Broadband Forum Overview

Our Community:

Over 160 Members
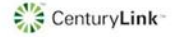
- Leading Service Providers

- Innovative Vendors

- Ecosystem Enablers

Continued Growth

- 30 new members in last 12 months

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member company

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Principal – Vendor

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Regional Operator

Auditing – Service Provider

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member company

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Auditing – Vendor

Actiontec   arcadyan   ARGUS   ASKEY   COMTREND

EZCONN   FiberHome   FURUKAWA ELECTRIC GROUP   Gemtek   Icotera

metaswitch   REPLY   SET   Seliro   SERCOM

SKYWORTH   Teldat bintec-elmeg   TRIductor   Westermo Robust Industrial Data Communications – Made Easy   WNC Wistron NeWeb Corp.

ZYXEL Your Networking Ally

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Associate – Influencer

Broadband Forum Areas of Focus & Work Areas

	5G	Connected Home	Cloud	Access Technologies
ATA Access and Transport Architecture	✓	✓		✓
BUS Broadband User Services		✓		
COMMON YANG	✓	✓	✓	✓
FAN Fiber Access Networks				✓
PHYtx Physical Layer Transmission		✓		✓
SDN NFV	✓	✓	✓	✓
WWC Wireless-Wireline Convergence	✓		✓	✓

Access and Transport Architecture

Mission Statement:

The Access and Transport Architecture (ATA) Work Area (WA) defines and specifies the architecture and requirements for access, routing and transport network infrastructure. ATA produces industry-agreed specifications for applications such as mobile transport infrastructure (fronthaul and backhaul), data center interconnect, residential broadband Internet access, etc. as well as specifications for testing these networks and their application. (E.g., Performance monitoring and testing, Application Level Testing and testing quality of experience.). This work is typically in the form of architecture, equipment requirements, test guidance, implementation guidance, and education materials.

Work Area Director: David Sinicrope, Ericsson

Business Impact:

A critical element of the work is the long-term support of existing network elements alongside virtualized software-based network functions, resulting in a stable network that may be evolved over time.. This enables seamless migration of new networking technologies based on their market acceptance, at the same time protecting existing infrastructure investment, and deployment into new different territories. ATA specifications underpin the infrastructure, value-added services and application delivery for fixed and mobile access networks and allows deployment at the pace of each relevant market. Co-existence of physical and virtualized solutions and from static and dynamic services will create a broadband network mitigating the risks to existing revenue and enabling leveraging new networking technology for according to market demand.

Scope:

ATA maintains the primary architectures for the work of Broadband Forum. The architectures, requirements and other deliverables reflect the control, management, and data plane aspects of the access, transport and routed networks used to provide operator, enterprise and "over-the-top" Internet based connectivity services.

The deliverables of the work area are designed to leverage and integrate new industry technologies while protecting investment of current deployments. These deliverables provide the industry with a collective and consistent methodology to drive product development and service deployment.

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Broadband User Services

Mission Statement:

The Broadband User Services Work Area provides the broadband industry with technical specifications, implementation guides, reference implementations, test plans, and marketing white papers for the deployment, management, and consumption of services by the broadband end user.

Work Area Directors: John Blackford, CommScope Jason Walls, QA Cafe

Business Impact:

The Broadband User Services Work Area develops specifications and publications to create a new kind of the Broadband experience for the end user and provides new means for service providers and application developers to monetize the broadband user's connection. This ranges from managed WiFi, IoT or smart home services, broadband and in-home performance management, and more - all of which open up large markets and profitable business models.

Scope:
- Develop and evolve the TR-069 CPE WAN Management Protocol and the User Service Platform (USP) to cover existing use cases, machine-to-machine/IoT use cases, and the virtualization of broadband user services
- Develop and specify new information models to broaden the range of for which TR-069 and USP can be used
- Develop requirements for broadband user devices and associated software
- Develop test plans and training programs for Work Area protocols and requirements
- Develop marketing white papers that supplement Work Area protocols and requirements

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Common Yang

Mission Statement:

The Work Area is also responsible for identifying YANG work in other SDOs that could or should be used by BBF YANG projects and will work directly with such SDOs as and when appropriate in order to assist in meeting BBF requirements and timescales.

Work Area Directors: Joey Boyd, ADTRAN and Sven Ooghe, Nokia

Business Impact:

Operators are constantly looking for ways to make their operations more efficient and more cost-effective.

A common method use is automation of the configuration and control of network elements.

One challenge to doing this effectively is ensuring interoperability between network components of different vendors.

The Common YANG Work Area addresses this challenge by defining YANG data models for functionality which is common across access network equipment of various physical layer technologies.

