IEEE Computer Society
802 LAN/MAN Standards Committee: Connecting the World

Part I – IEEE 802.3 Ethernet

14 December 2020

Paul Nikolich
John D’Ambrosia
Foreword

Per IEEE-SA Standards Board Bylaws, Nov 2019

At lectures, symposia, seminars, or educational courses, an individual presenting information on IEEE standards shall make it clear that his or her views should be considered the personal views of that individual rather than the formal position of IEEE.

Paul Nikoich (p.nikolich@ieee.org)
- Chair, IEEE 802 LAN / MAN Standards Committee
- Chair, IEEE Technical Activities Board Committee on Standards
- Independent Consultant and Partner, YAS Broadband Ventures LLC
- IEEE Fellow

John D’Ambrosia (jdambrosia@ieee.org)
- Acting Chair, IEEE 802.3 Beyond 400 Gb/s Ethernet Study Group
- Chair, IEEE P802.3ct, 100 GbE over DWDM Systems Task Force
- Chair, IEEE P802.3cw, 400 GbE over DWDM Systems Task Force
- Recording Secretary, IEEE 802 Executive Committee
- Distinguished Engineer, IP Standards Team North America, Futurewei Technologies
- IEEE Senior Member
IEEE MEMBERS

Board of Directors (BOD)

Exec Director & Staff

Publication Activities

Technical Activities:
many technical societies
and councils

IEEE Computer Society Board of Governors

IEEE Computer Society Standards Activities Board

IEEE 802 LAN/MAN Standards Committee

Standards Association (IEEE SA)

IEEE SA Board of Governors

IEEE SA Standard Board

Member & Geographic Activities

Educational Activities

IEEE 802 LMSC is a Standards Committee of the IEEE Computer Society

750+ volunteer individual experts
5 Working Groups
2 Technical Advisory Groups
1 Executive Committee

14 December 2020: 802 LAN / MAN Standards Committee: Connecting the World, Part I – IEEE 802.3 Ethernet
IEEE 802 LAN/MAN Standards Committee

- 2020 is our 40th Anniversary
- Standards for
  - Local Area Networks (LAN)
  - Metropolitan Area Networks (MAN)
  - Regional Area Networks (RAN)
  - Personal Area Networks (PAN)
  - Wireless Specialty Networks (WSN)

IEEE 802 produces high quality, market relevant standards
The Ethernet Family by Speed

Year of IEEE 802.3 Standard Ratification

Rate (b/s)


10M 100M 1G 10G 100G 1T
The Ethernet Family by Application

Rate (b/s)

ENTERPRISE

DATA CENTER

DCI

ACCESS

AUTOMOTIVE

Power Over Ethernet

INDUSTRIAL

Year of IEEE 802.3 Standard Ratification

The Ethernet Family by Physical Layer

- Project objective
- Backplane
- Twin-axial
- Multimode Fibre
- Voice grade copper
- Deprecated
- Co-axial
- Twisted pair
- Single-mode Fibre
- Single twisted pair
- Plastic optical Fibre
- Point to Multipoint Fibre
- DWDM Point to Multipoint Fibre
- BiDi Single-mode Fibre
- DWDM systems
- Electrical Interfaces (AUIs)

Based on content from “The State of IEEE 802.3 Ethernet”, Law, D’Ambrosia, July 2020

<table>
<thead>
<tr>
<th>Rate (b/s)</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10M</td>
<td>10^1 - 10^2</td>
</tr>
<tr>
<td>100M</td>
<td>10^2 - 10^3</td>
</tr>
<tr>
<td>1G</td>
<td>10^3 - 10^4</td>
</tr>
<tr>
<td>10G</td>
<td>10^4 - 10^5</td>
</tr>
<tr>
<td>100G</td>
<td>10^5</td>
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<tr>
<td>1T</td>
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14 December 2020: 802 LAN / MAN Standards Committee: Connecting the World, Part I – IEEE 802.3 Ethernet
The Beyond 400 Gb/s Ethernet Study Group

Year of IEEE 802.3 Standard Ratification

New IEEE 802.3 “Beyond 400 Gb/s Ethernet” Study Group formed
802 LAN/MAN Standards Committee: Connecting the World
Part II – IEEE 802 Wireless Standards

- Join us on January 20, 2021 @ 11am
- Speakers include:
  - Paul Nikolich, Chair, IEEE 802 LMSC
  - Dorothy Stanley, Chair, IEEE 802.11 WG
  - Pat Kinney, Chair, IEEE 802.15 WG
Key Links

- The Global Impact of IEEE 802’s Standards
- IEEE 802 Home Page
- IEEE 802.3 Home Page
- IEEE 802 Executive Committee Members
- IEEE 802 Document Repository
- IEEE 802 Meeting Calendar
- Follow IEEE 802 on LinkedIn
- Follow IEEE 802 on Twitter (@IEEE802)
THANK YOU

To get involved with IEEE 802: