

IEEE 802.3 Clause 30 management, MIB, definitions for Ethernet, registers and function

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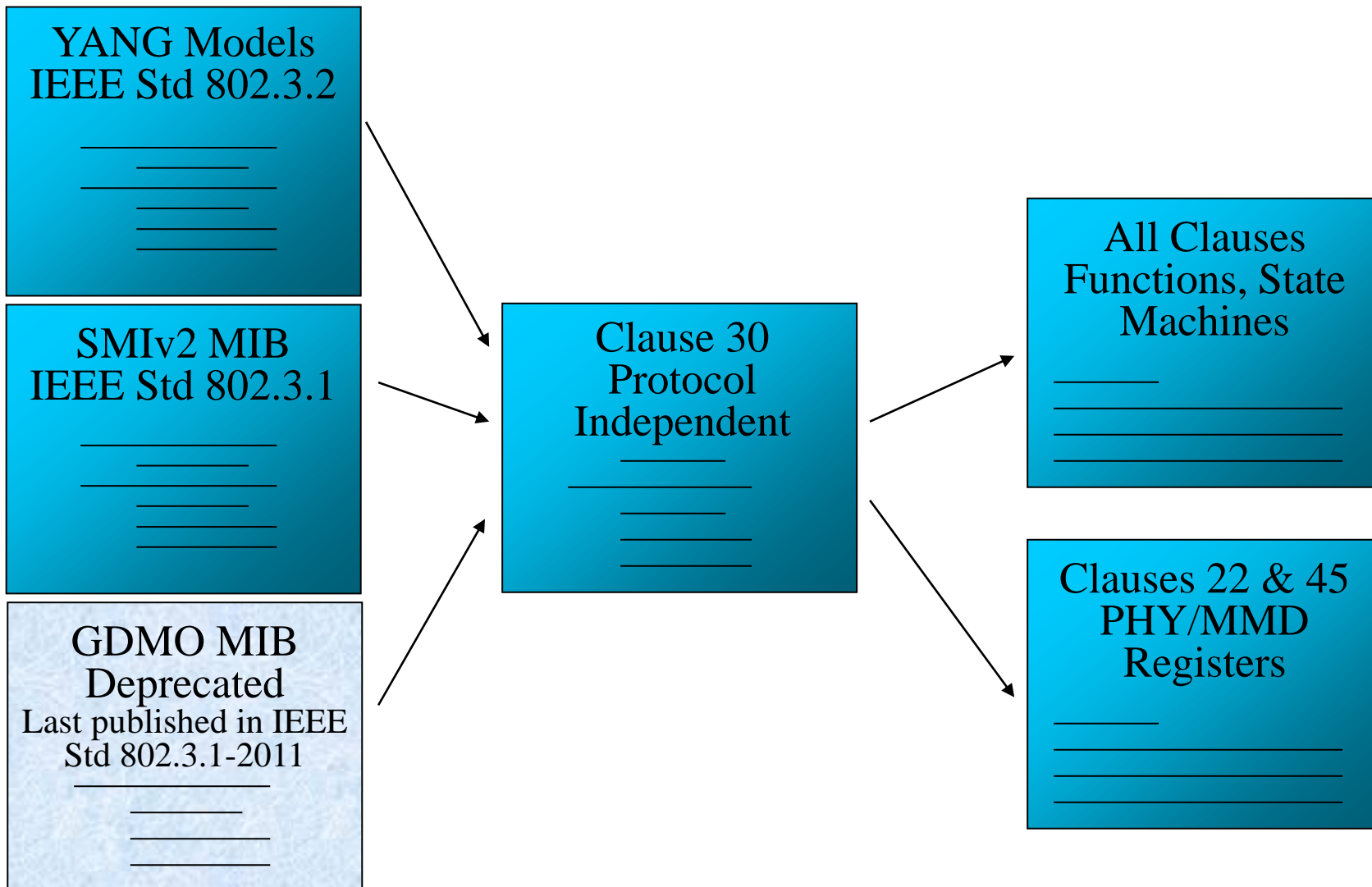
IEEE 802.3 approach

