDcdFecCodeType             Wman2IfOfdmFecCodeType,
        wman2IfSsOfdmDiucMandatoryExitThresh    INTEGER,
        wman2IfSsOfdmDiucMinEntryThresh         INTEGER,
        wman2IfSsOfdmTcsEnable                  INTEGER}


wman2IfSsOfdmDiucIndex OBJECT-TYPE
        SYNTAX      INTEGER (1..11)
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
```

```
                    "The Downlink Interval Usage Code indicates the downlink
                     burst profile in the DCD message, and is used along with
                     ifIndex to identify an entry in the
                     wman2IfSsOfdmDcdBurstProfileTable."
              REFERENCE
                    "Subclause 8.3.6.3.1, in IEEE Std 802.16-2004"
              ::= { wman2IfSsOfdmDcdBurstProfileEntry 1 }


wman2IfSsOfdmDownlinkFrequency OBJECT-TYPE
              SYNTAX      Unsigned32
              UNITS       "kHz"
              MAX-ACCESS  read-only
              STATUS      current
              DESCRIPTION
                    "Downlink Frequency (kHz)."
              REFERENCE
                    "Table 362, in IEEE Std 802.16-2004"
              ::= { wman2IfSsOfdmDcdBurstProfileEntry 2 }


wman2IfSsOfdmDcdFecCodeType OBJECT-TYPE
              SYNTAX      Wman2IfOfdmFecCodeType
              MAX-ACCESS  read-only
              STATUS      current
              DESCRIPTION
                    "Downlink FEC code type and modulation type"
              REFERENCE
                    "Table 362, in IEEE Std 802.16-2004"
              ::= { wman2IfSsOfdmDcdBurstProfileEntry 3 }


wman2IfSsOfdmDiucMandatoryExitThresh OBJECT-TYPE
              SYNTAX       INTEGER (0..255)
              MAX-ACCESS  read-only
              STATUS       current
              DESCRIPTION
                    "DIUC mandatory exit threshold: 0 - 63.75 dB CINR at or
                     below where this DIUC can no longer be used and where this
                     change to a more robust DIUC is required in 0.25 dB units."
              REFERENCE
                    "Table 362, in IEEE Std 802.16-2004"
              ::= { wman2IfSsOfdmDcdBurstProfileEntry 4 }


wman2IfSsOfdmDiucMinEntryThresh OBJECT-TYPE
              SYNTAX       INTEGER (0..255)
              MAX-ACCESS  read-only
              STATUS       current
              DESCRIPTION
                    "DIUC minimum entry threshold: 0 - 63.75 dB The minimum CINR
                     required to start using this DIUC when changing from a more
                     robust DIUC is required, in 0.25 dB units."
              REFERENCE
                    "Table 362, in IEEE Std 802.16-2004"
              ::= { wman2IfSsOfdmDcdBurstProfileEntry 5 }


wman2IfSsOfdmTcsEnable OBJECT-TYPE
```

```
                 SYNTAX       INTEGER {tcsDisabled (0),
                                       tcsEnabled (1)}
                 MAX-ACCESS   read-only
                 STATUS       current
                 DESCRIPTION
                     "Indicates whether Transmission COnvergence Sublayer
                      is enabled or disabled."
                 REFERENCE
                     "Table 362, in IEEE Std 802.16-2004"
                 ::= { wman2IfSsOfdmDcdBurstProfileEntry 6 }

        --
        -- SS OFDMA PHY objects
        --
        wman2IfSsOfdmaPhy OBJECT IDENTIFIER ::= { wman2IfSsPhy 2 }


        wman2IfSsOfdmaUplinkChannelTable OBJECT-TYPE
                 SYNTAX       SEQUENCE OF Wman2IfSsOfdmaUplinkChannelEntry
                 MAX-ACCESS   not-accessible
                 STATUS       current
                 DESCRIPTION
                     "This table contains UCD channel attributes, defining the
                      transmission characteristics of uplink channels"
                 REFERENCE
                     "Subclause 11.3.1, Table 349 and Table 353, in IEEE Std
                      802.16-2004"
                 ::= { wman2IfSsOfdmaPhy 1 }

        wman2IfSsOfdmaUplinkChannelEntry OBJECT-TYPE
                 SYNTAX       Wman2IfSsOfdmaUplinkChannelEntry
                 MAX-ACCESS   not-accessible
                 STATUS       current
                 DESCRIPTION
                     "This table provides one row for each uplink channel of
                      multi-sector BS, and is indexed by BS ifIndex. An entry
                      in this table exists for each ifEntry of BS with an
                      ifType of propBWAp2Mp."
                 INDEX        { ifIndex }
                 ::= { wman2IfSsOfdmaUplinkChannelTable 1 }

        Wman2IfSsOfdmaUplinkChannelEntry ::= SEQUENCE {
                 wman2IfSsOfdmaCtBasedResvTimeout         INTEGER,
                 wman2IfSsOfdmaBwReqOppSize               INTEGER,
                 wman2IfSsOfdmaRangReqOppSize             INTEGER,
                 wman2IfSsOfdmaUplinkCenterFreq           Unsigned32,
                 wman2IfSsOfdmaInitRngCodes               INTEGER,
                 wman2IfSsOfdmaPeriodicRngCodes           INTEGER,
                 wman2IfSsOfdmaBWReqCodes                 INTEGER,
                 wman2IfSsOfdmaPerRngBackoffStart         INTEGER,
                 wman2IfSsOfdmaPerRngBackoffEnd           INTEGER,
                 wman2IfSsOfdmaStartOfRngCodes            INTEGER,
                 wman2IfSsOfdmaPermutationBase            INTEGER,
                 wman2IfSsOfdmaULAllocSubchBitmap         OCTET STRING,
                 wman2IfSsOfdmaOptPermULAllocSubchBitmap OCTET STRING,
```

```
        wman2IfSsOfdmaBandAMCAllocThreshold      INTEGER,
        wman2IfSsOfdmaBandAMCReleaseThreshold    INTEGER,
        wman2IfSsOfdmaBandAMCAllocTimer          INTEGER,
        wman2IfSsOfdmaBandAMCReleaseTimer        INTEGER,
        wman2IfSsOfdmaBandStatRepMAXPeriod       INTEGER,
        wman2IfSsOfdmaBandAMCRetryTimer          INTEGER,
        wman2IfSsOfdmaSafetyChAllocThreshold     INTEGER,
        wman2IfSsOfdmaSafetyChReleaseThreshold   INTEGER,
        wman2IfSsOfdmaSafetyChAllocTimer         INTEGER,
        wman2IfSsOfdmaSafetyChReleaseTimer       INTEGER,
        wman2IfSsOfdmaBinStatRepMAXPeriod        INTEGER,
        wman2IfSsOfdmaSafetyChaRetryTimer        INTEGER,
        wman2IfSsOfdmaHARQAackDelayULBurst       INTEGER,
        wman2IfSsOfdmaCQICHBandAMCTranaDelay     INTEGER}

wman2IfSsOfdmaCtBasedResvTimeout OBJECT-TYPE
        SYNTAX       INTEGER (1..255)
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The number of UL-MAPs to receive before contention-based
             reservation is attempted again for the same connection."
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaUplinkChannelEntry 1 }

wman2IfSsOfdmaBwReqOppSize OBJECT-TYPE
        SYNTAX       INTEGER (1..65535)
        UNITS        "PS"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Size (in units of PS) of PHY payload that SS may use to
             format and transmit a bandwidth request message in a
             contention request opportunity. The value includes all
             PHY overhead as well as allowance for the MAC data the
             message may hold."
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaUplinkChannelEntry 2 }

wman2IfSsOfdmaRangReqOppSize OBJECT-TYPE
        SYNTAX       INTEGER (1..65535)
        UNITS        "PS"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Size (in units of PS) of PHY payload that SS may use to
             format and transmit a RNG-REQ message in a contention
             request opportunity. The value includes all PHY overhead
             as well as allowance for the MAC data the message may
             hold and the maxiumum SS/BS roundtrip propagation delay."
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
```

```
                    ::= { wman2IfSsOfdmaUplinkChannelEntry 3 }


wman2IfSsOfdmaUplinkCenterFreq OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "kHz"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            " Uplink center frequency (kHz)"
        REFERENCE
            "Table 349, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaUplinkChannelEntry 4 }


wman2IfSsOfdmaInitRngCodes OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Number of initial ranging CDMA codes. Possible values are
             0..255. The total number of wman2IfSsOfdmaInitRngCodes,
             wman2IfSsOfdmaPeriodicRngCodes and wman2IfSsOfdmaBWReqCodes
             shall be equal or less than 256."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        DEFVAL     { 30 }
        ::= { wman2IfSsOfdmaUplinkChannelEntry 5 }


wman2IfSsOfdmaPeriodicRngCodes OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Number of periodic ranging CDMA codes. Possible values are
             0..255. The total number of wman2IfSsOfdmaInitRngCodes,
             wman2IfSsOfdmaPeriodicRngCodes and wman2IfSsOfdmaBWReqCodes
             shall be equal or less than 256."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        DEFVAL     { 30 }
        ::= { wman2IfSsOfdmaUplinkChannelEntry 6 }


wman2IfSsOfdmaBWReqCodes OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Number of bandwidth request codes. Possible values are
             0..255. The total number of wman2IfSsOfdmaInitRngCodes,
             wman2IfSsOfdmaPeriodicRngCodes and wman2IfSsOfdmaBWReqCodes
             shall be equal or less than 256."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        DEFVAL     { 30 }
            ::= { wman2IfSsOfdmaUplinkChannelEntry 7 }
```

```
wman2IfSsOfdmaPerRngBackoffStart OBJECT-TYPE
        SYNTAX      INTEGER (0..15)
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Initial backoff window size for periodic ranging
             contention, expressed as a power of 2."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        DEFVAL    { 0 }
        ::= { wman2IfSsOfdmaUplinkChannelEntry 8 }

wman2IfSsOfdmaPerRngBackoffEnd OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 15)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Final backoff window size for periodic ranging contention,
             expressed as a power of 2."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        DEFVAL    { 15 }
        ::= { wman2IfSsOfdmaUplinkChannelEntry 9 }

wman2IfSsOfdmaStartOfRngCodes OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Indicates the starting number, S, of the group of codes
             used for this uplink.All the ranging codes used on this
             uplink will be between S and ((S+N+M+L) mod 256). Where,
             N is the number of initial-ranging codes M is the number
             of periodic-ranging codes L is the number of
             bandwidth-request codes The range of values is 0 S255"
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        DEFVAL    { 0 }
        ::= { wman2IfSsOfdmaUplinkChannelEntry 10 }

wman2IfSsOfdmaPermutationBase OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Determines the UL_IDcell parameter for the subcarrier
             permutation to be used on this uplink channel"
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        DEFVAL    { 0 }
        ::= { wman2IfSsOfdmaUplinkChannelEntry 11 }

wman2IfSsOfdmaULAllocSubchBitmap OBJECT-TYPE
```

```
            SYNTAX      OCTET STRING (SIZE (9))
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "This is a bitmap describing the sub-channels allocated
                 to the segment in the UL, when using the uplink PUSC
                 permutation. The LSB of the first byte shall corrspond to
                 subchannel 0. For any bit that is not set,
                 the corresponding subchannel shall not be used by the SS
                 on that segment"
            REFERENCE
                "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmaUplinkChannelEntry 12 }

wman2IfSsOfdmaOptPermULAllocSubchBitmap OBJECT-TYPE
            SYNTAX      OCTET STRING (SIZE (13))
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "This is a bitmap describing the sub-channels allocated to
                 the segment in the UL, when using the uplink optional PUSC
                 permutation (see 8.4.6.2.5 in IEEE Std 802.16-2004). The
                 LSB of the first byte shall correspond to subchannel 0.
                 For any bit that is not set, the corresponding subchannel
                 shall not be used by the SS on that segment"
            REFERENCE
                "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmaUplinkChannelEntry 13 }

wman2IfSsOfdmaBandAMCAllocThreshold OBJECT-TYPE
            SYNTAX      INTEGER (0 .. 255)
            UNITS       "dB"
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "This object defines the OFDMA band AMC allocation
                 threshold."
            REFERENCE
                "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmaUplinkChannelEntry 14 }

wman2IfSsOfdmaBandAMCReleaseThreshold OBJECT-TYPE
            SYNTAX      INTEGER (0 .. 255)
            UNITS       "dB"
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "This object defines the OFDMA band AMC release
                 threshold."
            REFERENCE
                "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmaUplinkChannelEntry 15 }

wman2IfSsOfdmaBandAMCAllocTimer OBJECT-TYPE
```

```
1          SYNTAX      INTEGER (0 .. 255)
2          UNITS       "Frame"
3          MAX-ACCESS  read-only
4          STATUS      current
5          DESCRIPTION
6              "This object defines the OFDMA band AMC allocation
7               timer."
8          REFERENCE
9              "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
10         ::= { wman2IfSsOfdmaUplinkChannelEntry 16 }
11
12
13  wman2IfSsOfdmaBandAMCReleaseTimer OBJECT-TYPE
14         SYNTAX      INTEGER (0 .. 255)
15         UNITS       "Frame"
16         MAX-ACCESS  read-only
17         STATUS      current
18         DESCRIPTION
19             "This object defines the OFDMA band AMC release
20              timer."
21         REFERENCE
22             "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
23         ::= { wman2IfSsOfdmaUplinkChannelEntry 17 }
24
25
26  wman2IfSsOfdmaBandStatRepMAXPeriod OBJECT-TYPE
27         SYNTAX      INTEGER (0 .. 255)
28         UNITS       "Frame"
29         MAX-ACCESS  read-only
30         STATUS      current
31         DESCRIPTION
32             "This object defines the OFDMA band status reporting
33              maximum period."
34         REFERENCE
35             "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
36         ::= { wman2IfSsOfdmaUplinkChannelEntry 18 }
37
38
39  wman2IfSsOfdmaBandAMCRetryTimer OBJECT-TYPE
40         SYNTAX      INTEGER (0 .. 255)
41         UNITS       "Frame"
42         MAX-ACCESS  read-only
43         STATUS      current
44         DESCRIPTION
45             "This object defines the OFDMA band AMC retry
46              timer."
47         REFERENCE
48             "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
49         ::= { wman2IfSsOfdmaUplinkChannelEntry 19 }
50
51
52  wman2IfSsOfdmaSafetyChAllocThreshold OBJECT-TYPE
53         SYNTAX      INTEGER (0 .. 255)
54         UNITS       "dB"
55         MAX-ACCESS  read-only
56         STATUS      current
57         DESCRIPTION
58             "This object defines the OFDMA safety channel allocation
```