Scope

The Common YANG Work Area has the following main areas of responsibility:
- Specification of YANG modules that are applicable to multiple Work Areas and/or involve expertise from multiple Work Areas
- Specification of NETCONF/YANG test plans and certification for the defined YANG modules
- Maintaining the BBF YANG Best Current Practices (OD-360), BBF-wide YANG processes, procedures and tools
- Define YANG data models for the management interfaces to support FTTdp, in order to enable interoperability for FTTdp management
- Define YANG data models for the management of Broadband Forum specified access network equipment used across many deployment scenarios
- Define the PMAA Northbound Interface (NBI) and the YANG data modules in line with the data models specified in TR-383 and TR-355 for management of DPUs by means of PMAA NBI

Fiber Access Networks

Mission Statement:

To define the requirements and data models for deploying Broadband Forum network architectures in fiber access technologies to accelerate deployments and ensuring interoperability.

Work Area Directors: Marta Seda, Calix; Samuel Chen , Broadcom

Business Impact:

This Work Area's focus along with the Physical Layer Transmission area is on both cost savings and acceleration of time to market. Standardized interoperability and certification create a trusted base of equipment and services without which significant investments in time and resources can cause years of delay and in-service failures that impact revenue and credibility. Interoperability provides invaluable intelligence as feedback to both developers and implementers of new products and services. As the move to virtualized devices with non-deterministic functions and performance becomes a reality, the need for interoperability testing, data models, and reference configurations will become critical.

Scope:

The FAN Work Area has the following main areas of responsibility:

- Specification of PON related requirements. These projects include: Architecture & Technical Requirements for PON-based Mobile Backhaul networks
- Multi-wavelength PON Inter-Channel-Termination Protocol Specification
- Multi-service Broadband Network Architecture and Nodal Requirements in the context of PON
- Specification of PON NETCONF/YANG data models for the defined YANG modules
- Specification of PON test suites used to verify the interoperability of the fiber access specific portions of the network. These projects include:G-PON & XG-PON & XGS-PON ONU Conformance Test Plan
- XGS-PON TC Layer Test Plan
- NGPON2 Test Plan
- PMD Layer Test Plan.

Software Defined Networking / Network Functions Virtualization

Mission Statement:

This Work Area focuses on the introduction of Software Defined Networking (SDN) and Network Functions Virtualization (NFV), including migration and coexistence of physical and virtual elements, into the broadband network. Activities work with and coordinate with Open Broadband (OB) program regarding open source e.g. Open Broadband-Broadband Access Abstraction (OB-BAA) and testing Open Broadband Laboratories (OBLs). These activities demonstrate how standards organizations and open source projects can collaborate.

Work Area Directors: Bruno Cornaglia (Vodafone) and George Dobrowski (Individual Member)

Business Impact:

The migration to SDN and NFV in the broadband network facilitates agile deployment of new customized distributed broadband services and applications. This enables new revenues and provider differentiation while managing OpEx both in the access network and in single and multi-tenant residential and business locations.

Scope:

The scope includes migration to and deployment of SDN- and NFV-enabled implementations across all aspects of the broadband network. Building on the initial architectural definition of and extensions to the BNG framework has led to new definition and requirements for Cloud-based Central Office (CloudCO). It provides architectural cornerstone for next generation broadband networking with dis-aggregation of functions which enable changes to the traditional boundary of a Central Office. The set of deliverables below build on CloudCO addressing migration, new Access Nodes, and automated intelligent management.

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Physical Layer Transmission

Mission Statement:

The Physical Layer Transmission Work Area provides test plans, technical documentation, and marketing papers to enable multi-vendor interoperability in deployments for both access and in-premises networks.

Work Area Director: Herman Verbueken, Nokia

Business Impact:

The focus of the PHYtx WA is to develop technical recommendations which will help service providers deploy equipment that will give a better quality of experience for their end users.

Standardized interoperability and certification, create a trusted base of equipment and services providing operators with an accelerated time to market, avoiding large investments in time and customizations. Interoperability provides invaluable intelligence as feedback to both developers and implementers of new products and services.

Scope:

- Definition of test plans for access network physical layer transmission technologies (such as VDSL2 and Gfast) and Reverse Power Feeding technologies
- Definition of test plans for in-premises network physical layer transmission technologies such as power line communications
- Creation of best practice or use cases documentation for advanced features, such as Fiber extensions, cable models.

Wireline–Wireless Convergence

Mission Statement:

This Work Area addresses the increasing synergy between wireless access technologies and wired access technologies, as well as that of wireless networking and wireline networking functions. Activities examine scenarios where wireless access technologies play a role or mobile networking is involved in the wireline network.

