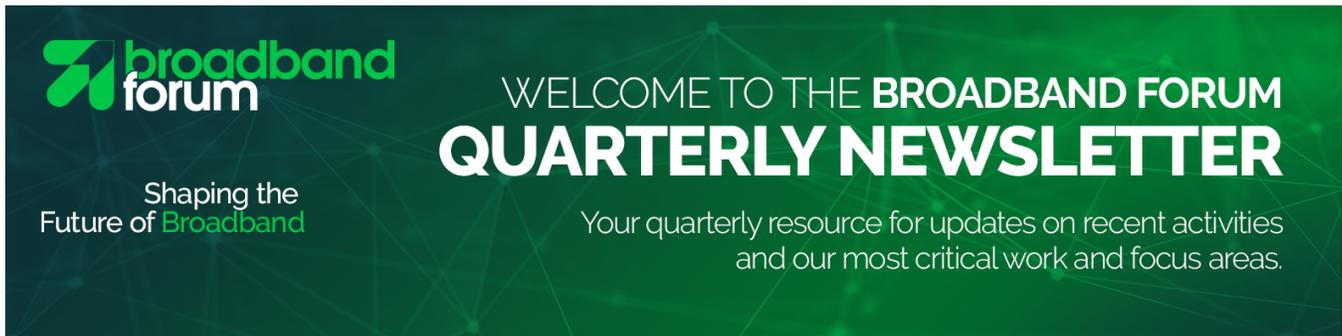


# Broadband Forum Quarterly Newsletter



## A Word from our CEO

It is perhaps fitting, as we reach the halfway point in another exciting year for Broadband Forum, that I am writing these notes in Seoul, South Korea – home to the world’s highest average Internet speeds and the highest fiber optic broadband penetration. In fact, I wonder why this is our first appearance in this dynamic, technology-hungry country, where we have been made most welcome by our sponsors Korea Telecom (KT) and the GiGA Wire Alliance. Their enthusiastic demonstrations of GiGA Wire and G.hn, and the site visit to a live

installation at a challenging shopping center Multi Dwelling Units (MDU) complex, were not only fascinating but reminded me of how in the telecoms industry we are all part of a family; driving broadband forward everywhere we go.

The keynote from KT Lab’s Vice President Jongpil Lee highlighted how that drive and commitment can deliver results through copper as well as fiber, even in tough and challenging environments and with financial constraints. Making it possible is often helped by that “family” feeling – being part of something like providing broadband which changes so many lives.

I got a similar feeling of being part of something special from our Strategy Meeting at the headquarters of Calix last month. It was an intensive three days covering all aspects of our work and asking ourselves important questions such as, “where we are going” and “what we could have done better”. One of the big takeaways was that teamwork in the Forum was highlighted as the top example of what went well and at such a critical phase of our work, good teamwork is vital.

Just behind teamwork in the success ratings were the BAsE events and the big leap in PR and marketing activity. You are probably reading this while UFBB BAsE at The Hague, in the Netherlands, is taking place. This is the latest event of this type, with two more planned by the end of the year, supported by the PR and marketing machine, which is raising the profile and awareness of our widening work portfolio.

This, in turn, is helping to generate a very healthy increase in membership and we welcomed several new members and first-time attendees in Korea. What is important here is not just the numbers but the new areas of expertise and thinking that they bring to the group, which will support the quality and importance of the work going forward.

They are all very welcome to our team – a hardworking, committed group which I am very proud to lead into the second half of 2019.

#### Previous Newsletters

- [BBF Q2 2019 Newsletter \(PDF\)](#)
- [BBF Q1 2019 Newsletter \(PDF\)](#)
  
- [BBF Q4 2018 Newsletter \(PDF\)](#)
- [BBF Q3 2018 Newsletter \(PDF\)](#)
- [BBF Q2 2018 Newsletter \(PDF\)](#)
- [BBF Q1 2018 Newsletter \(PDF\)](#)
  
- [BBF Q4 2017 Newsletter \(PDF\)](#)
- [BBF Q3 2017 Newsletter \(PDF\)](#)
- [BBF Q2 2017 Newsletter \(PDF\)](#)
- [BBF Q1 2017 Newsletter \(PDF\)](#)
  
