broadband forum

Shaping the Future of Broadband

WELCOME TO THE BROADBAND FORUM QUARTERLY NEWSLETTER

Your quarterly resource for updates on recent activities and our most critical work and focus areas.

A Word from our CEO

This virtual Q4 is the 54th quarterly meeting I have attended and, whilst it will not be my last, it will be the final one for me as CEO. It has been an honor and privilege to serve the broadband industry through some very exciting times.

At the time of my first meeting, in Athens in 2006, we were known as DSL Forum and became Broadband Forum when DSL Forum joined with the IP/MPLS Forum. During my time of leadership at Broadband Forum, total fixed broadband users have risen from below 300 million to more than one billion. I have seen the broadband community become truly global, witnessed the birth of the Internet of Things and seen connectivity become considered as the essential fourth utility alongside water, gas and electricity.

We have successfully launched Open Broadband software projects, several device Certification programs and fused together Open Standards with Open Source. The Forum's work continues to be cutting edge and groundbreaking for convergence, cloud services, service management, Wi-Fi, testing, certification and software. YANG for broadband management has become a key expertise and Wireless Wireline Convergence and SDN/NFV have become important workstreams for the Forum. Marketing has transformed from speaking at other organizations' events in 2006 to now holding our own BASe workshops and hosting our own independent event, UFBB each year – in 2020 we held over 15 events with more than 7500 registrants.

Fixed broadband continues to play a pivotal role in our home and work lives and as we close the doors on an unprecedented year, but we can look back with pride at how the whole industry robustly combated and adjusted to the terms of the pandemic. Broadband Forum continues to act as the collective voice to influence standards and the appointment of Mike Talbert from Verizon and Weiqiang Cheng from China Mobile as new Vice Chairs in the Service Provider Action Council (SPAC) brings together the global Service Provider community. Congratulations and good luck both.

It is with great pleasure that we welcome Ken Ko back to Broadband Forum as he steps into his new role of Managing Director and Craig Thomas has been promoted to VP Strategic Marketing and Business Development. I am happy to be leaving the organization in good hands and wish Ken, Craig, John Blackford, Lincoln Lavoie, Bernd Hesse and the rest of the leadership all the very best. I know they will continue to ensure Broadband Forum remains a force in the industry and are supported by an outstanding staff, Board and Steering Committee.

I have had the privilege to work alongside a great community of people past and present during my time with the organization. The future is bright, and I'll continue to follow the Forum with

great interest and pride as it moves from strength to strength. I look forward to seeing the even greater heights Broadband Forum rises to in 2021 and beyond.

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Leadership team's collaborative approach aims to broaden visibility of all of the Forum's work

As Ken Ko and Craig Thomas move into their new roles respectively, Ken paid homage to the 14 years of success that Robin had at Broadband Forum. Looking ahead, Ken and Craig highlighted the collaborative approach for the new leadership team that will pay dividends in the future. While Ken is responsible for the operations and technical work of the Forum, and Craig is responsible for marketing and Business Development, they will take a shared approach with regard to strategy.

Ken added: "I am quite excited by the challenges this new role provides. Craig and I are working closely with each other on strategy development and execution, with each of us bringing our complementary strengths to the table – Craig's marketing and business development background combined with my background in technology".

"I look forward to working with the Technical Committee across all of the Work Areas, as well as with our Open Broadband projects. We have a great support network here with the fantastic staff that keeps the Broadband Forum operating seamlessly. More than anything else, it is great to once again be working together with the phenomenal individuals that participate in the Forum."

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Record year for open standards supports record growth in global fixed broadband subscriptions

A record year for the development of industry-wide standardized solutions and technical specifications (Open Standards), and open-source technology projects (Open Source), 2020 saw the Broadband Forum continue to support phenomenal levels of global growth in the number of fixed broadband subscribers.

As an ever-greater percentage of the world's population come online at an ever more rapid pace, the importance of standards also grows – helping developers to bring new products and technologies to market and helping service providers bring them online faster. But the speed at which standards themselves are developed needs to keep up too. That's why the Broadband Forum has become a driving force behind the acceleration of the combined use of both Open Source technology and Open Standards.