```
                    threshold."
            REFERENCE
                "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
            ::= { wman2IfSsOfdmaUplinkChannelEntry 20 }


wman2IfSsOfdmaSafetyChReleaseThreshold OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 255)
        UNITS       "dB"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object defines the OFDMA safety channel release
             threshold."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaUplinkChannelEntry 21 }


wman2IfSsOfdmaSafetyChAllocTimer OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 255)
        UNITS       "Frame"
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "This object defines the OFDMA safety channel allocation
             timer."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaUplinkChannelEntry 22 }


wman2IfSsOfdmaSafetyChReleaseTimer OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 255)
        UNITS       "Frame"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object defines the OFDMA safety channel release
             timer."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaUplinkChannelEntry 23 }


wman2IfSsOfdmaBinStatRepMAXPeriod OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 255)
        UNITS       "Frame"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object defines the OFDMA bin status reporting
             maximum period."
        REFERENCE
            "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaUplinkChannelEntry 24 }


wman2IfSsOfdmaSafetyChaRetryTimer OBJECT-TYPE
```

```
          SYNTAX      INTEGER (0 .. 255)
          UNITS       "Frame"
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
              "This object defines the OFDMA safety channel retry
               timer."
          REFERENCE
              "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
          ::= { wman2IfSsOfdmaUplinkChannelEntry 25 }

wman2IfSsOfdmaHARQAackDelayULBurst OBJECT-TYPE
          SYNTAX      INTEGER {oneframeoffset(1),
                              twoframesoffset(2),
                              threeframesoffset(3)}
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
              "This object defines the OFDMA H-ARQ ACK delay for UL burst.
               1 = one frame offset
               2 = two frames offset
               3 = three frames offset"
          REFERENCE
              "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
                  ::= { wman2IfSsOfdmaUplinkChannelEntry 26 }

wman2IfSsOfdmaCQICHBandAMCTranaDelay OBJECT-TYPE
          SYNTAX      INTEGER (0 .. 255)
          UNITS       "Frame"
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
              "This object defines the OFDMA CQICH band AMC transition
               delay."
          REFERENCE
              "Subclause 11.3.1, Table 353, in IEEE Std 802.16-2004"
          ::= { wman2IfSsOfdmaUplinkChannelEntry 27 }

wman2IfSsOfdmaDownlinkChannelTable OBJECT-TYPE
          SYNTAX      SEQUENCE OF Wman2IfSsOfdmaDownlinkChannelEntry
          MAX-ACCESS  not-accessible
          STATUS      current
          DESCRIPTION
              "This table contains DCD channel attributes, defining the
               transmission characteristics of downlink channels"
          REFERENCE
              "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
          ::= { wman2IfSsOfdmaPhy 2 }

wman2IfSsOfdmaDownlinkChannelEntry OBJECT-TYPE
          SYNTAX      Wman2IfSsOfdmaDownlinkChannelEntry
          MAX-ACCESS  not-accessible
          STATUS      current
          DESCRIPTION
```

```
                    "This table provides one row for each downlink channel of
                     multi-sector BS, and is indexed by BS ifIndex. An entry in
                     this table exists for each ifEntry of BS with an ifType of
                     propBWAp2Mp."
                INDEX       { ifIndex }
                ::= { wman2IfSsOfdmaDownlinkChannelTable 1 }


        Wman2IfSsOfdmaDownlinkChannelEntry ::= SEQUENCE {
                wman2IfSsOfdmaBsEIRP                      INTEGER,
                wman2IfSsOfdmaChannelNumber              Wman2IfChannelNumber,
                wman2IfSsOfdmaTTG                        INTEGER,
                wman2IfSsOfdmaRTG                        INTEGER,
                wman2IfSsOfdmaInitRngMaxRSS              INTEGER,
                wman2IfSsOfdmaDownlinkCenterFreq         Unsigned32,
                wman2IfSsOfdmaBsId                       Wman2IfBsIdType,
                wman2IfSsOfdmaMacVersion                 Wman2IfMacVersion,
                wman2IfSsOfdmaFrameDurationCode          INTEGER,
                wman2IfSsOfdmaSizeCqichIdField           INTEGER,
                wman2IfSsOfdmaHARQAackDelayBurst         INTEGER}


        wman2IfSsOfdmaBsEIRP OBJECT-TYPE
                SYNTAX      INTEGER (0..65535)
                UNITS       "dBm"
                MAX-ACCESS  read-only
                STATUS      current
                DESCRIPTION
                    "The EIRP is the equivalent isotropic radiated power of
                     the base station, which is computed for a simple
                     single-antenna transmitter."
                REFERENCE
                    "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
                ::= { wman2IfSsOfdmaDownlinkChannelEntry 1 }


        wman2IfSsOfdmaChannelNumber OBJECT-TYPE
                SYNTAX      Wman2IfChannelNumber
                MAX-ACCESS  read-only
                STATUS      current
                DESCRIPTION
                    "Downlink channel number as defined in 8.5. Used for
                     license-exempt operation only."
                REFERENCE
                    "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
                ::= { wman2IfSsOfdmaDownlinkChannelEntry 2 }


        wman2IfSsOfdmaTTG OBJECT-TYPE
                SYNTAX      INTEGER (0..255)
                MAX-ACCESS  read-only
                STATUS      current
                DESCRIPTION
                    "Transmit / Receive Transition Gap."
                REFERENCE
                    "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
                ::= { wman2IfSsOfdmaDownlinkChannelEntry 3 }
```

```
1    wman2IfSsOfdmaRTG OBJECT-TYPE
2            SYNTAX       INTEGER (0..255)
3            MAX-ACCESS   read-only
4            STATUS       current
5            DESCRIPTION
6                "Receive / Transmit Transition Gap."
7            REFERENCE
8                "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
9            ::= { wman2IfSsOfdmaDownlinkChannelEntry 4 }
10
11
12   wman2IfSsOfdmaInitRngMaxRSS OBJECT-TYPE
13           SYNTAX       INTEGER (0..65535)
14           UNITS        "dBm"
15           MAX-ACCESS   read-only
16           STATUS       current
17           DESCRIPTION
18               "Initial Ranging Max. Received Signal Strength at BS
19                Signed in units of 1 dBm."
20           REFERENCE
21               "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
22           ::= { wman2IfSsOfdmaDownlinkChannelEntry 5 }
23
24
25   wman2IfSsOfdmaDownlinkCenterFreq OBJECT-TYPE
26           SYNTAX       Unsigned32
27           UNITS        "kHz"
28           MAX-ACCESS   read-only
29           STATUS       current
30           DESCRIPTION
31               "Downlink center frequency (kHz)."
32           REFERENCE
33               "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
34           ::= { wman2IfSsOfdmaDownlinkChannelEntry 6 }
35
36
37   wman2IfSsOfdmaBsId OBJECT-TYPE
38           SYNTAX       Wman2IfBsIdType
39           MAX-ACCESS   read-only
40           STATUS       current
41           DESCRIPTION
42               "Base station ID."
43           REFERENCE
44               "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
45           ::= { wman2IfSsOfdmaDownlinkChannelEntry 7 }
46
47
48   wman2IfSsOfdmaMacVersion OBJECT-TYPE
49           SYNTAX       Wman2IfMacVersion
50           MAX-ACCESS   read-only
51           STATUS       current
52           DESCRIPTION
53               "This parameter specifies the version of 802.16 to which
54                the message originator conforms."
55           REFERENCE
56               "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
57           ::= { wman2IfSsOfdmaDownlinkChannelEntry 8 }
```

```
wman2IfSsOfdmaFrameDurationCode OBJECT-TYPE
        SYNTAX        INTEGER {aASGap(0),
                                duration2ms(1),
                                duration2dot5ms(2),
                                duration4ms(3),
                                duration5ms(4),
                                duration8ms(5),
                                duration10ms(6),
                                duration12dot5ms(7),
                                duration20ms(8)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The duration of the frame. The frame duration code values
             are specified in Table 232 in IEEE Std 802.16-2004."
        REFERENCE
            "Subclause 11.4.1, Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaDownlinkChannelEntry 9 }

wman2IfSsOfdmaSizeCqichIdField OBJECT-TYPE
        SYNTAX        INTEGER {threebits(1),
                                fourbits(2),
                                fivebits(3),
                                sixbits(4),
                                sevenbits(5),
                                eightbits(6),
                                ninebits(7)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object defines the size of CQICH ID field.
             0 = Reserved
             1 = 3 bits
             2 = 4 bits
             3 = 5 bits
             4 = 6 bits
             5 = 7 bits
             6 = 8 bits
             7 = 9 bits
             8...255 = Reserved"
        REFERENCE
            "Subclause 11.3.1, Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaDownlinkChannelEntry 10 }

wman2IfSsOfdmaHARQAackDelayBurst OBJECT-TYPE
        SYNTAX        INTEGER {oneframeoffset(1),
                                twoframesoffset(2),
                                threeframesoffset(3)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This object defines the OFDMA H-ARQ ACK delay for DL burst.
             1 = one frame offset
             2 = two frames offset
```

```
                    3 = three frames offset"
        REFERENCE
            "Subclause 11.3.1, Table 358, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaDownlinkChannelEntry 11 }


wman2IfSsOfdmaUcdBurstProfileTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfSsOfdmaUcdBurstProfileEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains UCD burst profiles for each uplink
             channel"
        REFERENCE
            "Subclause 11.3.1.1, Table 288 and Table 357, in IEEE
             Std 802.16-2004"
        ::= { wman2IfSsOfdmaPhy 3 }


wman2IfSsOfdmaUcdBurstProfileEntry OBJECT-TYPE
        SYNTAX      Wman2IfSsOfdmaUcdBurstProfileEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each UCD burst profile.
             This table is double indexed. The primary index is an
             ifIndex with an ifType of propBWAp2Mp. The secondary index
             is wman2IfSsOfdmaUiucIndex."
        INDEX       { ifIndex, wman2IfSsOfdmaUiucIndex }
        ::= { wman2IfSsOfdmaUcdBurstProfileTable 1 }


Wman2IfSsOfdmaUcdBurstProfileEntry ::= SEQUENCE {
        wman2IfSsOfdmaUiucIndex                 INTEGER,
        wman2IfSsOfdmaUcdFecCodeType            Wman2IfOfdmaFecCodeType,
        wman2IfSsOfdmaRangingDataRatio          INTEGER,
        wman2IfSsOfdmaNorCOverNOverride         OCTET STRING}


wman2IfSsOfdmaUiucIndex OBJECT-TYPE
        SYNTAX      INTEGER (1 .. 10)
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "The Uplink Interval Usage Code indicates the uplink burst
             profile in the UCD message, and is used along with ifIndex
             to identify an entry in the
             wman2IfSsOfdmaUcdBurstProfileTable."
        REFERENCE
            "Subclause 8.4.5.4.1, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaUcdBurstProfileEntry 1 }


wman2IfSsOfdmaUcdFecCodeType OBJECT-TYPE
        SYNTAX      Wman2IfOfdmaFecCodeType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Uplink FEC code type and modulation type"
```

```
         REFERENCE
             "Subclause 11.3.1.1, Table 357, in IEEE Std 802.16-2004"
         ::= { wman2IfSsOfdmaUcdBurstProfileEntry 2 }


wman2IfSsOfdmaRangingDataRatio OBJECT-TYPE
         SYNTAX       INTEGER (0 .. 255)
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
             "Reducing factor in units of 1 dB, between the power used
              for this burst and power should be used for CDMA Ranging."
         REFERENCE
             "Subclause 11.3.1.1, Table 357, in IEEE Std 802.16-2004"
         ::= { wman2IfSsOfdmaUcdBurstProfileEntry 3 }


wman2IfSsOfdmaNorCOverNOverride OBJECT-TYPE
         SYNTAX OCTET STRING (SIZE (5))
         MAX-ACCESS read-only
         STATUS current
         DESCRIPTION
             "This is a list of numbers, where each number is encoded by
              one nibble, and interpeted as a signed integer. The nibbles
              correspond in order to the list define by Table 334 in IEEE
              Std 802.16-2004 starting from the second line, such that
              the LS nibble of the first byte corresponds to the second
              line in the table. The number encoded by each nibble
              represents the difference in normalized C/N relative to the
              previous line in the table"
         REFERENCE
             "Subclause 11.3.1.1, Table 357, in IEEE Std 802.16-2004"
         ::= { wman2IfSsOfdmaUcdBurstProfileEntry 4 }


wman2IfSsOfdmaDcdBurstProfileTable OBJECT-TYPE
         SYNTAX       SEQUENCE OF Wman2IfSsOfdmaDcdBurstProfileEntry
         MAX-ACCESS   not-accessible
         STATUS       current
         DESCRIPTION
             "This table provides one row for each DCD burst profile.
              This table is double indexed. The primary index is an
              ifIndex with an ifType of propBWAp2Mp. The secondary index
              is wman2IfSsOfdmaDiucIndex."
         ::= { wman2IfSsOfdmaPhy 4 }


wman2IfSsOfdmaDcdBurstProfileEntry OBJECT-TYPE
         SYNTAX       Wman2IfSsOfdmaDcdBurstProfileEntry
         MAX-ACCESS   not-accessible
         STATUS       current
         DESCRIPTION
             "This table provides one row for each DCD burst profile,
              and is double indexed. The primary index is an ifIndex
              with an ifType of propBWAp2Mp. The secondary index is
              wman2IfSsOfdmaDiucIndex."
         INDEX       { ifIndex, wman2IfSsOfdmaDiucIndex }
         ::= { wman2IfSsOfdmaDcdBurstProfileTable 1 }
```

```
Wman2IfSsOfdmaDcdBurstProfileEntry ::= SEQUENCE {
        wman2IfSsOfdmaDiucIndex                     INTEGER,
        wman2IfSsOfdmaDownlinkFrequency             Unsigned32,
        wman2IfSsOfdmaDcdFecCodeType                Wman2IfOfdmaFecCodeType,
        wman2IfSsOfdmaDiucMandatoryExitThresh       INTEGER,
        wman2IfSsOfdmaDiucMinEntryThresh            INTEGER}

wman2IfSsOfdmaDiucIndex OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 12)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The Downlink Interval Usage Code indicates the downlink
             burst profile in the DCD message, and is used
             along with ifIndex to identify an entry in the
             wman2IfSsOfdmaDcdBurstProfileTable."
        REFERENCE
            "Subclause 8.4.5.3.1, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaDcdBurstProfileEntry 1 }

wman2IfSsOfdmaDownlinkFrequency OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "kHz"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Downlink Frequency (kHz)."
        REFERENCE
            "Subclause 11.4.2, Table 359, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaDcdBurstProfileEntry 2 }

wman2IfSsOfdmaDcdFecCodeType OBJECT-TYPE
        SYNTAX      Wman2IfOfdmaFecCodeType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Downlink FEC code type and modulation type"
        REFERENCE
            "Subclause 11.4.2, Table 363, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaDcdBurstProfileEntry 3 }

wman2IfSsOfdmaDiucMandatoryExitThresh OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "DIUC mandatory exit threshold: 0 - 63.75 dB CINR at or
             below where this DIUC can no longer be used and where this
             change to a more robust DIUC is required in 0.25 dB units."
        REFERENCE
            "Subclause 11.4.2, Table 363, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaDcdBurstProfileEntry 4 }
```

