

EVOLUTIONARY INNOVATION AT THE HEART OF ETHERNET ALLIANCE OFC 2019 DEMO

As race to Ethernet's Holy Grail tightens, interactive demo puts diverse array of disruptive 10 – 400G solutions, FlexE, and multi-booth 400G network on display

BEAVERTON, OR, FEBRUARY 26, 2019 – The [Ethernet Alliance](#), a global consortium dedicated to the continued success and advancement of Ethernet technologies, today released details of its upcoming demo at the [2019 Optical Networking and Communication Conference and Exhibition](#) (OFC 2019). Backed by 21 member companies, the organization's display captures key disruptive Ethernet technologies, including interoperable 10 Gigabit Ethernet (GbE) to 400GbE solutions, increasingly mature PAM4 technologies, and a live 400GbE network spanning a half-dozen booths. The interactive demo, available for viewing from March 5 – 7, 2019 in booth 4749 on the OFC 2019 expo floor, highlights the growing diversity and maturity of the next generation of Ethernet.

“Ethernet brings the whole package to the table. Whether your sweet spot is 10GbE, 25GbE, 40GbE, 50GbE, 100GbE, 200GbE, or even 400GbE, the Ethernet family of solutions is flexible enough to accommodate your needs,” said David J. Rodgers, chair, conference events committee, Ethernet Alliance; and senior product marketing manager, Teledyne LeCroy, Inc. “The Ethernet Alliance continues to spearhead the Ethernet ecosystem's commitment to unyielding interoperability, and our demo represents a perfect proof-of-concept, whether you're talking switches, routers, copper, optical, or test and measurement solutions. We're excited to be at OFC 2019 with the support of so many of our market-leading member companies.”

Incorporating numerous products and solutions at speeds of 10GbE up to 400GbE for multiple interconnects and media types, the Ethernet Alliance's live demo emphasizes Ethernet's mounting diversity and continued expansion. The yearly display includes state-of-the-art network switches and routers, both electrical and optical PAM4 technologies, optical transceivers and fiber interconnects, and direct attach copper (DAC) cabling and connectors. It also features the latest in test and measurement tools, traffic generators, and mesh assemblies, and showcases Ethernet's capacity for interoperating between disparate interfaces and form factors. The exhibit also features a live 400GbE network spanning eight booths across the OFC 2019 expo floor, as well as a Flex Ethernet (FlexE) demo.

In a near record-breaking showing of support, the Ethernet Alliance OFC 2019 demo integrates a broad array of technologies and equipment from 21 of its member companies, including Amphenol Corporation (NYSE: [APH](#)); Anritsu Corporation (TYO: [6754](#)); Arista Networks, Inc. (NYSE: [ANET](#)); Cisco Systems, Inc. (NASDAQ: [CSCO](#)); Credo Semiconductor, Inc. ; EXFO, Inc. (NASDAQ: [EXFO](#)); Finisar (NASDAQ: [FNSR](#)); Intel Corporation (NASDAQ: [INTC](#)); Ixia / Keysight Technologies, Inc. (NYSE: [KEYS](#)); Juniper Networks, Inc. (NYSE: [JNPR](#)); Lumentum Holdings Inc. (NASDAQ: [LITE](#)); Nexans S.A. (EPA: [NEX](#)); Panduit Corp.; Source Photonics Inc.;

Spectra7 Microsystems Ltd. (TSX: [SEV](#)); Spirent Communications plc (LSE: [SPT](#)); TE Connectivity Ltd. (NYSE: [TEL](#)); Tektronix, Inc.; Teledyne LeCroy, Inc. (NYSE: [TDY](#)); VIAVI Solutions, Inc. (NASDAQ: [VIAV](#)); and Xilinx, Inc. (NASDAQ: [XLNX](#)).

Beyond its live multivendor interoperability demo, the Ethernet Alliance is also hosting a panel entitled [Interoperability – the Foundation of Ethernet Success](#). Moderated by Mr. Rodgers, featured panelists Dr. Paul Brooks of VIAVI Solutions; David Chalupsky of Intel Corporation; Matt Traverso of Cisco Systems; and Rakesh Sambaraju of Nexans S.A. will address the evolution of Ethernet interoperability testing, among other topics. The presentation begins at 10:15am PST on Tuesday, March 5, 2019, in Theatre II, Hall E.

