IETF Ethernet Interfaces and Hub MIB WG Update

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IETF Ethernet Interfaces and Hub MIB Working Group

- http://www.ietf.cnri.reston.va.us/html.charters/hubmib-charter.html
- Charter: The Ethernet Interfaces and Hub MIB WG is Chartered to define a set of managed objects that instrument devices, MAUs and interfaces that conform to the IEEE 802.3 standard for Ethernet. This set of objects should be largely compliant with, and even draw from IEEE 802.3, although there is no requirement that any specific object be present or absent. The MIB object definitions produced will be for use by SNMP and will be adequately consistent with other SNMP objects, standards and conventions. The WG will define new MIB objects to cover the following 802.3 technologies:
    - P802.3ae - 10 Gb/s Ethernet
    - P802.3af - DTE Power via MDI
- Schedule for completion – January 2002 forward the I-Ds to the IESG for Proposed Standard consideration
- Out of the Charter
    - Ethernet First Mile
        - too early and not yet defined
        - Some management issues may belong to other layers
    - 802.17 (RPR) – non-802.3 item
- General Discussion:hubmib@ietf.org
To Subscribe: hubmib-request@ietf.org
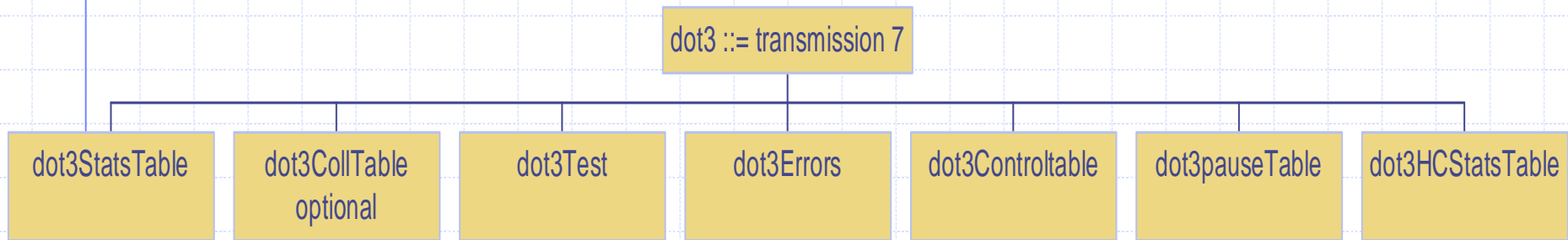In Body: subscribe your_email_address

Current Request For Comments (RFCs)

- ◆ RFC 2108 – Definitions of Managed Objects for IEEE 802.3 Repeater Devices using SMIv2
- ◆ RFC 2665 – Definition of Managed Objects for the Ethernet-like Interface Types
- ◆ RFC 2668 – Definition of Managed Objects for IEEE 802.3 Medium Attached Units (MAUs) using SMIv2
- ◆ RFC 2666 – Definition of Object identifiers for Identifying Ethernet Chip Sets
- ◆ IETF RFC Page - http://www.ietf.cnri.reston.va.us/rfc.html

Current Internet-Drafts

◆ Definition of Managed Objects for the Ethernet-like Interface types - http://www.ietf.cnri.reston.va.us/internet-drafts/draft-ietf-hubmib-etherif-mib-v3-00.txt

◆ Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs) - http://www.ietf.cnri.reston.va.us/internet-drafts/draft-ietf-hubmib-mau-mib-v3-00.txt

◆ Definition of Managed Objects for the Ethernet WAN Interface Sublayer - http://www.ietf.cnri.reston.va.us/internet-drafts/draft-ietf-hubmib-wis-mib-00.txt

◆ Power Ethernet (DTE Power via MDI) MIB - http://www.ietf.cnri.reston.va.us/internet-drafts/draft-ietf-hubmib-power-ethernet-mib-00.txt
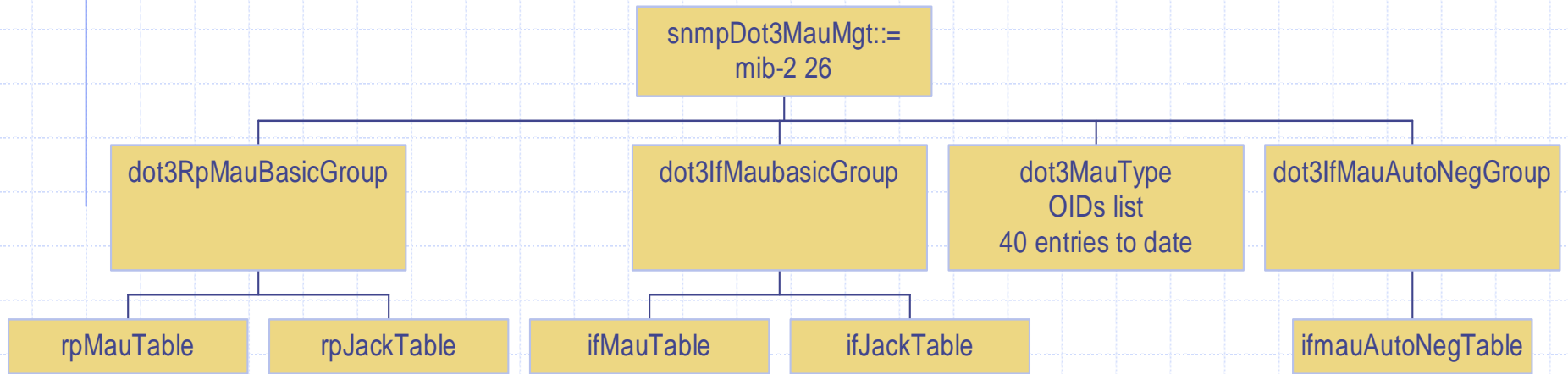
Changes and Issues since RFC 2665

