

A Word from our Leadership Team

It is now two years in a row that the second of our quarterly meetings has had to be held virtually. While it does seem like a long time since we all met in Budapest in early 2020, attendance levels for this event remained high. Special thanks must be given to our hardcore North American leaders and members where sessions didn't finish until 3 am or even later!

We would like to thank all members who contributed to our recent survey. We had a great response, which provided both a validation of our work and some great insights on how we can work even better. It was especially pleasing to see that over 93% of respondents say that they feel the value of their Broadband Forum membership to be at the right level or of great value to them.

That value and the increasingly crucial role global open standards are playing in driving forward the broadband industry is clear from the surge in new members we've welcomed since the start of 2021. We are pleased to have been able to welcome marquee large global brands, associate partners, service providers and innovative new technology vendors into the fold and look forward to them contributing to our critical work in 5G, Connected Home, Cloud and the Next Generation of Access technologies.

Part of the attraction to becoming a part of the Broadband Forum comes from the volume of work contributions being made by our members. In the last quarter alone, we saw a significant level of technical collateral being delivered including 6 Technical Reports, 1 Test Plan and 2 Marketing Reports. Also, in this quarter we held multiple BAsE Fiber Access webinars, as well as knowledge-based webinars from the Connected Home Council and the Wireless Wireline Convergence Work Area plus our first ever State of Broadband Summit. We also participated in 3 Industry 3rd party events.

All of our Work Area groups maintained their exciting progress during Q2 and built on the momentum from the previous quarterly meeting. As the BUS Work Area sets its sights on the "year of USP", the group remains on track to publish USP 1.2 later this year. The Common YANG Work Area has completed all work on Amendment 4 of the Common YANG Modules for Access Networks (TR-383) to ensure service providers can efficiently manage a range of broadband services supported over any access technology, including VDSL, FAST and Passive Optical Networks (PON). The Open Broadband projects made notable strides including OB-USP-Agent project team completing its work on the Dunlin Release. PHYtx Work Area published the third version of the 'Gfast Certification Test Plan' and SDN/NFV Work Area received great input from the OB-BAA project team on a number of specifications.



There is a bumper calendar of events planned over the rest of the year. In Q3 and Q4 we will organize several webinars and our recognized UFBB event will once again be held virtually. There will also be a number of 'in-person' industry events arranged. For details, please see the list of upcoming events on the Broadband Forum website.

Sadly, owing to the continued international Covid uncertainty, the remaining quarterly meetings of 2021 will be held virtually too. While we all miss being able to meet in person, it only makes us all look forward to being able to see each other face to face in 2022. Until then, a big thank you to all those who help make these virtual events possible and to everyone who participated.

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Broadband Forum welcomes surge of new members

The increasingly crucial role global open standards are playing in driving forward the broadband industry is behind the recent growth in new members of the Broadband Forum. This follows a successful 2020 that saw a rise in worldwide participation and industry interest in the group and highlights the leading open standards organization's continued influence and support.

Broadband Forum continues to see a surge of new companies from around the globe. This year [Airties](#), [Alethea Communications Technologies](#), [APS Networks](#), [Ciena](#), [General Mobile](#), [Genew Technologies](#), [Google Fiber](#), [H3C](#), [Harmonic Inc](#), [Heights Telecom](#), [Hitron Technologies Inc](#), [KPN](#), [Liberty Global](#), [Merocom Solutions](#), [Microsoft](#), [RDK](#), [Technetix](#), [Tellabs](#), [TP-Link](#), [Travelping GmbH](#), and [Vecima Networks Inc](#) have been welcomed in the first few months of 2021.

Broadband Forum Director of Membership Development Rhonda Heier said: "The last twelve months has seen the Broadband Forum continue to make substantial strides in the most challenging times. We appreciate the service providers, vendors and influencers across the globe that are collaborating together in the Broadband Forum to drive forward our critical work in 5G, Connected Home, Cloud and the Next Generation of Access technologies."

For more information on our new members and to see the full release, click [here](#).



Thank you to our sponsor, KAON Broadband!