- Protocol independent Management Clause
 - IEEE Std 802.3 Clause 30 Management
 - Referenced by protocol dependent MIBs
- Protocol dependent Management Information Base (MIB)
 - Guidelines for the Definition of Managed Objects (GDMO)
 - Deprecated except object branch and leaf assignments
 - Used in variable descriptors in IEEE Std 802.3 Variable Request operations, administration, and maintenance protocol data unit (OAMPDU)
 - Structure of Management Information Version 2 (SMIv2) MIBs
 - IEEE Std 802.3.1-2013 MIB Definitions for Ethernet
 - YANG models
 - IEEE Std 802.3.2-2019 YANG Data Model Definitions

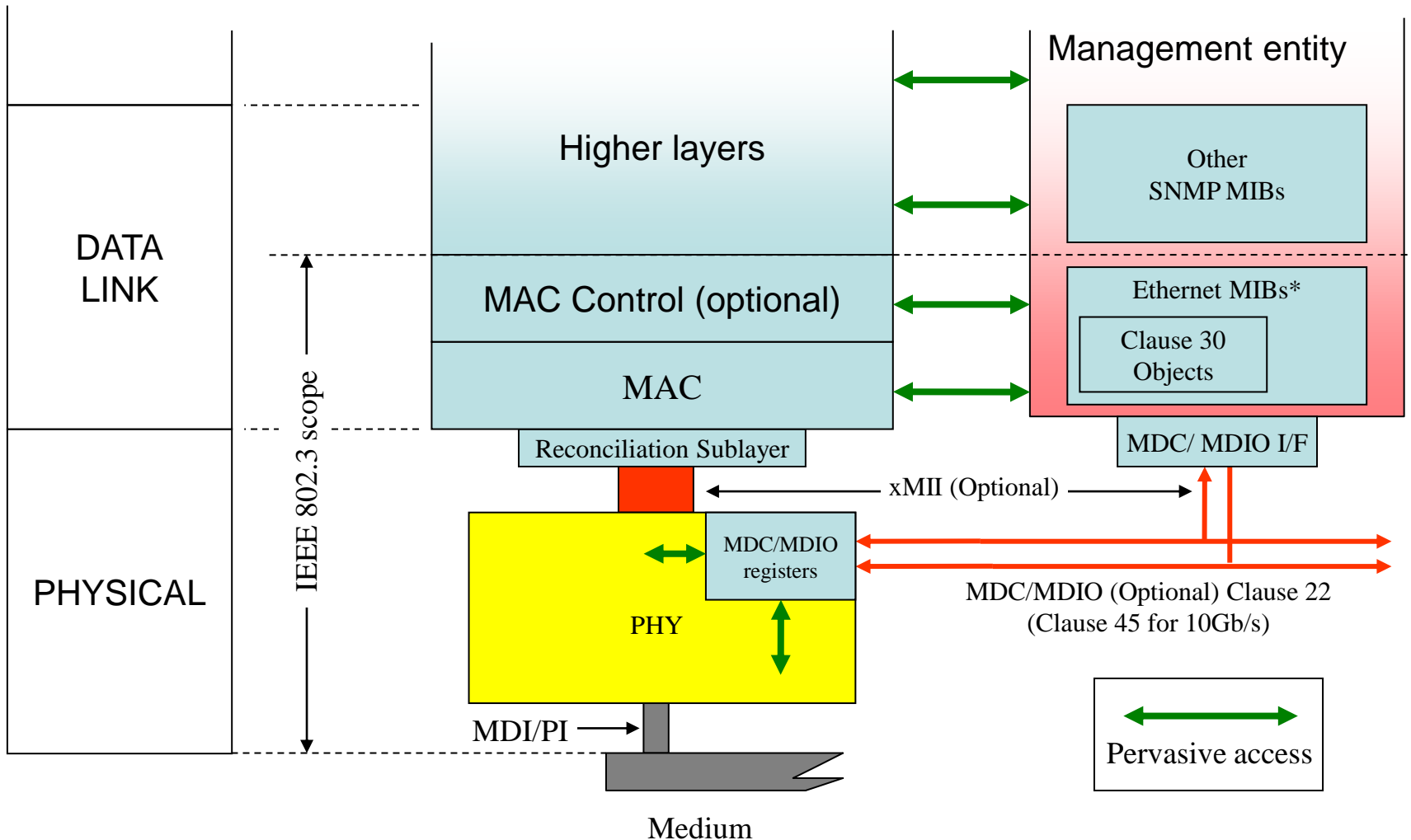
Clause 30 Management elements

- Objects, attributes, actions or notifications
- Generally only provide elements that are associated with hardware function
 - Behaviours references functions and registers within the relevant Clause of IEEE 802.3
- Generally don't provide elements if it doesn't require hardware support
 - Examples
 - Attributes that could be calculated from other attributes
 - These may be provided in protocol dependent MIB

