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IEEE launches 802.3™ Beyond 400Gb/s Ethernet Study Group to Define Next High Speed Threshold for Ethernet Data Rate

With exponential growth across Ethernet users, access methods and services—and the global pandemic magnifying humanity's reliance on connectivity—IEEE 802.3 community advances toward speed leap

PISCATAWAY, NJ, XX December 2020 – IEEE, the world's largest technical professional organization dedicated to advancing technology for humanity, and IEEE Standards Association (IEEE SA) today announced the formation of a study group within the IEEE 802.3**™** Ethernet Working Group. With bandwidth demand growing across all areas of Ethernet connectivity globally, the IEEE 802.3 Beyond 400Gb/s Ethernet Study Group will explore initiating a new IEEE project that would standardize capabilities exceeding today's maximum data rate of 400 Gigabit per second (Gb/s) for IEEE 802.3, *IEEE Standard for Ethernet*.

The publicly available IEEE 802.3™ Ethernet Bandwidth Assessment (BWA) report, released in April 2020, showed that trends around traffic drivers such as video, hyperscale data centers, 5G and deployment of IEEE 802.11™ "Wi-Fi®" all point toward an ongoing bandwidth explosion for Ethernet networks around the world in the years ahead. Undeniably, simultaneous trends point toward more users, faster access speeds, more services, more devices coming online, greater difference between average and peak bandwidth demands on networks. Furthermore, the year-long study of global usage and trends that informed the IEEE 802.3 Ethernet Bandwidth Assessment report was completed before the global COVID-19 pandemic, which has only magnified the need for connectivity and bandwidth to people everywhere.

Expertise from across application spaces around the world will come together in the new study group to consider the definition of a project to define Ethernet rates beyond the current maximum rate currently defined for IEEE 802.3 Ethernet, 400 Gb/s. The first meeting of the newly launched IEEE 802.3 Beyond 400 Gb/s Ethernet Study Group is scheduled for the IEEE 802.3 Ethernet Working Group's interim session the week of 18 January 2021.

"The path to beyond 400 Gb/s Ethernet exists, but there are a host of options and physical challenges that will need to be considered to take the next leap in speed rate for Ethernet," said John D'Ambrosia, Distinguished Engineer, Futurewei Technologies, who led the call for interest in forming the IEEE 802.3

Beyond 400 Gb/s Ethernet Study Group. "Both the historical trend lines for Ethernet bandwidth demand and everything the industry understands today about its future needs and technology growth curves indicate that the time to take the next step is now, in order to satisfy humanity's needs and desires for connectivity. It will be the responsibility of the study group to examine the problem and develop the project authorization documentation necessary to launch a new standard-development project. "

IEEE 802 encompasses a diverse library of standards addressing a broad array of protocols and applications. The standards developed by thousands of IEEE 802 technical experts over the past 40 years have enabled the industry to connect the world. Commencing in February 1980, IEEE 802.3 initially was developed to standardize connectivity among devices inside a local area network (LAN). The standard has steadily evolved in the decades since to deliver increased capacities and connect more users and devices across more types of networks. IEEE 802.3ba™, published in 2010, defined 40Gb/s Ethernet and 100Gb/s Ethernet; IEEE 802.3bs™, published in 2017, defined 200 Gb/s Ethernet and 400 Gb/s Ethernet. Deployment of technology defined by IEEE 802 standards is global, driven by the ever-growing needs of data networks and new application areas. New bandwidth-generating applications constantly are being introduced across mobile, video, artificial intelligence, virtual/augmented reality, etc., driving the need for higher-speed Ethernet connectivity.

Cedric Lam, principal engineer, Google, participated heavily in the consensus-building effort which led to the launch of the IEEE 802.3 Beyond 400 Gb/s Ethernet Study Group. He said, "Bandwidth demand is ever increasing, and the industry must always be building new capacity to accommodate modern demands for connectivity and the advancement of new and innovative services."

Individuals and organizations are encouraged to learn more about IEEE 802 initiatives and get involved.

To learn more about IEEE SA or about any of its many market-driven initiatives, visit us on Facebook, follow us on Twitter, connect with us on LinkedIn or on the Beyond Standards Blog.

About the IEEE Standards Association
IEEE Standards Association (IEEE SA) is a collaborative organization where innovators raise the world's standards for technology. IEEE SA provides a globally open, consensus-building environment and platform that empowers people to work together in the development of leading-edge, market-relevant technology standards and industry solutions shaping a better, safer and sustainable world. For more information, visit https://standards.ieee.org.

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