In its insightful presentation, KAON Broadband discussed the enablement of Open Source platforms for CPEs, and its recent work within the Broadband Forum. KAON Broadband aims to deliver carrier-grade Connected Home services and Open Source platform and services ecosystem enablement on CPE devices with better hardware, service orchestration and unified SW Quantum.

Since becoming a member of the Broadband Forum in 2017, KAON Broadband has made significant contributions to Open Standards and Open Source reference implementation. Its work was an essential part of the successful launch of the XGS-PON Certification Program last year, and it looks forward to making active and tangible contributions in the months ahead.

KAON Broadband recognizes that the work of all the members within Broadband Forum is the key driving force of the broadband sector and a notable example of this was the leadership demonstrated in its testing and certification programs.



Full speed ahead for vBAsE webinars

Continuing to build on the 2020 vBAsE session success which attracted nearly 400 registrations on average per event and more than 4,000 downloads, the 2021 series of webinars has since seen more than 60 speakers so far. The webinars are aligned within three different topics that address the challenges facing the telco and cable broadband ecosystem.

These are encompassed under the following series:

- Connected Home, IoT and User 'State of Play'
- Fiber Access 'State of Play'
- The Network and Service Delivery 'State of Play'

As part of BAsE Sponsorship, Broadband Forum's sponsors are invited to participate in its thought leadership webinar series of events that include perspectives from both service providers and technology leading vendors, solution providers and analysts.

So far this year, Broadband Forum has hosted five 'BAsE Knowledge events', consisting of two QED tutorials, two WWC updates, and a Connected Home webinar. Additionally, it hosted two vBAsE PON webinars, four 'Future of the Telco-Connected Home' webinars and its first-ever virtual Broadband 3-day summit, all taking place during Q2.

If you want to catch up on the latest Broadband Forum webinars, download the respective recording and slide decks [here](#).

Our BAsE 2021 sponsors so far include:



Broadband Forum is calling for proposals from service providers and vendors for panellist presentations, roundtable panels and video use case studies for all of our H2 2021 vBAsE and BAsE 2021 events. All proposals should be titled “vBAsE 2021 Call for Speakers” and submissions should include:

- Title of the specific listed webinar and your panellist session or presentation
- A short synopsis of the content and a bio of the presenter

Submissions should be made to: basechair@broadband-forum.org. Please also ‘CC’ Broadband Forum’s Marketing Coordinator, Tiffany Cracknell, on all proposal submissions at tcracknell@broadband-forum.org.

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 - Resolving comments in every timezone



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:

1. MD-452.2 QED for creation of application SLAs - release imminent
2. WT-459.3 IPTV Multicast for DBNG - Straw Ballot comment resolution completed
3. WT-459.2 CGN for DBNG - in comment resolution
4. WT-521 5G Transport Architecture and Requirements - in comment resolution

Progress:

The Q2 meeting was based on London time but due to the COVID-19 pandemic, the meeting was virtual with North America joining into the wee hours of the morning. (... and here is where we gratefully acknowledge our APAC participants who do this regularly - cheers! and thank you!!) Despite the late/early hours, the Work Area again made outstanding progress across all Project Streams.

Access Architecture (AA) Project Stream

Of particular note was the wrap up of WT-459.3 IPTV Multicast for DBNG - sent for Straw Ballot in the Q1-Q2 ballot cycle, the group worked through and resolved all comments. The Editor is finalizing the Final Ballot version and will be posting the candidate for assessment on a conference call after the meeting. The document specifies the architecture and protocol requirements for providing IP TV multicast support in a Multi-Service Disaggregated BNG environment.

Comment resolution continues on WT-459.2 CGN for Multi Service DBNG. Contribution continues on all other AA Project Stream deliverables.

Work continues on both WT-459 Issue 2 Multi Service DBNG with CUPS and WT-487 DBNG for Wired Access. Contributions and participation are encouraged.

Mobile Transport & Routing (MT&R) Project Stream

WT-521 5G Transport Architecture and Requirements is progressing through Straw Ballot comment resolution. There were substantive discussions on adjusting the document scope which will likely generate additional contribution.

Work on WT-522 Mobile-Transport Network Slice Instance Management Interfaces (MMI) continues. Contributions are encouraged.