References to and from IEEE Std 802.3 Clause 30



Management model

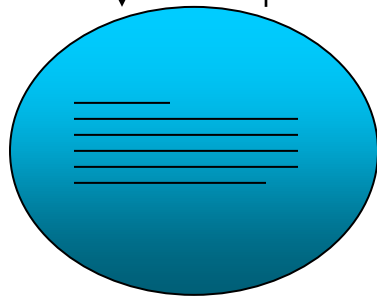
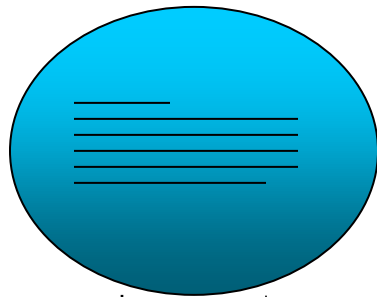


* IEEE Std 802.3.1-2013, IEEE Std 802.3.2-2019

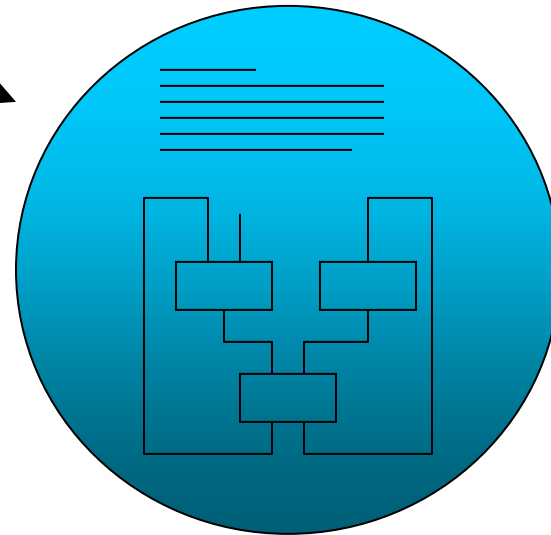
MIB, Registers and Function

Function in PHY needs register access to make it manageable across xMII

MIB definition



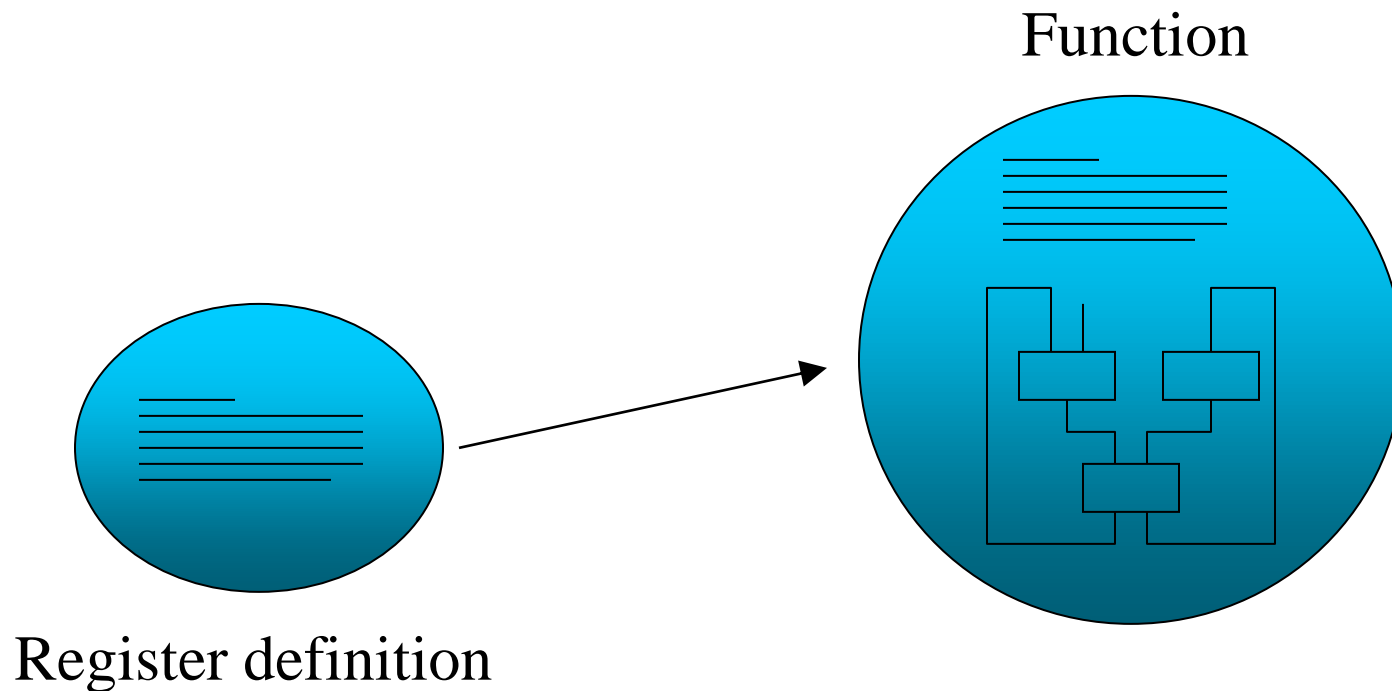
Function



Register definition

MIB, Registers and Function

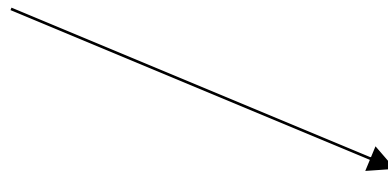
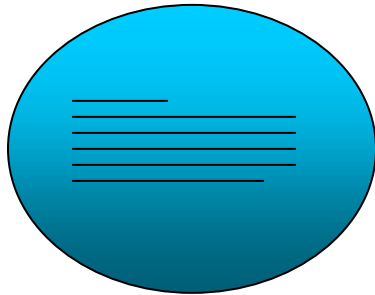
Can have a register but no MIB attribute. Example: PHY test mode



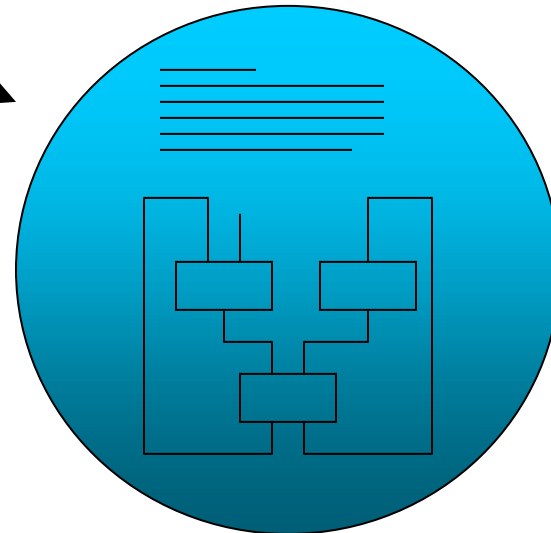
MIB, Registers and Function