The 2019 edition of the Ethernet Alliance Ethernet Roadmap will also make its debut during the organization's reception taking place Wednesday, March 6, 2019 from 3:00 – 5:00pm PST in booth 4749. Reflecting updated information and the latest advancements, the map details Ethernet's progress toward terabit speeds. With the tightening race to achieving Ethernet's Holy Grail of true 100GbE SFP still ongoing, the Ethernet Alliance will be conferring its Ethernet Holy Cup awards on Applied Optoelectronics, Inc. (NASDAQ: [AAOI](#)); InnoLight Technology (Suzhou) Ltd.; Oclaro Inc. (NASDAQ: [OCLR](#)); Source Photonics, Inc.; and Sumitomo Electric Industries Ltd. (TYO: [5802](#)), each of which [successfully demonstrated](#) single-lambda 100GbE in Quad Small Form-factor Pluggable module (QSFP28).

“Ethernet encompasses a vibrant ecosystem of technologies integrating seamlessly to deliver the robust connectivity demanded by emerging markets and applications. The drive toward tomorrow's higher speed networks is being enabled by Ethernet's multi-vendor interoperability,” said John D'Ambrosia, chairman, Ethernet Alliance. “And even as networks grow larger and faster, Ethernet is successfully meeting the multivendor challenges of these networks head-on. The Ethernet Alliance OFC 2019 demo illustrates that Ethernet has not only the horsepower needed to support next-generation networks, but is mature enough to do so reliably and cost-effectively.”

To follow the latest Ethernet Alliance OFC 2019 news and events, please follow [#EAOFC19](#) and [#EthernetRoadmap](#) on Twitter. To experience the Ethernet Alliance live multi-vendor demo at OFC 2019, please visit booth number 4749 on the expo floor.

For more information about the Ethernet Alliance, please visit <http://www.ethernetalliance.org>, follow [@EthernetAllianc](#) on Twitter, visit its [Facebook](#) page, or join its [LinkedIn](#) group.

About the Ethernet Alliance

The Ethernet Alliance is a global consortium that includes system and component vendors, industry experts, and university and government professionals who are committed to the continued success and expansion of Ethernet technology. The Ethernet Alliance takes Ethernet standards to market by supporting activities that span from incubation of new Ethernet technologies to interoperability demonstrations and education. The organization's plans for 2019 may be found at <https://ethernetalliance.org/member-events/>.

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Additional Quotes:

"Amphenol is once again participating in Ethernet Alliance's live demo at the OFC exhibition for the tenth year. We are proud to be involved, as the OFC Conference is one of the nation's premier optical events. The Ethernet Alliance booth is a great place for designers and end users alike to get up-to-date information on the latest GbE products in both live and static displays.

Amphenol will be demonstrating our world class 25GbE SFP+, 40GbE QSFP+, 100GbE, 200GbE and our latest 400Gb OSFP and QSFP-DD interconnect systems. Amphenol will showcase our passive copper cables and our latest Active Optical Cable assemblies (AOC's). This year we are excited to also be showing our receptacles, cages and copper cables. In Addition we will be showcasing a new offering of High Density (HD) rack mount optical connectivity panels and trunk cable solutions designed to increase density to improve cable routing and tray congestion." – *Greg McSorley, technical business development manager, Amphenol High-Speed Cables*

"Anritsu is excited to partner with fellow Ethernet Alliance members in demonstrating leading-edge interoperability among high-speed network equipment and interconnect manufacturers from 10Gbps to 400Gbps. As a world-class leader in optical transport and data network testing solutions, Anritsu welcomes its role in the Ethernet Alliance demonstrations at OFC 2019, as it enables us to showcase our test capabilities alongside market leaders in their respective industry segments in a true, real-world application." – *Daniel Gonzalez, business development manager, Anritsu*

"Arista is pleased to be part of the Ethernet Alliance demonstrating multi-vendor interoperability with Arista's 7060X4 Series, offering a wide range of connectivity options. Interoperability between industry-standard optics and cables is essential for 400G adoption. Transitioning from 100G to 400G systems enables hyper scale cloud companies to realize greater network efficiency for video, storage, AI and machine learning applications." – *Christophe Metivier, vice president manufacturing and platform engineering, Arista Networks*

“Credo is excited to be a new Ethernet Alliance member and proud to participate in the Ethernet Alliance OFC2019 booth demonstrations. We are showcasing 112Gbps single lane rate electrical transmission through a two meter copper cable. 112Gbps per lambda optical connectivity is ramping in production this year. This 112Gbps electrical demonstration with our low power, 16nm technology shows the readiness of the industry to move quickly to 112Gbps end-to-end platform deployments.” – *Jeff Twombly, vice president, marketing and business development, Credo*