Performance, Experience, Application Testing (PEAT) Project Stream

As noted above MD-452.2 QED for creation of application SLA will be published imminently.

New baselines for the following work were adopted:

- WT-471i2 IP-Layer Capacity Metrics and Measurements - IETF and OB coordination
- WT-390.2 Amendment 1- STAMP requirements to support QED

Work is progressing on both of the following QED documents. Contributions are encouraged.

- WT-452.2 Quality Attenuation Measurements using Active Test Protocols
- WT-452.3 Quality Attenuation Conformance Testing

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

Membership swells for BUS as it remains on track to publish USP 1.2 this year



Target: Continued growth and support of a truly interoperable and standardized Connected Home through the User Services Platform (USP/TR-369) and key partnerships.

Progress:

The Broadband User Services (BUS) Work Area once again saw membership and participation swell from key players looking to advance the revolutionary User Services Platform for more wider use cases across the industry. The group is on target to publish USP 1.2 later this year, providing a number of clarifications and updates based on feedback from active deployments in the field. The group sees the 2021-2022 season to be the "year of USP" as more and more operators commit to the standard. This update includes continued new releases of the OB-USP-Agent Open Source reference implementation, and the associated BBF.369 test and

certification to help operators and vendors qualify their products

Alongside the upcoming release of USP comes the next version of the comprehensive data model for Connected Home products and services. Device:2.15 (defined in TR-181) is set for release in early Q3 of 2021, with a number of important updates including the modelling of DOCSIS 3.0/3.1 interfaces and better Wi-Fi statistics, monitoring, and control objects that align and enhance the elements agreed upon across industry standards bodies.

Lastly, the group began work on the next version of TR-398 that defines performance metrics for in-home Wi-Fi networks. Issue 2 is now part of the BBF.398 Certification Program, and Issue 3 will include metrics for newer Wi-Fi technology, as well as metrics for Multi-Access-Point environments and provide a holistic approach to measuring performance across all interfaces, beyond just Wi-Fi.

Common YANG reaches major milestone with the publication of TR-383 Amendment 4



- **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:** Amendment 4 of TR-383 has been published; the team agreed on how to move forward with Amendment 5 of WT-383, including Software Management and support for IEEE Connectivity Fault Management (CFM).
- **Outcomes:** The group will start a two-week review on all accepted pull requests; prepare a liaison to IEEE and ITU-T informing them on our planned Ethernet OAM alarm handling strategy.

The Common YANG Work Area has completed all work on Amendment 4 of the Common YANG Modules for Access Networks (TR-383). With this publication, existing modules are further improved, but more importantly this Amendment will become a reference to be used by the SDN/NFV Work Area related to the 'YANG Modules for Access Network Map & Equipment Inventory' (WT-454). With these modules, service providers can efficiently manage a range of broadband services supported over any access technology, including VDSL, FAST and Passive Optical Networks (PON).

It doesn't end there. The group is already at cruising speed, working on further YANG model enhancements, captured in Amendment 5 of WT-383. The group also agreed on the alarm handling strategy for Ethernet Connectivity Fault Management (CFM) OAM and will be communicating its plan to IEEE and ITU-T for feedback. Further, the work on Software Management YANG progressing has reached the final stage, with no blocking points for publication. The remaining open points will be listed and discussed in an interim call. Finally, proposals were discussed on the Access Node Control Protocol (ANCP) states and alarms. A new joint proposal is being prepared and will be discussed during an upcoming interim call.

Common YANG is also anticipating 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>.

FAN Work Area builds on momentum from Q1



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 YANG specifications.

Progress:

- The PON Management Project Stream continues WT-385 ITU-PON YANG Management Issue 2 Amendment 1 work.
- The Unassigned Project Stream continues WT-280 Issue 2 ITU-T PON in the context of TR-178 work to address requirements related to PON.
- The Interop Project Stream continues DTP-247 Issue 4 Corrigendum 1: G-PON, XG-PON1 and XGS-PON ONU Conformance Test Plan.
- The Wavelength Management Project Stream identified the need to open a corrigendum for a WT-352 Issue 2 Corrigendum 1 Inter Channel Termination Protocol (ICTP).

