

Cablefax Daily™

WHAT THE INDUSTRY READS FIRST

Next Frontier: CableLabs Explores More than Speed Connectivity Era

Internet speed records are all the rage these days, with two separate breakthroughs making the headlines recently. The first actually happened in April, although the news really started burning rubber stateside on social media this week. Researchers at Japan's National Institute of Information and Communications Technology achieved a record-breaking transmission rate of 1.02 petabits per second over a simulated distance of 1,808 kilometers—roughly the distance from Missouri to Montana—via an experimental 19-core optical fiber, alongside specially developed amplifier tech.

Once you confirm “petabits” isn't a joke someone is playing on you, it's time to crunch the numbers: that's 1,020,000 Gbps per second, over 3.5 million times the average broadband speed in the U.S. (which [Ookla](#) says is about 290 Mbps downstream). Of course, consumers aren't getting access to this kind of juice any time soon, as this was all achieved in a lab environment, clean from the noise that can disrupt light signals on a deployed network. There are years of R&D to be done to get us to these speeds, so for now, this might as well be science fiction as far as the general public is concerned.

The second breakthrough might sound like a much humbler achievement when compared to the mighty petabit, but it has a major advantage: it's a lot closer to reality, based on tech that's already being deployed. This week, **Harmonic** announced its cOS virtualized broadband platform delivered a 14 Gbps downstream

throughput across a multi-vendor network at a recent **CableLabs** interoperability event, beating the 10 Gbps downstream benchmark for DOCSIS 4.0. It's a win for Harmonic's tech, which is currently being used by several operators, including **Mediacom** and **Astound Broadband**, to upgrade their existing hybrid fiber-coaxial (HFC) networks to deliver higher speeds and data capacity without having to install completely new fiber infrastructure. And it's proof of 4.0's ability to deliver higher capacity that can support multiple modems at higher speed levels with less conflict. Lest you think these week-long testing events at CableLab's Louisville, Colorado, office are only about internet speed demons competing for more and faster bits, there's a lot more to them than that.

The Truth Behind Interop Events

The ultimate goal of these “plug and play events,” according to **Kathrik Sundaresan**, CableLab's Distinguished Technologist and Director of HFC Solutions, is to help cable modem vendors' devices reach certification for DOCSIS 4.0. “When a device gets certified, it's basically saying you can take this device and plug it into pretty much any operator's network, and it's going to do the things that it promises to do,” Sundaresan said. That promise doesn't just mean modulating the faster speeds operators expect with the HFC upgrade but also delivering security features (a potential focus for upcoming interop events) and reliability.

Sundaresan said that, while the 10 Gig benchmark is “definitely top of mind for everybody” during interop events, and there are clear benefits to learning what you can do when those speeds are surpassed, he thinks “the shift is slowly going towards reliability.”

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"I want my connection to be rock solid, not freeze on me when I'm on a Zoom call," Sundaresan said. "I think reliability is the new black. And a lot of technology changes within DOCSIS, and technology around DOCSIS, are focused on that reliability piece."

Messaging around reliability has been more of a priority of late for many ISPs over touting bigger numbers at customers, as today's multi-gig speeds more than meet the average consumer's needs. Netflix recommends a download speed of just 15 Mbps to stream 4K programming, and you only need 25 Mbps down to play a brand-new game at 1080p and 60 fps on **NVIDIA's** GeForce Now cloud gaming service.

"I think we're actually going to a place where, at least where the applications are today, you don't have to think about the network. I mean, you go to an office building or to the library, you just plug into the wall in terms of power supply, you're not really thinking about how much power you're going to use," Sundaresan added. "I think we've kind of reached the same point with DOCSIS networks as well as DOCSIS 4.0. There's just going to be so much capacity that you don't have to micromanage it, or you don't have to think about it."

Users might not spend as much time thinking about how many bits they're chugging up to stream a movie or log into "Call of Duty," but they definitely notice when a connection is less than reliable. In May, web hosting company **Liquid Web** published a [study](#) that found that 95% of gamers surveyed have experienced latency issues while playing online games, and 78% have quit a game in frustration due to high latency during gameplay, with the average gamer only tolerating up to 45 milliseconds of lag. Most worrying for ISPs is that 72% blame them for the issues, even when there are other factors in play.

To address that specific reliability concern, CableLabs is continuing to develop tech that optimizes the flow of network traffic to reduce latency. This solution, which is suitably called Low Latency DOCSIS, was first launched in 3.1 and is "baked into 4.0 and allows for sub-five millisecond latencies in the DOCSIS network itself, specifically for gaming and real-time communication applications," according to Sundaresan, adding that the team "will continue to evolve it and refine it as we go along." In January, **Comcast** launched in select markets a DOCSIS-based ultra-low lag Xfinity internet experience that reduces latency when using comms apps like FaceTime or gaming on Steam.

The Need for Speed

So, the vibe has shifted toward reliability, but will there ever come a day when we are begging for those sweet petabits? When we asked whether future use cases involving AI could push that consumer demand past current capabilities, Sundaresan stressed, that while the cable industry is always looking through all possibilities, it's really too early for anyone to say anything concrete.

