ISO/IEC/IEEE 8802-3-1:2015-08 (E)

Standard for Management Information Base (MIB) - Definitions for Ethernet

Contents

Page

1. Overview ... 1

1.1 Scope ... 2
1.2 Purpose ... 2
1.3 Internet-Standard Management Framework ... 2
1.4 Security considerations ... 2
1.5 Conformance ... 3

2. Normative references ... 5

3. Definitions ... 7

4. Abbreviations ... 9

5. Ethernet logical link discovery protocol (LLDP) extension MIB module ... 11

5.1 Structure of the IEEE 802.3 LLDP extension MIB ... 11
5.2 Relationship to other MIBs ... 11
5.3 Security considerations for IEEE 802.3 LLDP extension MIB module ... 14
5.4 MIB module definition ... 15

6. Ethernet operations, administration, and maintenance (OAM) MIB module ... 41

6.1 Introduction ... 41
6.2 Overview ... 41
6.2.1 Remote fault indication ... 41
6.2.2 Link monitoring ... 41
6.2.3 Remote loopback ... 42
6.2.4 Ethernet OAM protocol data units ... 42
6.3 Relation to other MIB modules ... 42
6.3.1 Relation to other EFM MIB modules ... 42
6.3.2 Mapping of IEEE 802.3 managed objects ... 42
6.4 MIB structure ... 45
6.5 Security considerations for Ethernet operations, administration, and maintenance (OAM) MIB module ... 45
6.6 MIB module definition ... 46

7. Ethernet repeater device MIB module ... 83

7.1 Overview ... 83
7.1.1 Repeater management ... 83
7.1.2 Structure of the MIB ... 83
7.1.3 Relationship to MIB-II ... 83
7.2 Topology mapping ... 84
7.3 MIB module definition ... 84

8. Ethernet data terminal equipment (DTE) power via medium dependent interface (MDI) MIB module ... 129

8.1 Introduction ... 129
8.2 Overview ... 129
8.3 MIB structure ... 129

8.4 Security considerations for Ethernet data terminal equipment (DTE) power via medium dependent interface (MDI) MIB module 129
8.5 MIB module definition 130

9. Ethernet passive optical networks (EPON) MIB module 143

9.1 Overview 143
9.1.1 EPON architecture highlights 143
9.1.2 Management architecture 149
9.2 MIB structure 150
9.3 Relationship to other MIB modules 154
9.3.1 Relation to the Interfaces Group MIB and Ethernet-like interface MIB 154
9.3.2 Relation to the IEEE 802.3 MAU MIBs 160
9.3.3 Relation to the Ethernet OAM MIB 160
9.3.4 Relation to the bridge MIB 160
9.4 Mapping of IEEE 802.3 managed objects 160
9.5 Security considerations for Ethernet passive optical network (EPON) MIB module 163
9.5.1 dot3MpcpAdminState 163
9.5.2 dot3EponFecMode 163
9.5.3 dot3ExtPkgObjectReset 163
9.5.4 dot3ExtPkgObjectPowerDown 163
9.5.5 dot3ExtPkgObjectFecEnabled 163
9.5.6 dot3ExtPkgObjectRegisterAction 163
9.5.7 dot3ExtPkgObjectReportNumThreshold 163
9.5.8 dot3ExtPkgObjectReportThreshold 163
9.5.9 dot3ExtPkgOptIfLowerInputPowerThreshold 164
9.5.10 dot3ExtPkgOptIfUpperInputPowerThreshold 164
9.5.11 dot3ExtPkgOptIfLowerOutputPowerThreshold 164
9.5.12 dot3ExtPkgOptIfUpperOutputPowerThreshold 164
9.5.13 dot3ExtPkgOptIfTransmitEnable 164
9.6 MIB module definition 164

10. Ethernet-like interface MIB module 209

10.1 Introduction 209
10.2 Overview 209
10.2.1 Relation to MIB-2 209
10.2.2 Relation to the Interfaces Group MIB 209
10.2.3 Relation to the IEEE 802.3 MAU-MIB module 215
10.2.4 Mapping of IEEE 802.3 managed objects 216
10.3 Security considerations for Ethernet-like interface MIB module 218
10.4 MIB module definition 219

11. Ethernet in the First Mile copper (EFMCu) interfaces MIB module 253

11.1 Introduction 253
11.2 Relation to other MIB modules 253
11.2.1 Relation to Interfaces Group MIB module 253
11.2.2 Relation to SHDSL MIB module 259
11.2.3 Relation to VDSL MIB module 259
11.2.4 Relation to Ethernet-Like and MAU MIB modules 259
11.3 MIB structure 260
11.3.1 EFM copper MIB overview 260
11.3.2 PME profiles 260

11.3.3 Mapping of IEEE 802.3 managed objects 261
11.4 Security considerations for Ethernet in the First Mile copper interfaces MIB module 262
11.5 MIB module definition 262

12. Ethernet wide area network (WAN) interface sublayer (WIS) MIB module 313

12.1 Overview 313
12.1.1 Relationship to the SONET/SDH interface MIB 313
12.1.2 Relationship to the Ethernet-like interface MIB 313
12.1.3 Relationship to the IEEE 802.3 MAU MIB 314
12.1.4 Use of the ifTable 314
12.1.5 SONET/SDH terminology 315
12.1.6 Mapping of IEEE 802.3 managed objects 315
12.1.7 Mapping of SNMP objects to WIS station management registers 319
12.1.8 Structure of the MIB module 322
12.2 Security considerations for Ethernet wide area network (WAN) interface sublayer (WIS) MIB module 323
12.3 MIB module definition 324

Annex 12A (informative) Collection of performance data using WIS MDIO registers 337

13. Ethernet medium attachment units (MAUs) MIB module 339

13.1 Introduction 339
13.2 Overview 339
13.2.1 Relationship to IETF RFC 3636 and IETF RFC 4836 339
13.2.2 Relationship to other MIBs 339
13.2.3 Management of internal MAUs 340
13.2.4 Mapping of IEEE 802.3 managed objects 340
13.2.5 Addition of new MAU types 343
13.3 Security considerations for Ethernet medium attachment units (MAUs) MIB module 344
13.4 IANA considerations 344
13.5 MIB module definition 344

Annex A (informative) Bibliography 375

Annex B (normative) Branch and leaf assignments for IEEE 802.3 and IEEE 802.3.1 managed objects 379

B.1 Branch and leaf table 379