- [BBF Q4 2016 Newsletter \(PDF\)](#)
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- [BBF Q4 2015 Newsletter \(PDF\)](#)
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- [BBF Q2 2015 Newsletter \(PDF\)](#)
- [BBF Q1 2015 Newsletter \(PDF\)](#)

#### **GiGA Wire technology breathes new life into bandwidth-hungry Korean MDUs previously held back by hard-to-replace copper infrastructure**

Korea Telecom (KT), which leads the world in fiber optic broadband delivery, is meeting the clamor for high-speed broadband where only copper is economically viable and – by using GiGA Wire and G.hn technologies – is achieving spectacular success. That was the message given to the Broadband Forum quarterly meeting in Seoul by KT Lab's Vice President Jongpil Lee.

Contact Broadband Forum at [info@broadband-forum.org](mailto:info@broadband-forum.org).

[Broadband Forum Meetings](#)



Lee explained to the attendees that when faced with the normal telco dilemmas of flat revenues, increasing competition and the need to invest, KT started research which culminated in the development of its [G.hn](#) Access Multiplexer (GAM). Located in apartments and buildings where fiber delivery was not possible, the GAM – with a vector boost to

cut crosstalk and [G.hn](#) at the customer end – was giving ten times faster speeds and a 50 per cent Capital Expenditure (CapEx) saving.

GiGA Wire can be used for Internet services with VDSL in the same cable bundle and KT has already replaced some 16 percent of its DSL installations with the technology.

“GiGA Wire and [G.hn](#) is proving that copper telephone lines are not dead – they still have an important role to play in meeting client demands for speed and performance,” said Lee. “From the telco perspective, GiGA Wire gives us a better financial and operational performance. It also helps us to solve digital divide issues, as well as preserve historical buildings where optical fiber installation would not be allowed and provides us with a technical differentiation which is really helping in our success.”

KT Lab, a member of the GiGA Wire Alliance, also gave a demonstration on site of the Q2 meeting to Broadband Forum members of the technology and demonstrated the higher speeds achievable.

Lee’s opening day keynote and demonstration was followed by a visit to a live KT GiGA Wire and [G.hn](#) equipped building, the Good Morning City shopping mall, which is focused on clothing but with much more besides, including eateries and an impressive Virtual Reality (VR) gaming center. It is home to a great number of small outlets, each of which has a growing need for faster, high-speed performance.

As part of a major refurbishment, the Good Morning City building now has truly world class broadband – all provided through [G.hn](#) and GiGA Wire technology sitting comfortably alongside VDSL equipment.

Sponsorship opportunities are available for the Forum's remaining 2018 quarterly meetings. Sponsoring a meeting is a great way to highlight your company and exhibit your company's innovation in the broadband industry – including demonstrations or prototypes – while showing your support of the Broadband Forum. Opportunities vary and can be customized to accommodate a variety of budgets.

Please view the list of our standard sponsorship packages and benefits at:<https://wiki.broadband-forum.org/display/BBF/Sponsorship+Opportunities>.

Contact Rhonda Heier at [rheier@broadband-forum.org](mailto:rheier@broadband-forum.org) for more information.

## Help showcase the silver lining of CloudCO at Broadband World Forum

The Software Defined Networks (SDN)/ Network Functions Virtualization (NFV) Work Area is looking for vendor and operator participation in developing and executing the Cloud Central Office (CloudCO) Demo which will be showcased at Broadband Forum’s Interop Pavilion at Broadband World Forum (BBWF) in Amsterdam, which takes place from Tuesday, October 15 until Thursday, October 17. Last year, the Open Broadband – Broadband Access Abstraction (OB-BAA) demo gained very high industry visibility and showed the promise of multi-vendor management in CloudCO. This year, Broadband Forum will take a major leap forward by leveraging Application Note 446 ([APP N-446](#)) which has been enhanced for multi-vendor capabilities that will be provided by the OB-BAA reference implementation.