```
wman2IfSsOfdmaDiucMinEntryThresh OBJECT-TYPE
        SYNTAX       INTEGER (0..255)
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "DIUC minimum entry threshold: 0 - 63.75 dB The minimum CINR
             required to start using this DIUC when changing from a more
             robust DIUC is required, in 0.25 dB units."
        REFERENCE
            "Subclause 11.4.2, Table 363, in IEEE Std 802.16-2004"
        ::= { wman2IfSsOfdmaDcdBurstProfileEntry 5 }


--
-- Common object group – containing common tables and objects to be
-- implemented in both Base Station and Subscriber Station
--
-- wman2IfCmnPacketCs contain the Packet Convergence Sublayer objects
-- that are common to both Base Station and Subscriber Station
--
wman2IfCmnPacketCs OBJECT IDENTIFIER ::= { wman2IfCommonObjects 1 }


wman2IfCmnClassifierRuleTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF Wman2IfCmnClassifierRuleEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table contains packet classifier rules associated
             with service flows."
        ::= { wman2IfCmnPacketCs 1 }


wman2IfCmnClassifierRuleEntry OBJECT-TYPE
        SYNTAX       Wman2IfCmnClassifierRuleEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "This table provides one row for each packet classifier
             rule, and is indexed by ifIndex, wman2IfCmnCpsSfId, and
             wman2IfCmnClassifierRuleIndex. ifIndex is associated with
             the BS sector. wman2IfCmnCpsSfId identifies the service
             flow,  and wman2IfCmnClassifierRuleIndex identifies the
             packet classifier rule."
        INDEX { ifIndex, wman2IfCmnCpsSfId,
                wman2IfCmnClassifierRuleIndex }
        ::= { wman2IfCmnClassifierRuleTable 1 }


Wman2IfCmnClassifierRuleEntry::= SEQUENCE {
        wman2IfCmnClassifierRuleIndex            Unsigned32,
        wman2IfCmnClassifierRulePriority         INTEGER,
        wman2IfCmnClassifierRuleIpTosLow         INTEGER,
        wman2IfCmnClassifierRuleIpTosHigh        INTEGER,
        wman2IfCmnClassifierRuleIpTosMask        INTEGER,
        wman2IfCmnClassifierRuleIpProtocol       Integer32,
        wman2IfCmnClassifierRuleIpSourceAddr     InetAddress,
        wman2IfCmnClassifierRuleIpSourceMask     InetAddress,
```

```
            wman2IfCmnClassifierRuleIpDestAddr        InetAddress,
            wman2IfCmnClassifierRuleIpDestMask        InetAddress,
            wman2IfCmnClassifierRuleSourcePortStart   Integer32,
            wman2IfCmnClassifierRuleSourcePortEnd     Integer32,
            wman2IfCmnClassifierRuleDestPortStart     Integer32,
            wman2IfCmnClassifierRuleDestPortEnd       Integer32,
            wman2IfCmnClassifierRuleDestMacAddr       MacAddress,
            wman2IfCmnClassifierRuleDestMacMask       MacAddress,
            wman2IfCmnClassifierRuleSourceMacAddr     MacAddress,
            wman2IfCmnClassifierRuleSourceMacMask     MacAddress,
            wman2IfCmnClassifierRuleEnetProtocolType  INTEGER,
            wman2IfCmnClassifierRuleEnetProtocol      Integer32,
            wman2IfCmnClassifierRuleUserPriLow        Integer32,
            wman2IfCmnClassifierRuleUserPriHigh       Integer32,
            wman2IfCmnClassifierRuleVlanId            Integer32,
            wman2IfCmnClassifierRuleState             INTEGER,
            wman2IfCmnClassifierRulePkts              Counter64,
        wman2IfCmnClassifierRuleIpv6FlowLabel   Wman2IfIpv6FlowLabel,
            wman2IfCmnClassifierRuleBitMap           Wman2IfClassifierBitMap
                                                     }

wman2IfCmnClassifierRuleIndex  OBJECT-TYPE
        SYNTAX       Unsigned32 (1..4294967295)
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "An index is assigned to each classifier in the classifiers
             table"
        ::= { wman2IfCmnClassifierRuleEntry 1 }

wman2IfCmnClassifierRulePriority OBJECT-TYPE
        SYNTAX       INTEGER (0..255)
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The value specifies the order of evaluation of the
             classifiers. The higher the value the higher the
             priority. The value of 0 is used as default in
             provisioned service flows classifiers. The default
             value of 64 is used for dynamic service flow classifiers.
             If the referenced parameter is not present in a classifier
             , this object reports the default value as defined above"
        REFERENCE
            "Subclause 11.13.19.3.4.1 in IEEE Std 802.16-2004"
        DEFVAL       { 0 }
        ::= { wman2IfCmnClassifierRuleEntry 2 }

wman2IfCmnClassifierRuleIpTosLow OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 255)
        MAX-ACCESS   read-only
        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
                "Subclause 11.13.19.3.4.2 in IEEE Std 802.16-2004"
            ::= { wman2IfCmnClassifierRuleEntry 3 }


wman2IfCmnClassifierRuleIpTosHigh OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 255)
        MAX-ACCESS  read-only
        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
            "Subclause 11.13.19.3.4.2 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 4 }


wman2IfCmnClassifierRuleIpTosMask OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The mask value is bitwise ANDed with TOS byte in an IP
             packet and this value is used for the range checking of
             TosLow and TosHigh. If the referenced parameter is not
             present in a classifier, this object reports the value
             of 0."
        REFERENCE
            "Subclause 11.13.19.3.4.2 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 5 }


wman2IfCmnClassifierRuleIpProtocol OBJECT-TYPE
        SYNTAX      Integer32 (0..255)
        MAX-ACCESS  read-only
        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
            "Subclause 11.13.19.3.4.3 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 6 }


wman2IfCmnClassifierRuleIpSourceAddr OBJECT-TYPE
        SYNTAX      InetAddress
        MAX-ACCESS  read-only
        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 wman2IfCmnClassifierRuleIpSourceMask value
             equals the wman2IfCmnClassifierRuleIpSourceAddr value.
```

```
                     If the referenced parameter is not present in a classifier
                     , this object reports the value of 0.0.0.0."
            REFERENCE
                "Subclause 11.13.19.3.4.4 in IEEE Std 802.16-2004"
            ::= { wman2IfCmnClassifierRuleEntry 7 }

wman2IfCmnClassifierRuleIpSourceMask OBJECT-TYPE
            SYNTAX      InetAddress
            MAX-ACCESS  read-only
            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
                 wman2IfCmnClassifierRuleIpSourceMask value equals the
                 wman2IfCmnClassifierRuleIpSourceAddr value.
                 If the referenced parameter is not present in a classifier
                 , this object reports the value of 0.0.0.0."
            REFERENCE
                "Subclause 11.13.19.3.4.4 in IEEE Std 802.16-2004"
            ::= { wman2IfCmnClassifierRuleEntry 8 }

wman2IfCmnClassifierRuleIpDestAddr OBJECT-TYPE
            SYNTAX      InetAddress
            MAX-ACCESS  read-only
            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
                 wman2IfCmnClassifierRuleIpDestMask value equals the
                 wman2IfCmnClassifierRuleIpDestAddr value.
                 If the referenced parameter is not present in a
                 classifier, this object reports the value of 0.0.0.0."
            REFERENCE
                "Subclause 11.13.19.3.4.5 in IEEE Std 802.16-2004"
            ::= { wman2IfCmnClassifierRuleEntry 9 }

wman2IfCmnClassifierRuleIpDestMask OBJECT-TYPE
            SYNTAX      InetAddress
            MAX-ACCESS  read-only
            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
                 wman2IfCmnClassifierRuleIpDestMask value equals the
                 wman2IfCmnClassifierRuleIpDestAddr value.
                 If the referenced parameter is not present in a classifier
                 , this object reports the value of 0.0.0.0."
            REFERENCE
```

```
                    "Subclause 11.13.19.3.4.5 in IEEE Std 802.16-2004"
              ::= { wman2IfCmnClassifierRuleEntry 10 }


wman2IfCmnClassifierRuleSourcePortStart OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-only
        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
            "Subclause 11.13.19.3.4.6 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 11 }


wman2IfCmnClassifierRuleSourcePortEnd OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-only
        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
            "Subclause 11.13.19.3.4.6 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 12 }


wman2IfCmnClassifierRuleDestPortStart OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-only
        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
            "Subclause 11.13.19.3.4.7 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 13 }


wman2IfCmnClassifierRuleDestPortEnd OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-only
        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
                "Subclause 11.13.19.3.4.7 in IEEE Std 802.16-2004"
            ::= { wman2IfCmnClassifierRuleEntry 14 }


wman2IfCmnClassifierRuleDestMacAddr OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "An Ethernet packet matches an entry when its destination
             MAC address bitwise ANDed with
             wman2IfCmnClassifierRuleDestMacMask equals the value of
             wman2IfCmnClassifierRuleDestMacAddr. If the referenced
             parameter is not present in a classifier, this object
             reports the value of '000000000000'H."
        REFERENCE
            "Subclause 11.13.19.3.4.8 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 15 }


wman2IfCmnClassifierRuleDestMacMask OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "An Ethernet packet matches an entry when its destination
             MAC address bitwise ANDed with
             wman2IfCmnClassifierRuleDestMacMask equals the value of
             wman2IfCmnClassifierRuleDestMacAddr. If the referenced
             parameter is not present in a classifier, this object
             reports the value of '000000000000'H."
        REFERENCE
            "Subclause 11.13.19.3.4.8 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 16 }


wman2IfCmnClassifierRuleSourceMacAddr OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "An Ethernet packet matches this entry when its source
             MAC address  bitwise ANDed with
             wman2IfCmnClassifierRuleSourceMacMask equals the value
             of wman2IfCmnClassifierRuleSourceMacAddr. If the
             referenced parameter is not present in a classifier,
             this object reports the value of '000000000000'H."
        REFERENCE
            "Subclause 11.13.19.3.4.9 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 17 }


wman2IfCmnClassifierRuleSourceMacMask OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
```

```
            "An Ethernet packet matches an entry when its destination
             MAC address bitwise ANDed with
             wman2IfCmnClassifierRuleSourceMacMask equals the value of
             wman2IfCmnClassifierRuleSourceMacAddr. If the referenced
             parameter is not present in a classifier, this object
             reports the value of '000000000000'H."
        REFERENCE
            "Subclause 11.13.19.3.4.9 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 18 }


wman2IfCmnClassifierRuleEnetProtocolType OBJECT-TYPE
        SYNTAX      INTEGER {none(0),
                             ethertype(1),
                             dsap(2)}
        MAX-ACCESS  read-only
        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
            "Subclause 11.13.19.3.4.10 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnClassifierRuleEntry 19 }


wman2IfCmnClassifierRuleEnetProtocol OBJECT-TYPE
        SYNTAX      Integer32 (0..65535)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "If wman2IfCmnClassifierRuleEnetProtocolType is none(0),
             this object is ignored when considering whether a packet
             matches the current rule.
             If wman2IfCmnClassifierRuleEnetProtocolType 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 wman2IfCmnClassifierRuleEnetProtocolType 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
                  "Subclause 11.13.19.3.4.10 in IEEE Std 802.16-2004"
              ::= { wman2IfCmnClassifierRuleEntry 20 }


    wman2IfCmnClassifierRuleUserPriLow OBJECT-TYPE
              SYNTAX      Integer32 (0..7)
              MAX-ACCESS  read-only
              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 wman2IfCmnClassifierRulePriLow and
                  wman2IfCmnClassifierRulePriHigh 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
                  "Subclause 11.13.19.3.4.11 in IEEE Std 802.16-2004"
              ::= { wman2IfCmnClassifierRuleEntry 21 }


    wman2IfCmnClassifierRuleUserPriHigh OBJECT-TYPE
              SYNTAX      Integer32 (0..7)
              MAX-ACCESS  read-only
              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 wman2IfCmnClassifierRulePriLow
                  and wman2IfCmnClassifierRulePriHigh 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
                  "Subclause 11.13.19.3.4.11 in IEEE Std 802.16-2004"
              ::= { wman2IfCmnClassifierRuleEntry 22 }


    wman2IfCmnClassifierRuleVlanId OBJECT-TYPE
              SYNTAX      Integer32 (0..4095)
              MAX-ACCESS  read-only
              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
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```
                    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
                "Subclause 11.13.19.3.4.12 in IEEE Std 802.16-2004"
           ::= { wman2IfCmnClassifierRuleEntry 23 }

wman2IfCmnClassifierRuleState OBJECT-TYPE
           SYNTAX     INTEGER {active(1),
                               inactive(2)}
           MAX-ACCESS  read-only
           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)."
           ::= { wman2IfCmnClassifierRuleEntry 24 }

wman2IfCmnClassifierRulePkts OBJECT-TYPE
           SYNTAX      Counter64
           MAX-ACCESS  read-only
           STATUS      current
           DESCRIPTION
                "This object counts the number of packets that have
                 been classified using this entry."
           ::= { wman2IfCmnClassifierRuleEntry 25 }
wman2IfCmnClassifierRuleIpv6FlowLabel OBJECT-TYPE
           SYNTAX      Wman2IfIpv6FlowLabel
           MAX-ACCESS  read-only
           STATUS      current
           DESCRIPTION
                "The value of this field specifies the matching values for
                 the IPv6 Flow label field."
           ::= { wman2IfCmnClassifierRuleEntry 26 }

wman2IfCmnClassifierRuleBitMap OBJECT-TYPE
           SYNTAX      Wman2IfClassifierBitMap
           MAX-ACCESS  read-only
           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"
           ::= { wman2IfCmnClassifierRuleEntry 27 }

wman2IfCmnPhsRuleTable OBJECT-TYPE
           SYNTAX      SEQUENCE OF Wman2IfCmnPhsRuleEntry
           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
            "Subclause 5.2.3 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnPacketCs 2 }

wman2IfCmnPhsRuleEntry OBJECT-TYPE
        SYNTAX      Wman2IfCmnPhsRuleEntry
        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 IfIndex,
             wman2IfCmnCpsSfId, and wman2IfCmnPhsIndex. The table is
             read-only for NMS. "
        INDEX       { ifIndex, wman2IfCmnCpsSfId,
                      wman2IfCmnPhsRulePhsIndex }
        ::= { wman2IfCmnPhsRuleTable 1 }

