

# Ethernet Alliance

***Making IEEE 802 Ethernet Standards  
Work From Carrier to Consumer***

***February 2009***



ethernet alliance®

[www.ethernetalliance.org](http://www.ethernetalliance.org)

# Ethernet Alliance Initiatives

- Drive revenue for our members
  - Member equipment testing
  - Demonstrate equipment interoperability at tradeshow
  - Generate sales leads for members
- Market Education
  - Provide an Ethernet industry voice that collaborates with other relevant .orgs
  - Utilize various mediums: presentations, whitepapers, webinars
- Grow the Ethernet ecosystem
  - Expand Ethernet applications
  - Enhance Ethernet capabilities through standards incubation
  - Build relationships and programs with academia and industry



# Executive Summary

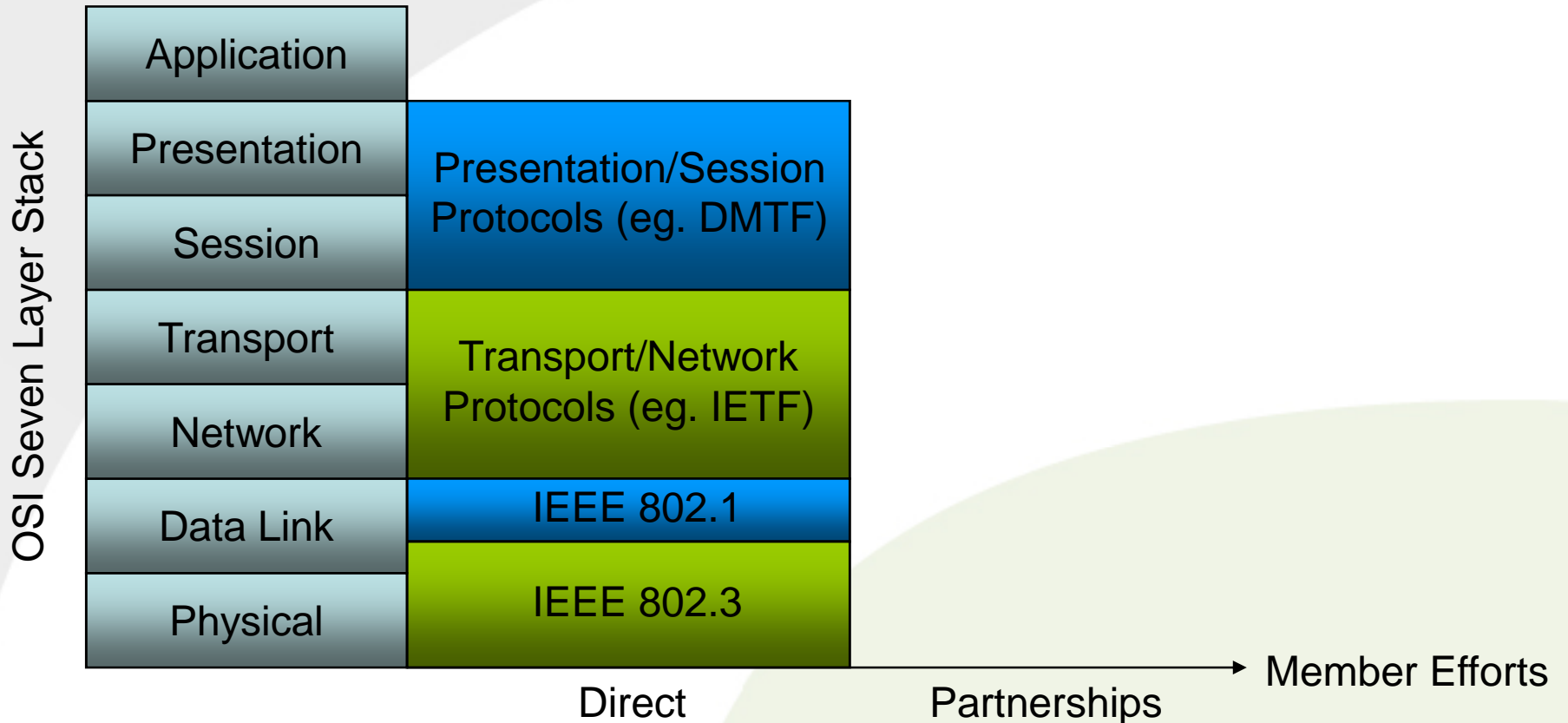
	Inception (01/06)	2009
Members	Industry voice representing the spectrum of IEEE 802 Ethernet. Our members represent the diversity of Ethernet from carrier to consumer and from the cabling to applications	
	17 Founding	100+
Mission	Make IEEE 802 Ethernet standards work through technology incubation, interoperability testing and certification	
Market Focus	Enterprise Ethernet	Data center / storage / unified fabric Carrier and service provider Applications
Affiliations	University of New Hampshire Interoperability Lab Lawrence Berkeley National Lab	Universities Student opportunities via IEEE Other .orgs
Education	Whitepapers, speakerships	Papers, webinars, speakerships, customized panels, videos, public technology demonstrations