“Together with Ethernet Alliance and collaborating industry partners, EXFO is proud to participate in several exciting interoperability demonstrations at OFC 2019 showing how emerging technologies are ready for prime time. Live demos will showcase: 400G Ethernet traffic using multiple interfaces including QSFP-DD and OSFP, a 400G FlexE interconnection between multiple booths, 100G testing (including 25G) featuring the latest interface types as well as a 100G link using BiDi technology. Each demo is facilitated by our unique Open Transceiver System (OTS) – a modular system that enables our existing test platforms to handle current and future high-speed transceiver technologies, extends the life of EXFO test equipment and reduces CAPEX and total cost of ownership for our customers.” – *Stéphane Chabot, vice president, test and measurement, EXFO*

“As an industry leader, Finisar is proud to participate in several very exciting collaborative demonstrations in the Ethernet Alliance booth at OFC 2019. Together with industry partners Arista, Cisco, EXFO, Juniper, Spirent, VIAVI, and Xilinx the extensive demonstration will showcase Finisar’s 400G-LR8 QSFP-DD and CFP8 modules and also Finisar’s 100G-FR, CWDM4 and LR4 QSFP28 modules. During this demonstration, 12.8T switches from leading OEM vendors will be deployed in conjunction with equipment from Xilinx and leading test equipment providers to establish 400GE and FlexE links between the EA booth, OIF and Xilinx booths. This demonstration highlights the benefits of FlexE by combining bonded 100GbE streams into unified 400GbE streams.” – *Mark Ives, director, product line management, Finisar*

“Ixia, a Keysight Business, is proud to participate in Ethernet Alliance’s 400GE interoperability demonstrations at OFC 2019. This year’s demos showcase the growing momentum in the 400GE market as major network equipment manufacturers and chip manufacturers move beyond early design and feature verification testing to full-featured interoperability testing to the latest IEEE 802.3 standards. Joining with other industry-leading companies showcasing 400/200/100GE and 50GE networking, cables, optics and test tools, we are pleased to demonstrate the field proven, high density, second generation AresONE 400GE test solution.” – *Aniket Khosla, director, product management, Ixia, a Keysight Business*

“Juniper Networks is pleased to participate in the Ethernet Alliance. As an industry leader in automated, scalable and secure networks, collaboration and interoperability are key to driving innovation and we’re proud to work alongside fellow industry experts toward the advancement of Ethernet technologies. To demonstrate Juniper’s commitment to open standards, we will be showcasing the interoperability of Juniper technology at OFC 2019 with equipment from several vendors in an extended topology that simulates real-world applications in a diverse, multi-vendor environment.” – *Donyel Jones-Williams, director, product marketing, Juniper Networks*

“Lumentum reaffirms its commitment to open standards with a live demonstration at OFC 2019 utilizing 100G Lambda MSA-compliant 400G modules including QSFP56-DD FR4, OSFP FR4 – 100G single lambda QSFP28 DR/FR, and 25GbE SFP28 LR. All based on Lumentum’s leading edge EML and DML technology.

Sustained industry support of interoperability ensures an ideal ecosystem for development of next generation

high-density, high-speed networking solutions.” – *Sharon Hall, senior director, marketing, Lumentum*

“Nexans Data Center Solutions is always pleased to participate with the Ethernet Alliance to advocate for the importance of interoperability. The interoperability of the Ethernet protocol has been a driving economic force behind the growth of the modern data center. Nexans’ “Own the Link” approach uses that to help customers develop an optimized physical layer connection. Standardization does not limit creativity in application. For example, we will be demonstrating a fiber optic cable assembly that provides a mesh connection between fabric and spine ports. At the booth, we will also have pluggable transceivers, AOC’s, and DAC’s along with fiber optic cabling – the complete physical layer.” – *Harvey McDowell, VP, strategic business, Nexans Data Center Solutions*

“Panduit is excited to contribute to Ethernet Alliance’s interoperability and 400G demonstrations as a trusted provider of network cabling and infrastructure products. Panduit will display HD Flex™ Fiber Cabling System and PanMPO™ Fiber Optic Assemblies. HD Flex™ Fiber Cabling System is engineered to provide the highest levels of density and serviceability for high-performance data centers. The system is designed to enable organizations to easily scale up density and execute moves, adds, and changes quickly and safely, without disrupting adjacent circuits. In addition, Panduit has partnered with Anritsu, EXFO, Amphenol, and Cisco to demonstrate 100G-BiDi over 200+ m of OM4 Signature Core™ fiber. Panduit’s OM4 Signature Core™ fiber is OM4 MMF optimized to take advantage of the Modal Chromatic Dispersion Interaction present in VCSEL to MMF optical coupling. It also shows enhanced performance for WDM MMF applications utilizing wavelengths longer than 850 nm compared to non-optimized OM4 fiber.” – *Jose Castro, fiber optics research manager, Panduit*