In 2020 the Forum published 25 technical reports, 14 application notes, test plans, marketing reports and market updates and had 24 new members and observers in attendance. In an unprecedented year, it held five vBASe events virtually covering all corners of the globe, and in addition over 20 separate virtual sessions in its educational webinar series, which addressed hot topics including PON, USP, 5G and convergence. Through the Cloud CO and Connected Home initiatives, the Forum showcased the strength of the organization and signified the industry-wide support which looks set to continue growing.

"2020 has been a difficult year for many during the COVID-19 pandemic, but the broadband industry has risen to the challenge to address the heightened network usage," said Broadband Forum Chairman, John Blackford. "As we look to the future, the Forum will continue to combine standards, innovation, and education to unlock the potential that broadband promises."

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New vice chairs announced as Broadband Forum strengthens the Service Provider Action Council

Two new vice chairs have been appointed to the Broadband Forum's Service Provider Action Council (SPAC) as was announced at the industry's leading organization's Q4 meeting. Mike Talbert from Verizon and Weiqiang Cheng from China Mobile will help the group continue to provide critical direction on standards development and operator engagement.

Broadband Forum's SPAC was created to ensure that Service Providers' voice and requirements stay front and center to all broadband work, accelerating time-to-market and maintaining relevancy and value. SPAC chair Mauro Tilocca (TIM) said: "It has been a pleasure to be able to bring in two people with the level of leadership, expertise and experience Weiqiang and Mike have within their fellow Service Provider community."

"Their input will be fundamental to the continued evolution of the Service Provider Action Council and help ensure that the work of the Broadband Forum is directly related to the real needs of Service Providers across all corners of the globe. Their global vision of our market, regional knowledge, and direction will only encourage even more Service Providers to join SPAC and drive the demands of our industry into our wider broadband industry work," Mr Tilocca continued.

Next year, while evolving in response to a rapidly changing sector, the Council will continue to focus on providing the use cases and a common Service Provider voice that influences and drives the Broadband Forum's Open Standards and Open Software work. Key areas of focus in 2021 will include the Connected Home, edge / core evolution, wireless and wireline convergence and the Software Defined Cloud (SDC).

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Nokia demo TR-459 specified BNG Control and User Plane Separation (CUPS) at Q4 meeting

Kenneth Wan and Bert Todts from Nokia showcased a demo on Broadband Forum's TR-459 specified Broadband Network Gateway (BNG) Control and User Plane Separation (CUPS) with Packet Forwarding Control Protocol (PFCP) during the Q4 meeting. The demo addresses demand placed on BNGs and the challenges in control place and user plane scaling. CUPS is a very popular topic within Broadband Forum and the demo provided answers on what CUPS is, what its benefits are, how it works, and whether PFCP really works for Fixed Wireline Access.

The presentation covered the BNG CUPs architecture as defined in TR-459, a basic introduction to the PFCP and the demo addressed the two most popular use cases of Dynamic Host Control Protocol (DHCP) and Point-to-Point Protocol over Ethernet (PPPoE). Watch the demo here: https://www.broadband-forum.org/meetings-and-events/nokia-demo-bbf-tr-459-specified-bng-cups-with-pfcp.

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The Board of Directors nominations are now open

The Broadband Forum leadership elections will take place at the 2021 Q1 meeting and nominations are due by 22 January with the election voting officially opening on 25 January. There are a total of five available seats to be filled for the Board of Directors, with each term lasting for two years.

Election results will be announced in person at the 2021 Q1 annual meeting and to the general membership via email. If you have any questions regarding the election process, please contact Member Support Manager April Nowicki at anowicki@broadband-forum.org.

For more information about being considered for a seat on the Board of Directors, visit: https://wiki.broadband-forum.org/display/BBF/2021+Board+of+Directors+Election.

Following the Work Area Director elections, the following appointments were completed for two-year terms commencing from 2021:

- Dave Sinicrope – ATA Work Area Director
- John Blackford – BUS Work Area Director
- Jason Walls – BUS Work Area Director
- Marta Seda – FAN Work Area Director
- Samuel Chen – FAN Work Area Director

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vBASe Australia rounds off a successful year

The final quarter of the year has been extremely busy for BASe events with Broadband World Forum, vBASe North America, UFBB BASe, vBASe Australia and FTTH Council Europe. Broadband Forum rounds off a successful year of BASe with its final vBASe Australia session on December 15 in partnership with NBN.