Outcome: No working texts were completed in Q2 (all work is in-progress).

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



OB-BAA – Ongoing collaboration between Open Source and Open Standards continues to advance and accelerate the adoption of interoperable, standardized solutions across the industry

The Open Broadband – Broadband Access Abstraction (OB-BAA) project team continued to engage with the standards development activities within Broadband Forum by developing a reference implementation for the Broadband Forum's specification for virtualized ONU management (vOMCI) in WT-451. This work is expected to be released in July 2021.

Additionally, the OB-BAA Work Area is developing Use Case stories and requirements for functions needed for Software Defined Access Nodes that include Telemetry Campaigns and ONU Authentication. The results of this work effort – which will conclude in June 2021 – is expected to be contributed back to the Broadband Forum for its consideration in specifications such as Access & Home Network O&M Automation/Intelligence Interface (WT-484) and Access Node Hardware Disaggregation (WT-477). Finally, the OB-BAA project team expects to complete an implementation of these features in its Essex Skipper release (5.0) due out in December 2021.

Take a look at the OB-BAA project's latest work here: <https://wiki.broadband-forum.org/display/OBBAA/Open+Broadband-Broadband+Access+Abstraction+Project+Home>.



OB-MAP and prplMesh collaboration produces innovative results

The Open Broadband – Multi Access Point (OB-MAP) project – together with prpl Foundation's prplMesh project – continues to refine how prplMesh data and control commands will be represented in TR-181. This effort is closely related to BUS Work Area modeling of Wi-Fi management commands, restructuring of Wi-Fi Multi AP data, and modeling of networked devices that the managed device communicates with through a variety of protocols (including IEEE 1905). A large part of the OB-MAP effort is ensuring the architecture meets the needs of a variety of Use Cases (including wireline technology). The data model (and prplMesh APIs) must meet the diagnostics and management needs of service providers that use multiple physical layer networking technologies to deliver ever-increasing broadband bandwidth and innovative services through increasingly complex home networks to end-user devices.

In the future, OB-MAP still expects to produce vendor extensions to IEEE 1905.1 (the protocol underlying Wi-Fi Alliance's EasyMesh specification) to 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 the birth of a new certification program.

For more on the OB-MAP project's ongoing work, please see: <https://wiki.broadband-forum.org/display/OBMAP/OBMAP+Home>.

OB-USP-Agent's Dunlin Release is now available

Recent Accomplishments: OB-USP-Agent project team completed its work on the Dunlin Release (Release 4) this past month, which introduces several features that were of keen interest to the community.

The first key feature was the expansion of the USP Controller Trust concepts to add support for sending the OnBoardRequest mechanism and the introduction of the Challenge/Response mechanism. The OnBoardRequest mechanism allows an already established USP Controller to instruct a USP Agent to send an OnBoardRequest notification to a new USP Controller for the purpose of initiating communications. Furthermore, the Challenge/Response mechanism takes the whole on-boarding process one step further by providing a means of elevating the new USP Controller's permissions to an appropriate level.

The expansion of Bulk Data collection mechanism to support the ability to send the bulk data report across the USP protocol as an Event Notification is the second key feature, and this is the implementation of the USP defined USPEventNotif Bulk Data Collection option. This feature allows the transmission of bulk data reports over the existing USP communications channel, which can be a very efficient means of delivering bulk data reports under certain circumstances.

The third key feature is the introduction of the Schedule Timer mechanism, which allows a USP Controller to instruct a USP Agent to send a notification message to the USP Controller at a specific time. This is important for scenarios where the USP Controller is looking to distribute the scheduling portion of a bulk operation across a section of the CPE population.

Current Efforts: The team has started planning the soon to be named Release 5. While the contents of this next release are not yet fully defined, the driving feature for the release will be the support for the WebSockets MTP.

Future Plans: The aim is to publish Release 5 before the end of 2021.

For more on the OB-USP-Agent project's ongoing work, please see: <https://wiki.broadband->



forum.org/display/OBUSPA/OB-USP-Agent+Home.