But he did offer this fascinating bit of speculation on what could spark a change in data needs: "In the next couple of years, maybe there's a stark revolution in how AI takes over. Maybe everybody's running their own large language models locally. Once, we get there, I think we'll have to understand what the bandwidth needs are for those types of applications and then figure out where we are," Sundaresan said, adding that he "still feels that DOCSIS 4.0, with these 10 Gbps services, are taking us a long way."

FCC APPROVES T-MOBILE-USCELLULAR AND OTHER DEALS

In the days after **T-Mobile** told the **FCC** it was [doing away with DEI-related policies](#), the uncarrier's logjam of pending M&A deals is clearing up. The FCC's Wireline Telecommunications and International Affairs Bureaus gave the green light Friday to T-Mobile's proposed \$4.4 billion deal to acquire **UScellular**, following the **Department of Justice's** Antitrust Division saying Thursday it wouldn't seek an injunction to prevent the deal from reaching the finish line. "As part of the FCC's Build America Agenda, the agency is working to unleash new builds, encourage greater investment, and expand network capacity. The FCC's decisions this week further all of these goals while cutting across multiple different sectors of the communications market," FCC Chair **Brendan Carr** said in announcing [the approval](#) as well as the FCC's OK of a deal that'll have **Metronet** transition to a JV controlled and co-managed by T-Mobile and the investment firm **KKR**. The FCC also gave its blessing to the **Intelsat/SES** merger. All the deals were approved by agency bureaus vs. a full Commission vote. While Carr cheered innovation, the DOJ did strike a note of concern regarding competition in relevant markets for mobile wireless services, in addition to the availability of wireless spectrum needed to enable competition and entry. "The Department's investigation made clear that we stand at a pivotal moment for the wireless industry. The transaction comes near the tail end of a decades-long trend toward consolidation-by-acquisition that has now left most consumers with meaningful choices among just the 'Big 3' national carriers," said **Gail Slater**, Assistant Attorney General of the Antitrust Division. She pointed to the fact that the "Big 3"—**AT&T**, **Verizon** and **T-Mobile**—account for more than 90% of the estimated 335 million mobile subscriptions in the U.S. **NCTA** and **Public Knowledge** applauded the DOJ for acknowledging the mobile industry's need for competition. "While cable broadband providers are aggressively investing to deliver real mobile competition, cost savings, and other benefits to millions of wireless consumers, the Big 3 are continuing their desperate

attempts to thwart this new competition through aggressive spectrum stockpiling strategies,” NCTA said. Slater also showed concern with further spectrum consolidation and how the Big 3 control north of 80% of the U.S.’ mobile wireless spectrum. While the investigation found the spectrum transfers wouldn’t lead to sufficient harm to competition, “the risks to future competition due to further spectrum aggregation by the Big 3 are acute,” she said, adding that there’s concern that continued spectrum aggregation by the Big 3 “threatens to impede the path for a fourth national player to emerge.” The FCC order released late Friday struck a different tune: “We reject the opponents’ implicit assumption that a reduction in the number of competitors from four to three is dispositive. The Commission has never adopted a rigid numerical threshold to define effective competition, and doing so would fail to account for the dynamic and evolving nature of the communications marketplace.” Regarding spectrum aggregation, it found that the public interest harm is low.

MORE TIDYING UP AT THE FCC

The **FCC** is continuing to delete rules from it no longer deems necessary or enforceable. The agency’s Wireline Competition Bureau filed a list of actions Friday that’ll remove five pages and 41 rules or requirements. First centered on everyone’s favorite proceeding: Title II. The FCC is restoring the text of certain rules that were in place before the Second Title II Order was made in April 2024. Since the Sixth Circuit [decided against](#) that order, the rules adopted never went into effect. The FCC is also removing requirements from rules that were vacated by the Eighth Circuit in Iowa Utilities Board II nearly 25 years ago, but never pulled.

PEOPLE

Former **Blue Stream Fiber** CEO Joe Canavan is now CEO for **All Points Broadband**, which serves rural Virginia. Canavan spent more than eight years at Blue Stream, joining from **Atlantic Broadband** (now **Breezeline**) in 2016.



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Social Media Hits



Quotable

“Constantly shifting deadlines, mixed signals, and threats of new tariffs create uncertainty that makes it nearly impossible for American businesses—especially startups and small businesses—to plan, invest, or make long term decisions. We urge President Trump to use this extension as an opportunity to forge deals that support strong economic growth, strengthen trade ties with friends and allies, and ensure that American families can afford the products they love and rely on.”



- Gary Shapiro, CEO, Consumer Technology Association



Up Ahead

JULY 17: [Fiber Broadband Association Regional Fiber Connect](#), Anchorage, AK

JULY 24: [FCC July Open Commission Meeting](#), Washington, D.C.

JULY 27-29: [NTCA Summer Symposium](#), Hilton Head Island, S.C.

JULY 28-29: [C2HR CON](#), Brooklyn

AUG 4-7: [Cabelabs Interop-Labs XGS-PON](#), Louisville, CO

AUG. 10-13: [Independent Show](#), Salt Lake City