DALLAS, March 12, 2025

AT&T Breaks Speed Barriers: Successfully Tests 1.6 Tbps Data Transport on its Commercial Long-Distance Fiber Network

AT&T completes the highest speed across a single wavelength

Key Takeaways:

- AT&T has successfully tested a new technology that can transport data at 1.6 terabits per second, which is four times faster than the current top speed on our network.
- For customers, this shows that AT&T's network can now support faster and more efficient connectivity, improving the performance of internet services, including streaming videos, using AI applications, virtual reality, cloud computing, and more.
- The trial took place over a 296-kilometer route between Newark, New Jersey, and Philadelphia, Pennsylvania, using AT&T's existing infrastructure.

AT&T has achieved a significant technology milestone demonstrating its nationwide software-centric network is ready for massidatave bandwidth demands driven by AI, user generated content, augmented and virtual reality, cloud computing, streaming video and more.

Recently, AT&T successfully completed testing a 1.6 terabit-per-second single-carrier wavelength across 296 kilometers of its commercial long-distance network — four times the speed of current 400Gb/s wavelengths. The 1.6Tb/s wavelength carried two IEEE standards-based 800 Gigabit Ethernet[1] end-to-end circuits, an industry first. It is a full, uninterrupted data path utilizing a single light frequency across the entire fiber length between two points.

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This trial demonstrates AT&T's intent to lead the industry in providing next-generation speeds – enabling our customers to fully leverage AI and helping them transform how they do business.

"Traffic on AT&T's network continues to increase as consumers are using more connected devices," said Mike Satterlee, Vice President, Network Infrastructure and Services, AT&T. "We anticipate network traffic growth to double by 2028 and the technologies demonstrated in this trial will play a key role in AT&T's continued efforts to keep up with increasing customer demand to send data, watch videos, and use streaming services."

How We Completed the Trial – The Technical Details

The trial took place over a 296-km route spanning Newark, New Jersey to Philadelphia, Pennsylvania on AT&T's existing long-haul fiber network. The single-carrier 1.6 Tb/s wavelength was transported alongside existing live customer traffic on 100Gb/s and 400Gb/s wavelengths.

Open-sourced white box switches acted as network equipment during the trial. The white boxes are designed using the Broadcom Jericho3 packet processor chip and can provide up to 18 x 800G network interface ports all within a 2RU platform. The DriveNets Network Cloud software-based solution is hardware-agnostic and runs open APIs on the white boxes to perform data and control plane functions, including routing at 800G. The use of white boxes and the disaggregation of the hardware and software control costs and facilitate faster innovation.

The two 800GbE signals from the white box were multiplexed to 1.6 Tb/s in Ciena's WaveLogic 6 Extreme coherent optical transponder, which is the first coherent optical solution to use a 200Gbaud design and 3nm coherent DSP ASIC and to reach speeds up to 1.6 Tb/s on a single carrier. The WL6e technology reduces the space and power per transmitted bit by 50% compared to current 800G transponders. This trial is the first to demonstrate WL6e at 1.6Tb/s with standards compliant 800GbE clients.

In the Newark and Philadelphia offices, 800G DR8 pluggable transceivers from Coherent were installed in the white box router and WL6e transponder to create the cross-office connectivity between the packet and optical technologies. And 800GbE client signals, provided by Keysight's AresOne-M 800GE testset, fed the white box

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through additional pairs of 800G DR8 pluggable client optics, allowing verification of end-to-end performance of the two 800GbE services from Newark to Philadelphia.

“This groundbreaking achievement with AT&T adds to a growing list of Ciena industry-firsts that push the boundaries of optical network speed and capacity,” said Dino DiPerna, Senior Vice President, Global Research and Development, Ciena. “Ciena’s WaveLogic 6 coherent optics will support AT&T’s next gen converged optical network and efforts to build a cloud-based and AI-ready network with greater scale, flexibility and efficiency.”

Please visit our website to learn more about **AT&T Wavelength**.

[1] The 800 Gigabit Ethernet (800G, 800GbE) standard was developed by the IEEE P802.3df Task Force and approved on Feb. 16, 2024 [802.3_B400G] IEEE P802.3df Standard Approved.

About AT&T
We help more than 100 million U.S. families, friends, and neighbors, plus nearly 2.5 million businesses, connect to greater possibility. From the first phone call 140 plus years ago to our 5G wireless and multi-gig internet offerings today, we @ATT innovate to improve lives. For more information about AT&T Inc. (NYSE:T), please visit us at about.att.com. Investors can learn more at investors.att.com.

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