

FROM THE INDUSTRY

Wired for the Future:

COMMSCOPE'S CRAIG COOGAN ON DRIVING CABLE AND FIBRE INNOVATION

BY MELISSA COGAVIN, BROADBAND JOURNAL

CRAIG COOGAN, CTO AND VP OF PRODUCT & STRATEGY AT COMMSCOPE BROADBAND NETWORK SOLUTIONS, SAT DOWN WITH BROADBAND JOURNAL AT ANGACOM IN COLOGNE IN JUNE. HE SHARED INSIGHTS ON THE EVOLVING BALANCE BETWEEN CABLE AND FIBRE, AND WHAT'S NEXT FOR BROADBAND INNOVATION. FROM DOCSIS 4.0 TO NETWORK VIRTUALISATION, COOGAN REVEALS HOW COMMSCOPE IS SHAPING THE BROADBAND FUTURE.

COMMSCOPE®

WHAT NEW TECHNOLOGY DID COMMSCOPE SHOWCASE AT ANGACOM THIS YEAR?

The most exciting product is the combination of the vCCAP Evo™, which is a virtual CMTS product combined with the RD1710-U2, which is a DOCSIS 4.0 Remote PHY device.

We had a static unit on the stand, and it fits into what's called the DC2182 compact cabinet node. It was designed with European operators in mind, and for European operators to specifically target the European market. It demonstrates the ability to go up to six blocks of OFDM (downstream) channels on the downstream (hardware can go to nine blocks). On the upstream, we're going up to 396MHz, which is one of what's called the ultra-high splits, and the hardware can go even higher. In Europe, it's up to 65 split, or 85 is called mid-split. 204 is called high-split. You go all the way up to 396, one of several of what's called ultra-high splits. That's part of DOCSIS 4.0. One of the things that 4.0 brings is to expand the upstream spectrum and consequently the bandwidth for end-user subscribers.

That has four blocks of OFDMA (upstream) up to the 396 (hardware can go up to nine blocks); we're showing approximately 7Gbps in the downstream direction, and between 2-2.5Gbps in the upstream. It can actually handle more throughput than that, it just hasn't been fully optimised yet; at present, it's just a prototype. We're going to be ramping up manufacturing of it by the end of this year. We're really excited to have shown it at ANGACOM live from our European facility.

AS IT'S A PROTOTYPE, IS COMMSCOPE WAY OUT IN FRONT OF YOUR COMPETITORS?

Specific to the European market, I think we are ahead of competitors, because we've been working with some of the lead operators here on doing this work.

WHAT ELSE HAVE YOU BEEN WORKING ON?

We are excited about our virtual Broadband Network Gateway, which is used for PON deployments today, but later could be used for additional access technologies. That's branded the "vBNG Evo™," similar to what we have for the

"vCCAP Evo™" for the cable side. vBNG is more for the PON side today, but it can do things like Virtual Wi-Fi Access Gateway (vWAG).

ARE THEY SEPARATE FOR A REASON?

Over time, we're looking to merge the two together so that you could actually have a single way of provisioning the subscriber, whether it's on cable or fibre, and ultimately across both. We've also got our ServAssure NXT and ServAssure portfolio of Performance Management Software Suite, which has been enhanced with AI-driven insights in two ways. One is what's called profile optimisation, which is used for DOCSIS 3.1 and 4.0, OFDM and OFDMA channels, where data is gathered from the network and then in real time that data changes how the channels are modulated over the spectrum to best fit and make the most optimal use of the spectrum, given the noise that you measure from the plant.

Secondly, our ServAssure platform is powered by DvSum; this is a partnership that we have just entered in where they provide an agentic AI interface to gathering data. Some operators have already deployed in this way and they've seen a notable decrease in repair time and an increase in productivity of their customer service representatives (CSRs). It actually allows the customer service representative to ask specific service questions of the subscriber and really drill down into how things are going.

IN THIS INSTANCE IS THE AI AGENT FACILITATING GREATER COMMUNICATION?

Exactly. The subscriber may call in and then the rep will ask of ServAssure Powered by DvSum, "Hey, what's going on with this modem?" They will have a chat-like interface. It goes up and pulls all the disparate data points that exist in the operator for the subscriber, including billing.

WHICH PAINTS A FULLER PICTURE OF WHAT'S ACTUALLY HAPPENING WITH THE SUBSCRIBER.

That's right. ServAssure and DvSum can drive revenue by identifying subscribers who are heavy bandwidth users, cross-referencing that with billing data, and

determining who may be a good candidate for an upgrade to a higher-tier bandwidth package.

It goes even further. For example, are they on time with their billing? If not, do we want to shut them off because they haven't paid? And then the agent gathers all the data from how the plant is operating from the head end all the way down to the subscriber, evaluates it on its own and then provides a recommended next step. Could be, "It looks like it's related to the provisioning of the device, go check that." Or it might be, "Oh, you need to check something else, something else in the network." But it basically takes steps that the CSRs would normally have to do on their own manually.

PRESUMABLY THAT REDUCES THE POTENTIAL FOR HUMAN ERROR.

It does, it's very efficient. That was on display at ANGACOM too.

WHAT ELSE IS COMMSCOPE SHOWING AT ANGACOM?

On the cable side and on the front wall of our booth, we showed solutions spanning from DOCSIS 3.1 to D3.1Enhanced (D3.1E), to D4.0. Then, we have solutions for any architecture the operator may be deployed with or considering. Whether it's Integrated CCAP (I-CCAP) or Remote PHY with a physical core, Remote PHY with a virtual core, or Remote MACPHY, operators know we can provide an agnostic view of what they should do because we have all the solutions.