Broadband Forum is seeking the following support from its membership:

Vendors:

1. Access Network Equipment – Would include Optical Line Terminals (OLT), Digital Processing Unit (DPU)/ Residential Gateway (RG) and Optical Network Terminals (ONTs), OB-BAA with servers, GUI Web browser, PC connected to the ONT to show Internet connectivity
2. An access SDN M&C that can work with OB-BAA and implement the Business Support Systems (BBS) scenarios for configuration

Operators:

1. Sponsorship Opportunity – Tie brand to the future of access

Vendors/Operators:

1. Assistance with modifications – the Open Network Automation Platform (ONAP) and/or extend portal

Major contributors will have the opportunity for brand recognition within the Interop Pavilion on the BBWF show floor, as well as opportunities to be highlighted during Broadband Forum workshops on Day 1.

Objectives of the demonstrations would be as follows:

- OB-BAA as an open source reference implementation of CloudCO's BAA layer. This is demonstrated by using OB-BAA within the CloudCO's Broadband Services (BBS) application note (APPN-446).
- OB-BAA within the CloudCO framework using the BBS application note
- Service provisioning via a single portal driving a multi-vendor access network using Access Networks (Ans) of the same type
- Stretch goal: multi-vendor capability via a vendor adapter
- Stretch goal: multi-technology capability using different types of ANs (DPU, OLT)
- Stretch goal: support of ANs without a NETCONF/YANG interface via a vendor adapter
- Stretch goal: technology upgrade (e.g. from GPON to XG-PON) via adapter update

If you would like to be involved in pulling together this highly visible project, **confirmation is needed by July 1**. For more information, see description on the Wiki [here](#).

If you have any questions, please contact Tim Carey ([timothy.carey@nokia.com](mailto:timothy.carey@nokia.com)) urgently.

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**Growing momentum behind Connected Home, 5G and broadband experience initiatives drives influx of new Broadband Forum members**

**Broadband Forum has revealed that the growing momentum around its [Connected Home](#) and [broadband experience](#) related projects has been the driver behind a spike in new members. This reaffirms the important role standards have to play as connected devices become more mainstream and consumers redefine what constitutes a superior broadband experience.**

Since the beginning of the year, more than a dozen innovative companies have joined Broadband Forum, including [Benu Networks](#), [dot11 Labs](#), [F-Secure](#), [HUMAX Co Ltd](#), [KAON Media](#), [Metaswitch](#), [Pico VR](#), [Plume](#), [Roqos Inc](#), [SIDN](#), [SUPPORT Robotics Limited](#), [TQ Delta](#) and [Telecom Argentina](#). In addition, [AEPONYX](#), [BQ](#), [Domos AS](#), [Easy CWMP](#), [Furukawa Latam](#), [Hybrid Access Technologies](#), [Integrated Silicon Solution Israel](#), [Inteno \(Genexis BV\)](#), [Luster Teraband Photonics Co. Ltd](#), [Predictable Network Solutions](#), [TalkTalk Group PLC](#) and [Wistron NeWeb Corp](#) have enrolled in the Forum in the last 12 months.

More than half of these companies have cited Broadband Forum's growing body of work in the Connected Home area as the reason behind getting involved. Published in April 2018, [User Services Platform \(USP\)](#) – an evolution of the TR-069 standard – is Broadband Forum's solution for service providers looking for a truly unified, common approach to securely deploy, manage and control network-aware consumer electronics, including home and enterprise Wi-Fi, the Internet of Things, and more.

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**Broadband Forum publishes open source USP Agent, accelerating interoperable Connected Home deployments**

Faster time-to-market for interoperable, standards-based Connected Home solutions which help operators unlock additional income has been made possible, following the publishing of Broadband Forum's [Open Broadband – USP Agent \(OB-USP-Agent\) implementation](#).

Giving vendors a code base to either integrate into their devices or use as a reference implementation as they utilize [USP](#), OB-USP-Agent facilitates USP deployment and enables faster time-to-market for USP-based innovation and solutions. The standards-based solution paves the way for large-scale operator deployments and lucrative new revenue streams while greatly limiting the risks associated with stunted ecosystems.