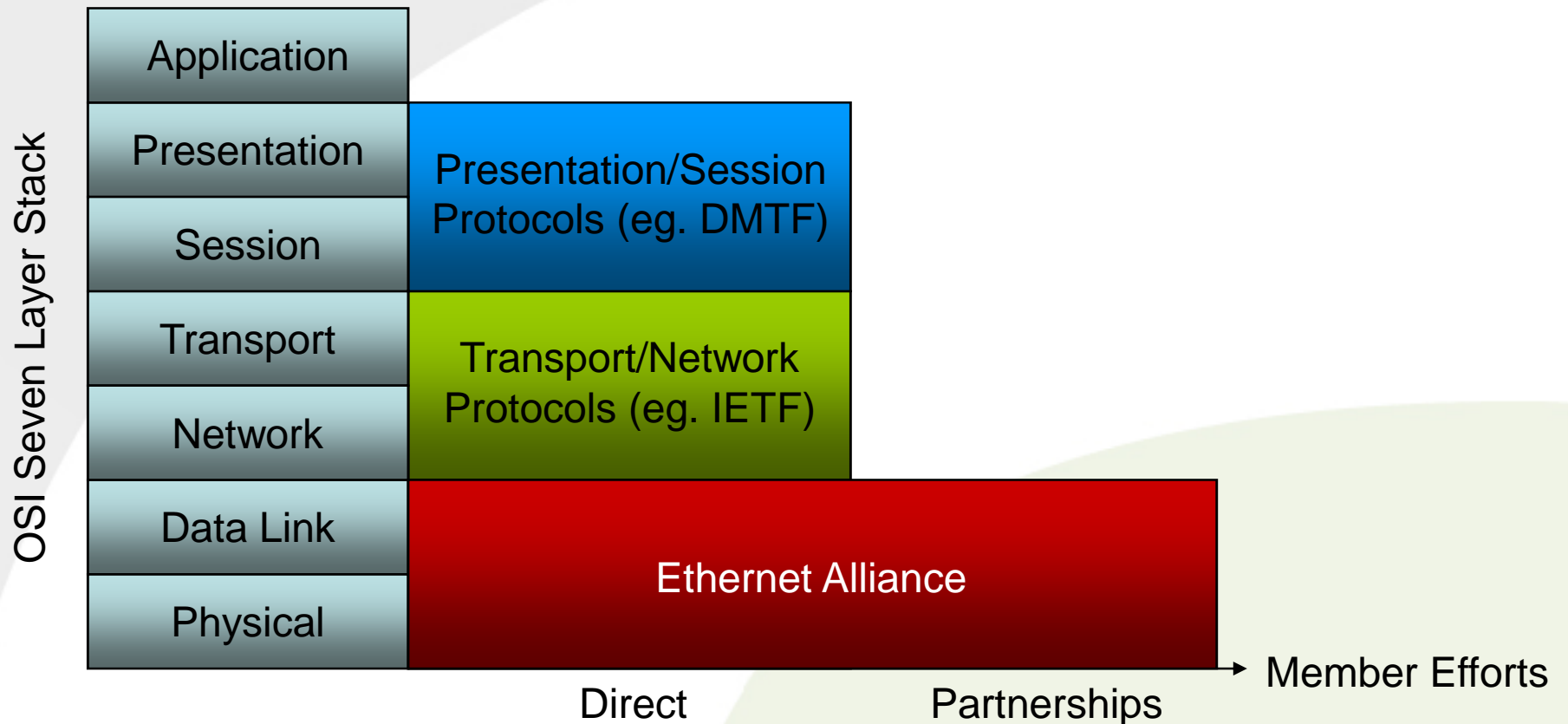
# Some of Our 100+ Members



# What the Ethernet Alliance Covers



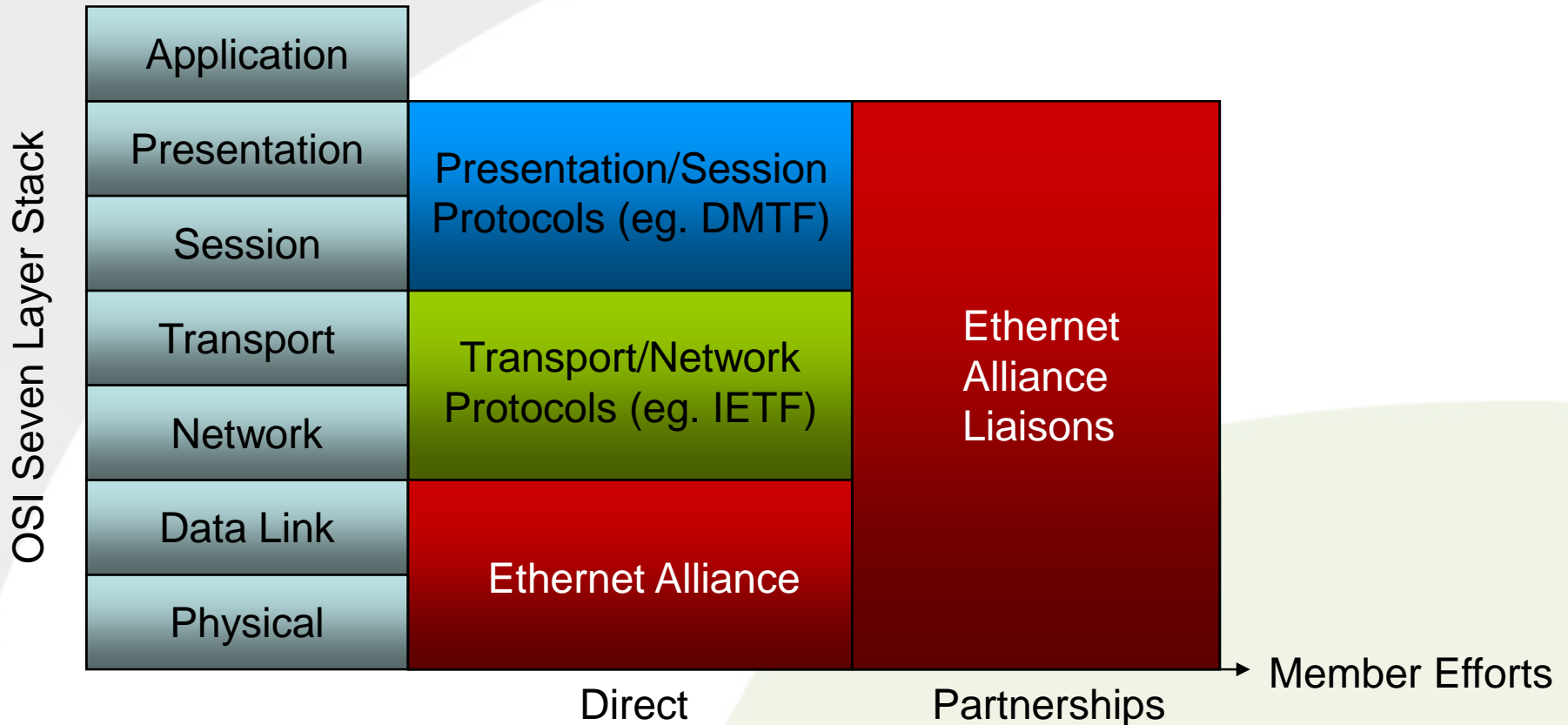
# What the Ethernet Alliance Covers



- Primary focus: Layer 1 and 2 Ethernet Standards



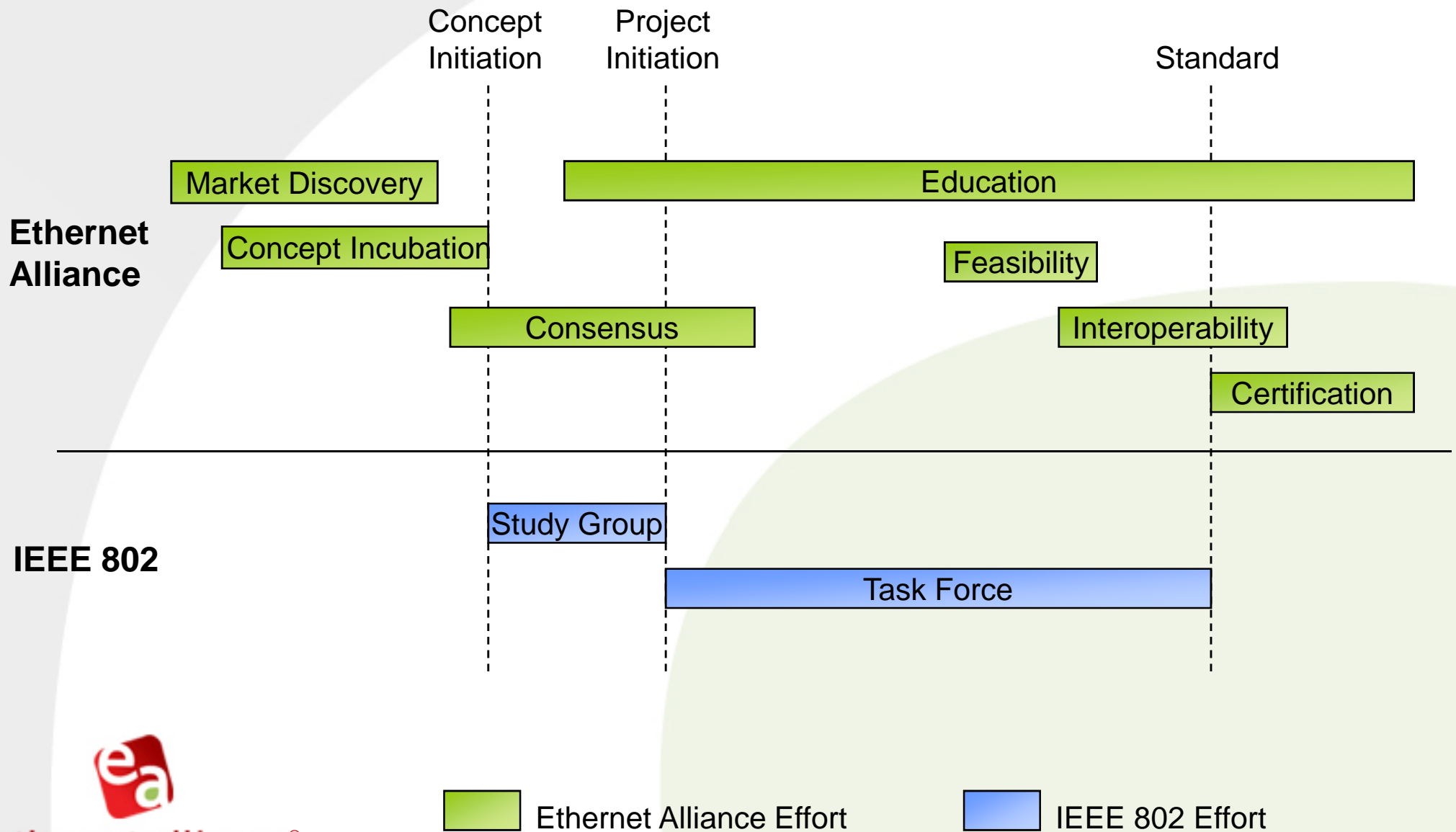
# What the Ethernet Alliance Covers



- Primary focus: Layer 1 and 2 Ethernet Standards
- Partnerships and liaisons with Ethernet users/influencers



# Partnership with IEEE 802 Ethernet



# Achievement Examples

Activity	Area	Value
Incubation/ Consensus	Higher Speed Ethernet (IEEE P802.3ab)	Initiation of standards effort
	Energy Efficient Ethernet (IEEE 802.3az)	Agreement on protocol
Private Interoperability	10GBASE-KR	Component and board testing
	10GBASE-LRM	Determination of technology readiness
	SFP+/EDC	Evaluation of SFF-8431 draft standard