“Source Photonics is excited to demonstrate its advanced 400G modules, including the 400G QSFP-DD DR4 during the interoperability event of Ethernet Alliance at OFC 2019. Multiple vendor interoperability is a key milestone in the migration from 100G architecture to 400G architecture, which signals readiness for deployment. We will demonstrate various 400G interfaces, including the DR4 and LR8, in addition to several modules from our 100G QSFP28 portfolio.” – *Ed Ulrichs, product line manager, high-speed products, Source Photonics*

“Spectra7 is proud to be showcasing our Active Copper Cable (ACC) technology in the Ethernet Alliance Interop Demo at OFC 2019. As the industry leader in ACCs, we will be demonstrating broad interoperability and robust performance in form factors including SFP, QSFP, QSFP-DD and OSFP at data rates from 25Gbps to 400Gbps. We see ACCs playing a critical role in 2019 as data rates and interface densities increasingly shorten the lengths that passive copper cables can service.” – *John Mitchell, chief marketing officer, Spectra7*

“Spirent is proud to continue its partnership with Ethernet Alliance and fellow members in leading-edge interoperability demonstrations at OFC 2019. This year’s collaborative showcases cover the latest technological advances in Flex Ethernet (FlexE) and High Speed Ethernet, which enable the flexibility, reliability, and new services required to support the next generation network evolution. In this demonstration with the Ethernet Alliance, Spirent will showcase its leadership in 400-Gigabit Ethernet and high density FlexE testing. Spirent offers the most flexible, highest density, and highest performance 400GbE and FlexE test solutions to ensure network interoperability, performance, and availability, to meet today’s complex testing needs.” – *Abhitesh Kastuar, general manager, cloud & IP business unit, Spirent Communications*

“As a founding principal member of the Ethernet Alliance, TE Connectivity (TE) is proud to participate in the Ethernet Alliance interoperability demonstrations at OFC 2019. In this year’s demonstrations, we are showing our SFP56, QSFP56, OSFP, QSFP-DD and OSFP to QSFP-DD cable assemblies operating at 400 Gbps, and we are

also demonstrating our 800G OSFP cable. These performance levels will be essential as Ethernet connectivity evolves to support the applications of the future, and TE innovations pave the way.” – *Nathan Tracy, technologist and manager of industry standards, TE Connectivity*

As the industry begins rollout of 400GbeE technologies, Tektronix is proud to join the Ethernet Alliance at OFC 2019 in validating network performance and interoperability. This year, the focus is on showing how our low-noise test solutions optimize tuning and offer the highest sensitivity and shortest test times when testing up to 56 Gbaud to maximize production yields. We’ll also be showing our real-time solutions that provide superior features and debug capabilities for efficient validation of new 400GbE and beyond technologies.” – *Sarah Boen, General Manager Wired Communications, Tektronix*

“Ethernet continues to march on, advancing more variants and furthering its presences as the “go to” communications channel for the myriad of traditional and new applications. Leading the charge is the advancement of mission critical storage applications, industrial automation, broadcast video, and automotive adaptations, as well as the legacy implementations. Teledyne LeCroy is leading the Test & Measurement segment with new fabric test solutions and services to ensure specification compliance and operational readiness for the Ethernet community. The Ethernet Ecosystem is keenly aware of the need to ensure interoperability and ‘out of the box’ performance. Teledyne LeCroy’s SierraNet product family fulfills a critical requirement towards achievement of that goal.” – *David J. Rodgers, senior product marketing manager, ENET/SAN protocol tools, Teledyne LeCroy*

“VIAVI will be demonstrating our industry reference Optical Network Tester (ONT) product family at the Ethernet Alliance interop at OFC 2019. Our unique applications can be used to stress, validate, and troubleshoot some of the most demanding aspects of 400G Ethernet, including the FEC and PAM-4 physical layer with real live traffic controlled to nsec precision. VIAVI will also be premiering the latest developments in FlexE in conjunction with the Ethernet Alliance and OIF at the Ethernet Alliance booth.” - *Dr. Paul Brooks, Director – Dr. Paul Brooks, director, lab & production strategy, VIAVI*

“Xilinx is pleased to participate in the multi-vendor FlexE interoperability demonstration, providing our 400GE to FlexE bridge platform, based on the Xilinx Virtex UltraScale+ device. 400GE and FlexE are key components of next-generation networks, enabling operators to meet increasing bandwidth demands and deliver new services to support applications for NFV, 5G slicing, and end-to-end bandwidth allocation.” – *Farhad Shafai, vice president, communications markets, Xilinx*