OB-USP Agent is the latest development to USP which evolves the TR-069 standard by using the same data models to build a network of controllers and agents to allow applications to manipulate service elements.

To find out more about the USP and its momentum in the market, watch this [video interview](#) with John Blackford. For more insight into how USP is transforming the Connected Home experience, watch this [video interview](#) with Broadband Forum's USP Project Lead Barbara Stark, of AT&T.

**Work Area Updates from Seoul, South Korea**

*For a full list of all Technical Reports published by Broadband Forum, [click here](#). Please feel free to share this information with your colleagues, so they are engaged and aware of the developments of this work. For additional insight and to get involved, [sign up for the members-only Broadband Forum tools](#) and access your member-only account using your company email address.*

## Access and Transport Architecture Work Area zones in on quality, scalability and 5G

- **Target:** The Access and Transport Architecture Work Area maintains primary architectural work of Broadband Forum. This work reflects the control, management and data plane aspects of the Broadband Forum's defined architectures. These architectures are augmented to leverage new industry practices, while protecting the investment in broadband networks already deployed.
- **Progress:** Significant technical work was made on the new Disaggregated Broadband Network Gateway (BNG) project, Hybrid Access and Broadband Quality Experience Delivered (Broadband QED) Testing. New work was started on Transport Network Slicing Management Interfaces.
- **Outcomes:** Hybrid Access White Paper was sent for last comment.

The Access and Transport Architecture Work Area focused on three main areas this meeting: testing for application of Quality of Experience (QoE), scalable service deployment and infrastructure for 5G networks.

Continuing from the Q1 2019 work in Warsaw, Poland, the Application Layer Testing (ALT), Broadband QED (SD-452) and Performance Measurement work using STAMP activities continue to make progress and reach milestones. WT-421 on ALT has passed final approval and will soon be published. Broadband QED is nearing completion which has the group looking at next steps for the work. The first revision of a work plan was agreed that includes several short documents to explain Broadband QED and its application, as well as technical specifications focused on Broadband QED implementation and deployment.

The Disaggregated BNG work (WT-459) started in Warsaw has seen tremendous progress since then and throughout the meeting this week in Seoul. Those working on the activities are working together to specify a common set of protocol and equipment requirements, despite a wide variety of use cases, deployment models and even differing philosophies that present challenges at every step. The work on Disaggregated BNG is critical to the future scalability and resiliency of broadband networks being deployed and the pursuit of the second billion broadband users.

Network slicing is a key feature of 5G networks, both fixed and mobile. The Work Area approved the start of a project to look at the orchestration and management interfaces needed to support 5G network slicing from the transport level networks. This is an incredibly complex and vast endeavor given the number of different types of transport networks and the variety of technologies they use. The work has just kicked off and will look at leveraging existing deployed transport networks and their management to facilitate 5G network slicing, while at the same time identifying gaps and issues that need to be addressed by Broadband Forum and the industry in general. The activities of the group will engage with partner Standards Development Organizations (SDOs) to ensure a holistic view of the problem and of the resulting solutions.

For more information about the Access and Transport Architecture Work Area, please see: <https://wiki.broadband-forum.org/display/BBF/Architecture+and+Migration>.

## Broadband User Services Work Area paves the way for new USP agent certification

- **Target:** Help service providers control the Connected Home business model.
- **Progress:** Finalized USP version 1.1, Device:2.13 (TR181) and paved the way for what will become USP agent certification.
- **Outcomes:** USP 1.1 and Device 2.13 to be published in Q3. Certification program will be created by the end of the year. The next USP Plugfest will be held the week of September 16, 2019.

The Broadband User Services (BUS) Work Area finalized its work on version 1.1 of its revolutionary USP (TR-369). The new version includes updates learned from early Plugfests and implementations, plus the clean addition of MQTT as an additional transport mechanism. It continues with its Plugfest series the week of September 16th, 2019 and seeks to launch a certification program for USP Agents by the end of the year.