Marking a total of 16 vBASe sessions during 2020, and with registration, on average, in excess of 400 per event and attendance of between 200-330 companies from 40-65 countries per event, the BASe series has been a triumphant success. The first-ever virtual demo video was hosted at Broadband World Forum demonstrating the evolution of its CloudCO project and gaining 320 streamed views. A panelist workshop session on the Connected Home, along with a live Q&A, was also held and attracted more than 300 live and download viewers.

vBASe North America based on the theme of “2020 Lessons, 2021 Reality” involved five vendor technology panelists and had more than 300 registrants. Impressively, vBASe UFBB saw a 300% increase of registrations compared to the 2019 meeting. The first-ever virtual UFBB 2020 was very successful and saw 18 panelist sessions on the theme of ‘The Technology Leaders’. Broadband Forum’s work has extended to all corners of the globe, with vBASe Australia sessions providing operator updates, Broadband Forum and NBN work updates and a vendor vision day.

We just want to extend our thanks to the BASe sponsors as we look ahead to an even more impressive 2021!

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Work Area Updates

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 access to Broadband Forum tools and access your account using your company email address.

ATA ends 2020 by beginning new work

Target: The Access & Transport Architecture Work Area maintains primary architectural work of the Broadband Forum. This work reflects the control, management and data plane aspects of the Broadband Forum's defined and new architectures. These architectures are augmented to leverage new industry practices, while protecting the investment in broadband networks already deployed.

Outcomes: MD-452.4 released for publication pending Board approval; WT-459.3 IPTV Multicast for DBNG started; Fixed Only Access DBNG Alternative started.

Progress:

The Performance, Experience, Application Testing (PEAT) Project Stream

Work continues on QED, specifically:

- WT-452.2 Quality Attenuation Measurements using Active Test Protocols - In progress (CONTRIB-22309)
- WT-452.3 QED Quality Attenuation Conformance Testing - In progress (CONTRIB-22147)
- MD-452.2 Use of DeltaQ to Manage Customer SLA (QED) - In progress (CONTRIB-22309)

MD452.4 QED Uses in Lab Evaluation & Network Design – was wrapped up during this meeting (CONTRIB-22449) and will be published pending Board approval to waive final ballot.

Mobile Transport and Routing

Progressed both:

- WT-521 5G Transport Networks (architecture and requirements) - In progress (CONTRIB-20551).
- WT-522 Mobile-Transport Network Slice Instance Management Interfaces (MMI) - In progress (CONTRIB-21582)

WT-522 will align with IETF work on network slicing.

DBNG

The ATA Disaggregated BNG work continued on the existing projects and the group started two new projects. Work has started on WT-459.3 IPTV Multicast for DBNG. A new project was also started on a Fixed Only Access DBNG Alternative started. The Closing Plenary announced that the ATA Disaggregated BNG work was consolidated under a new Access Architecture (AA) PS.

The new PS will be reflected in Jira and the wiki pages early in 2021.

For more information on ATA Work Area's ongoing work, visit: https://wiki.broadband-forum.org/display/BBF/Access+and+Transport+Architecture.

All aboard! BUS set to release TR-398 Issue 2 in Q1

Target: Complete WT-398 Issue 2 in preparation for certification program.

Progress: Coalescing around final performance numbers for 802.11ax benchmarks.

Outcome: On track to release TR-398 Issue 2 in Q1 2021.

The Broadband User Services (BUS) Work Area is finalizing its work on the next issue of its Wi-Fi In-Premises Performance test suite defined in TR-398. Issue 2 will include performance metrics for Wi-Fi 6, and will be the basis for an upcoming certification program for service provider grade in-home Wi-Fi. It's moving quickly and is on target for release in Q1.