Fourth release on schedule for OB-UDPST project team

Current Progress: The OB-UDP Speed Test (OB-UDPST) project team is working towards its fourth public release on July 16, 2021. This release will have the first features for compute environment adaptation (OS limitations, clock precision limitations, and CPU power limitations) and JSON-formatted output. The project team continues to evaluate new features for the release that result from review of new material in Broadband Forum's TR-471 Issue 2, and the harmonized IETF Internet Draft on the same topic (very recently approved). The team continues to draw new participants to the project, both testers and developers.

Past Accomplishments: The OB-UDPST project team launched Release 7.1.0 (its third Broadband Forum release) on schedule: March 5, 2021. This release published a detailed OB-UDPST protocol description, which allows developers to easily understand key aspects, such as the simple set-up request and test activation interactions, the protocol support for strategic positioning of the load rate adjustment algorithm at the Server (chosen for easier update at fewer/more accessible hosts than the clients), and the efficient test stopping procedure embedded in packets during the testing phase.

Future Plans: With more developers joining the project and offering their ideas and skills, the team will likely continue work to provide results in JSON format (output), wider code portability, optimizations and additional operating system support. Like any other Open Source project, if you want new features, send developers!

For more on the OB-UDP Speed Test project's ongoing progress, please see: <https://wiki.broadband-forum.org/display/OBUDPST/OB+UDP+Speed+Test+Home>.

PHYtx Work Area on track to publish the next revision of TR-380 G.fast Performance Test Plan



Target: To help service providers deploy equipment that will provide a better Quality of Experience (QoE) for their end-users.

Progress: The third version of the 'G.fast Certification Test Plan' ([TP-337i3](#) and [TP-337i3c1](#)) has been published. Initial work was started on 'Architecture and Requirements for Home Distribution Networks' (WT-488) and 'Reverse Power Feed Testing Issue 3' (WT-338i3). The 'Performance Test Plan for use of G.hn technology in access scenarios' (WT-476) was further developed.

Outcome: The 'G.fast Performance Test Plan' (TR-380i2) is out for final approval.

WT-380i2 is currently in the Final Ballot approval phase, which closes on 15 June. This latest issue of the Test Plan provides performance targets for deployment of G.fast over coaxial infrastructure.

WT-488 addresses the heterogeneous home network infrastructure for delivering multi-gigabit services to end-users. It provides insights into typical Use Cases and services delivered over a mixture of in-home broadband and narrowband connection technologies. Understanding the

in-home infrastructure enables telecom operators and service providers to quickly, easily and cost-effectively roll-out future-proofed fiber-grade services to end-users and devices in homes and businesses.

WT-338i3 addresses the reverse power feeding over coaxial cable deployments, according to ETSI TS101 548-2. The first versions of these working texts are being drafted. Additionally, new testcases covering G.hn Access performance and throughput verification were added to WT-476. The test setup requirements of WT-476 were detailed further in alignment with TR-380. This alignment significantly reduces lab CAPEX when testing needs to be performed for both G.fast and/or G.hn Access.

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 collaborate with OB-BAA on a number of specifications during fruitful Q2



- **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 SDN/NFV Work Area continues to progress the Cloud-based-Central Office (CloudCO) project for virtualized network functions, SDN management and control and CloudCO domain orchestration capabilities in Broadband Network. The project encompasses an expanding set of deliverables addressing Reference Architecture, Interfaces specifications, Software reference implementations, Coexistence and Migration and exemplary implementations and testing. The SDN/NFV Work Area has also been reorganized into two Project Streams: “CloudCO” that includes all the activities related to CloudCO architecture and “Cloud Components” that includes all the activities related to Cloud Infrastructure not necessarily CloudCO based.

- **Outcomes:**

The SDN/NFV Work Area has received great input from the OB-BAA project team on a number of specifications and continued to progress work on:

- ‘Metro Compute Networking (MCN): Use Cases and High Level Requirements’ (WT-466) has been approved to start the Straw Ballot process.
- ‘YANG Modules for Network Map & Equipment Inventory’ (WT-454) completed the Straw Ballot process. The data models to be included into WT-383a4 have also been developed so the document can move to Final Ballot process.
- ‘vOMCI for New Access Nodes’ (WT-451) Straw Ballot comment resolution continues and a number of new items (ONU authentication, PM collection and NB Proxy) have been added during the Q2 meeting; the goal is to publish Issue 1 within the end of year.

