

IEEE Launches 40Gb/s Ethernet Optical Interface Standard In Record Time

IEEE responding to industry needs quickly develops a 40Gb/s interface to enable smooth transition and fast adoption of Ethernet technologies on carrier networks.

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PISCATAWAY, N.J., USA, xx April, 2011 -- IEEE, the world's leading professional association for the advancement of technology, today announced the ratification of IEEE Std 802.3bg™-2011, 40Gb/s Ethernet Single-mode fiber optical interface, a new standard enabling 40 Gb/s serial Ethernet interfaces to be deployed on single-mode fiber. An amendment to the IEEE 802.3 Ethernet standard, IEEE 802.3bg, paves the way for carriers to smoothly and rapidly adopt Ethernet technology in their networks.

The IEEE 802.3bg standard, ratified March 31, 2011, enables telecom carriers to deploy equipment that supports 40 Gb/s Ethernet and optimizes optical compatibility with the installed base of telecom carrier 40Gb/s interfaces. The new standardized interface, called 40GBASE-FR, supports transmission up to 2km over single-mode fiber and can enable equipment to be configurable to interoperate with installed base of equipment conforming to existing telecom and ITU standards such as OC-768, OTU3, STM-256 or 40G Packet-over-SONET (POS).

"The telecom carrier community is very keen to adopt Ethernet technologies but also needs to leverage its significant installed base of OTN, SONET, SDH or POS equipment. Once the need was determined, the IEEE was able to quickly gather forces and develop a standard to meet the technical requirements as well as the schedule needs of the user community." said Mark Nowell, Chair, IEEE P802.3bg Task Force, Senior Director Engineering, SP Routing Technology Group, Cisco. "The excellent cooperation between the IEEE and ITU standards bodies and members enabled us to develop and complete this IEEE Ethernet specification in record time for an optical interface. Completing in only 16 months from the original Call for Interest and 12 months from the project approval enables the industry to quickly respond to the growing need for Ethernet adoption in the carrier networks."

The new standard builds upon last year's release of the IEEE Std 802.3ba™-2010, IEEE's 40 Gb/s and 100 Gb/s Ethernet standard. The 40GBASE-FR interface was a specific need identified by the telecom carrier network

operators as a key factor in their ability to seamlessly transition from installed equipment to new equipment supporting 40 Gb/s Ethernet.

"This was truly an excellent example of the collaborative power of the IEEE Standards organization working with and responding to the industry users and the other industry standards bodies," said David Law, Chair, IEEE 802.3 Working Group. "IEEE 802.3bg ensures that we can meet today's needs without abandoning yesterday's investments."

This second 40 Gb/s Ethernet optical interface for single-mode fiber remains compatible with the existing IEEE 802.3 standards and installations. It is anticipated that the equipment suppliers will be able to support the new 40GBASE-FR interfaces in equipment that is already designed to support 40GBASE-LR4. Similarly, multi-protocol equipment can be built that would be software configurable between 40 Gb/s Ethernet, OTU3, STM-256, OC-768 or 40G POS, enabling this new equipment to interoperate with legacy installed equipment as well as current or future designed equipment optimized for 40 Gb/s Ethernet. Key stakeholders for the IEEE 802.3bg project included telecommunications carriers, users and producers of systems and components for networking systems, and data centers.

Simon Zelingher, Vice President of Global Optical, IP, & Data Development at AT&T stated: "AT&T has been leading the industry in deployment of 40G technology. The IEEE 802.3bg standard provides a bridge between the already standardized 40G interface and future 40G Ethernet technologies. We appreciate the flexibility and support of the IEEE to drive this standard forward."

Paul Nikolich, Chairman, IEEE 802 LAN/MAN Standards Committee, stated: "I wish to extend my congratulations to the IEEE 802.3 Working Group and the IEEE P802.3bg Task Force on the success of this project. It is yet another example of the industry coming together in IEEE 802 and quickly reaching consensus that will benefit all users and providers of Ethernet network-based services and products."

"The IEEE 802.3bg Task Force exceeded expectations in swiftly moving the new 40 Gb/s Ethernet single-mode fiber PMD standard to final approval," said Martin Carroll, Distinguished Member of Technical Staff, Network and Technology, Verizon. "The resultant standard reflects the cooperative spirit among participants involved in both IEEE and ITU-T initiatives to enhance and improve 40 Gb/s capabilities across Ethernet and transport networking arenas."

For additional information please visit: [IEEE P802.3bg](#). The CD version of the approved standard will be available for [purchase](#) on 22 June. The PDF version will be available for [purchase](#) on xx April.

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