Meanwhile, the successful release of the Device:2.14 data model and TR-124 Issue 6 provides a standardized management interface as well as design requirements for 5G based fixed access home gateways. This provides developers with a clear path for building 5G fixed gateways for service providers that will work with TR-069/USP management systems while integrating with the 5G core. With such a monumental achievement behind them, the group is moving on to the next versions of Device:2 (TR-181) and USP to add new functionality and further solidify the User Services Platform as THE interoperable ecosystem for the Connected Home.

Common YANG kicks off "YANG Advisors" to review new specifications

- **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:** Work is progressing well on future Amendments of WT-383 on a broad range of topics including Software Management, statistics, transceiver management and support for IEEE Connectivity Fault Management (CFM). There was a joint review with the SDN/NFV Work Area on YANG Modules for Access Network Map & Equipment Inventory (WT-454). The YANG Advisors will review these YANG modules before the project moves to Final Ballot, dependent on the publication of common types in WT-383 Amendment 4.
- **Outcomes:** Start 4-week review on all accepted pull requests. Common YANG will lead the work on a YANG model for Voice over IP (VoIP); kick-off of the "YANG Advisors" group that will review Broadband Forum YANG models for adherence to Broadband Forum best practices defined in OD-360.

The Q4 virtual Common YANG meeting was again well-attended and brought together the cream of the crop of YANG experts, all working very hard to define new YANG models that are to be used for efficiently managing ultrafast broadband over VDSL, FAST and Passive Optical Networks (PON).

Work is continuing for Amendment 4 and beyond of Common YANG Modules for Access Networks (WT-383). Progress was made on a broad range of topics including Software Management, interface and Quality of Service (QoS) counters, enhancements to the management of transceivers and the integration of the IEEE CFM OAM YANG model with the Broadband Forum YANG model. Moreover, the group will lead the effort to define a YANG model for VoIP, in close concert with the FAN Work Area. All these further enhance the capabilities to manage and troubleshoot broadband networks using fiber OLTs or copper DPUs.

Common YANG has established a team of "YANG Advisors", a group of volunteers responsible for reviewing YANG data models created within the Broadband Forum, ensuring consistency and adherence to Broadband Forum best practices defined in OD-360. This group is overseen by the Common YANG Work Area Directors.

Moving forward, Common YANG also expects to receive further contributions on Amendment 4 of the YANG Modules for Fiber-To-The-distribution-point (FTTdp) Management (WT-355).

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

Productive Q4 for FAN

FAN Fiber Access Networks

Target: The Fiber Access Network (FAN) Work Area specifies and maintains PON architecture and nodal requirements, PON abstraction and mobile backhaul requirements. It is also responsible for PON test suites related to ITU-T PON Conformance, and compliance test plans related to XGS-PON, NGPON2 and PMD Layer. Lastly, it is responsible for IEEE PON YANG and ITU-T PON Layer specifications.

Progress/Outcomes:

- The unassigned Project Stream sent out for Straw Ballot: WT-280 Corrigendum 1 Issue 1 ITU-T PON in the context of TR-178
- The PON Management Project Stream has started to work on: WT-385 ITU-PON YANG Issue 2 Amendment 1
- The Interop Project Stream has started: DTP-247 Issue 4 Corrigendum 1: G-PON & XG-PON1 & XGS-PON ONU Conformance Test Plan

Outcome: WT-280 Issue 1 Corrigendum 1 Straw Ballot resolution period was completed during the virtual meeting. A future teleconference will review the Final Ballot version of this Working Text.

For more on the FAN Work Area's ongoing work, please see: https://wiki.broadband-forum.org/display/BBF/Fiber+Access+Networks.

open broadband

OB-BAA – Proof that collaboration between Open Source and Open Standards advances and accelerates the adoption of interoperable, standardized solutions across the industry

The Open Broadband – Broadband Access Abstraction (OB-BAA) project team recently published the fourth major public release of its Open Source reference implementation of the CloudCO's BAA layer. This included a reference implementation of Broadband Forum's vOMCI specification (WT-451) as well as the ability for access nodes to intercept and the BAA layer to redirect the control and user plane packets that can be used in traffic steering and other SDN applications.