Work continues to progress on ‘CloudCO Enhancement - Access Node Hardware Disaggregation’ (WT-477) and ‘Access Network Abstraction, Softwarisation and Disaggregation’ (WT-484) related to OB-BAA Open Source activities. Work on WT-477 is proceeding by adding call flows on DHCP RA, PPOE IA and IGMP while the call flow for ONU authentication needs further work; protocol specification has also been added.

On the Artificial Intelligence and automation fronts, work continues on WT-486, which builds on the Automated Intelligent Management Framework specification TR-436 previously approved. While this is a different Project Stream within SDN/NFV Work Area, network automation and low-maintenance operations are imperative for simplifying network validation and engineering, streamlining network deployment and upgrades, and improving operations with less error-prone and automated OAM in the CloudCO environment. This will also automate some management functions and help realize rapid troubleshooting and pre-emptive maintenance. WT-486 on AIM Interfaces continues by adding the collection task definition.

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

Productive Q2 meeting as WWC sets sights on finalization of second phase of specs



- **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 is aiming to finalize the scope of the second phase of specification development, with the goal of moving that work into straw ballot following the Q3 meeting as the group looks to subsume more of the capabilities of the 5G architecture.
- **Outcomes:** A set of new capabilities and enhancements will be published by the end of the year.

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.

The scope of the second phase work provides updates to TR-456 (Access Gateway Function Functional Requirements), TR-470 (5G Wireless Wireline Convergence Architecture), TR-124 Issue 6 (Functional Requirements for Broadband Residential Gateway Devices) and TR-181 Issue 2 Amendment 14 (Device Data Model), as well as planning to issue two additional specifications WT-457 (FMIF Functional Requirements) and WT-458 (CUPS for 5G FMC), both of which expand the deployment options for 5G WWC. At the Q2 meeting, a joint session with the BUS Work Area was held around the Phase 2 5G RG data models. The scope and document plan included how to document ATAs for 5G-RGs and RG requirement updates were provided for adding ATSSS and other spec hardening / improvements and clarifications based on implementation experience.

Broadband Forum continues to study 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. The group is currently incorporating technology from the 5G system into our specifications to realize a variety of Use Cases. These range across a broad spectrum

and include topics such as hybrid access, enhanced work from home, access sharing scenarios and convergence of voice with the mobile system.

The group continues to expose the industry to the latest WWC work and its most recent webinar broadcast in May focused on '[Bringing New 5G Services Inside the Home with 5G-Residential Gateways](#)'.

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!

At the Q2 meeting, Broadband Forum welcomed 258 registered attendees including 39 first-time attendees. In addition, at the start of the opening plenary, there were 23 guests from 11 companies in attendance highlighting the continued importance of the quarterly meetings in bringing together players from across the globe. [Airties](#), [Ciena](#), [General Mobile](#), [Google Fiber](#), [Hitron Technologies Inc](#), [KPN](#), [Merocom Solutions](#), [RDK](#) and [Technetix](#) were among the new members welcomed at the meeting.

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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5G convergence, containerization and the future of the Forum topics for Q2's blog roster

As operators and technology providers continue to jointly develop 5G convergence standards, in his blog post, **David Allan, Wireless-Wireline Convergence Work Area Director at Broadband Forum**, recapped the BAsE knowledge webinar '5G Wireless – Wireline Convergence Work Overview Webinar'. Five esteemed presenters, including representatives from Nokia, Telstra, Telecom Italia and Ericsson, discussed the shared goal of realizing a converged wireless wireline network within the Broadband Forum. In his blog, titled [Facilitating the ongoing transformation of 5G networks](#), David discussed the 5G Wireless Wireline Convergence (WWC) Work Area within the Broadband Forum and 3GPP, and how it is making the case for convergence and the monetization and streamlined 5G architecture it can achieve.