The group also finalized work on version Device:2.13 of the TR-181 data model for TR-069 and USP, adding service elements for Wi-Fi mesh networks that align with the Wi-Fi Alliance's Data Elements standard. It also added a flexible and standardized set of Internet of Things (IoT) control elements, unleashing the power of USP for all kinds of sensors, controls, and other "smart" elements, and allowing a very real, interoperable Connected Home that opens vast new opportunities for service providers, consumer electronics, and software vendors alike.

Lastly, the group is already moving forward with additions to its popular Wi-Fi performance tests defined in TR-398 with a new issue that will tackle the performance of Wi-Fi 6 (802.11ax) devices plus advanced features like dual mode operation and roaming.

A video summary of updates in BUS can be seen [here](#).

For more information on BUS' ongoing work, visit: <https://wiki.broadband-forum.org/display/BBF/Broadband+User+Services>.

## Common YANG starts new project on BNGs

- **Target:** Specify YANG modules that are applicable to multiple Work Areas, NETCONF/YANG test plans and certification for the defined YANG modules, and maintain YANG Best Current Practices, processes, procedures and tools.
- **Progress:** High interest in both the vendor and service provider community; continued work on managing the Access Node Control Protocol (ANCP) and alarm management, enabling additional functionality for network troubleshooting and data analysis.
- **Outcomes:** Initiate Amendment 3 of the YANG Modules for Fiber-to-the-distribution-point (FTTdp) Management; creation of new Working Text (WT-460) on YANG Modules for BNGs.

Since the last meeting, work continued on Amendment 3 of the Common YANG Modules for Access Nodes (WT-383a3), which will further enhance the suite of YANG Modules, focusing on aspects such as alarm management, managing the Access Node Control Protocol (ANCP), and hardware management. These developments will meet service provider requirements, enabling additional functionality for network troubleshooting and data analysis for ultrafast broadband over VDSL, FAST and Passive Optical Networks (PON).

Work on Amendment 3 of the YANG Modules for FTTdp Management (WT-355a3) has commenced. This Amendment updates existing models with the objective to further enhance the model as well as extend its scope to bonding interfaces.

The group agreed to kick off a Working Text, YANG Modules for BNGs (WT-460), based on the scope as agreed and reviewed in the corresponding Study Document SD-460. A set of key BNG functions has been identified for which the corresponding YANG Modules will be specified. The aim of this work is to smoothen interop for BNG deployments.

For an overview of the Common YANG Work Area's work, please visit: <https://wiki.broadband-forum.org/display/BBF/Common+YANG+Work+Area>

### **FAN moves forward with several documents, collaborates on next-gen networks**

- **Target:** Inter-Channel Termination Protocol (WT-352) is awaiting additional contributions but will hopefully be concluded by Q3.
- **Progress:** Work is nearing completion on the PON PMD Test Plan (WT-423), with Straw Ballot imminent. ID-247 Issue 4 has made good progress and FAN will be discussing straw ballot readiness. ID-247 is the ONU interoperability and certification test plan. WT-385 Issue 2 and WT-352 Issue 2 have also progressed.

Since the Q1 2019 meeting, the Fiber Access Networks (FAN) Work Area has continued to update several key Study Documents that will bring a range of benefits to service providers.

The PON Management Project Stream is dedicated to the development of NETCONF management models for ITU-T and IEEE PON YANG models. It has progressed as noted above. Common PON models promote interoperability between NETCONF servers and third-party NETCONF clients.

Within the Interoperability and Test Project Stream, work continued on both the PON PMD TP (WT-423) and ONU interoperability and certification test plan (ID-247) as described above. The interoperability project stream is responsible for creating test case documents for vendor certification and conformance. Both vendors and operators benefit from these documents as they describe agreed-upon interoperability use cases among diverse platforms. Being able to exchange information between devices and management applications is crucial for the modern economy of the telecoms industry.

In the Wavelength Management Project Stream work continued on the ICTP Protocol (WT-352) as described above. This project stream is dedicated to the development of NG-PON2 Inter-Channel Termination Protocol (ICTP) for

interoperability among suppliers of the TWDM and PTP WDM NG-PON2 subsystem, as well as the suppliers of the TWDM CTs for business and residential applications.

ID-247 Issue 4 discussions have identified the potential for requirement improvements to TR-280 and a New Project Information Form (NPIF) is under review.

