

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	MAC and PHY MIB for WirelessMAN and WirelessHUMAN Subscriber Station	
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Re:		
Abstract	802.16 specification [1] [2] defines PHY_GET and PHY_SET primitives to access management information specific to PHY layer. However, 802.16 specification does not define the Management Information Base (MIB) for MAC and PHY layers. Standard based 802.16 MIB is an integral piece in achieving management interoperability that is very important to the deployment of 802.16 wirelessMAN and WirelessHUMAN. This contribution proposes that an 802.16 MIB be defined for remote management of MAC and PHY layers in SS, and includes a structure to define the high level framework of the 802.16 MIB.	
Purpose	Adoption	
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1 **1. Introduction**

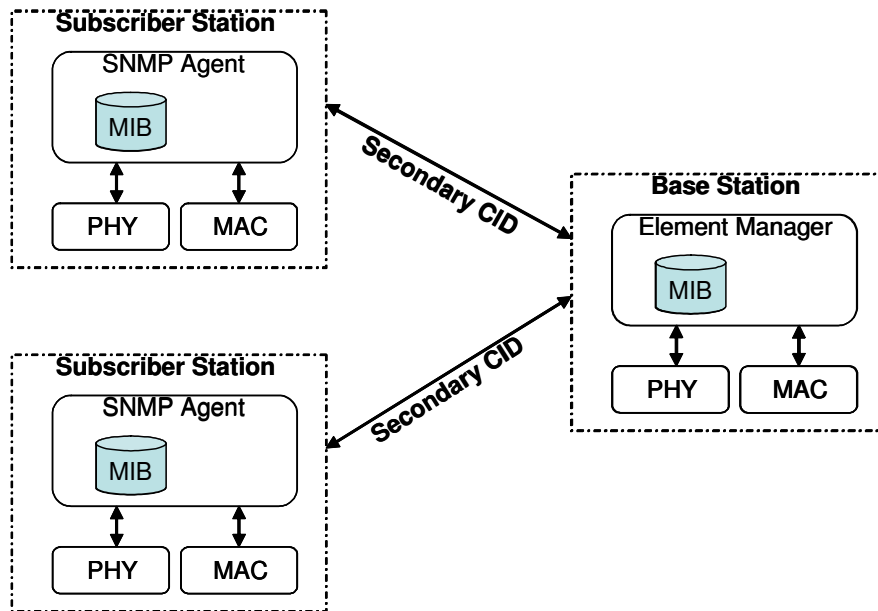
2 IEEE 802.16 working group defines WirelessMAN and WirelessHUMAN air interface specifications
 3 for the development of standard based Base Station (BS) and Subscriber Station (SS) to provide
 4 broadband wireless services to Metropolitan Area Networks (MANs).
 5

6 802.16 specification [1] [2] defines PHY_GET and PHY_SET primitives to access management
 7 information specific to PHY layer. However, 802.16 specification does not define the Management
 8 Information Base (MIB) for MAC and PHY layers. Standard based 802.16 MIB is an integral piece in
 9 achieving management interoperability that is very important to the deployment of 802.16
 10 wirelessMAN and WirelessHUMAN. This contribution proposes that an 802.16 MIB be defined for
 11 remote management of MAC and PHY layers in SS, and includes a structure to define the high
 12 level framework of the 802.16 MIB.

13 **2. Scope**

14 The scope of this contribution is to define 802.16 MAC and PHY MIB for SS in supporting SS
 15 remote management. 802.16 MIB for BS is out of scope to enable vendors adding product
 16 differentiation features in the BS design. The 802.16 SS MIB is intended to work with both SNMPv1
 17 and SNMPv2 [3] [4].

18 Figure 1 shows the 802.16 MIB reference model. The MIB in the SNMP Agent in SS is derived from
 19 parameters in PHY and MAC layers. The Element Manager in BS communicates with SSs via
 20 secondary CID to write and read MAC and PHY parameters in SS.
 21



32 **Figure 1: 802.16 MIB Reference Model**

1 **3. References**

- 2 [1] IEEE 802.16-2001, "IEEE Standard for Local and Metropolitan area networks – Part 16:
3 Air Interface for Fixed Wireless Access Systems".
- 4 [2] IEEE 802.16a-2003, "IEEE Standard for local and Metropolitan area networks – Part
5 16: Air Interface for Fixed Wireless Access Systems – Amendment 2: Medium Access
6 Control Modifications and Additional Physical Layer Specifications for 2-11 GHz.
- 7 [3] RFC1902, "Structure of Management Information for version 2 of the Simple Network
8 Management Protocol (SNMPv2)", January 1996
- 9 [4] RFC 1213, " Management Information Base for Network Management of TCP/IP-based
10 internets: MIB-II", IETF, March 1991

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4. 802.16 MIB Structure

Figure 2 defines high level MIB structure for 802.16. It provides the framework to assist the 802.16 MIB definition. The 802.16 MIB shall support the following core network management functions—FCAPS.

