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New IEEE 802.3™ Communication Documents Technical Feasibility and Market Drivers for Next Generation of Ethernet Passive Optical Network (EPON)

Residential access, business access, and mobile backhaul markets represent different bandwidth, performance, cost, and functional objectives

PISCATAWAY, N.J., USA, XX Month Year – IEEE, the world's largest professional organization dedicated to advancing technology for humanity, today announced availability of “IEEE 802.3™ Industry Connections Feasibility Assessment for the Next Generation of EPON.” The IEEE 802.3 communication synthesizes input collected in 2014 and 2015 from individuals throughout the global Ethernet Passive Optical Network (EPON) ecosystem—operators, system integrators, chip vendors, optics suppliers, and others—on the desired features and options for a next generation of EPON, operating at aggregate data rates above 10 Gigabit per second and minimizing the footprint and power consumption in optical access networks.

EPON today is widely deployed for a number of applications, including residential subscriber access (providing voice, video, and data services), business subscriber access (providing primarily voice and high-grade/high-reliability data services) and mobile backhaul. Network operators globally have deployed 1G-EPON solutions in large scale; 10G-EPON deployments are intensifying, and network operators and equipment vendors alike are interested in exploring technologies for the next generation of EPON.

“While unified in the common trend to support more subscribers with higher data rates, the residential access, business access, and mobile backhaul markets have different bandwidth targets and technical performance requirements,” the published communication from the IEEE 802.3 Ethernet Working Group states. “Not only are the technical requirements different in all these markets, but also the cost-to-performance objectives are different.”

To address the diversity of market requirements, the referenced communication suggests consideration of multiple NG-EPON solutions, including a multi-wavelength 40G solution with an evolutionary path to 100G and single-wavelength solutions supporting the data rates of 25G symmetric or 25G downstream/10G upstream. “The new PHYs need to consider the coexistence with the deployed EPON technologies and reuse functions and components of 10G-EPON to the extent possible,” adds the IEEE 802.3 communication.

Said Marek Hajduczenia, chair of the IEEE 802.3 Industry Connections NG-EPON Ad Hoc and network architect with Bright House Networks: “The IEEE 802.3 Industry Connections NG-EPON Ad Hoc was launched to explore the market potential and technology options for an NG-EPON operating at data rates beyond 10G, ~~and the~~ The expectation is that information contained within the published communication will help ~~spur ongoing with~~ development ~~towards~~ of a future Call for Interest for NG-EPON and, afterwards, ~~successful technical development of a~~ new standard within the IEEE 802.3 Ethernet Working Group.”

The IEEE 802.3 communication is available at http://www.ieee802.org/3/ad_hoc/ngepon/ng_epon_report.pdf.

Through Industry Connections activities such as the IEEE 802.3 Industry Connections NG-EPON Ad Hoc, the IEEE Standards Association (IEEE-SA) facilitates like-minded organizations and individuals coming together quickly, effectively and economically to build consensus at strategic points in a technology’s lifecycle. Industry Connections activities have the unique opportunity to leverage IEEE resources in a customized format to produce a variety of shared results. For more information about the IEEE-SA’s Industry Connections program, please visit standards.ieee.org/industryconnections.

Deployment of technology defined by IEEE 802® standards is already globally pervasive, driven by the ever-growing needs of data networks around the world. New application areas are constantly being considered that might leverage IEEE 802 standards in their networks from wireless, through twisted-pair cabling, to fiber-optic cabling solutions. To better address the needs of all of these areas, IEEE 802 standards are constantly evolving and expanding. The success of IEEE 802 standards—from their inception through today—has been their fair, open and transparent development process.

For more information about the IEEE 802.3 Ethernet Working Group, please visit <http://standards.ieee.org/develop/wg/WG802.3.html>.

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About the IEEE Standards Association

The IEEE Standards Association, a globally recognized standards-setting body within IEEE, develops consensus standards through an open process that engages industry and brings together a broad stakeholder community. IEEE standards set specifications and best practices based on current scientific and technological knowledge. The IEEE-SA has a portfolio of over 1,100 active standards and more than 500 standards under development. For more information visit <http://standards.ieee.org>.

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