SPECIAL REPORT

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Are You Ready for DOCSIS 3.1?

By Stephen Hardy

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SPECIAL REPORT

Are You Ready for DOCSIS 3.1?

The starter's gun on DOCSIS 3.1 deployments has fired, with Comcast taking the early lead in the Americas and Liberty Global looking to do the same in Europe. But the fact that other operators haven't started their own deployments doesn't indicate a lack of interest, according to sources. A variety of factors will affect the pace at which a given operator will roll out the new technology – some of which are beyond the service providers' control.

Who's in Line

Comcast acknowledged limited field trials of DOCSIS 3.1 as early as March 2015, wider-spread trials in markets such as Philadelphia this past January, and an "advanced consumer trial" in Atlanta in March. The operator has announced it will deploy DOCSIS 3.1 in Atlanta and Nashville in the first half of this year, with Chicago, Detroit and Miami following in the second half.

Comcast traditionally has jumped on new technologies earlier than other operators, says Jeff Heynen, consulting director and senior research analyst at S&P Global Market Intelligence. Its large footprint puts it in more competitive market situations, Heynen points out. That large size also makes it financially worthwhile for technology vendors to produce custom components, subsystems, and other products for Comcast, he adds. The operator has acknowledged use of custom equipment, including CPE, in its DOCSIS 3.1 trials.

For operators without such financial clout, DOCSIS 3.1 technology available through traditional vendor channels is on the near horizon, Heynen says. Most of these will

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DOCSIS 3.1 – Ready? Set? Update!

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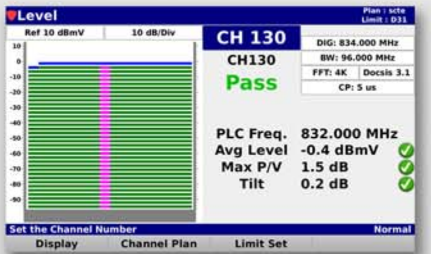

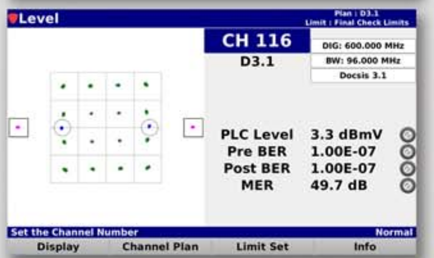

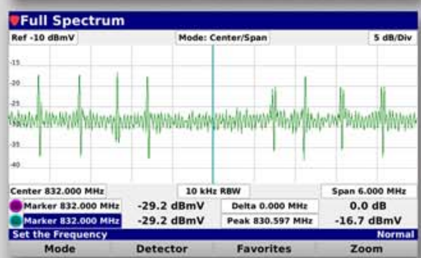

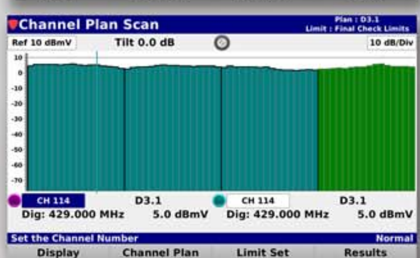

Designed to protect your past investments in Trilithic field analyzers, this update allows you to test DOCSIS 3.1 signals without spending valuable capital on new or upgraded test equipment until fully certified DOCSIS 3.1 hardware becomes available in late 2016.

Additionally, this update will simplify the daily life of your technicians by providing them measurement tools that they already understand which results in reduced operational expenses related to the downtime spent re-training your technicians for DOCSIS 3.1 technology.

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The demand for such capabilities is significant according to Daniel Howard, director, consulting services, energy solutions, at Hitachi Consulting (and former CTO of SCTE). "There are a lot of them that are in the process of rolling [DOCSIS 3.1] out or in later phases of testing," he says. "I'd say roughly half the industry is planning on getting it out this year. And that's pretty aggressive industry-wide, I think."

Howard sees Cox as part of this year's new starts, with Heynen adding Rogers and Shaw in Canada and what looks to soon be the "New Charter" markets formerly under

VeEX, a market leader in CATV Test and Measurement, has been actively developing tools and solutions to facilitate the deployment of DOCSIS 3.1. Watch the video to learn how VeEX provides a one-stop shop for all your DOCSIS 3.1 needs. Visit www.veexinc.com for more information.

The extra capacity DOCSIS 3.1 will enable should improve delivery of a variety of services.

the auspices of Time Warner Cable to the list of near-term deployers in North America.

As for the markets that currently reside under Charter Communications' umbrella, doubts appear to remain. "Charter has not been saying a lot about rolling out DOCSIS 3.1. But what they have said is that they're likely to roll it out in the places of Time Warner and Bright House that they're about to acquire that are in competitive territories, especially with Google Fiber but also with AT&T's GigaPower," Howard says. Regarding the rest of Charter's territory, "I think we can cut Charter a little slack because they're in the middle of this acquisition of Time Warner Cable and Bright House," Howard adds. "That certainly would have to be a delaying factor."

Another wild card is Altice's recent acquisition of Cablevision. Heynen sees Cablevision as a prime candidate for early DOCSIS 3.1 deployments. However, it would

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Cable operators are preparing their DOCSIS 3.1 strategies now. Deployments decisions likely will be on a market-by-market basis.

not be unreasonable for the integration into Altice to slow the operator's roll out plans.

What's the Rush?