- Fault management
- Configuration management
- Accounting management – to be study
- Performance Monitoring
- Security

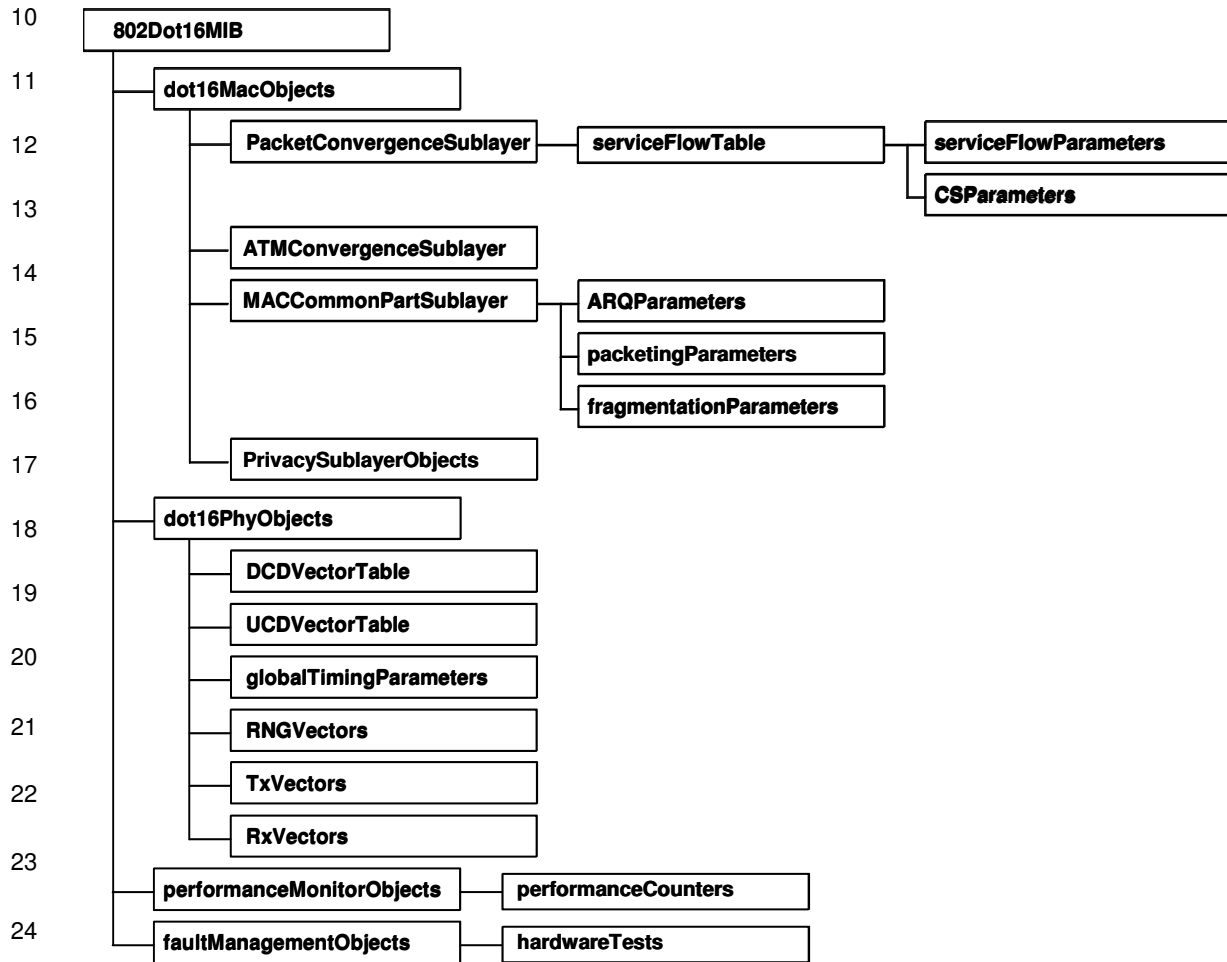


Figure 2: 802.16 MIB Structure

1 **4.1 Fault Management**

2 Fault management includes lookback, continuity test, or diagnostics to assist fault identification,
3 mitigation, and isolation. Its managed objects are defined in faultManagementObjects.

4 **4.2 Configuration Management**

5 Configuration management is responsible for the provisioning of MAC and PHY parameters that are
6 defined in dot16MacObjects and dot16PhyObjects.

7 **4.3 Account Management**

8 Account management includes subscription and usage information that are used to create the
9 billing data. Managed objects for account management are TBD.

10 **4.4 Performance Management**

11 Performance management includes statistics counters that are used to monitor PHY and MAC
12 performance. Its managed objects are defined in performanceMonitorObjects.

13 **4.5 Security Management**

14 Security management includes the Privacy Sublayer managed objects that are defined in
15 privacySublayer contained in dot16MacObjects.

16

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