

Overview of IEEE 802 Standards

CS 571

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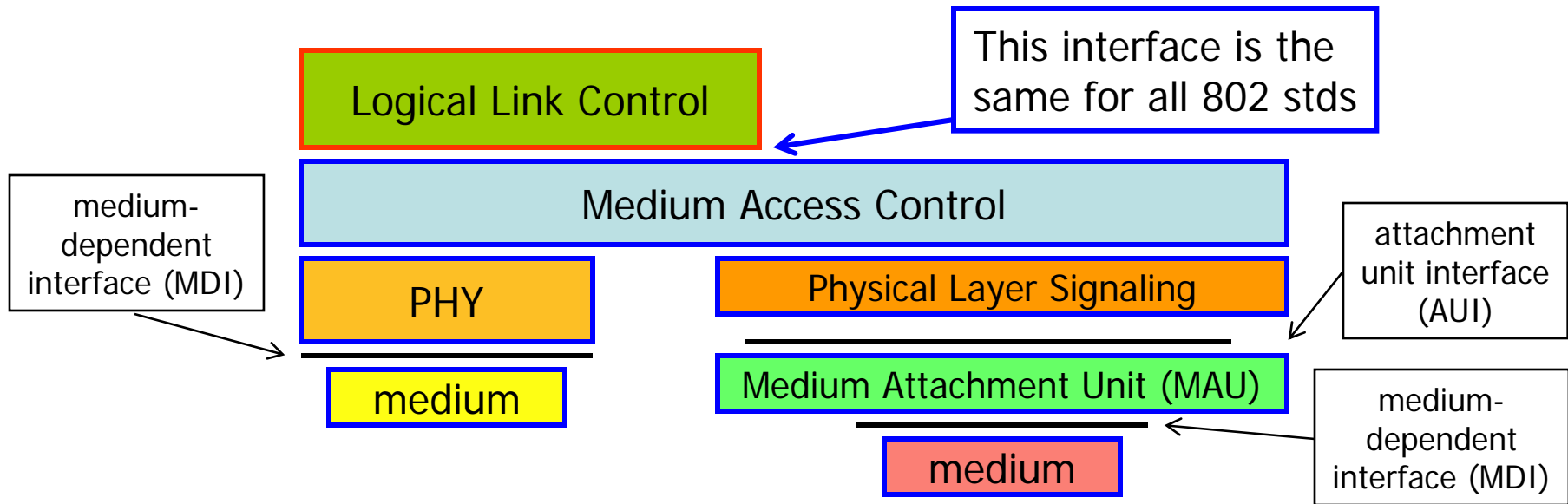
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Overview of IEEE 802 Standards

- Institute of Electrical and Electronics Engineers
 - Among other activities, develops standards to aid development of EE-related industries
- IEEE 802 LAN/MAN Committee
 - Standards for Local- and Metropolitan Area Networks
 - Optimized for modest-sized geographical areas (e.g. campus)
 - First meeting: February 1980 (!)
 - Goal: single LAN standard, speeds 1-20 MHz
 - Divided logically into PHY, MAC and "High-level Interface" components
 - By the end of 1980 there were 3 LAN MACs: CSMA/CD, Token Bus, Token Ring

IEEE 802 Standards



- All 802 standards provide a common upper interface to Logical Link Control (LLC)
- A MAC protocol may be specified for use with different physical media
 - E.g., 802.3 supports thick coax, thin coax, twisted pair, etc.

IEEE 802 Addresses

- All 802 protocols use the same address format
 - 48-bit, globally-unique addresses
 - Advantage: any interface can be plugged into any LAN worldwide without danger of collision
- First 24 bits: Organizationally Unique Identifier (OUI)
 - Address space administered by IEEE, assigned to organizations
 - Typically manufacturers of equipment (interfaces)
 - To get an OUI currently costs \$1650
- Last 24 bits: set by the organization
 - Example: MAC address 00-19-C5-01-23-45
OUI 00-19-C5 is registered to Sony Corp
- Download list of public OUIs:
<http://standards.ieee.org/regauth/oui/oui.txt>

802 Standards

- 802.1 Interconnection (Bridging)
- 802.2 Logical Link Control
- 802.3 Ethernet (CSMA/CD) LAN
- 802.4 Token Bus LAN
- 802.5 Token Ring LAN
- 802.6 Metropolitan Area Networks (DQDB)
- 802.7 Broadband TAG
- 802.8 Fiber Optic TAG
- 802.9 Isochronous LAN
- 802.10 Security
- 802.11 Wireless LAN
- 802.12 Demand Priority
- 802.14 Cable Modem
- 802.15 Wireless Personal Area Network (PAN)
- 802.16 Broadband Wireless
- 802.17 Resilient Packet Ring
- 802.18 Radio Regulatory WG
- 802.19 Coexistence TAG
- 802.20 Mobile Broadband Wireless
- 802.21 Media Independent Handoff
- 802.22 Wireless Regional Area Networks

Active
Inactive
Disbanded