Can have a MIB attribute but no register. Example: MAC packet counters

MIB definition



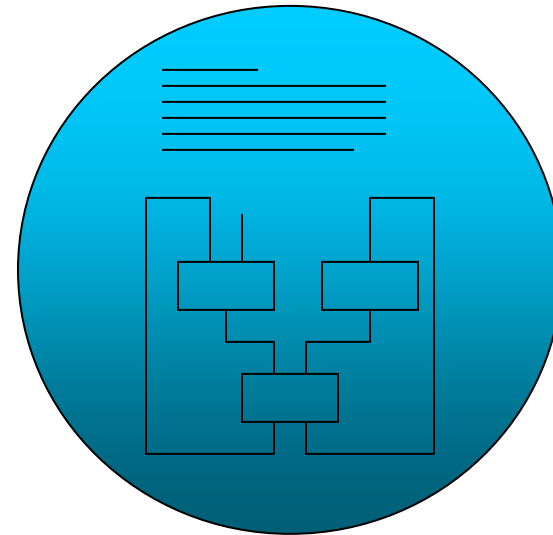
Function



MIB, Registers and Function

Can have a function but no register or MIB attribute

Function



Summary

- Protocol independent Clause 30
 - Generally, hardware related objects
 - References functions and/or registers in other clauses
- Protocol dependant MIBs
 - GDMO
 - Deprecated (last published in IEEE Std 802.3.1-2011)
 - GDMO object branch and leaf assignments kept for OAM
 - SMIV2
 - IEEE Std 802.3.1-2013 MIB Definitions for Ethernet
 - YANG
 - IEEE Std 802.3.2-2019 YANG Data Model Definitions

Thank You!