Public Interoperability Demonstrations	<u>Interop</u> : 10GBASE-T, 10GBASE-LRM, SFP+, PoE/PoE+, backplane Ethernet	Interoperability demonstration of Ethernet technologies
	<u>Supercomputing</u> : FCoE, iSCSI, Data Center Bridging, 10GBASE-T, SFP+, Virtualization	Demonstration of how applications work together over Ethernet
University Program	Intellectual Property (IP) Database	Member access to academic intellectual property
	Internship Program	Bringing students and companies together
	White Paper Challenge	Visibility for students and universities

# Making Ethernet Standards Work

- Feasibility
  - Public demonstration of technical feasibility of concepts
- Interoperability
  - Closed door to provide members with interoperability information
  - Public interoperability demonstrations at tradeshow to highlight technology development
- Certification
  - Closed door testing event
  - Interoperability and standards compliance tested
  - Indicates equipment readiness to the market



# Certification Program

- Ethernet Alliance subcommittees develop certification criteria
  - Based upon IEEE 802 conformance statement (PICS)
  - Interoperability is a key requirement
- Testing conducted at vendor-neutral, third-party facility
  - Additional cost for certification testing
  - Ethernet Alliance members receive reduced cost for testing
- Certification logo
  - Only Ethernet Alliance members permitted to use logo
  - Logo will highlight successfully completed test
  - Certified products will be published on Ethernet Alliance web site



# Intellectual Property Database

- Academia
  - Colleges and universities often develop intellectual property
  - Intellectual property can be a source of revenue
  - Ethernet Alliance academic members can share their IP databases with Ethernet Alliance corporate members
- Ethernet Alliance IP database
  - Available to members of the Ethernet Alliance
  - Permits corporations to find academic institutes performing research and IP development in areas of interest
  - Provides feedback to academia about areas for future research



# Resources for More Information

- For newsletter and updates:  
[news-subscribe@ethernetalliance.org](mailto:news-subscribe@ethernetalliance.org)
- For white papers and articles:  
[ethernetalliance.org/library/white-papers.html](http://ethernetalliance.org/library/white-papers.html)
- For organizations to join:  
[ethernetalliance.org/join](http://ethernetalliance.org/join)