Magnus Olden, CTO at Doms, made the convincing case for containerization – which refers to the ability to unlock a new service by adding software to a CPE (Customer Premises Equipment) without upgrading the firmware – in his [blog post](#). As flexibility and security within the home network is sought after by service providers and is essential for end-users, a containerized environment and standardizing the implementation and management of third-party software within a container will allow these much-needed abilities to be accomplished. Magnus explains in his blog how the path of widespread containerization also opens the door to rapid innovation and cost efficiency.

As well as sitting down with Brian Dolby to talk about the role of the Broadband Forum over the past year and the future of the organization in a [video interview](#), **Ken Ko, Managing Director at the Broadband Forum**, wrote about how its important work will help the broadband ecosystem continue to flourish. In [his blog](#), Ken noted the crucial work of keeping us connected that broadband providers have been tasked with as we move forward through and beyond the pandemic. He also discussed the trends that the Broadband Forum has been a major contributor to that are helping providers address the past year's challenges, including access options at the physical layer, hybrid networks, and network transformation. Ken also highlighted the work of the Broadband Forum's highly professional, committed, and talented staff and how their help has ensured he has seamlessly moved into his new role due to their collective efforts.

Broadband Forum in the news

Broadband Forum's Vice President Strategic Marketing and Business Development Craig Thomas was one of the guests in TelecomTV's roundtable on ['The Evolution of fixed broadband access in an open, cellular-first world' at its Open Access Summit](#). Craig discussed what Fixed Mobile Convergence means for operators across the industry, operations and economics



that are driving change in broadband access networks and how Open Source developments such as Broadband Forum's OB-BAA are impacting access network architectures. Additionally, at Gigabit Access 2021, InCoax's roundtable entitled 'FTTep: How can complimentary technologies support gigabit broadband rollouts?' was moderated by Thomas with speakers including Helge Tiainen (InCoax), Simon Fisher (BT) and Mike Talbert (Verizon).



Following the publication of Broadband Forum’s TR-419, Herman Verbueken (Nokia), Helge Tiainen (InCoax) and Livia Rosu (HomeGrid Forum) discussed in a [TeleSemana webinar](#) how economic deployments can be realized by service providers and telecom operators by integrating complementary copper technologies such as Multimedia over Coax Alliance (MoCA)

Access, ITU-T G.fast, or ITU-T G.hn-based Access and reusing existing phoneline and coaxial cables. The webinar entitled ‘Leveraging existing copper infrastructure to offer access like fiber’ was aired to executives across Latin America.

In the [Spring Edition of Optical Connections Magazine](#), Broadband Forum was involved in an article on the growth of XGS-PON technology. Thomas discussed the importance of standardization and Certification Programs in achieving greater interoperability and attaining XGS-PON market readiness to ensure vendors’ products are trusted and proven, and therefore operators and equipment manufacturers have the confidence that the products will provide their end-users with the seamless service they require.



Events Calendar

Broadband Forum Meetings and BAsE Events

Q3 2021

- July 8, 2021, Fiber Access State of Play vBAsE series, Virtual
- July 22, 2021, Service Delivery State of Play vBAsE series, “The Converged Mobile and Fixed Network”, Virtual
- July 25, 2021, FBA Connect, Nashville, USA
- July 29, 2021, Connected Home State of Play vBAsE series, “Who Owns the Home? Application provider versus Service Provider enabled Connected Home Round Table”, Virtual
- August 4, 2021, Certification and Interop Update BAsE Knowledge webinar, Virtual
- August 30 – September 2, 2021, Q3 Meeting, Virtual
- September 10, 2021, FTTH Europe BAsE event, Virtual
- September 21-23, 2021, UFBB 21 BAsE event, Virtual
- September 23, 2021, Service Delivery State of Play vBAsE series, “Disaggregating and virtualizing the Network and Services”, Virtual

Q4 2021

- October 12-14, 2021, BBWF BAsE event, Virtual
- October 24, 2021, BAsE North America, Virtual
- November 3, 2021, Service Delivery State of Play vBAsE series, Virtual
- November TBD 2021, Connected Home State of Play vBAsE series, Virtual
- November 29, 2021, BAsE ANZ, Virtual
- November 30 – December 3, 2021, Q4 Virtual

To register for our latest events, visit: <https://www.broadband-forum.org/meetings-and-events>.

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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:

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Contact information

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