### **OB-MAP makes progress on APIs**

The Open Broadband – Multi Access Point (OB-MAP) project has primarily been focused on working with prplMesh to define the Application Programming Interface (APIs) that will be provided by their implementation of the Wi-Fi Alliance MAP and Data Elements specifications.

A prplMesh workshop was held the same week as the Q2 Broadband Forum meeting in Korea and provided a “deep dive” into their new open source implementation. OB-MAP will be assessing this implementation and determining whether it will contribute to it or will attempt to make improvements to the current Broadband Forum meshComms open source stack.

The OB-MAP Project Leads have also been asked to see if providers have special performance requirements for steering that may be incorporated into WT-398 Issue 2 (Wi-Fi performance testing).

### **USP-Agent launches Release 1**

The USP-Agent group released its “Anhinga” Release (R1) on April 29 and published the “Anhinga” Release (R1) press release on May 20. This can be viewed at: <https://www.broadband-forum.org/2019-05-20-broadband-forum-publishes-open-source-usp-agent>

It has also scoped its “Blackbird” Release (R2) and is focused on completing the CoAP MTP work.

A video summary of OB-BAA release 2 and other Open Broadband initiatives can be seen [here](#).

### **Physical Layer Transmission finalizes three documents in busy three-month period**

- **Target:** To help service providers deploy equipment that will give a better quality of experience for their end-users.
- **Progress:** The Physical Layer Transmission group work continued on its Gfast Performance Testing document, Reverse Powering Feeding, long reach VDSL2, Fiber Extension, and many more projects.

Outcome: Three documents have passed final ballot, reaching full approval and are ready for publication. They are ATP-337 Issue 2 (G.fast certification), TR-285 Issue 2 (cable models) and TR-338 Issue 1, Amendment 1 (reverse power feed test plan). Three more are going to Straw Ballot – the technical review stage. These include WT-114 Issue 3, Amendment 3, WT-115 Issue 3,

Amendment 2 and WT-249 Issue 2 which all relate to VDSL2-LR (Long Reach). Finally, WT-208, Issue 3 (powerline communication systems test plan) has been sent to Final Ballot.

Projects WT-419/SD-419 made significant progress with further details discussed and agreed on use cases and requirements for extending fiber access over existing local copper infrastructure. This work will help telecoms operators to offer fiber-like speeds on their existing copper infrastructure where the installation of fiber is not yet economical. Work continued on WT-301 Issue 3, which includes architectures and requirements for FASTBACK - copper backhaul from a Distribution Point Unit (DPU) using bonded Gfast.

ID-337 Issue 2, Amendment 1 is taking shape. This covers the addition of certification of the 106b Gfast profile. This document is on fast track for technical review in the third quarter.

Together with BUS, work progressed on performance testing of in-premises video support over Wi-Fi (WT-434). This will help service providers deploy equipment to give a better quality of experience for their end-users.

To gain further insight into what the Physical Layer Transmission Work Area is doing, visit: <https://wiki.broadband-forum.org/display/BBF/Physical+Layer+Transmission>.

A video summary of the latest work in PHYtx can be seen [here](#).

### **SDN/NFV Work Area restructures key document to improve time to publish**

- **Target:** To drive the migration of SDN and NFV into broadband networks to facilitate the agile deployment of new customized distributed broadband services and applications.
- **Progress:** vOMCI (WT-451) showed good progress on the enthusiasm generated by the interim meeting. The CloudCO Migration topic (WT-408) refocused its efforts to speed delivery of the TR and committed to deliver an accompanying white paper to explain its importance to the industry.
- **Outcome:** A new work topic proposal was discussed within the Metro Computing space. It was agreed to progress this to a formal request to identify the scope and key deliverables.

The SDN/NFV Work Area currently has nine separate projects in flight. Following discussion in the meeting it has been possible to agree some target dates for publication of the major projects.

WT-408 – CloudCO migration is a major topic of importance to the industry and the Broadband Forum is one of the few, if not the only place where migration is being addressed. It was felt that the Work Area needed to accelerate the publication of this work and following a discussion at this meeting, the group agreed a way forward to achieve this and generate a white paper that will help explain the key messages.