**Thank you!**



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# Back-up



# Subcommittees

Subcommittee	Focus	Status
<b>10G EPON</b>	<a href="#">IEEE P802.3av Task Force</a> : Demonstration of EPON at 10Gb/s	Interoperability
<b>10GBASE-T</b>	IEEE Std. 802.3an™-2006: 10Gb/s over 100m of copper cabling	Interoperability
<b>Backplane</b>	Develop methodologies for compliance to IEEE Std. 802.3ap™-2007	Interoperability and education
<b>Carrier Ethernet</b>	Develop an Ethernet roadmap for hardware for the carrier and service provider market	Incubation and education
<b>Ethernet in the Data Center</b>	Drive a holistic approach to Ethernet that is optimized for future trends in data centers	Interoperability, education and certification planning
<b>Energy Efficient Ethernet</b>	<a href="#">IEEE P802.3az Task Force</a> : Reduce energy consumption in networking equipment	Education and certification planning
<b>Higher Speed Ethernet</b>	<a href="#">IEEE P802.3ba Task Force</a> : Increased bandwidth for data center and long-haul networking applications	Education and certification planning
<b>POE/POE+</b>	Extending the power delivery and port-level resiliency capabilities of Power over Ethernet in the <a href="#">IEEE P802.3at Task Force</a>	Interoperability, education and certification planning
<b>SFP+/EDC</b>	Supporting adoption of SFP+ (SFF-8431) and EDC technologies	Interoperability and education
<b>Test and Management</b>	Focused on interoperability aspects of IEEE 802 Ethernet standards to meet the market expectations	Discovery

# Glossary

- **10GBASE-LRM**: 10 Gbps over MMF using 1310 nm wavelength optics
- **10GBASE-R**: 64B/66B coding scheme for serial data transmission at 10.3125 Gbps
- **10GBASE-T**: 10 Gbps over 4-pair, twisted-pair balanced copper cabling
- **10G EPON**: 10 Gigabit per second Ethernet Passive Optical Networks
- **64B/66B**: 64 binary symbols (bits) are scrambled and appended with a sync binary symbol and a control binary symbol
- **DSQ128**: Double Square constellation, PAM16 constellation with half the code points removed
- **DTE**: Data Terminal Equipment
- **DWDM**: Dense Wavelength Division Multiplexing
- **EDC**: Electronic Dispersion Compensation
- **EFM**: Ethernet in the First Mile
- **GMII**: Gigabit Media Independent Interface
- **HSSG**: Higher Speed Ethernet Study Group
- **IEEE**: Institute of Electrical and Electronics Engineers
- **IEEE-SA**: IEEE Standards Association
- **IPG**: Inter-Packet Gap
- **iSCSI**: Internet Small Computer System Interface
- **ISP**: Internet Service Provider
- **LAN**: Local Area Network
- **LRM**: LR Optics for Multi-Mode Fiber
- **LTE**: Line Terminating Equipment
- **MAC**: Media Access Control
- **MAN**: Metropolitan Area Network
- **MDI**: Medium Dependent Interface
- **MMF**: Multimode Fiber
- **PAR**: Project Approval Request
- **PAM**: Pulse Amplitude Modulation
- **PCS**: Physical Coding Sublayer
- **PHY**: Physical Layer Device
- **PMA**: Physical Medium Attachment
- **PMD**: Physical Medium Dependent
- **PoE**: Power over Ethernet
- **PoE+**: Power over Ethernet extended to 30W
- **RS**: Reconciliation Sublayer
- **SERDES**: Serializer-Deserializer
- **SFP+**: Small Form factor Pluggable for 10 Gigabit modules
- **SMF**: Single-Mode Fiber
- **UNH-IOL**: University of New Hampshire Interoperability Lab
- **WAN**: Wide Area Network
- **WIS**: WAN Interface Sublayer
- **XAUI**: 10 Gigabit Attachment Unit Interface
- **XENPAK, X2, XPAK, XFP**: 10 Gigabit optical module form factors
- **XFI**: 10 Gigabit Ethernet Serial Interface
- **XGMII**: 10 Gigabit Media Independent Interface