Wman2IfCmnPhsRuleEntry::= SEQUENCE {
        wman2IfCmnPhsRulePhsIndex               INTEGER,
        wman2IfCmnPhsRulePhsField               OCTET STRING,
        wman2IfCmnPhsRulePhsMask                OCTET STRING,
        wman2IfCmnPhsRulePhsSize                Integer32,
        wman2IfCmnPhsRulePhsVerify              Wman2IfPhsRuleVerify}

wman2IfCmnPhsRulePhsIndex OBJECT-TYPE
        SYNTAX      INTEGER (1..255)
        MAX-ACCESS  not-accessible
        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
            "Subclause 11.13.19.3.7.1 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnPhsRuleEntry 1 }

wman2IfCmnPhsRulePhsField OBJECT-TYPE
        SYNTAX      OCTET STRING (SIZE(0..65535))
        MAX-ACCESS  read-only
```

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```
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
    "Subclause 11.13.19.3.7.2 in IEEE Std 802.16-2004"
::= { wman2IfCmnPhsRuleEntry 2 }

wman2IfCmnPhsRulePhsMask OBJECT-TYPE
    SYNTAX          OCTET STRING (SIZE(0..65535))
    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 encoded as follows:
         bit 0:
            0 = don't suppress the 1st byte of the suppression field
            1 = suppress first byte of the suppression field
         bit 1:
            0 = don't suppress the 2nd byte of the suppression field
            1 = suppress second byte of the suppression field
         bit x:
            0 = don't suppress the (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
         (wman2IfCmnPhsRulePhsSize/8)."
    REFERENCE
        "Subclause 11.13.19.3.7.3 in IEEE Std 802.16-2004"
    ::= { wman2IfCmnPhsRuleEntry 3 }

wman2IfCmnPhsRulePhsSize 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
        "Subclause 11.13.19.3.7.4 in IEEE Std 802.16-2004"
    DEFVAL          {0}
    ::= { wman2IfCmnPhsRuleEntry 4 }

wman2IfCmnPhsRulePhsVerify OBJECT-TYPE
    SYNTAX          Wman2IfPhsRuleVerify
```

```
              MAX-ACCESS  read-only
              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 }
              ::= { wman2IfCmnPhsRuleEntry 5 }


--
-- wman2IfCmnCps contain the Common Part Sublayer objects that are
-- common to both Base Station and Subscriber Station
--
wman2IfCmnCps OBJECT IDENTIFIER ::= { wman2IfCommonObjects 2 }


wman2IfCmnCpsServiceFlowTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Wman2IfCmnCpsServiceFlowEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table contains Service Flow managed objects that
             are common in BS and SS."
        ::= { wman2IfCmnCps 1 }


wman2IfCmnCpsServiceFlowEntry OBJECT-TYPE
        SYNTAX      Wman2IfCmnCpsServiceFlowEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "This table provides one row for each created service
             flow for a given MacAddress, and is indexed by ifIndex,
             wman2IfCmnCpsCpsSfMacAddress, and wman2IfCmnCpsSfId.
             IfIndex is associated with the BS sector."
        INDEX     { ifIndex, wman2IfCmnCpsSfMacAddress,
                    wman2IfCmnCpsSfId  }
        ::= { wman2IfCmnCpsServiceFlowTable 1 }


Wman2IfCmnCpsServiceFlowEntry::= SEQUENCE {
        wman2IfCmnCpsSfMacAddress               MacAddress,
        wman2IfCmnCpsSfId                       Unsigned32,
        wman2IfCmnCpsSfCid                      Wman2IfCidType,
        wman2IfCmnCpsSfDirection                INTEGER,
        wman2IfCmnCpsSfState                    Wman2IfSfState,
        wman2IfCmnCpsTrafficPriority            INTEGER,
        wman2IfCmnCpsMaxSustainedRate           Unsigned32,
        wman2IfCmnCpsMaxTrafficBurst            Unsigned32,
        wman2IfCmnCpsMinReservedRate            Unsigned32,
        wman2IfCmnCpsToleratedJitter            Unsigned32,
        wman2IfCmnCpsMaxLatency                 Unsigned32,
        wman2IfCmnCpsFixedVsVariableSduInd      INTEGER,
        wman2IfCmnCpsSduSize                    Unsigned32,
        wman2IfCmnCpsSfSchedulingType           Wman2IfSfSchedulingType,
        wman2IfCmnCpsArqEnable                  TruthValue,
        wman2IfCmnCpsArqWindowSize              INTEGER,
```

```
            wman2IfCmnCpsArqBlockLifetime               INTEGER,
            wman2IfCmnCpsArqSyncLossTimeout             INTEGER,
            wman2IfCmnCpsArqDeliverInOrder              TruthValue,
            wman2IfCmnCpsArqRxPurgeTimeout              INTEGER,
            wman2IfCmnCpsArqBlockSize                   INTEGER,
            wman2IfCmnCpsMinRsvdTolerableRate           Unsigned32,
            wman2IfCmnCpsReqTxPolicy                    BITS,
            wman2IfCmnSfCsSpecification                 Wman2IfCsSpecification,
            wman2IfCmnCpsTargetSaid                     INTEGER}

wman2IfCmnCpsSfMacAddress OBJECT-TYPE
        SYNTAX       MacAddress
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
            "When this table is implemented on the basestation, this
             object contains the SS Mac address, the reported service
             flow was created for. On the SS, the value returned is
             the SS's own Mac address."
        ::= { wman2IfCmnCpsServiceFlowEntry 1 }

wman2IfCmnCpsSfId 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)."
        ::= { wman2IfCmnCpsServiceFlowEntry 2 }

wman2IfCmnCpsSfCid OBJECT-TYPE
        SYNTAX       Wman2IfCidType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "A 16 bit channel identifier to identify the connection
             being created by DSA."
        ::= { wman2IfCmnCpsServiceFlowEntry 3 }

wman2IfCmnCpsSfDirection OBJECT-TYPE
        SYNTAX       INTEGER {downstream(1),
                              upstream(2)}
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "An attribute indicating the service flow is downstream or
             upstream."
        ::= { wman2IfCmnCpsServiceFlowEntry 4 }

wman2IfCmnCpsSfState OBJECT-TYPE
        SYNTAX       Wman2IfSfState
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
```

```
            "wman2IfCmnCpsSfState indicates the service flow state:
             Authorized (1), Admitted (2), and Active (3) service
             flow state."
        REFERENCE
            "Subclause 6.3.14.6, in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 5 }


wman2IfCmnCpsTrafficPriority OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 7)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this parameter specifies the priority
             assigned to a service flow. For uplink service flows,
             the BS should use this parameter when determining
             precedence in request service and grant generation,
             and the SS shall preferentially select contention
             Request opportunities for Priority Request CIDs
             based on this priority"
        REFERENCE
            "Subclause 11.13.5 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 6 }


wman2IfCmnCpsMaxSustainedRate OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "b/s"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter defines the peak information rate
             of the service. The rate is expressed in bits per
             second and pertains to the SDUs at the input to
             the system."
        REFERENCE
            "Subclause 11.13.6 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 7 }


wman2IfCmnCpsMaxTrafficBurst OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS    "byte"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter defines the maximum burst size that
             must be accommodated for the service."
        REFERENCE
            "Subclause 11.13.7 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 8 }


wman2IfCmnCpsMinReservedRate OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "byte"
        MAX-ACCESS  read-only
        STATUS      current
```

```
        DESCRIPTION
            "This parameter specifies the minimum rate reserved
             for this service flow."
        REFERENCE
            "Subclause 11.13.8 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 9 }


wman2IfCmnCpsToleratedJitter OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "millisecond"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This parameter defines the Maximum delay
             variation (jitter) for the connection."
        REFERENCE
            "Subclause 11.13.13 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 10 }


wman2IfCmnCpsMaxLatency OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "millisecond"
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this parameter specifies the maximum
             latency between the reception of a packet by the BS
             or SS on its network interface and the forwarding
             of the packet to its RF Interface."
        REFERENCE
            "Subclause 11.13.14 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 11 }


wman2IfCmnCpsFixedVsVariableSduInd OBJECT-TYPE
        SYNTAX      INTEGER {variableLength(0),
                             fixedLength(1)}
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "The value of this parameter specifies whether the SDUs
             on the service flow are variable-length (0) or
             fixed-length (1). The parameter is used only if
             packing is on for the service flow. The default value
             is 0, i.e.,variable-length SDUs."
        REFERENCE
            "Subclause 11.13.15 in IEEE Std 802.16-2004"
        DEFVAL      { variableLength }
        ::= { wman2IfCmnCpsServiceFlowEntry 12 }


wman2IfCmnCpsSduSize OBJECT-TYPE
        SYNTAX      Unsigned32
        UNITS       "byte"
        MAX-ACCESS  read-only
        STATUS      current
```

```
        DESCRIPTION
            "The value of this parameter specifies the length of the
             SDU for a fixed-length SDU service flow. This parameter
             is used only if packing is on and the service flow is
             indicated as carrying fixed-length SDUs. The default
             value is 49 bytes, i.e., VC-switched ATM cells with PHS.
             The parameter is relevant for both ATM and Packet
             Convergence Sublayers."
        REFERENCE
            "Subclause 11.13.16 in IEEE Std 802.16-2004"
        DEFVAL      { 49 }
        ::= { wman2IfCmnCpsServiceFlowEntry 13 }


wman2IfCmnCpsSfSchedulingType OBJECT-TYPE
        SYNTAX      Wman2IfSfSchedulingType
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Specifies the upstream scheduling service used for
             upstream service flow. If the referenced parameter
             is not present in the corresponding 802.16 QOS
             Parameter Set of an upstream service flow, the
             default value of this object is bestEffort(2)."
        REFERENCE
            "Subclause 11.13.11 in IEEE Std 802.16-2004"
        DEFVAL          { bestEffort }
        ::= { wman2IfCmnCpsServiceFlowEntry 14 }


wman2IfCmnCpsArqEnable OBJECT-TYPE
        SYNTAX      TruthValue
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "True(1) ARQ enabling is requested for the connection."
        ::= { wman2IfCmnCpsServiceFlowEntry 15 }


wman2IfCmnCpsArqWindowSize OBJECT-TYPE
        SYNTAX    INTEGER (1..1024)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "Indicates the maximum number of unacknowledged
             fragments at any time."
        ::= { wman2IfCmnCpsServiceFlowEntry 16 }


wman2IfCmnCpsArqBlockLifetime 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 fragment is discarded.
                    A value of 0 means Infinite."
             ::= { wman2IfCmnCpsServiceFlowEntry 17 }


wman2IfCmnCpsArqSyncLossTimeout 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."
        ::= { wman2IfCmnCpsServiceFlowEntry 18 }


wman2IfCmnCpsArqDeliverInOrder  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."
        ::= { wman2IfCmnCpsServiceFlowEntry 19 }


wman2IfCmnCpsArqRxPurgeTimeout  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."
        ::= { wman2IfCmnCpsServiceFlowEntry 20 }


wman2IfCmnCpsArqBlockSize 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. This parameter shall be established by
             negotiation during the connection creation dialog."
        REFERENCE
            "Subclause 11.13.18.8 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 21 }


wman2IfCmnCpsMinRsvdTolerableRate OBJECT-TYPE
        SYNTAX      Unsigned32
```

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```
        UNITS        "b/s"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Minimum Tolerable Traffic Rate = R (bits/sec) with
             time base T(sec) means the following. Let S denote
             additional demand accumulated at the MAC SAP of the
             transmitter during an arbitrary time interval of the
             length T. Then the amount of data forwarded at the
             receiver to CS (in bits) during this interval should
             be not less than min {S, R * T}."
        REFERENCE
            "Subclause 11.13.9 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 22 }

wman2IfCmnCpsReqTxPolicy OBJECT-TYPE
        SYNTAX       BITS {noBroadcastBwReq(0),
                          reserved1(1),
                          noPiggybackReq(2),
                          noFragmentData(3),
                          noPHS(4),
                          noSduPacking(5),
                          noCrc(6),
                          reserved2(7)}
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The value of this parameter provides the capability to
             specify certain attributes for the associated service
             flow. An attribute is enabled by setting the
             corresponding bit position to 1."
        REFERENCE
            "Subclause 11.13.12 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 23 }

wman2IfCmnSfCsSpecification OBJECT-TYPE
        SYNTAX       Wman2IfCsSpecification
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "This parameter specifies the convergence sublayer
             encapsulation mode."
        REFERENCE
            "Subclause 11.13.19.1 in IEEE Std 802.16-2004"
        ::= { wman2IfCmnCpsServiceFlowEntry 24 }

wman2IfCmnCpsTargetSaid OBJECT-TYPE
        SYNTAX       INTEGER (0 .. 65535)
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The target SAID parameter indicates the SAID onto
             which the service flow being set up shall be mapped."
        REFERENCE
```

```
                        "Subclause 11.13.17 in IEEE Std 802.16-2004"
                     ::= { wman2IfCmnCpsServiceFlowEntry 25 }


      --
      -- wman2IfCmnBsSsConfigurationTable contains global parameters
      -- common in BS and SS
      --
      wman2IfCmnBsSsConfigurationTable OBJECT-TYPE
              SYNTAX       SEQUENCE OF Wman2IfCmnBsSsConfigurationEntry
              MAX-ACCESS   not-accessible
              STATUS       current
              DESCRIPTION
                  "This table provides one row for each BS sector that
                   contains the system parameters common in both SS and
                   BS. All SSs shall have the same parameters as the BS
                   to which the SSs are associated."
              REFERENCE
                  "Subclause 10.1 in IEEE Std 802.16-2004"
              ::= { wman2IfCmnCps 2 }

      wman2IfCmnBsSsConfigurationEntry OBJECT-TYPE
              SYNTAX       Wman2IfCmnBsSsConfigurationEntry
              MAX-ACCESS   not-accessible
              STATUS       current
              DESCRIPTION
                  "This table is indexed by ifIndex, indicating BS
                   sector."
              INDEX        { ifIndex }
              ::= { wman2IfCmnBsSsConfigurationTable 1 }

      Wman2IfCmnBsSsConfigurationEntry ::= SEQUENCE {
              wman2IfCmnInvitedRangRetries            INTEGER,
              wman2IfCmnDSxReqRetries                 Unsigned32,
              wman2IfCmnDSxRespRetries                Unsigned32,
              wman2IfCmnT7Timeout                     INTEGER,
              wman2IfCmnT8Timeout                     INTEGER,
              wman2IfCmnT10Timeout                    INTEGER,
              wman2IfCmnT22Timeout                    INTEGER}

      wman2IfCmnInvitedRangRetries OBJECT-TYPE
              SYNTAX       INTEGER (16..65535)
              MAX-ACCESS   read-write
              STATUS       current
              DESCRIPTION
                  "Number of retries on inviting Ranging Requests."
              ::= { wman2IfCmnBsSsConfigurationEntry 1 }

      wman2IfCmnDSxReqRetries OBJECT-TYPE
              SYNTAX       Unsigned32
              MAX-ACCESS   read-write
              STATUS       current
              DESCRIPTION
                  "Number of Timeout Retries on DSA/DSC/DSD Requests."
              DEFVAL       { 3 }
```

```
                  ::= { wman2IfCmnBsSsConfigurationEntry 2 }


wman2IfCmnDSxRespRetries OBJECT-TYPE
        SYNTAX      Unsigned32
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Number of Timeout Retries on DSA/DSC/DSD Responses."
        DEFVAL      { 3 }
        ::= { wman2IfCmnBsSsConfigurationEntry 3 }


wman2IfCmnT7Timeout OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 1000)
        UNITS       "milliseconds"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Wait for DSA/DSC/DSD Response Timeout in ms."
        ::= { wman2IfCmnBsSsConfigurationEntry 4 }


wman2IfCmnT8Timeout OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 300)
        UNITS       "milliseconds"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Wait for DSA/DSC/DSD Acknowledge Timeout in ms."
        ::= { wman2IfCmnBsSsConfigurationEntry 5 }


wman2IfCmnT10Timeout OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 3000)
        UNITS       "milliseconds"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Wait for Transaction End timeout in ms."
        ::= { wman2IfCmnBsSsConfigurationEntry 6 }


wman2IfCmnT22Timeout OBJECT-TYPE
        SYNTAX      INTEGER (0 .. 500)
        UNITS       "milliseconds"
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "Wait for ARQ Reset in ms."
        ::= { wman2IfCmnBsSsConfigurationEntry 7 }