WT-451 – The group was also able to agree a schedule for the publication of the vOMCI project, which is linked to OB-BAA and Issue 2 of TR-385 from the FAN group.

The vOMCI project has also agreed that there will be a reference implementation in conjunction with the OB-BAA project and this will be tested by the Open Broadband Labs.

Additionally, the group discussed a proposed value proposition for the Open Broadband Labs and suggested some key additions. This will be used to generate marketing material to promote the labs to the rest of industry. An update from the European Open Broadband Lab on its status was also provided.

The work on the new Issue 2 of the Fixed Access Network Sharing (TR-370) report that was agreed at the last meeting has progressed and now has an agreed target to publish before the end of the year. This aligns that document with others in the CloudCO project.

Four of the Work Area's Application notes (APPN-441- "Converged Core as a Service", APPN-442 – "Value Added Services (VAS) based on NERG", APPN-445 – "Monitoring, Diagnostics and Optimization in a Residential Broadband System" and APPN-447 – "NERG Overlay LSL with vG\_MUX PNF") were approved for external publication. The other five projects have continued with steady progress.

The Work Area has also requested industry volunteers to participate in the CloudCO demo that will take place at the Broadband Forum Interop Pavilion at the 2019 Broadband World Forum which will be held in Amsterdam, 15-17 October. If this is of interest, please see above for further details.

More information about the SDN/NFV Work Area can be found at: <https://wiki.broadband-forum.org/display/BBF/SDN+and+NFV>.

A video summary of the latest updates in the SDN/NFV work area can be seen [here](#).

### **WWC now "deeply engaged" with 3GPP for FMC**

- **Target:** Address the needs of converged operators, which have both wireline and mobile networks deployed and are in a position to leverage all their assets with combined subscriber offerings.
- **Progress:** The Wireline-Wireless Convergence Work Area (WWC) has started populating the documents that will provide the normative specifications for the equipment that will connect wireline to the 5G core and the Customer Premises Equipment (CPE) it will serve.
- **Outcome:** Complete solutions to FMC will be delivered in the release 16 timeframe as originally planned.

Work in the WWC Work Area is now increasingly focused on the technical details that require specification, addressing the needs of converged operators with both wireline and mobile networks deployed who are in a position to leverage all their assets with combined subscriber offerings. This work will allow converged operators to provide a uniform experience to their customers irrespective of the access or appliance they are using. This will be supported by a common and streamlined back office and control plane.

On the journey to making this happen, the study work on 5G fixed access concluded at the Q4 meeting. Broadband Forum and 3GPP are now deeply engaged in ensuring the myriad of technical details required to generate detailed specifications are addressed.

Broadband Forum is taking an important role in developing 5G, making recommendations for the connection points between the fixed and 5G mobile core networks in order to drive core convergence.

Joint sessions were held across the Technical Committee examining other aspects of 5G where Broadband Forum's expertise could be applied. In particular, with BUS, which saw the go forward plan to execute CPE changes for FMC firmed up. This will enable USP, and its predecessor, TR-069, to also contribute to the value proposition of FMC and 5G. SDN for 5G (known as CUPS or control user plane separation) is another important topic under intense exploration. This will greatly enhance the deployment options available to carriers that embrace 5G and the overall transition to NFV.

No aspect of convergence has been left unexamined, including ensuring the security of the converged network is adequate for all foreseen challenges that lie ahead. In parallel, the group is ramping up technical education efforts with a first Marketing Document (MD) on migration, planned for completion by Q3 and with further MDs envisaged.

WWC is now settling into the normative phase of this work with the specifications set to be finalized by the end of 2019.

For more on the WWC Work Area, please see: <https://wiki.broadband-forum.org/display/BBF/Wireline-Wireless+Convergence>.

A video summary of the latest updates in the WWC Work Area can be seen [here](#).

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### **Join broadband pioneers at Broadband World Forum!**

Following another successful show in 2018, Broadband Forum is once again bringing its hugely popular Interoperability Pavilion to Broadband World Forum, taking place in Amsterdam, The Netherlands, October 15-17, 2019.

