CONSORTIUM TO BRING INTEROPERABLE ON-BOARD OPTICS TO THE NETWORK INDUSTRY

Consortium for On-Board Optics Develops Interoperable Specifications to Lower Power Consumption and Increase Bandwidth for Optics in the Next Generation Enterprise and Cloud Datacenters

Los Angeles, CA – March 23, 2015 – A new consortium created to solve switch faceplate bandwidth density and airflow constraints caused by the ever-increasing speeds of networking technologies like 400 Gigabit Ethernet today opened its doors. Through the Consortium for On-Board Optics (COBO), technology leaders will promote collaboration in defining industry standards that permit relocating the optical module from the faceplate to inside the networking equipment.

Founding members include Arista Networks (NYSE: ANET), Broadcom Corp. (NASDAQ:BRCM), Cisco (NASDAQ: CSCO), Coriant, Dell, Finisar Corp. (NASDAQ: FNSR), Inphi Corp. (NYSE: IPHI), Intel Corp. (NASDAQ: INTC), JDSU (NASDAQ: JDSU), Juniper Networks (NYSE: JNPR), Luxtera Inc., Mellanox Technologies (NASDAQ: MLNX), Microsoft Corp. (NASDAQ: MSFT), Oclaro (NASDAQ: OCLR), RANOVUS, Source Photonics and TE Connectivity (NYSE: TEL) which will work together to develop specifications and technology roadmaps for on-board optical modules.

The consortium will immediately begin collaborating on a set of industry standards that define electrical interfaces, management interfaces, thermal requirements and pinouts to permit the development of interchangeable and interoperable optical modules that can be mounted or socketed on a network switch or adapter motherboard. COBO will enable the development of optical modules that can be placed closer to the network integrated circuits to decrease the power required to interface to the modules while also increasing faceplate bandwidth density and airflow.

“The founding companies of the Consortium for On-Board Optics are taking a major step forward in improving the efficiency of optical interconnects in datacenter networks,” said Brad Booth, COBO Chair and Principal Architect, Microsoft Azure Global Networking Services. “With ever-increasing data rates, the ability to move the optical modules closer to the network silicon provides a real economic and environmental benefit.”

“LightCounting has tracked the decade-long use of proprietary on-board/embedded optical modules inside high-performance systems,” said Dale Murray, Principal Analyst for LightCounting Market Research. “Standardizing these on-board modules via an industry consortium helps accelerate their use in the much larger datacenter market.”

Companies interested in becoming a member of COBO should visit http://cobo.azurewebsites.net/.

Additional Quotes

“Arista wholeheartedly endorses the Consortium for On-Board Optics to drive open standards. Such advances for higher performance 10/40/100G systems addresses key challenges of cloud scale networking. Our customers will benefit from the lower power, increased density and multi-vendor interoperability,” said Martin Hull, Director of Product Management, Arista Networks.

“Cloud data center networks are setting the pace for switch ASIC and high speed optics innovations. Cisco is committed to work as part of the Consortium for On-Board Optics towards standards-based interoperable solutions,” said Thomas Scheibe, senior director of product management for Insieme Business Unit, Cisco

“Dell is pleased to be a founding member of this consortium to help define open standards for on-board optics. This will set the stage for interchangeable, multi-party solutions that combine the flexibility offered by pluggable modules with improved face-plate density to meet the growing demands of next-generation data centers,” said Subi Krishnamurthy, CTO, Dell Networking. “The Consortium for On-Board Optics is an important step in the right direction to continue driving efficiency into data center systems and deployments.”

“For next-generation switch ASICs targeting 6.4T or higher bandwidth per 1RU, on-board optics is a compelling solution to solve the port density and power consumption limitations associated with traditional pluggable optics. COBO will help drive the development of cost-effective, interoperable on-board optics solutions for future data center applications,” Sudeep Bhoja, CTO, Networking Interconnects, Inphi.

“We are excited by the vision of on-board optics and the benefits this brings to data centers, including the energy efficiency and performance gains this makes possible.” Jeff Demain, Marketing and Strategic Planning for Intel Silicon Photonics

"JDSU is excited to take part in defining the first Industry Standard for On-board Optics. On-board Optics has the potential to change how data centers are architected and will have a profound impact on the entire eco-system.,” said Azmina Somani, Vice President of Engineering at JDSU. “We believe On-Board Optics will fundamentally change the way optical hardware is designed and managed, with the ultimate goal of reducing cost and power consumption."

“Juniper Networks has always been committed to providing open, standards-based networking technologies that drive scale, automation and performance across enterprise and service provider environments. As a founding member of the Consortium for On-Board Optics, Juniper intends to promote open innovation in the networking industry and eliminate the barrier of adoption for on-board optics through a new set of industry standards that aims to deliver greater efficiency and performance for cloud data centers,” stated Jeffery J. Maki, distinguished engineer II, Juniper Networks

“As the interconnect rates in the datacenter increase, intelligent integration of optics becomes far more critical for efficient, cost effective data centers. Faceplate integration via optical modules was designed when copper was the dominant interconnect type, and burdens an optical transceiver with undue power consumption and cost. Board mounted optics yield considerable cost and power savings, and are a necessary component for systems where optics are the majority interconnect type,” said Brian Welch, Director of Product Marketing at Luxtera. “Luxtera is pleased to be a member of the Consortium for On-Board Optics (COBO), and recognizes it as an important step forward for the mass proliferation of optics in the datacenter”.

“Mellanox is delighted to be a founding member of the Consortium for On Board Optics,” said Benny Koren, Vice President of Architecture at Mellanox. “The QSFP28 is a great form factor for 100Gb/s end-to-end interconnects, but, as lane speeds increase, we will need to move the optics from the front panel to on board next to the switching ASICs.”

“Oclaro fully supports the development of new optical technologies to enable the rapid and cost-effective scaling of high-bandwidth optical interconnects. We are excited to join the COBO Group and to participate

in the creation of innovative solutions that address the future needs of cloud operators," said Yves LeMaitre, President Optical Connectivity Business at Oclaro.

"We're excited to join this consortium of industry leaders to set the innovation roadmap for cost effective and scalable data center networks" said Saeid Aramideh, co-founder and chief marketing and sales officer for RANOVUS. "This collaboration will expedite adoption of next generation connectivity standards for the whole industry."

"Source Photonics is excited to be a part of the COBO group and participate in the definition of next generation optical components for data center networks" says Manish Mehta, VP of Product Management at Source Photonics. "The continuous need to reduce equipment cost, power, and size will push the limits of existing optical solutions and will require innovation in optics. This consortium will facilitate rapid advancement on board mounted technology to overcome these challenges."

"TE Connectivity is excited to participate as a founding member of this new consortium which will guide the future direction of high density interconnect architectures for the data center utilizing on-board optics. TE has been a strong advocate for on-board optics to help improve faceplate density and we look forward to supporting COBO's efforts to advance the trend of low power, high density '"inside-the-box"' optics," said Tom Giunta, senior director of Optics Business Development at TE Connectivity.

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