Ethernet Alliance® Congratulates IEEE on the Ratification of Energy Efficient Ethernet Standard; Announces Demonstration and Interoperability Plans

IEEE Standards Association Standards Board Approves IEEE 802.3az

Mountain View, CA – October 11, 2010 – The Ethernet Alliance, in its continuing support of Ethernet standards bodies, is pleased to congratulate the IEEE Standards Association (IEEE-SA) and the IEEE P802.3az Task Force on the ratification of IEEE Std. 802.3az™-2010. As an amendment to the IEEE 802.3 base standard, it specifies the technology and requirements for the development of Energy Efficient Ethernet (EEE) components and systems utilizing 100BASE-TX, 1000BASE-T, 1000BASE-KX, 10GBASE-T, 10GBASE-KX4 and 10GBASE-KR interconnects plus creating a lower voltage 10 Mbps connection: 10BASE-Te. The Ethernet Alliance was proud to play a role in the development of the standard by providing a venue for its members to work with others in the industry to form consensus on the requirements and protocols for EEE.

"Ethernet deployment in an enterprise environment is very wide spread – to the desktop, to wireless access points, to servers – and the efficient use of power during periods of low bandwidth utilization is important to a company's bottom line," said Seamus Crehan, President of Crehan Research. "It is great to see that manufacturers of Ethernet equipment and components took a leadership role by coming together in the IEEE and the Ethernet Alliance to develop standards and products for reducing power and helping their customers' bottom line."

IEEE Std. 802.3az includes the ability for widely-adopted BASE-T (twisted-pair) and BASE-K (backplane) physical layer (PHY) components to be able to be put into a low power idle (LPI) – similar to how existing 10BASE-T operates – while using the Layer 2 Link Layer Discovery Protocol (LLDP) specified in IEEE Std. 802.1AB™-2009 and Std 802.3bc™-2009 to manage the EEE operation.

"Before this standard, there was no industry-specified method for saving power on an Ethernet connection," stated Michael Bennett, chair of the IEEE P802.3az EEE Task Force and Senior Network Engineer with Lawrence Berkeley National Labs. "While the power savings per link may be small, the cumulative effect in enterprise networks, data centers, home networking, etc. can add up to terawatts saved annually, when the majority of existing Ethernet ports are replaced with EEE. With government agencies worldwide looking at power consumption and usage, the IEEE P802.3az Task Force, with the help of the Ethernet Alliance, was able to take a leadership role in creating a standards-based approach to resolve this growing concern."

A PHY with EEE capabilities has five modes of operation for each path in the link: Active, Sleep, Quiet, Wake and Refresh. Active mode is used for passing data across the link. Sleep mode is when the PHY is transitioning one of its paths into LPI. Quiet mode is when the path is operating in LPI. Wake mode is when the PHY is transitioning one of its paths out of LPI. Refresh mode is a periodic state during LPI in which the path wakes up to keep the clock circuitry and other parameters in synchronization before going back to LPI. The Refresh permits a faster Wake time. These modes of operation permit the link to remain at the same data rate and enable a response time measured in tens or hundreds of microseconds to respond to bandwidth demands.

"The EEE protocol permits systems from multiple vendors to interoperate and greatly reduce power in under-utilized links," stated George Zimmerman, technical chair of the Ethernet Alliance EEE subcommittee and CTO and founder of Solarflare. "The protocol provides faster recovery to high bandwidth utilization while offering substantial power savings on low utilized links. The EEE subcommittee looks forward to bringing together Ethernet Alliance members and non-members in performing interoperability testing and publishing those test results to accelerate the adoption of EEE in the industry."

With the completion of the EEE standard, the Ethernet Alliance EEE subcommittee will work with its members to move the technology from concept to deployment. A pre-standard interoperability event was held early in 2010 and as vendors move their products towards market readiness to support the EEE specification, the EEE subcommittee will continue to support educational activities such as Ethernet Alliance white papers, technology seminars and public demonstrations while also hosting compliance and interoperability testing through a series of closed-door test events.

For more information on Energy Efficient Ethernet and Ethernet Alliance related activities, please visit http://ethernetalliance.org.

About the Ethernet Alliance
The Ethernet Alliance is a global community of Ethernet end users, system and component vendors, industry experts and university and government professionals who are committed to the continued success and expansion of Ethernet. The Ethernet Alliance brings Ethernet standards to life by supporting activities that span from incubation to interoperability. For more information, visit www.ethernetalliance.org. Individuals who would like to receive updates on Ethernet Alliance news, activities and events may sign up for the Ethernet Alliance newsletter at ethernetalliance.org/about_the_alliance/newsletter.

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