Actively engaged with the standardization activities within Broadband Forum, the OB-BAA project team is helping accelerate the publication and adoption of the Forum's SDN/NFV specifications for Access Networks. The Work Area is contributing major parts of its OB-BAA system description for consideration in Broadband Forum's work on Access Network Abstraction, Softwarisation and Disaggregation in draft specification WT-484. Similarly, the reference implementation work that the OB-BAA team implemented as part of its latest release, is being fed back into Broadband Forum's vOMCI specification.

The team is also aligning its efforts with the SDN/NFV Work Area and contributing its work on Control Relay functionality for the Access Network. In addition, the team is upstreaming results into SDN/NFV project team's work in disaggregation of the OLT (WT-477) and CloudCO interfaces (WT-413). This work is just a continuum of the efforts that the OB-BAA Work Area has contributed towards standardization to help accelerate the adoption of interoperable, standardized solutions in the Access Network.

"The collaborative relationship we have within Broadband Forum works well. The Forum can use the Open Source projects to provide reference implementations of their specifications and the Open Source project members can use the projects as an innovation center that can feed into Broadband Forum's standardization activities. It really is a win-win situation," said Tim Carey, OB-BAA Chair.

Q4 sees OB-MAP and prplMesh continue collaboration

The Open Broadband – Multi Access Point (OB-MAP) project – together with prpl Foundation's prplMesh project – has been tackling how prplMesh data will be represented in TR-181. There is now a consensus on how to architect the TR-181 objects and parameters. Next steps include formalizing this architecture, the modeling of commands, and ensuring the architecture meets the needs of a variety of use cases (including wireline technology). The data model (and prplMesh APIs) continues to be critical for all physical layer networking technologies.

In the future, OB-MAP still expects to produce vendor extensions to the IEEE 1905.1, a specification that will provide carrier-grade capabilities enhancing EasyMesh operation in operator deployments. Once these are complete, the team will also deliver certification requirements for these Broadband Forum extensions that will ultimately lead to a certification program.

OB-USP Agent begin initial work on DUNLIN Release

Recent Accomplishments: OB-USP-Agent project team has recently published the Canary Release (Release 3), which focused on providing support for MQTT and Architecture improvements to better support OpenWRT/prplWRT and RDK-based deployments.

Current Efforts: We have started the DUNLIN Release (Release 4) and identified the scope for the project. Release 4 will focus on the completion of 'Controller Trust' support which includes the OnBoardRequest and also the ScheduleTimer mechanism. Incognito and embeDD

have helped get Release 4 off to a quick start by contributing code.

Future Plans: Publish Release 4 in the Q1/Q2 2021 timeframe.

Physical Layer Transmission publishes TP-337i3 'G.fast Certification Test plan' and TR-419 'Fiber access extension over existing copper'

Target: To help service providers deploy equipment that will provide a better Quality of Experience (QoE) for their end-users.
Progress: The next issue of the 'G.fast Certification Test plan' (TP-337i3) and 'Fiber access extension over existing copper' (TR-419) passed Final Ballot approval and are ready for publication. Technical Review comments on the related marketing draft 'Utilizing existing copper infrastructure for deployment of fiber-grade services' (MD-419) were resolved. The document is now being prepared for Final Ballot approval.
Outcome: TP-337i3 and TR-419 are ready for publication. MD-419 is ready for Final Ballot.

The Technical Review (Straw Ballot) of the Marketing Draft 'Utilizing existing copper infrastructure for deployment of fiber-grade services' (MD-419) was finalized and the document is prepared for Final Ballot.

MD-419 provides a top-level view on what 'Fiber To The Extension Point' (FTTep) can deliver and provides an answer to five key questions that telecom operators and service providers may have regarding the FTTep architecture. FTTep can be used to offer fiber-like speeds and experience on any existing copper infrastructure where the installation of fiber to the end-users' premises is not yet viable or economical.

The associated TR-419 goes deeper into the various FTTep architectures and technical implementation with various technologies.

The test plans 'G.fast Performance Test Plan Issue 2' (WT-380) and 'G.hn Access Performance Test Plan' (WT-476) were further developed. Special attention was placed on making sure the test setups were re-useable between the two test plans.

Initial G.fast Coax performance measurements are being collected, with the goal of publishing Issue 2 of WT-380 in the near future. This issue focuses specifically on G.fast Coax performance requirements.