-- Common PKM  group
-- wman2IfCmnPkmObjects contain the Privacy Sublayer objects that are
-- common to both Base Station and Subscriber Station
--
wman2IfCmnPkmObjects OBJECT IDENTIFIER ::= { wman2IfCommonObjects  3 }


--
```

```
1    -- Table wman2IfCmnCryptoSuiteTable
2    --
3
4    wman2IfCmnCryptoSuiteTable OBJECT-TYPE
5           SYNTAX      SEQUENCE OF   Wman2IfCmnCryptoSuiteEntry
6           MAX-ACCESS  not-accessible
7           STATUS      current
8           DESCRIPTION
9               "This table describes the PKM cryptographic suite
10               capabilites for each SS or BS wireless interface."
11          ::= { wman2IfCmnPkmObjects  1 }
12
13
14   wman2IfCmnCryptoSuiteEntry OBJECT-TYPE
15          SYNTAX      Wman2IfCmnCryptoSuiteEntry
16          MAX-ACCESS  not-accessible
17          STATUS      current
18          DESCRIPTION
19              "Each entry contains the cryptographic suite pair that SS
20               or BS supports."
21          INDEX       { ifIndex, wman2IfCmnCryptoSuiteIndex }
22          ::= { wman2IfCmnCryptoSuiteTable  1 }
23
24
25   Wman2IfCmnCryptoSuiteEntry ::= SEQUENCE {
26          wman2IfCmnCryptoSuiteIndex              Integer32,
27          wman2IfCmnCryptoSuiteDataEncryptAlg     Wman2IfDataEncryptAlgId,
28          wman2IfCmnCryptoSuiteDataAuthentAlg     Wman2IfDataAuthAlgId,
29          wman2IfCmnCryptoSuiteTekEncryptAlg      Wman2IfTekEncryptAlgId}
30
31
32   wman2IfCmnCryptoSuiteIndex OBJECT-TYPE
33          SYNTAX      Integer32 (1 .. 1000)
34          MAX-ACCESS  not-accessible
35          STATUS      current
36          DESCRIPTION
37              "The index for a cryptographic suite row."
38          ::= { wman2IfCmnCryptoSuiteEntry 1 }
39
40
41   wman2IfCmnCryptoSuiteDataEncryptAlg OBJECT-TYPE
42          SYNTAX      Wman2IfDataEncryptAlgId
43          MAX-ACCESS  read-only
44          STATUS      current
45          DESCRIPTION
46              "The value of this object is the data encryption algorithm
47               for this cryptographic suite capability."
48          REFERENCE
49              "Table 375, IEEE Std 802.16-2004"
50          ::= { wman2IfCmnCryptoSuiteEntry 2 }
51
52
53   wman2IfCmnCryptoSuiteDataAuthentAlg OBJECT-TYPE
54          SYNTAX      Wman2IfDataAuthAlgId
55          MAX-ACCESS  read-only
56          STATUS      current
57          DESCRIPTION
58              "The value of this object is the data authentication
59               algorithm for this cryptographic suite capability."
60          REFERENCE
```

The line numbers shown in the left margin are: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65.

```
                   "Table 376, IEEE Std 802.16-2004"
              ::= { wman2IfCmnCryptoSuiteEntry 3 }


   wman2IfCmnCryptoSuiteTekEncryptAlg OBJECT-TYPE
           SYNTAX     Wman2IfTekEncryptAlgId
           MAX-ACCESS  read-only
           STATUS     current
           DESCRIPTION
               "The value of this object is the TEK key encryption
                algorithm for this cryptographic suite capability."
           REFERENCE
               "Table 377, IEEE Std 802.16-2004"
              ::= { wman2IfCmnCryptoSuiteEntry 4 }


   --
   -- Conformance Information
   --
   wman2IfMibConformance OBJECT IDENTIFIER ::= {wman2IfMib 2}
   wman2IfMibGroups       OBJECT IDENTIFIER ::= {wman2IfMibConformance 1}
   wman2IfMibCompliances OBJECT IDENTIFIER ::= {wman2IfMibConformance 2}

   -- compliance statements
   wman2IfMibCompliance MODULE-COMPLIANCE
           STATUS     current
           DESCRIPTION
               "The compliance statement for devices that implement
                Wireless MAN interfaces as defined in IEEE Std 802.16-2004."

           MODULE  -- wman2IfMib

           MANDATORY-GROUPS              -- unconditionally mandatory groups
               { wman2IfMibCommonGroup }

           GROUP wman2IfMibQoSGroup      -- unconditionally mandatory group
           DESCRIPTION
               "This group is mandatory for Base Station and subscriber
                station."

           GROUP wman2IfMibBsGroup       -- conditionally mandatory group
           DESCRIPTION
               "This group is mandatory for Base Station."

           GROUP wman2IfMibBsAasGroup   -- optional group
           DESCRIPTION
               "This group is mandatory for Base Station."

           GROUP wman2IfMibSsGroup       -- conditionally mandatory group
           DESCRIPTION
               "This group is mandatory for Subscriber Station."

           GROUP wman2IfMibBsOfdmGroup  -- conditionally mandatory group
           DESCRIPTION
               "This group is mandatory for Base Station
                implementaing the OFDM PHY."
```

```
            GROUP wman2IfMibSsOfdmGroup  -- conditionally mandatory group
            DESCRIPTION
                "This group is mandatory for Subscriber Station
                 implementing the OFDM PHY."

            GROUP wman2IfMibBsOfdmaGroup -- conditionally mandatory group
            DESCRIPTION
                "This group is mandatory for Base Station
                 implementaing the OFDMA PHY."

            GROUP wman2IfMibSsOfdmaGroup -- conditionally mandatory group
            DESCRIPTION
                "This group is mandatory for Subscriber Station
                 implementing the OFDMA PHY."

            GROUP wman2IfMibBsNotificationGroup -- unconditionally
                                                -- mandatory groups
            DESCRIPTION
                "This group is mandatory for Base Station."

            GROUP wman2IfMibSsNotificationGroup -- optional group
            DESCRIPTION
                "This group is optional for Subscriber Station."

            GROUP wman2IfMibCmnPhsGroup -- optional group
            DESCRIPTION
                "This group is optional for Base Station and
                 Subscriber Station."

            GROUP wman2IfMibBsPhsGroup -- optional group
            DESCRIPTION
                "This group is optional for Base Station."
            ::= { wman2IfMibCompliances 1 }

    wman2IfMibCommonGroup     OBJECT-GROUP
            OBJECTS {-- Classification
                    wman2IfCmnClassifierRulePriority,
                    wman2IfCmnClassifierRuleIpTosLow,
                    wman2IfCmnClassifierRuleIpTosHigh,
                    wman2IfCmnClassifierRuleIpTosMask,
                    wman2IfCmnClassifierRuleIpProtocol,
                    wman2IfCmnClassifierRuleIpSourceAddr,
                    wman2IfCmnClassifierRuleIpSourceMask,
                    wman2IfCmnClassifierRuleIpDestAddr,
                    wman2IfCmnClassifierRuleIpDestMask,
                    wman2IfCmnClassifierRuleSourcePortStart,
                    wman2IfCmnClassifierRuleSourcePortEnd,
                    wman2IfCmnClassifierRuleDestPortStart,
                    wman2IfCmnClassifierRuleDestPortEnd,
                    wman2IfCmnClassifierRuleDestMacAddr,
                    wman2IfCmnClassifierRuleDestMacMask,
                    wman2IfCmnClassifierRuleSourceMacAddr,
                    wman2IfCmnClassifierRuleSourceMacMask,
```

```
                        wman2IfCmnClassifierRuleEnetProtocolType,
                        wman2IfCmnClassifierRuleEnetProtocol,
                        wman2IfCmnClassifierRuleUserPriLow,
                        wman2IfCmnClassifierRuleUserPriHigh,
                        wman2IfCmnClassifierRuleVlanId,
                        wman2IfCmnClassifierRuleState,
                        wman2IfCmnClassifierRulePkts,
                        wman2IfCmnClassifierRuleIpv6FlowLabel,
                        wman2IfCmnClassifierRuleBitMap,

                        -- Configuration parameters
                        wman2IfCmnCpsTargetSaid,
                        wman2IfCmnInvitedRangRetries,
                        wman2IfCmnDSxReqRetries,
                        wman2IfCmnDSxRespRetries,
                        wman2IfCmnT7Timeout,
                        wman2IfCmnT8Timeout,
                        wman2IfCmnT10Timeout,
                        wman2IfCmnT22Timeout,
                        wman2IfCmnCryptoSuiteDataEncryptAlg,
                        wman2IfCmnCryptoSuiteDataAuthentAlg,
                        wman2IfCmnCryptoSuiteTekEncryptAlg}
          STATUS        current
          DESCRIPTION
              "This group contains objects for both BS and SS,
               and are independent of PHY."
          ::= { wman2IfMibGroups 1 }


    wman2IfMibQoSGroup     OBJECT-GROUP
          OBJECTS {wman2IfCmnCpsSfId,
                        wman2IfCmnCpsSfCid,
                        wman2IfCmnCpsSfDirection,
                        wman2IfCmnCpsSfState,
                        wman2IfCmnCpsTrafficPriority,
                        wman2IfCmnCpsMaxSustainedRate,
                        wman2IfCmnCpsMaxTrafficBurst,
                        wman2IfCmnCpsMinReservedRate,
                        wman2IfCmnCpsToleratedJitter,
                        wman2IfCmnCpsMaxLatency,
                        wman2IfCmnCpsFixedVsVariableSduInd,
                        wman2IfCmnCpsSduSize,
                        wman2IfCmnCpsSfSchedulingType,
                        wman2IfCmnCpsArqEnable,
                        wman2IfCmnCpsArqWindowSize,
                        wman2IfCmnCpsArqBlockLifetime,
                        wman2IfCmnCpsArqSyncLossTimeout,
                        wman2IfCmnCpsArqDeliverInOrder,
                        wman2IfCmnCpsArqRxPurgeTimeout,
                        wman2IfCmnCpsArqBlockSize,
                        wman2IfCmnCpsMinRsvdTolerableRate,
                        wman2IfCmnCpsReqTxPolicy,
                        wman2IfCmnSfCsSpecification}
          STATUS        current
          DESCRIPTION
```

```
                    "This group contains QoS objects for both BS and SS."
              ::= { wman2IfMibGroups 2 }


wman2IfMibBsGroup      OBJECT-GROUP
        OBJECTS {-- Service classes
                  wman2IfBsSfDirection,
                  wman2IfBsServiceClassIndex,
                  wman2IfBsSfState,
                  wman2IfBsSfProvisionedTime,
                  wman2IfBsProvisionedSfRowStatus,
                  wman2IfBsSsProvisionedForSfRowStatus,
                  wman2IfBsSfCsSpecification,
                  wman2IfBsQosServiceClassName,
                  wman2IfBsQoSTrafficPriority,
                  wman2IfBsQoSMaxSustainedRate,
                  wman2IfBsQoSMaxTrafficBurst,
                  wman2IfBsQoSMinReservedRate,
                  wman2IfBsQoSToleratedJitter,
                  wman2IfBsQoSMaxLatency,
                  wman2IfBsQoSFixedVsVariableSduInd,
                  wman2IfBsQoSSduSize,
                  wman2IfBsQosScSchedulingType,
                  wman2IfBsQosScArqEnable,
                  wman2IfBsQosScArqWindowSize,
                  wman2IfBsQosScArqBlockLifetime,
                  wman2IfBsQosScArqSyncLossTimeout,
                  wman2IfBsQosScArqDeliverInOrder,
                  wman2IfBsQosScArqRxPurgeTimeout,
                  wman2IfBsQosScArqBlockSize,
                  wman2IfBsQosSCMinRsvdTolerableRate,
                  wman2IfBsQoSReqTxPolicy,
                  wman2IfBsQoSServiceClassRowStatus,

                  -- Classification
                  wman2IfBsClassifierRulePriority,
                  wman2IfBsClassifierRuleIpTosLow,
                  wman2IfBsClassifierRuleIpTosHigh,
                  wman2IfBsClassifierRuleIpTosMask,
                  wman2IfBsClassifierRuleIpProtocol,
                  wman2IfBsClassifierRuleIpSourceAddr,
                  wman2IfBsClassifierRuleIpSourceMask,
                  wman2IfBsClassifierRuleIpDestAddr,
                  wman2IfBsClassifierRuleIpDestMask,
                  wman2IfBsClassifierRuleSourcePortStart,
                  wman2IfBsClassifierRuleSourcePortEnd,
                  wman2IfBsClassifierRuleDestPortStart,
                  wman2IfBsClassifierRuleDestPortEnd,
                  wman2IfBsClassifierRuleDestMacAddr,
                  wman2IfBsClassifierRuleDestMacMask,
                  wman2IfBsClassifierRuleSourceMacAddr,
                  wman2IfBsClassifierRuleSourceMacMask,
                  wman2IfBsClassifierRuleEnetProtocolType,
                  wman2IfBsClassifierRuleEnetProtocol,
                  wman2IfBsClassifierRuleUserPriLow,
```

```
   1                      wman2IfBsClassifierRuleUserPriHigh,
   2                      wman2IfBsClassifierRuleVlanId,
   3                      wman2IfBsClassifierRuleState,
   4                      wman2IfBsClassifierRulePhsSize,
   5                      wman2IfBsClassifierRulePhsMask,
   6                      wman2IfBsClassifierRulePhsVerify,
   7                      wman2IfBsClassifierRuleIpv6FlowLabel,
   8                      wman2IfBsClassifierRuleBitMap,
   9                      wman2IfBsClassifierRuleRowStatus,
  10
  11
  12
  13                      -- Packet counters
  14                      wman2IfBsSsMacSduCount,
  15                      wman2IfBsSsOctetCount,
  16                      wman2IfBsSsResetCounter,
  17                      wman2IfBsSsResetCounterTime,
  18
  19
  20                      -- Capability negotiation
  21                      wman2IfBsSsBasicCid,
  22                      wman2IfBsSsPrimaryCid,
  23                      wman2IfBsSsSecondaryCid,
  24                      wman2IfBsSsManagementSupport,
  25                      wman2IfBsSsIpManagementMode,
  26                      wman2IfBs2ndMgmtDlQoSProfileIndex,
  27                      wman2IfBs2ndMgmtUlQoSProfileIndex,
  28                      wman2IfBsAutoSfidEnabled,
  29                      wman2IfBsAutoSfidRangeMin,
  30                      wman2IfBsAutoSfidRangeMax,
  31                      wman2IfBsResetSector,
  32                      wman2IfBsSs2ndMgmtArqEnable,
  33                      wman2IfBsSs2ndMgmtArqWindowSize,
  34                      wman2IfBsSs2ndMgmtArqDnLinkTxDelay,
  35                      wman2IfBsSs2ndMgmtArqUpLinkTxDelay,
  36                      wman2IfBsSs2ndMgmtArqDnLinkRxDelay,
  37                      wman2IfBsSs2ndMgmtArqUpLinkRxDelay,
  38                      wman2IfBsSs2ndMgmtArqBlockLifetime,
  39                      wman2IfBsSs2ndMgmtArqSyncLossTimeout,
  40                      wman2IfBsSs2ndMgmtArqDeliverInOrder,
  41                      wman2IfBsSs2ndMgmtArqRxPurgeTimeout,
  42                      wman2IfBsSs2ndMgmtArqBlockSize,
  43                      wman2IfBsSsVendorIdEncoding,
  44                      wman2IfBsSsAasBroadcastPermission,
  45                      wman2IfBsSsMaxTxPowerBpsk,
  46                      wman2IfBsSsMaxTxPowerQpsk,
  47                      wman2IfBsSsMaxTxPower16Qam,
  48                      wman2IfBsSsMaxTxPower64Qam,
  49
  50                      -- Configuration parameters
  51                      wman2IfBsSsMacVersion,
  52                      wman2IfBsDcdInterval,
  53                      wman2IfBsUcdInterval,
  54                      wman2IfBsUcdTransition,
  55                      wman2IfBsDcdTransition,
  56                      wman2IfBsInitialRangingInterval,
  57                      wman2IfBsSsULMapProcTime,
```