Those at the forefront of DOCSIS 3.1 rollouts likely share similar circumstances. "If you look at all the places where they're planning to roll it out initially, it's primarily driven by competition first and foremost, and I'd say secondarily it's a drive for offering faster and more reliable commercial services," explains Howard. "So you'll see a lot of the operators initially offering it to their commercial customers as a means of giving them faster and faster speeds and it just basically leverages the technology to the fullest."

Watch the video to learn more about how solutions from Trilithic can help your business with its rollout of DOCSIS 3.1 to consumers.

We'll also see the first deployments among operators who have properly prepped their infrastructure. DOCSIS 3.1 has been specified to work alongside DOCSIS 3.0, to enable a smooth migration. However, it requires that sufficient spectrum becomes available to leverage its capabilities. That

> "You'll see a lot of the other cable operators moving as quickly as they can to get rid of those inefficient analog channels."

means reclaiming analog channels and converting them to digital operation, a process with several benefits. Comcast began this process some time ago, Howard points out.

"You'll see a lot of the other cable operators moving as quickly as they can to get rid of those inefficient analog channels," he adds. "The spectrum efficiency you get with an advanced digital modulation versus an analog TV channel is huge." The move to digital transmission not only helps enable DOCSIS 3.1 but IPTV as well. It also improves support

Migrating to DOCSIS 3.1?

It Doesn't Have to be an Upstream Battle

As DOCSIS 3.1 technology evolves, Cable Operators must face major deployment challenges that can affect service delivery and reliability. More than ever, MSOs must fully characterize every aspect of the cable network, from the headend to the home.

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DOCSIS 3.1 solutions

of over-the-top (OTT) services and offers other benefits, Howard points out.

Because of these benefits, Howard expects operators across the board to move to DOCSIS 3.1 eventually. However, while we'll see several operators begin DOCSIS 3.1 deployments in 2016, full roll outs likely will take years. Operators likely will take a market-by-market approach, with areas where they face significant competition or want to enhance their business services capabilities highest on the deployment list. These areas tend to have common characterstics.

"Where Google Fiber and AT&T are going to roll out their advanced services, it's typically going to be in these larger cities where there is a huge dense customer base already that makes the costs work out much better," Howard points out.

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Want more info on DOCSIS 3.1 deployments?

Then tune in Tuesday, May 24, 2016 for the "DOCSIS 3.1 Strategies" webcast. You'll hear from Jorge Salinger, vice president, access architecture, Comcast, and Belal Hamzeh, director of network technologies, CableLabs, as they discuss lessons learned from the initial stages of DOCSIS 3.1 rollouts. Find out more and register on the BTR website.

Conversely, rural areas with few customers, little or no competition, and a lack of appetite for paying higher prices for advanced Internet and video services likely will be among the last territories to see DOCSIS 3.1. The impetus for an upgrade in markets in between will vary. Those where operators have met the competitive threat via DOCSIS 3.0 channel bonding – a technology both Heynen and Howard believe has a long and fruitful future – may not have to move to DOCSIS 3.1 very quickly.

"If you don't have to roll it out right away from a competitive threat, then why would you spend that money if you don't have customers lined up willing to spend more per month on a gigabit-type service?" Howard asks.

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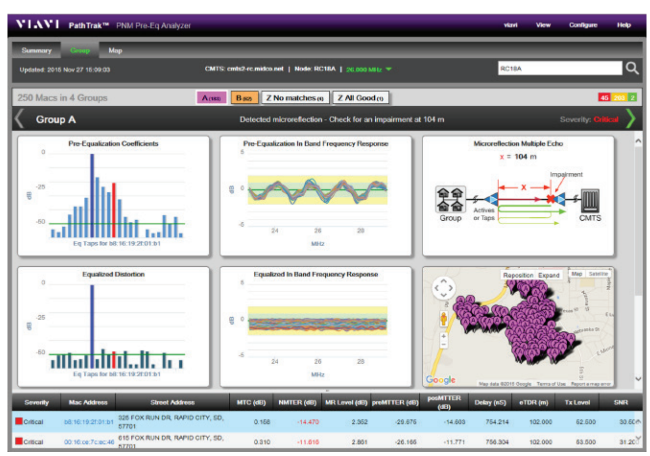

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DOCSIS 3.1 would appear to be in every operators' future. But how near-term that future is will vary widely among them.

A Lack of Symmetry

As is the case with its predecessor, DOCSIS 3.1 offers asymmetric capacity. A fully enabled DOCSIS 3.1. architecture will support 10 Gbps downstream but only a gigabit or two upstream. In light of the fact that advanced FTTH architectures will support 10 Gbps of capacity in each direction, CableLabs has announced a project to investigate a similarly symmetrical version of DOCSIS 3.1.

The lack of symmetrical capabilities obviously hasn't diminished operator interest in DOCSIS 3.1. And neither Heynen nor Howard believe it should, particularly to support residential services. Consumers just don't need a significant amount of upstream bandwidth in most cases, they say.

"Consumers really for the most part don't need that fat a pipe on the upstream," says Howard. "Unless a new killer app like virtual reality or something that suddenly requires a lot more speed on the upstream." And if that were the case, operators likely would have to go to a Node+0 architecture to support symmetrical 10-Gbps transmissions.

There could be a better case for symmetrical 10-Gbps capabilities to support business services, particularly if cable operators want to challenge telco competitors for large accounts. But there's likely plenty of time before operators have to consider such strategies. For now, the focus is on getting the first deployments of DOCSIS 3.1 into the field.

Stephen Hardy is editorial director of Broadband Technology Report.

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