Additional cable models for the Australian region have been adopted for an appendix to TR-285i2 'Broadband Copper Cable Models'.

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.

SDN/NFV continues to raise the bar at Q4!

- **Target:** To drive the migration of SDN and NFV into all aspects of broadband networks to facilitate the agile deployment of new customized distributed broadband services and applications for operators with greater operational efficiency and lower cost.

- **Progress:** The Cloud-based-Central Office (CloudCO) project encompasses an expanding set of deliverables addressing Reference Architecture, Interfaces specifications, Software reference implementations, Coexistence and Migration and exemplary implementations and testing. Some of these activities involve other Broadband Forum Work Areas and this will continue to expand.

- **Outcomes:**

The SDN/NFV Work Area continued to progress work on a number of specifications:

- "NETCONF Requirements for Access Nodes and Broadband Access Abstraction" (TR-435) is in Final Ballot.
- "Test Cases for CloudCO Applications" (WT-412), "Access & Home Network O&M Automation/Intelligence" (WT-436) and "YANG Modules for Network Map & Equipment 17 Inventory" (WT-454) concluded Straw Ballot comment resolution and they are going to Final Ballot process.
- "vOMCI for New Access Nodes" (WT-451) is continuing Straw Ballot comment resolution.
- "Definition of interfaces between CloudCO Functional Modules" (WT-411) started the Straw Ballot comment resolution process and the plan is to complete before the Q1 2021 meeting.

"CloudCO Enhancement - Access Node Hardware Disaggregation" (WT-477) and "Access Network Abstraction, Softwarisation and Disaggregation" (WT-484) are working from the definition of the flow control interface. This work also has an impact on the revision of "SDN Management and Control Interfaces for CloudCO Network Functions" (WT-413i2).

"Metro Computing Network" (WT-466) highlights the new capabilities of edge computing and how it impacts multi-service broadband networks. The Metro Edge Computing project is rethinking the network architectural edge and routing to extend an NFVI interconnect which may reduce Operator OAM and enable a network of edge computing islands. The major discussions were on revising the purpose and scope and how to integrate MCN architecture into the CloudCO architecture.

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

WWC puts its foot down to accelerate 5G work

- **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 WWC Work Area's specifications for CPE and the associated management data model have now been published or are in the process of being published. These are TR-124 Issue 6 (Functional Requirements for Broadband Residential Gateway Devices) and TR-181 Issue 2 Amendment 14 (Device Data Model). Coupled with TR-470 (5G Wireless Wireline Convergence Architecture) and TR-456 (Access Gateway Function Functional Requirements) it

defines a system for convergence and a roadmap for things to come. This completes the initial phase of work for WWC and positions the group to start working on the next phase. This will encompass increased functionality, more deployment options and increased specification robustness. This will build on the foundation that has been laid in the development of the initial specifications as many of the hard problems of adapting wireline to 5G have been addressed.

- **Outcomes**: Complete solutions to WWC will be delivered in the Release 16 timeframe.

Work in the WWC Work Area has transitioned from completing the basic set of specifications to focusing on topics that bring more value to 5G for wireline and provide operators with increased flexibility, revenue potential and deployment options. The goal is to increase the service capabilities of the network to allow operators to fully leverage convergence of their networks while at the same time giving them more paths to transition their networks from legacy to 5G. 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.

Broadband Forum is now studying how to extract more value from the available feature set from 3GPP in the context of expanding legacy device support, being able to monetize the additional network functionality 5G brings to the table and expanding the overall addressable market for convergence.

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.

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

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Welcome to our new and returning members!

The virtual Q4 meeting had 274 registered attendees and the Forum welcomed 19 guests and 51first-time attendees. Interlink, Net+, Pacific Broadband Networks and Snom were unveiled as new members. There was also nine new guest companies from potential, new and upgrading members including ACMA, Chorus, Genew, Gemtek, Humax, OI, Telkom, Universidade Federal de Santa Maria and Wistron NeWeb Corp.

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.

We have a range of membership options for companies of all sizes, from startup companies to large corporations and not-for-profit organizations. Our new Regional Operator Membership category has further opened participation, take a look for further details of the access level privileges, benefits and requirements.