Now in its 19th year, Broadband World Forum provides the perfect opportunity to connect with the entire fixed network ecosystem and bring the latest broadband technologies together.

As an organization at the leading edge of broadband developments and trends, Broadband Forum members are encouraged to take part in the Interoperability Pavilion – and will gain access to a discounted rate for their pod. The first ten applicants will also receive a full access delegate pass for the conference.

“Exhibiting at Broadband World Forum is an excellent opportunity to position your company as an innovator in the space and provides the ideal event to meet potential partners, learn about current challenges, and get a 360-degree view of the industry in one place,” said Geoff Burke, Broadband Forum Chief Marketing Officer.

Anyone interested in taking part in the Interoperability Pavilion should contact Tamas Szuts at [tamas.szuts@knect365.com](mailto:tamas.szuts@knect365.com) or on +44 (0) 207 017 4260.

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**Welcome to new and returning members!**

Since the last quarterly meeting we have welcomed a host of new members, including dot11 Labs, Metaswitch, Plume, SIDN and Telecom Argentina.

Are you interested in becoming the next member of the industry's leading standards body in defining Broadband Networks? Broadband Forum membership will not only accelerate your company's progress but enable you to become a key influencer in developing 5G, the Cloud, the Connected Home and Access Networks.

To learn more about the benefits of Membership, please contact Rhonda Heier, Membership Development Manager, at [rheier@broadband-forum.org](mailto:rheier@broadband-forum.org).

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**Broadband Forum in the news**

It has been a busy few months for Broadband Forum as it prepares for its [UFB B BAsE Seminar](#), with its world-class line-up of speakers already receiving a great response from both the media and industry delegates.

The launch of our [OB-USP-Agent implementation](#) also received exceptional coverage across the media, with publications [Advanced Television](#), [Broadband World News](#) and [TelecomTV](#) jumping on the news.

More recently, a news release on the influx of new members that we have received, which has been driven by our Connected Home, 5G and broadband experience initiatives, was issued. Momentum behind our Connected Home work has also gained further pace, with the publishing of our Market Update: '[M U-461: Realizing the Promise of the Connected Home with Broadband Forum User Services Platform \(TR-369\)](#)'.

As part of our efforts to raise awareness of our widening portfolio of work, numerous members of the Broadband Forum have also made contributions to well-known publications over the past few months. Intelligent CIO [featured a piece on OB-BAA](#) and how it enables migration to cloud-based networks, which will in turn, drive digital transformation. Further reiterating Broadband Forum's presence in the Connected Home arena, IoT Agenda also [hosted a piece on USP](#) and how it is delivering on the promise of the Connected Home.

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Events Calendar

**2019 Broadband Forum Meetings**

Don't forget to save the dates for this year's meetings:

- 2019 Q3 Meeting: September 2-5 – Milan, Italy
- 2019 Q4 Meeting: December 2-5 – Panama City, Panama

Sponsorship opportunities are available for Broadband Forum's 2019 quarterly meetings.

Sponsoring a meeting is a great way to highlight your company and exhibit your company's innovation in the broadband industry – including demonstrations or prototypes – while showing your support of Broadband Forum. Opportunities vary and can be customized to accommodate a variety of budgets.

Please view the list of our standard sponsorship packages and benefits at: <http://wiki.broadband-forum.org/display/BBF/Sponsorship+Opportunities>.

If you are interested in sponsoring a meeting, please contact Rhonda Heier at [rheier@broadband-forum.org](mailto:rheier@broadband-forum.org).

Other dates for your diary:

- SDN NFV World Congress: October 14-17, The Hague, The Netherlands
- Broadband World Forum: October 15-17, Amsterdam, The Netherlands
- Broadband Forum BAsE Workshops: October 15, Amsterdam, The Netherlands
- BAsE North America: October 26, Las Vegas, NV, USA
- Total Telecom Congress: October 29-30, London, UK

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**Contact information**

Questions or ideas? Contact the [Broadband Forum](#) on +1 510.492.4020 or email [info@broadband-forum.org](mailto:info@broadband-forum.org).