- DESCRIPTION clauses have been updated to reflect behavior on 10 Gb/s interfaces:
  - dot3StatsAlignmentErrors
  - dot3StatsSymbolErrors
- Objects have been added for management of the Rate Control function in WAN applications of Ethernet
  - dot3StatsRateControlAbility
  - dot3StatsRateControlStatus
- 64-bit counters have been added to support operation on high-speed Ethernet interfaces
  - dot3HCControlInUnknownOpcodes
  - dot3HCInPauseFrames
  - dot3HCOutPauseFrames
  - dot3HCStatsAlignmentErrors
  - dot3HCStatsFCSErrors
  - dot3HCStatsFrameTooLongs
  - dot3HCStatsInternalMacTransmitErrors
  - dot3HCStatsInternalMacReceiveErrors
  - dot3StatsSymbolErrors
- Several clarifications were made to the section on the mapping of Interface MIB objects to Ethernet
  - ifXxxOctets
  - ifXxxXcastPkts

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MAU MIB

```
                    ┌─────────────────┐
                    │ snmpDot3MauMgt::=│
                    │    mib-2 26     │
                    └────────┬────────┘
        ┌────────────────────┼──────────────────┬──────────────────┐
┌───────┴───────────┐ ┌──────┴──────────┐ ┌─────┴─────────┐ ┌──────┴──────────────┐
│ dot3RpMauBasicGroup│ │dot3IfMaubasicGroup│ │ dot3MauType   │ │dot3IfMauAutoNegGroup│
│                    │ │                 │ │  OIDs list    │ │                     │
│                    │ │                 │ │40 entries to date│ │                  │
└───┬────────────┬───┘ └───┬─────────┬───┘ └───────────────┘ └──────────┬──────────┘
┌───┴───┐    ┌───┴───┐ ┌───┴───┐ ┌───┴───┐                     ┌─────────┴─────────┐
│rpMauTable│ │rpJackTable│ │ifMauTable│ │ifJackTable│            │ifmauAutoNegTable │
└──────────┘ └──────────┘ └──────────┘ └───────────┘            └───────────────────┘
```
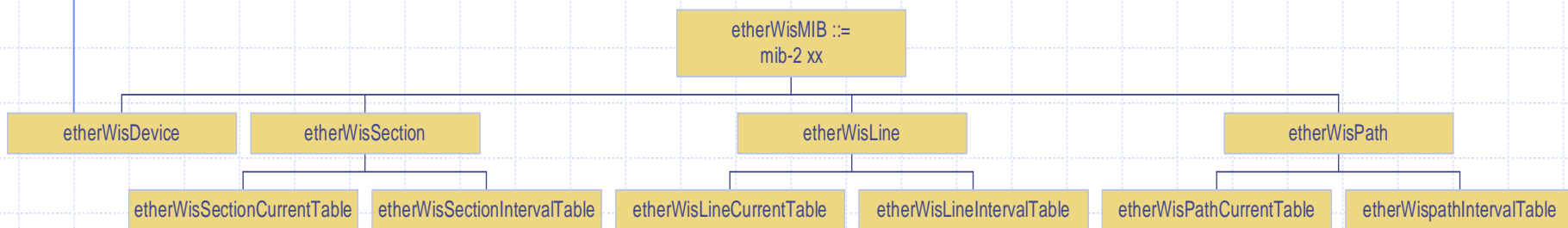
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Changes and Issues Since RFC 2668

- The DESCRIPTION clauses of ifMauMediaAvailable has been updated to reflect behavior on 10 Gb/s interfaces

- OBJECT-IDENTITY definitions have been added for 10 gigabit MAU types

- Enumerations for 'pmdLinkFault', 'wisFrameLoss', 'wisSignalLoss', pcsLinkFault', excessiveBER', 'dxsLinkFault' and 'pxsLinkFault' have been added for the ifMauMediaAvailable object

- ifMauTypeListBits has been extended with bits for the 10 Gb/s MAU types.

WIS MIB

```
                              ┌──────────────────┐
                              │  etherWisMIB ::=  │
                              │    mib-2 xx       │
                              └──────────────────┘
```

etherWisDevice	etherWisSection		etherWisLine		etherWisPath	

| | etherWisSectionCurrentTable | etherWisSectionIntervalTable | etherWisLineCurrentTable | etherWisLineIntervalTable | etherWisPathCurrentTable | etherWispathIntervalTable |

WIS MIB Issues

- First Internet-Draft

- Missing mapping of the new Clause 30 objects – to be added in later releases

- Relationship with SONET MIB – developed within the AToM MIB WG – common meeting of the two WGs at the London IETF Meeting

Summary

- The IETF Ethernet Interfaces and Hub MIB WG tries to synchronize its standardization effortds with the goal of providing the SNMP MIB support simultaneously or close to the release of the IEEE standards

- The IETF standard MIBs try to reflect as close as possible the set of objects defined by the IEEE in an SNMP interface, but there is no commitment to achieve full coverage, or an one-to-one mapping

- The IETF WG may define more objects with applicative value with software based implementation within the SNMP entities

- We intend to achieve a closer cooperation and coordination

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