To learn more about the benefits of membership, watch the video interview with Rhonda Heier, Director of Membership Development, as Rhonda discusses the value of the Broadband Forum membership here or email rheier@broadband-forum.org for more information.

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The Forum continues to help shape the future of 5G

5G continues to gain momentum in the Broadband Forum with the publication of three standards to accelerate global 5G adoption with the landmark specifications covering the entire ecosystem including Fixed Mobile Convergence, the Access Gateway Function and Customer Premises Equipment to help operators unlock the full potential of 5G. Building on the Forum's mission to drive a future consolidated approach to 5G, the standards will reduce development time, as well as capex and opex, from the traditional disparate fixed broadband and 5G networks. Ultimately, they will deliver a common and managed broadband experience to the end-user whatever the final connectivity technology. The news was also covered by 3G4G blog which is well-respected for leading edge mobile topics.

At the beginning of the final quarter of 2020, a feature article from Broadband Forum CEO Robin Mersh was published in SCTE Broadband Journal discussing the Forum's role in standardizing the transport architecture and how operators can harness converged networks in the new era of 5G. Mersh highlighted the importance of seamlessly integrating wireline and wireless convergence at all levels of the broadband ecosystem and supporting this with an enhanced transport network to handle the increased growth of network traffic.

In addition, a feature published in 5G Technology World from David Allan, Work Area Director for Wireless-Wireline Convergence and Greg Dalle, 5G Project Stream Lead discussed the importance of using the 5G Core as the common core where the control plane and user plane can span across mobile and fixed networks. The article also highlights the Forum's Network Transformation Toolkit that was developed in close collaboration with 3GPP and 5G Core support for the Connected Home. Allan also discussed the advancement in Fixed-Mobile Convergence and the publication of the first set of 5G specifications in an interview with TeleSemana as part of 5G&TD 2020 Latam Summit.

Broadband Forum's latest 5G video with Allan and Christele Bouchat, Innovation Group Director discuss what is coming up in the next phase of 5G work and what opportunities this has opened up for the industry - https://www.broadband-forum.org/christele-bouchat-innovation-group-director-david-allan-wwc-work-area-director-offer-a-5g-update.

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Broadband Forum in the news

A feature article on the importance of network automation in helping achieve higher bandwidth included a comment from Craig Thomas, Vice President of Strategic Marketing and Business Development in the Autumn edition of Fibre Systems. Thomas highlighted the increasing demand for high bandwidth-consuming applications and that operators and vendors across the world need to become integrated and involved in the development of standards to ensure the huge potential of automation is delivered upon.

As part of the annual survey examining the world of Customer Premises Equipment (CPE), Euromedia Magazine spoke to Broadband Forum and a range of industry practitioners to define the role of CPE in an increasingly cloud-based environment, in light of the pandemic. Thomas provided answers addressing the rise in home working and the need for CPE to evolve, interesting usage patterns during the pandemic, the role service provider CPE plays in monetizing the home and whether there is still a need for a service provider to have a physical presence in the home.

In the Fibre Yearbook 2021, Bernd Hesse, President and Marketing and BASe Chair of Broadband Forum discussed how Broadband Forum is improving user experience with its new specifications and how the BBF.247 GPON certification program is supporting the success of

GPON technologies and deployments while helping the industry expedite fiber network rollouts.

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Events Calendar

Broadband Forum Meetings and BASe Events

- Q4 2020: vBASe Australasia, 'Universal Broadband Reality Check – 2021 Broadband Technology Trends', December 15, 2020, Virtual
- Q1 2021: Q1 Meeting, March 22-25, 2021, Virtual
- Q2 2021: Q2 Meeting, June 7-10, 2021, Virtual
- Q3 2021: Q3 Meeting, August 30 – September 2, 2021, Antwerp, Belgium
- Q4 2021: Q4 Meeting, November 30 – December 3, 2021, Melbourne, Australia

Sponsorship opportunities are available for Broadband Forum's 2021 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: https://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.

Other industry event dates for your diary:

- Convergence India: March 24-26, 2021, New Delhi, India

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Contact information

Questions or ideas? Contact the Broadband Forum on +1 510.492.4020 or email info@broadband-forum.org.