```
wman2IfBsSsRangRespProcTime,
wman2IfBsT5Timeout,
wman2IfBsT9Timeout,
wman2IfBsT13Timeout,
wman2IfBsT15Timeout,
wman2IfBsT17Timeout,
wman2IfBsT27IdleTimer,
wman2IfBsT27ActiveTimer,

-- Performance monitoring
wman2IfBsHistogramIndex,
wman2IfBsChannelNumber,
wman2IfBsStartFrame,
wman2IfBsDuration,
wman2IfBsBasicReport,
wman2IfBsMeanCinrReport,
wman2IfBsMeanRssiReport,
wman2IfBsStdDeviationCinrReport,
wman2IfBsStdDeviationRssiReport,

-- Capability negotiation
wman2IfBsSsReqCapUplinkCidSupport,
wman2IfBsSsReqCapArqSupport,
wman2IfBsSsReqCapDsxFlowControl,
wman2IfBsSsReqCapMacCrcSupport,
wman2IfBsSsReqCapMcaFlowControl,
wman2IfBsSsReqCapMcpGroupCidSupport,
wman2IfBsSsReqCapPkmFlowControl,
wman2IfBsSsReqCapAuthPolicyControl,
wman2IfBsSsReqCapMaxNumOfSupportedSA,
wman2IfBsSsReqCapIpVersion,
wman2IfBsSsReqCapMacCsSupportBitMap,
wman2IfBsSsReqCapMaxNumOfClassifier,
wman2IfBsSsReqCapPhsSupport,
wman2IfBsSsReqCapBandwidthAllocSupport,
wman2IfBsSsReqCapPduConstruction,
wman2IfBsSsReqCapTtgTransitionGap,
wman2IfBsSsReqCapRtgTransitionGap,
wman2IfBsSsRspCapUplinkCidSupport,
wman2IfBsSsRspCapArqSupport,
wman2IfBsSsRspCapDsxFlowControl,
wman2IfBsSsRspCapMacCrcSupport,
wman2IfBsSsRspCapMcaFlowControl,
wman2IfBsSsRspCapMcpGroupCidSupport,
wman2IfBsSsRspCapPkmFlowControl,
wman2IfBsSsRspCapAuthPolicyControl,
wman2IfBsSsRspCapMaxNumOfSupportedSA,
wman2IfBsSsRspCapIpVersion,
wman2IfBsSsRspCapMacCsSupportBitMap,
wman2IfBsSsRspCapMaxNumOfClassifier,
wman2IfBsSsRspCapPhsSupport,
wman2IfBsSsRspCapBandwidthAllocSupport,
wman2IfBsSsRspCapPduConstruction,
wman2IfBsSsRspCapTtgTransitionGap,
```

```
                      wman2IfBsSsRspCapRtgTransitionGap,
                      wman2IfBsCapUplinkCidSupport,
                      wman2IfBsCapArqSupport,
                      wman2IfBsCapDsxFlowControl,
                      wman2IfBsCapMacCrcSupport,
                      wman2IfBsCapMcaFlowControl,
                      wman2IfBsCapMcpGroupCidSupport,
                      wman2IfBsCapPkmFlowControl,
                      wman2IfBsCapAuthPolicyControl,
                      wman2IfBsCapMaxNumOfSupportedSA,
                      wman2IfBsCapIpVersion,
                      wman2IfBsCapMacCsSupportBitMap,
                      wman2IfBsCapMaxNumOfClassifier,
                      wman2IfBsCapPhsSupport,
                      wman2IfBsCapBandwidthAllocSupport,
                      wman2IfBsCapPduConstruction,
                      wman2IfBsCapTtgTransitionGap,
                      wman2IfBsCapRtgTransitionGap,
                      wman2IfBsCapCfgUplinkCidSupport,
                      wman2IfBsCapCfgArqSupport,
                      wman2IfBsCapCfgDsxFlowControl,
                      wman2IfBsCapCfgMacCrcSupport,
                      wman2IfBsCapCfgMcaFlowControl,
                      wman2IfBsCapCfgMcpGroupCidSupport,
                      wman2IfBsCapCfgPkmFlowControl,
                      wman2IfBsCapCfgAuthPolicyControl,
                      wman2IfBsCapCfgMaxNumOfSupportedSA,
                      wman2IfBsCapCfgIpVersion,
                      wman2IfBsCapCfgMacCsSupportBitMap,
                      wman2IfBsCapCfgMaxNumOfClassifier,
                      wman2IfBsCapCfgPhsSupport,
                      wman2IfBsCapCfgBandwidthAllocSupport,
                      wman2IfBsCapCfgPduConstruction,
                      wman2IfBsCapCfgTtgTransitionGap,
                      wman2IfBsCapCfgRtgTransitionGap,
                      wman2IfBsSsActionsResetSs,
                      wman2IfBsSsActionsAbortSs,
                      wman2IfBsSsActionsOverrideDnFreq,
                      wman2IfBsSsActionsOverrideChannelId,
                      wman2IfBsSsActionsDeReRegSs,
                      wman2IfBsSsActionsDeReRegSsCode,
                      wman2IfBsSsActionsRowStatus,

                      -- Privacy sublayer
                      wman2IfBsPkmDefaultAuthLifetime,
                      wman2IfBsPkmDefaultTekLifetime,
                      wman2IfBsPkmDefaultSelfSigManufCertTrust,
                      wman2IfBsPkmCheckCertValidityPeriods,
                      wman2IfBsPkmAuthentInfos,
                      wman2IfBsPkmAuthRequests,
                      wman2IfBsPkmAuthReplies,
                      wman2IfBsPkmAuthRejects,
                      wman2IfBsPkmAuthInvalids,
                      wman2IfBsSsPkmAuthKeySequenceNumber,
```

```
                        wman2IfBsSsPkmAuthExpiresOld,
                        wman2IfBsSsPkmAuthExpiresNew,
                        wman2IfBsSsPkmAuthLifetime,
                        wman2IfBsSsPkmAuthReset,
                        wman2IfBsSsPkmAuthInfos,
                        wman2IfBsSsPkmAuthRequests,
                        wman2IfBsSsPkmAuthReplies,
                        wman2IfBsSsPkmAuthRejects,
                        wman2IfBsSsPkmAuthInvalids,
                        wman2IfBsSsPkmAuthRejectErrorCode,
                        wman2IfBsSsPkmAuthRejectErrorString,
                        wman2IfBsSsPkmAuthInvalidErrorCode,
                        wman2IfBsSsPkmAuthInvalidErrorString,
                        wman2IfBsSsPkmAuthPrimarySAId,
                        wman2IfBsSsPkmAuthValidStatus,
                        wman2IfBsPkmTekSAType,
                        wman2IfBsPkmTekDataEncryptAlg,
                        wman2IfBsPkmTekDataAuthentAlg,
                        wman2IfBsPkmTekEncryptAlg,
                        wman2IfBsPkmTekLifetime,
                        wman2IfBsPkmTekKeySequenceNumber,
                        wman2IfBsPkmTekExpiresOld,
                        wman2IfBsPkmTekExpiresNew,
                        wman2IfBsPkmTekReset,
                        wman2IfBsPkmKeyRequests,
                        wman2IfBsPkmKeyReplies,
                        wman2IfBsPkmKeyRejects,
                        wman2IfBsPkmTekInvalids,
                        wman2IfBsPkmKeyRejectErrorCode,
                        wman2IfBsPkmKeyRejectErrorString,
                        wman2IfBsPkmTekInvalidErrorCode,
                        wman2IfBsPkmTekInvalidErrorString,

                        -- Notification
                        wman2IfBsTrapControlRegister,
                        wman2IfBsStatusTrapControlRegister,
                        wman2IfBsRssiLowThreshold,
                        wman2IfBsRssiHighThreshold,
                        wman2IfBsSsNotificationMacAddr,
                        wman2IfBsSsStatusValue,
                        wman2IfBsSsStatusInfo,
                        wman2IfBsDynamicServiceType,
                        wman2IfBsDynamicServiceFailReason,
                        wman2IfBsSsRssiStatus,
                        wman2IfBsSsRssiStatusInfo,
                        wman2IfBsSsRegisterStatus}
            STATUS        current
            DESCRIPTION
                "This group contains objects for BS, and are
                 independent of PHY."
            ::= { wman2IfMibGroups 3 }

    wman2IfMibBsAasGroup      OBJECT-GROUP
            OBJECTS {-- AAS Configuration parameters
```

```
                        wman2IfBsAasChanFbckReqFreq,
                        wman2IfBsAasBeamSelectFreq,
                        wman2IfBsAasChanFbckReqResolution,
                        wman2IfBsAasBeamReqResolution,
                        wman2IfBsAasNumOptDiversityZones}
            STATUS        current
            DESCRIPTION
                "This group contains objects for AAS in BS."
            ::= { wman2IfMibGroups 4 }

    wman2IfMibSsGroup     OBJECT-GROUP
            OBJECTS {-- Configuration parameters
                    wman2IfSsLostDLMapInterval,
                    wman2IfSsLostULMapInterval,
                    wman2IfSsContentionRangRetries,
                    wman2IfSsRequestRetries,
                    wman2IfSsRegRequestRetries,
                    wman2IfSsTftpBackoffStart,
                    wman2IfSsTftpBackoffEnd,
                    wman2IfSsTftpRequestRetries,
                    wman2IfSsTftpDownloadRetries,
                    wman2IfSsTftpWait,
                    wman2IfSsToDRetries,
                    wman2IfSsToDRetryPeriod,
                    wman2IfSsT1Timeout,
                    wman2IfSsT2Timeout,
                    wman2IfSsT3Timeout,
                    wman2IfSsT4Timeout,
                    wman2IfSsT6Timeout,
                    wman2IfSsT12Timeout,
                    wman2IfSsT14Timeout,
                    wman2IfSsT16Timeout,
                    wman2IfSsT18Timeout,
                    wman2IfSsT19Timeout,
                    wman2IfSsT20Timeout,
                    wman2IfSsT21Timeout,
                    wman2IfSsSBCRequestRetries,
                    wman2IfSsTftpCpltRetries,
                    wman2IfSsT26Timeout,
                    wman2IfSsDLManagProcTime,

                    -- Performance monitoring
                    wman2IfSsChannelNumber,
                    wman2IfSsStartFrame ,
                    wman2IfSsDuration,
                    wman2IfSsBasicReport,
                    wman2IfSsMeanCinrReport,
                    wman2IfSsStdDeviationCinrReport,
                    wman2IfSsMeanRssiReport,
                    wman2IfSsStdDeviationRssiReport,

                    -- Privacy sublayer
                    wman2IfSsPkmAuthState,
                    wman2IfSsPkmAuthKeySequenceNumber,
```

```
                            wman2IfSsPkmAuthExpiresOld,
                            wman2IfSsPkmAuthExpiresNew ,
                            wman2IfSsPkmAuthReset,
                            wman2IfSsPkmAuthentInfos,
                            wman2IfSsPkmAuthRequests,
                            wman2IfSsPkmAuthReplies,
                            wman2IfSsPkmAuthRejects,
                            wman2IfSsPkmAuthInvalids,
                            wman2IfSsPkmAuthRejectErrorCode,
                            wman2IfSsPkmAuthRejectErrorString,
                            wman2IfSsPkmAuthInvalidErrorCode,
                            wman2IfSsPkmAuthInvalidErrorString ,
                            wman2IfSsPkmAuthGraceTime,
                            wman2IfSsPkmTekGraceTime,
                            wman2IfSsPkmAuthWaitTimeout,
                            wman2IfSsPkmReauthWaitTimeout,
                            wman2IfSsPkmOpWaitTimeout,
                            wman2IfSsPkmRekeyWaitTimeout,
                            wman2IfSsPkmAuthRejectWaitTimeout,
                            wman2IfSsPkmTekSAType,
                            wman2IfSsPkmTekDataEncryptAlg,
                            wman2IfSsPkmTekDataAuthentAlg,
                            wman2IfSsPkmTekEncryptAlg,
                            wman2IfSsPkmTekState,
                            wman2IfSsPkmTekKeySequenceNumber,
                            wman2IfSsPkmTekExpiresOld,
                            wman2IfSsPkmTekExpiresNew,
                            wman2IfSsPkmTekKeyRequests,
                            wman2IfSsPkmTekKeyReplies,
                            wman2IfSsPkmTekKeyRejects,
                            wman2IfSsPkmTekInvalids,
                            wman2IfSsPkmTekAuthPends,
                            wman2IfSsPkmTekKeyRejectErrorCode,
                            wman2IfSsPkmTekKeyRejectErrorString,
                            wman2IfSsPkmTekInvalidErrorCode,
                            wman2IfSsPkmTekInvalidErrorString,
                            wman2IfSsDeviceCert,
                            wman2IfSsDeviceManufCert,

                            -- Notofocation
                            wman2IfSsTrapControlRegister,
                            wman2IfSsRssiLowThreshold,
                            wman2IfSsRssiHighThreshold,
                            wman2IfSsMacAddress,
                            wman2IfSsUnknownTlv,
                            wman2IfSsDynamicServiceType,
                            wman2IfSsDynamicServiceFailReason,
                            wman2IfSsRssiStatus,
                            wman2IfSsRssiStatusInfo}
        STATUS      current
        DESCRIPTION
            "This group contains objects for SS, and are
             independent of PHY."
        ::= { wman2IfMibGroups 5 }
```