WHAT ABOUT ON THE BACK OF THE FRONT WALL?

We have the PON solutions; I mentioned the vBNG. We've got OLTs that go into the fibre node, and then ones that are in a shelf form factor. We've got a full portfolio of distributed PON or centralised PON, including the software. Regarding the vBNG, which handles the subscriber management and authorisation, we've got our SDN Evo controller and then also the ability to use that same ServAssure platform I mentioned earlier that can cover both cable and PON. So, from the hardware providing bandwidth to the network and then the software that manages it, we have the PON side covered as well.

FROM THE INDUSTRY

HOW DO YOU MANAGE SUSTAINABILITY ACROSS ALL THOSE LINES OF BUSINESS?

We try to reuse where we can. Our concept is: develop it once, use it many times. That provides us with a common look and feel of our products too. It also allows us to continue to drive this level of breadth because of that software reuse and not needing to greatly increase the number of resources we have to drive our solutions.

HAS THERE BEEN ANY CONSUMER BEHAVIOUR THAT'S SURPRISED YOU, FORCING YOU TO CHANGE DIRECTION?

All our products are developed in general to open standards (so there is a common set of products) so you would imagine people would deploy these in a common way. The reality is that every operator has a different starting point, and they have different end goals too. I thought having all these solutions would mean over time that would narrow down to a specific set of solutions, but actually, it's the opposite. Offering so many variables has meant our customers stitch them together in any way they like.

DO YOU PRODUCE BESPOKE TYPES OF SOLUTIONS?

That does happen, yes. We tend to make them so that they have broad appeal, ensuring that it's something we can leverage with other operators as well. In fact, the RD1710-U2, the Unified DOCSIS 4.0 started off life as a much more operator-specific product. We announced publicly that Liberty Global selected us as their preferred partner for the JDA with Broadcom.

The industry has evolved from DOCSIS 4.0, with Full Duplex and Extended Spectrum DOCSIS, to a situation of Unified DOCSIS 4.0, where you can do both in the same chip. Because of that, getting buy-in from the chip manufacturer went away, and the players involved decided to open it up for the market. We developed the product hand-in-glove with Liberty Global to meet their needs initially but pivoted once the ecosystem was opened up so that it could be available to others too. We're finding the interest in the DC2182 with the RD1710-U2 mostly from the

European market because of the small form factor, but we are gauging interest from other regions now because it is more widely applicable than just the European market.

WHAT DO THE NEXT 12-24 MONTHS LOOK LIKE FOR COMMScope?

A lot of operators are looking to deploy D3.1Enhanced, which is the ability to upgrade your CMTS infrastructure and without touching the cable plant. You can offer a much higher tier of service and apply licenses at the CMTS side. For any subscribers who buy this higher tier of service, the operator only needs to upgrade the modems at those subscribers, yet the operators get the marketing benefit of advertising that speed tier across the entire market footprint. The D3.1E, D3.1Enhanced, has been live since July 2024 at a significant North American tier one operator, and we're seeing a lot of interest in that.

WHAT ARE THE BENEFITS OF SUCH A SYSTEM?

With our platform, operators can deliver speeds of up to 8Gbps down and 1Gbps up using DOCSIS 3.1, which supports up to 1.2GHz downstream and 204MHz upstream. We support DOCSIS 3.1Enhanced (D3.1E) across all four major CMTS access architectures, so any operator using CommScope's cable headend solutions can take advantage of these capabilities. This helps extend the life of DOCSIS 3.1 and provides a smooth path toward DOCSIS 4.0.

At the same time, operators are already upgrading their networks to be 4.0-ready, including deploying 1.8GHz-capable taps and amplifiers. We support those efforts through our Access Technologies business unit within our Access Network Solutions (ANS) segment. Some operators are leading the charge on 4.0, while others are still exploring their options.

WHAT ABOUT THOSE MOVING AWAY FROM DOCSIS?

We're ready with a full range of solutions, including fibre node units and support for all major PON types—10G EPON, GPON, and XGS-PON. We also offer a new shelf-based OLT platform designed for 50G PON and are working on 50G options for

node-based platforms. There's a lot of innovation underway; DOCSIS discussions are even moving toward 3GHz capabilities and higher, beyond the 1.8GHz limit of DOCSIS 4.0 ESD.

WHAT ARE YOUR THOUGHTS ON THE LACK OF SUBSCRIBER TAKE UP?

There have been some recent shifts in the US on that. Fixed wireless access started to chip away at some of the subscribers for the cable operators - and the PON providers for that matter - for a while. But they were providing a lower tier service, maybe 100Mbps, maybe up to 300Mbps or so. The number of users affects the quality of course, and the latency isn't quite as good as cable or fibre. As a result, subscribers are realising this and there has been a shift back again; cable operators are fighting back, trying to compete in other ways. They're upping the speed tiers above going up to 400, 500, 600Mbps up to 4Gbps and even higher. They're also lowering the price points too, which is having a positive effect.

ALL POSITIVE STUFF. BETWEEN TECHNICAL INNOVATION AND COMMERCIAL VISION ACROSS CABLE AND FIBRE, AND A CLEAR DRIVE TO KEEP BOTH OPERATORS AND SUBSCRIBERS HAPPY, COMMScope AND THEIR PARTNERS ARE DOING GREAT THINGS IN THE US AND EUROPE. WE'LL CATCH UP WITH THEM AGAIN IN WASHINGTON DC AT TEC EXPO.

THANK YOU CRAIG!