```
wman2IfMibBsOfdmGroup        OBJECT-GROUP
        OBJECTS {wman2IfBsOfdmCtBasedResvTimeout,
                 wman2IfBsOfdmBwReqOppSize,
                 wman2IfBsOfdmRangReqOppSize,
                 wman2IfBsOfdmUplinkCenterFreq,
                 wman2IfBsOfdmNumSubChReqRegionFull,
                 wman2IfBsOfdmNumSymbolsReqRegionFull,
                 wman2IfBsOfdmSubChFocusCtCode,
                 wman2IfBsOfdmUpLinkChannelId,
                 wman2IfBsOfdmBsEIRP,
                 wman2IfBsOfdmChannelNumber,
                 wman2IfBsOfdmTTG,
                 wman2IfBsOfdmRTG,
                 wman2IfBsOfdmInitRngMaxRSS,
                 wman2IfBsOfdmDownlinkCenterFreq,
                 wman2IfBsOfdmBsId,
                 wman2IfBsOfdmMacVersion,
                 wman2IfBsOfdmFrameDurationCode,
                 wman2IfBsOfdmDownLinkChannelId,
                 wman2IfBsOfdmUcdFecCodeType,
                 wman2IfBsOfdmFocusCtPowerBoost,
                 wman2IfBsOfdmUcdTcsEnable,
                 wman2IfBsOfdmUcdBurstProfileRowStatus,
                 wman2IfBsOfdmDownlinkFrequency,
                 wman2IfBsOfdmDcdFecCodeType,
                 wman2IfBsOfdmDiucMandatoryExitThresh,
                 wman2IfBsOfdmDiucMinEntryThresh,
                 wman2IfBsOfdmTcsEnable,
                 wman2IfBsOfdmDcdBurstProfileRowStatus,
                 wman2IfBsOfdmMinReqRegionFullTxOpp,
                 wman2IfBsOfdmMinFocusedCtTxOpp,
                 wman2IfBsOfdmMaxRoundTripDelay,
                 wman2IfBsOfdmRangeAbortTimingThold,
                 wman2IfBsOfdmRangeAbortPowerThold ,
                 wman2IfBsOfdmRangeAbortFreqThold,
                 wman2IfBsOfdmDnlkRateId,
                 wman2IfBsOfdmRatioG,
                 wman2IfBsSsOfdmReqCapFftSizes,
                 wman2IfBsSsOfdmReqCapSsDemodulator,
                 wman2IfBsSsOfdmReqCapSsModulator,
                 wman2IfBsSsOfdmReqCapFocusedCtSupport,
                 wman2IfBsSsOfdmReqCapTcSublayerSupport,
                 wman2IfBsSsOfdmRspCapFftSizes,
                 wman2IfBsSsOfdmRspCapSsDemodulator,
                 wman2IfBsSsOfdmRspCapSsModulator,
                 wman2IfBsSsOfdmRspCapFocusedCtSupport,
                 wman2IfBsSsOfdmRspCapTcSublayerSupport,
                 wman2IfBsOfdmCapFftSizes,
                 wman2IfBsOfdmCapSsDemodulator,
                 wman2IfBsOfdmCapSsModulator,
                 wman2IfBsOfdmCapFocusedCtSupport,
                 wman2IfBsOfdmCapTcSublayerSupport,
                 wman2IfBsOfdmCapCfgFftSizes,
```

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 1                           wman2IfBsOfdmCapCfgSsDemodulator,
 2                           wman2IfBsOfdmCapCfgSsModulator,
 3                           wman2IfBsOfdmCapCfgFocusedCtSupport,
 4                           wman2IfBsOfdmCapCfgTcSublayerSupport}
 5
 6            STATUS        current
 7            DESCRIPTION
 8                "This group contains objects for BS and OFDM PHY."
 9            ::= { wman2IfMibGroups 6 }
10
11
12   wman2IfMibSsOfdmGroup      OBJECT-GROUP
13            OBJECTS {wman2IfSsOfdmCtBasedResvTimeout,
14                           wman2IfSsOfdmBwReqOppSize,
15                           wman2IfSsOfdmRangReqOppSize,
16                           wman2IfSsOfdmUplinkCenterFreq,
17                           wman2IfSsOfdmNumSubChReqRegionFull,
18                           wman2IfSsOfdmNumSymbolsReqRegionFull,
19                           wman2IfSsOfdmSubChFocusCtCode,
20                           wman2IfSsOfdmUpLinkChannelId,
21                           wman2IfSsOfdmBsEIRP,
22                           wman2IfSsOfdmChannelNumber,
23                           wman2IfSsOfdmTTG,
24                           wman2IfSsOfdmRTG,
25                           wman2IfSsOfdmInitRngMaxRSS,
26                           wman2IfSsOfdmDownlinkCenterFreq,
27                           wman2IfSsOfdmBsId,
28                           wman2IfSsOfdmMacVersion,
29                           wman2IfSsOfdmFrameDurationCode,
30                           wman2IfSsOfdmDownLinkChannelId,
31                           wman2IfSsOfdmUcdFecCodeType,
32                           wman2IfSsOfdmFocusCtPowerBoost,
33                           wman2IfSsOfdmUcdTcsEnable,
34                           wman2IfSsOfdmDownlinkFrequency,
35                           wman2IfSsOfdmDcdFecCodeType,
36                           wman2IfSsOfdmDiucMandatoryExitThresh,
37                           wman2IfSsOfdmDiucMinEntryThresh,
38                           wman2IfSsOfdmTcsEnable}
39            STATUS        current
40            DESCRIPTION
41                "This group contains objects for SS and OFDM PHY."
42            ::= { wman2IfMibGroups 7 }
43
44   wman2IfMibBsOfdmaGroup      OBJECT-GROUP
45            OBJECTS {wman2IfBsOfdmaCtBasedResvTimeout,
46                           wman2IfBsOfdmaBwReqOppSize,
47                           wman2IfBsOfdmaRangReqOppSize,
48                           wman2IfBsOfdmaUplinkCenterFreq,
49                           wman2IfBsOfdmaInitRngCodes,
50                           wman2IfBsOfdmaPeriodicRngCodes,
51                           wman2IfBsOfdmaBWReqCodes,
52                           wman2IfBsOfdmaPerRngBackoffStart,
53                           wman2IfBsOfdmaPerRngBackoffEnd,
54                           wman2IfBsOfdmaStartOfRngCodes,
55                           wman2IfBsOfdmaPermutationBase,
56                           wman2IfBsOfdmaULAllocSubchBitmap,
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                          wman2IfBsOfdmaOptPermULAllocSubchBitmap,
                          wman2IfBsOfdmaBandAMCAllocThreshold,
                          wman2IfBsOfdmaBandAMCReleaseThreshold,
                          wman2IfBsOfdmaBandAMCAllocTimer,
                          wman2IfBsOfdmaBandAMCReleaseTimer,
                          wman2IfBsOfdmaBandStatRepMAXPeriod,
                          wman2IfBsOfdmaBandAMCRetryTimer,
                          wman2IfBsOfdmaSafetyChAllocThreshold,
                          wman2IfBsOfdmaSafetyChReleaseThreshold,
                          wman2IfBsOfdmaSafetyChAllocTimer,
                          wman2IfBsOfdmaSafetyChReleaseTimer,
                          wman2IfBsOfdmaBinStatRepMAXPeriod,
                          wman2IfBsOfdmaSafetyChaRetryTimer,
                          wman2IfBsOfdmaHARQAackDelayULBurst,
                          wman2IfBsOfdmaCQICHBandAMCTranaDelay,
                          wman2IfBsOfdmaBsEIRP,
                          wman2IfBsOfdmaChannelNumber,
                          wman2IfBsOfdmaTTG,
                          wman2IfBsOfdmaRTG,
                          wman2IfBsOfdmaInitRngMaxRSS,
                          wman2IfBsOfdmaDownlinkCenterFreq,
                          wman2IfBsOfdmaBsId,
                          wman2IfBsOfdmaMacVersion,
                          wman2IfBsOfdmaFrameDurationCode,
                          wman2IfBsOfdmaSizeCqichIdField,
                          wman2IfBsOfdmaHARQAackDelayBurst,
                          wman2IfBsOfdmaUcdFecCodeType,
                          wman2IfBsOfdmaRangingDataRatio,
                          wman2IfBsOfdmaNorCOverNOverride,
                          wman2IfBsOfdmaUcdBurstProfileRowStatus,
                          wman2IfBsOfdmaDownlinkFrequency,
                          wman2IfBsOfdmaDcdFecCodeType,
                          wman2IfBsOfdmaDiucMandatoryExitThresh,
                          wman2IfBsOfdmaDiucMinEntryThresh,
                          wman2IfBsOfdmaDcdBurstProfileRowStatus}
        STATUS       current
        DESCRIPTION
            "This group contains objects for BS and OFDMA PHY."
        ::= { wman2IfMibGroups 8 }

wman2IfMibSsOfdmaGroup     OBJECT-GROUP
        OBJECTS {wman2IfSsOfdmaCtBasedResvTimeout,
                 wman2IfSsOfdmaBwReqOppSize,
                 wman2IfSsOfdmaRangReqOppSize,
                 wman2IfSsOfdmaUplinkCenterFreq,
                 wman2IfSsOfdmaInitRngCodes,
                 wman2IfSsOfdmaPeriodicRngCodes,
                 wman2IfSsOfdmaBWReqCodes,
                 wman2IfSsOfdmaPerRngBackoffStart,
                 wman2IfSsOfdmaPerRngBackoffEnd,
                 wman2IfSsOfdmaStartOfRngCodes,
                 wman2IfSsOfdmaPermutationBase,
                 wman2IfSsOfdmaULAllocSubchBitmap,
                 wman2IfSsOfdmaOptPermULAllocSubchBitmap,
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                    wman2IfSsOfdmaBandAMCAllocThreshold,
                    wman2IfSsOfdmaBandAMCReleaseThreshold,
                    wman2IfSsOfdmaBandAMCAllocTimer,
                    wman2IfSsOfdmaBandAMCReleaseTimer,
                    wman2IfSsOfdmaBandStatRepMAXPeriod,
                    wman2IfSsOfdmaBandAMCRetryTimer,
                    wman2IfSsOfdmaSafetyChAllocThreshold,
                    wman2IfSsOfdmaSafetyChReleaseThreshold,
                    wman2IfSsOfdmaSafetyChAllocTimer,
                    wman2IfSsOfdmaSafetyChReleaseTimer,
                    wman2IfSsOfdmaBinStatRepMAXPeriod,
                    wman2IfSsOfdmaSafetyChaRetryTimer,
                    wman2IfSsOfdmaHARQAackDelayULBurst,
                    wman2IfSsOfdmaCQICHBandAMCTranaDelay,
                    wman2IfSsOfdmaBsEIRP,
                    wman2IfSsOfdmaChannelNumber,
                    wman2IfSsOfdmaTTG,
                    wman2IfSsOfdmaRTG,
                    wman2IfSsOfdmaInitRngMaxRSS,
                    wman2IfSsOfdmaDownlinkCenterFreq,
                    wman2IfSsOfdmaBsId,
                    wman2IfSsOfdmaMacVersion,
                    wman2IfSsOfdmaFrameDurationCode,
                    wman2IfSsOfdmaSizeCqichIdField,
                    wman2IfSsOfdmaHARQAackDelayBurst,
                    wman2IfSsOfdmaUiucIndex,
                    wman2IfSsOfdmaUcdFecCodeType,
                    wman2IfSsOfdmaRangingDataRatio,
                    wman2IfSsOfdmaNorCOverNOverride,
                    wman2IfSsOfdmaDiucIndex,
                    wman2IfSsOfdmaDownlinkFrequency,
                    wman2IfSsOfdmaDcdFecCodeType,
                    wman2IfSsOfdmaDiucMandatoryExitThresh,
                    wman2IfSsOfdmaDiucMinEntryThresh}
        STATUS        current
        DESCRIPTION
            "This group contains objects for SS and OFDMA PHY."
        ::= { wman2IfMibGroups 9 }

wman2IfMibBsNotificationGroup     NOTIFICATION-GROUP
        NOTIFICATIONS {wman2IfBsSsStatusNotificationTrap,
                       wman2IfBsSsDynamicServiceFailTrap,
                       wman2IfBsSsRssiStatusChangeTrap,
                       wman2IfBsSsPkmFailTrap,
                       wman2IfBsSsRegistrerTrap}
        STATUS        current
        DESCRIPTION
            "This group contains event notifications for BS."
        ::= { wman2IfMibGroups 10 }

wman2IfMibSsNotificationGroup      NOTIFICATION-GROUP
        NOTIFICATIONS {wman2IfSsTlvUnknownTrap,
                       wman2IfSsDynamicServiceFailTrap,
                       wman2IfSsDhcpSuccessTrap,
```

```
                                wman2IfSsRssiStatusChangeTrap}
         STATUS        current
         DESCRIPTION
            "This group contains event notifications for SS."
         ::= { wman2IfMibGroups 11 }

wman2IfMibCmnPhsGroup     OBJECT-GROUP
         OBJECTS {-- Payload header supression
                 wman2IfCmnPhsRulePhsField,
                 wman2IfCmnPhsRulePhsMask,
                 wman2IfCmnPhsRulePhsSize,
                 wman2IfCmnPhsRulePhsVerify}
         STATUS        current
         DESCRIPTION
            "This group contains common objects for PHS."
         ::= { wman2IfMibGroups 12 }

wman2IfMibBsPhsGroup     OBJECT-GROUP
         OBJECTS {-- Payload header supression
                 wman2IfBsClassifierRulePhsSize,
                 wman2IfBsClassifierRulePhsMask,
                 wman2IfBsClassifierRulePhsVerify,
                 wman2IfBsClassifierRuleBitMap}
         STATUS        current
         DESCRIPTION
            "This group contains BS objects for PHS."
         ::= { wman2IfMibGroups 13 }
END
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Annex E.

Annex F. Proposal for Adding Mobility Handover and Paging group MIBs

1. Introduction

With the mobility feature introduced, handover between BS and its neighbouring BS is inevitable. This contribution proposes to add BS handover related parameters which will help to execute smoothly handover.

Paging group configuration is also very important in the mobility scenario, proper paging group settings will make the paging procedure simple and effective. The configuration of paging group is also included in this contribution.

2. Proposed Text Introduction

2.1 wmanIfBsObjects

2.1.1 wmanIfBsMobility

2.1.1.1 wmanIfBsHandoverConfiguration

wmanIfBsHandoverConfiguration contains handover related parameters. Handover related parameters include BS configuration parameters and its neighbouring BSes configuration parameters.

2.1.1.2 wmanIfBsPagingGroupTable

wmanIfBsPagingGroupTable contains paging group related parameters

3. ASN.1 Definitions of 802.16 MIB for SNMP

wmanIfBsMobility OBJECT IDENTIFIER ::= { wmanIfBsObjects x} -- e.g. x = 7

wmanIfBsHandoverConfiguration OBJECT IDENTIFIER ::= { wmanIfBsMobility 2 }

wmanIfBsOperatorId OBJECT-TYPE
    SYNTAX Integer32
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "An unique operator identifier."
    ::= { wmanIfBsHandoverConfiguration 1 }

wmanIfBsId OBJECT-TYPE
    SYNTAX WmanIfBsIdType
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "An unique BS identifier."
    ::= { wmanIfBsHandoverConfiguration 2 }

wmanIfBsHandoverSupport OBJECT-TYPE
    SYNTAX BITS
        {
        MDHO/FBSS HO not supported(0),
        FBSS/MDHO DLRF combining supported(1),
        MDHO DL soft combining supported monitoring single MAP from anchor
BS(2),
        MDHO DL soft combining supported monitoring MAPS from active BSs(3),
        reserved1(5),
        reserved2(6),
        reserved3(7)
        }
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "The Handover supported field indicates what type(s) of HO the BS and the MS
supports."
    ::= { wmanIfBsHandoverConfiguration 3 }

wmanIfBsHandoverSupport OBJECT-TYPE
    SYNTAX BITS
        {
        mdho/fbss HO not supported(0),
        fbss/mdho DLRF combining supported(1),
        mdho DL soft combining supported monitoring single MAP from anchor BS(2),
        mdho DL soft combining supported monitoring MAPS from active BSs(3)
        }
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "The Handover supported field indicates what type(s) of HO the BS and the MS
supports."

::= { wmanIfBsHandoverConfiguration 3 }

wmanIfBsResourceRetainTime OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "The Resource_Retain_Time is the duration for MS s connection information
that will be retained in serving BS. BS shall start Resource_Retain_Time timer at MS notification

of pending HO attempt through MOB_HO-IND or by detecting an MS drop. The unit of this value
is 100 milliseconds."
         ::= { wmanIfBsHandoverConfiguration 4 }

wmanIfBsHOProcessOptimizationMSTimer OBJECT-TYPE
     SYNTAX INTEGER
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION
         "the duration in frames MS shall wait until receipt
          of the next unsolicited network re-entry MAC
         management message as indicated in the HO Process
         Optimization element of the RNG-RSP message."
         ::= { wmanIfBsHandoverConfiguration 5 }

wmanIfBsMsHORetransmissionTimer OBJECT-TYPE
     SYNTAX INTEGER
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION
         "After a MS transmits MOB_MSHO-REQ to initiate a handover process, it shall
start MS Handover Retransmission Timer and shall not transmit another MOB_MSHO-REQ until
the expiration of the MS Handover Retransmission Timer."
         ::= { wmanIfBsHandoverConfiguration 6 }

wmanIfBsMobilityModeSupport OBJECT-TYPE
     SYNTAX BITS
         {
         handover support(0),
         sleep-mode support(1),
         idle-mode support(2)
         }
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION
         "This parameter is to represent the supported mobility mode."
         ::= { wmanIfBsHandoverConfiguration 7 }

wmanIfBsMsHOConnectProcessingTime OBJECT-TYPE
     SYNTAX INTEGER
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION
         "Time in ms the MS needs to process information
         on connections provided in
         RNGRSP or REG-RSP message during
         HO."
         ::= { wmanIfBsHandoverConfiguration 8 }

wmanIfBsMsHoTekProcessingTime OBJECT-TYPE
     SYNTAX INTEGER
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION

```
                                "Time in ms the MS needs to completely
                                process TEK information during HO."
                        ::= { wmanIfBsHandoverConfiguration 9 }


                wmanIfBsULPermutationBase OBJECT-TYPE
                        SYNTAX OCTET STRING
                        MAX-ACCESS read-write
                        STATUS current
                        DESCRIPTION
                                "This parameter is used for uplink subcarrier allocation."
                        ::= { wmanIfBsHandoverConfiguration 10 }


                wmanIfBsDLPermutationBase OBJECT-TYPE
                        SYNTAX OCTET STRING
                        MAX-ACCESS read-write
                        STATUS current
                        DESCRIPTION
                                "This parameter is used for downlink subcarrier allocation."
                        ::= { wmanIfBsHandoverConfiguration 11 }


                wmanIfBsPreambleIndex OBJECT-TYPE
                        SYNTAX OCTET STRING
                        MAX-ACCESS read-write
                        STATUS current
                        DESCRIPTION
                                "This parameter is used for downlink synchronization by MS."
                        ::= { wmanIfBsHandoverConfiguration 12 }


                wmanIfBsSegmentNumber OBJECT-TYPE
                        SYNTAX INTEGER
                        MAX-ACCESS read-write
                        STATUS current
                        DESCRIPTION
                                "This parameter is an unique segment identifier ."
                        ::= { wmanIfBsHandoverConfiguration 13 }


                wmanIfNeighbourBsTable OBJECT-TYPE
                        SYNTAX SEQUENCE OF WmanIfNeighbourBsEntry
                        MAX-ACCESS not-accessible
                        STATUS current
                        DESCRIPTION
                                "This table contains neighbouring BS related parameters."
                        ::= { wmanIfBsHandoverConfiguration 14 }


                wmanIfNeighbourBsEntry OBJECT-TYPE
                        SYNTAX WmanIfNeighbourBsEntry
                        MAX-ACCESS not-accessible
                        STATUS current
                        DESCRIPTION
                                "This table is indexed by wmanIfNeighbourBsId."
                        INDEX { ifIndex, wmanIfNeighbourBsId }
                        ::= { wmanIfNeighbourBsTable 1 }


                wmanIfNeighbourBsEntry ::= SEQUENCE {
```

```
wmanIfNeighbourBsId            WmanIfBsIdType,
wmanIfNeighbourBsFAIndex INTEGER,
wmanIfNeighbourBsEIRP          INTEGER (-128..127),
wmanIfNeighbourBsHOProcessOptimizationInteger32,
wmanIfNeighbourBsSchedulingServiceSupportBITS,
wmanIfNeighbourBsBandwidthInteger32,
wmanIfNeighbourBsFFTSize       Integer32,
wmanIfNeighbourBsCyclePrefixInteger32,
wmanIfNeighbourBsFrameDurationCodeInteger32,
wmanIfNeighbourBsULPermutationBaseInteger32,
wmanIfNeighbourBsDLPermutationBaseInteger32,
wmanIfNeighbourBsSegmentNumberInteger32,
wmanIfNeighbourBsPreambleIndexInteger32
}

wmanIfNeighbourBsId OBJECT-TYPE
        SYNTAX WmanIfBsIdType
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "The neighbouring BS identifier."
        ::= { wmanIfNeighbourBsEntry 1 }

wmanIfNeighbourBsFAIndex OBJECT-TYPE
        SYNTAX INTEGER
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "Frequency Assignment Index."
        ::= { wmanIfNeighbourBsEntry 2 }

wmanIfNeighbourBsEIRP OBJECT-TYPE
        SYNTAX INTEGER (-128..127)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "Neighbour BS EIRP."
        ::= { wmanIfNeighbourBsEntry 3 }

wmanIfNeighbourBsHOProcessOptimization OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "Identifies re-entry process management messages that may be omitted during
the current HO attempt due to the availability of MS service and operational context information,
and the MS service and operational status post-HO completion."
        ::= { wmanIfNeighbourBsEntry 4 }

wmanIfNeighbourBsSchedulingServiceSupport OBJECT-TYPE
        SYNTAX BITS
                {
                real-time polling service(0),
                extended real-time polling service(1),
```

```
1              non-real-time polling service(2),
2              unsolicited grant service(3),
3              best effort(4)
4              }
5         MAX-ACCESS read-write
6         STATUS current
7         DESCRIPTION
8
9              "This parameter is used to indicate neighbouring BS scheduling service type."
10        ::= { wmanIfNeighbourBsEntry 5 }
11
12
13 wmanIfNeighbourBsBandwidth OBJECT-TYPE
14        SYNTAX Integer32
15        MAX-ACCESS read-write
16        STATUS current
17        DESCRIPTION
18
19             "This parameter is used to indicate neighbouring BS bandwidth."
20        ::= { wmanIfNeighbourBsEntry 6 }
21
22
23 wmanIfNeighbourBsFFTSize OBJECT-TYPE
24        SYNTAX Integer32
25        MAX-ACCESS read-write
26        STATUS current
27        DESCRIPTION
28
29             "This parameter is used to indicate neighbouring BS FFT size."
30        ::= { wmanIfNeighbourBsEntry 7 }
31
32 wmanIfNeighbourBsCyclePrefix OBJECT-TYPE
33        SYNTAX Integer32
34        MAX-ACCESS read-write
35        STATUS current
36        DESCRIPTION
37
38             "This parameter is used to indicate neighbouring BS Cycle prefix."
39        ::= { wmanIfNeighbourBsEntry 8 }
40
41
42 wmanIfNeighbourBsFrameDurationCode OBJECT-TYPE
43        SYNTAX Integer32
44        MAX-ACCESS read-write
45        STATUS current
46        DESCRIPTION
47
48             "This parameter is used to indicate neighbouring BS Frame duration code."
49        ::= { wmanIfNeighbourBsEntry 9 }
50
51 wmanIfNeighbourBsULPermutationBase OBJECT-TYPE
52        SYNTAX Integer32
53        MAX-ACCESS read-write
54        STATUS current
55        DESCRIPTION
56
57             "This parameter is used to indicate neighbouring BS uplink permutation base."
58        ::= { wmanIfNeighbourBsEntry 10 }
59
60
61 wmanIfNeighbourBsDLPermutationBase OBJECT-TYPE
62        SYNTAX Integer32
63        MAX-ACCESS read-write
64        STATUS current
65
```

DESCRIPTION
          "This parameter is used to indicate neighbouring BS downlink permutation
base."
     ::= { wmanIfNeighbourBsEntry 11 }

wmanIfNeighbourBsSegmentNumber OBJECT-TYPE
     SYNTAX Integer32
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION
          "This parameter is used to indicate neighbouring BS segment number."
     ::= { wmanIfNeighbourBsEntry 12 }

wmanIfNeighbourBsPreambleIndex OBJECT-TYPE
     SYNTAX Integer32
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION
          "This parameter is used to indicate neighbouring BS preamble index."
     ::= { wmanIfNeighbourBsEntry 13 }

wmanIfBsPagingGroupTable OBJECT-TYPE
     SYNTAX SEQUENCE OF WmanIfBsPagingGroupEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
          "This table contains paging group related parameters."
     ::= { wmanIfBsMobility 3 }

wmanIfBsPagingGroupEntry OBJECT-TYPE
     SYNTAX WmanIfBsPagingGroupEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
          "This table is indexed by wmanIfBsPagingGroupId."
     INDEX { wmanIfBsPagingGroupId }
     ::= { wmanIfBsPagingGroupTable 1 }

wmanIfBsPagingGroupEntry ::= SEQUENCE {
wmanIfBsPagingControlId   IpAddress,
wmanIfBsPagingGroupId   INTEGER,
wmanIfBsMgmtResourceHoldingTimerInteger32,
wmanIfBsT46Timer   Integer32,
wmanIfBsPagingRetryCount   INTEGER,
wmanIfBsREQDuration   INTEGER,
wmanIfBsMACHashSkipThresholdInteger32,
wmanIfBsCDMATransmissionOpportunityAssignmentINTEGER,
wmanIfBsPagingResponseWindow INTEGER,
wmanIfBsIdleModeTimer   INTEGER,
wmanIfBsIdleModeSystemTimer   INTEGER,
wmanIfBsPagingIntervalLength   INTEGER,
wmanIfBsPagingCycle   INTEGER
}

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wmanIfBsPagingControlId OBJECT-TYPE
        SYNTAX IpAddress
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "This parameter is used to indicate paging controller identifier connected by BS."
        ::= { wmanIfBsPagingGroupEntry 1 }


wmanIfBsPagingGroupId OBJECT-TYPE
        SYNTAX INTEGER
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "This parameter is used to indicate the paging group identifier assigned to BS by
network."
        ::= { wmanIfBsPagingGroupEntry 2 }


wmanIfBsMgmtResourceHoldingTimer OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "Time the BS maintain connection
                information with the MS after the
                BS send DREG-CMD to the MS"
        ::= { wmanIfBsPagingGroupEntry 3 }


wmanIfBsT46Timer OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "Time the BS waits for DREGREQ
                in case of unsolicited Idle
                Mode initiation from BS."
        ::= { wmanIfBsPagingGroupEntry 4 }


wmanIfBsPagingRetryCount OBJECT-TYPE
        SYNTAX INTEGER
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "Number of retries on paging
                transmission. If the BS does not
                receive RNG-REQ from the MS
                until this value decreases to zero,
                it determines that the MS is
                unavailable."
        ::= { wmanIfBsPagingGroupEntry 5 }


wmanIfBsREQDuration OBJECT-TYPE
        SYNTAX INTEGER
        MAX-ACCESS read-write
        STATUS current
```

DESCRIPTION
                "Waiting value for the DREG-REQ message re-transmission
                (measured in frames)."
        ::= { wmanIfBsPagingGroupEntry 6 }

wmanIfBsMACHashSkipThreshold OBJECT-TYPE
        SYNTAX Integer32
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "Maximum number of successive MOB_PAG-ADV messages
                that may be sent from a BS without individual notification for
                an MS for which BS is allowed to skip MS MAC Address Hash
                when the Action Code for the MS is 0b00,'No Action Required'."
        ::= { wmanIfBsPagingGroupEntry 7 }

wmanIfBsCDMATransmissionOpportunityAssignment OBJECT-TYPE
        SYNTAX INTEGER
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "The CDMA code and transmission opportunity
                assignment field indicates the assigned code
                and transmission opportunity for a MS who is
                paged to use over dedicated CDMA ranging region."
        ::= { wmanIfBsPagingGroupEntry 8 }

wmanIfBsPagingResponseWindow OBJECT-TYPE
        SYNTAX INTEGER
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "The Page-Response Window indicates the Page-Response window for a MS
who is paged to transmit
                the assigned code for CDMA ranging channel."
        ::= { wmanIfBsPagingGroupEntry 9 }

wmanIfBsIdleModeTimer OBJECT-TYPE
        SYNTAX INTEGER (128..65536)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "MS timed interval to conduct
                Location Update. Set timer to MS
                Idle Mode Timeout capabilities
                setting. Timer recycles on successful
                Idle Mode Location Update."
        ::= { wmanIfBsPagingGroupEntry 10 }

wmanIfBsIdleModeSystemTimer OBJECT-TYPE
        SYNTAX INTEGER (128..65536)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION

```
                              "For BS acting as Paging Controller,
                              timed interval to receive notification
                              of MS Idle Mode Location Update. Set
                              timer to MS Idle Mode Timeout. Timer
                              recycles on successful Idle Mode
                              Location Update."
                     ::= { wmanIfBsPagingGroupEntry 11 }


wmanIfBsPagingIntervalLength OBJECT-TYPE
        SYNTAX INTEGER (2..5)
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "time duration of Paging Interval
                of the BS."
        ::= { wmanIfBsPagingGroupEntry 12 }


wmanIfBsPagingCycle OBJECT-TYPE
        SYNTAX INTEGER
        MAX-ACCESS read-write
        STATUS current
        DESCRIPTION
                "Cycle in which the paging message is transmitted
                within the paging group."
        ::= { wmanIfBsPagingGroupEntry 13 }
```

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