Work Area Director: David Allan, Ericsson

Business Impact:

The principle impact on the market addresses the ability to create seamless connectivity to either wireline or wireless access connectivity from single or multi-tenant business and residential locations that will radically alter users' network experience. This is the next step in the evolution from the automatic connectivity to available Wi-Fi networks and will become the norm with the advent of 5G.

Scope:

Topics in this area within scope are Wi-Fi as last mile for broadband access, small cells, hybrid (dual access) access, functions between wired and wireless networks that may be instantiated as a common element, wireline and wireless network interworking and convergence at the service and subscriber level.

The virtualization aspect of identified common functions will enable future study in the area of VNFs and NFVI destined for mobile and fixed networks and next phase of FMC evolution.

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Open Broadband Projects

Open Broadband (OB) is a set of independent Broadband Forum projects that use a modified IPR Policy and possibly a different software license (which means they have their own participation agreements). An OB project may also allow membership by companies or individuals who are not currently BBF members.

Open Broadband-Broadband Access Abstraction (OB-BAA)

- The Open Broadband-Broadband Access Abstraction (OB-BAA) is an open source project that specifies the Northbound Interfaces (NBI), Core Components and Southbound Adapter Interfaces (SAI) for functions associated with the access network devices (e.g., configuration, reporting, alarms) that have been virtualized. Inherent in the OB-BAA project is the ability to pull differing access device types, including legacy implementations, together under a single network and service management &control umbrella to be exposed to management elements such as the SDN Management and/or Control and Element Management Systems.
- Project lead: Tim Carey, Nokia

Open Broadband-Multi Access Point (OB-MAP)

- The Open Broadband-Multi Access Point (OB-MAP) project includes generating requirements for features that extend and enhance the Wi-Fi Alliance EasyMesh and Data Elements specifications for use in a service provider managed subscriber local network. The current BBF 1905.1a open source stack may also be extended to support some of these new features.
- Project leads: Barbara Stark, AT&T, Marcos Martinez, MaxLinear, Wojtek Makowski, Orange

Open Broadband-User Datagram Protocol Speed Test (OB-UDPST)

- The Open Broadband-User Datagram Protocol Speed Test (OB-UDPST) project will produce an open source implementation of a tool to perform the metrics defined in TR-471: IP Layer Capacity Metrics and Measurement (PDF).
- Project lead: Barbara Stark, AT&T Len Ciavattone, AT&T Al Morton, AT&T

Open Broadband-User Services Platform-Agent (OB-USP-Agent)

- Open Broadband-User Services Platform-Agent (OB-USP-Agent) is an open source project that is focused on creating a reference implementation of the User Services Platform (USP) specification from an "Agent" perspective. USP is a remote management and control protocol where management entities are separated between the Agent and the Controller. A USP Agent is responsible for exposing a set of "Service Elements" (essentially, a data model composed of objects and parameters that represent a specific set of functionality) for consumption by a Controller. While USP is capable of being used in many different environments, the home network is expected to be the most common environment, and in this environment a USP Agent would reside in a piece of Customer Premise Equipment (CPE), e.g. broadband home router, Wi-Fi access point, IoT gateway.
- Project lead: John Blackford, CommScope

Why Engage with The Forum?

Why the Need for The Broadband Forum?

- Standardization drives a healthy industry ecosystem
- Reduces total cost of ownership
- Speeds up time to deployment and to market
- Ensures interoperability & removes vendor 'Lock-in'
- Builds best practices into the service provider community
- Open Standards to ensure Open Source real 'deployability'
- Drives service providers needs to be incorporated in vendor solutions

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Why Join The Broadband Forum

BBF is THE Broadband standards organisation recognized for delivering:

End-to-end open standards

Proven fast to market best practices deployments

Accelerating & de-risking network and product investment

Ensuring interoperability and technical expertise

Service Provider's and Vendor's Accelerating together:
- Broadband Innovation
- Ecosystem development
- Mass market deployable, smarter, cost-effective broadband

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Why Should

broadband forum *member company*

engage with The Broadband Forum?

Contribute and Collaborate to influence the technical work

Awareness and Industry Insights to Stay Ahead

Engage with Peers, Customers and Suppliers to develop relationships

Thought Leadership and Marketing

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How do I engage with the Broadband Forum?

Education & Demonstration

- BASe
- vBASe webinars
- broadband forum blogs
- UFBB Broadband World Forum **Interop Pavilion**

Technical Contributions

- BBF Wiki
- Jira
- slack

Robust Tools to easily track or contribute to the work in progress

Weekly/Bi-weekly Project Meetings

Q3 2020 Quarterly Meeting Opening Plenary — Quarterly Meetings

Plugfests & Interop Certification

- BROADBAND FORUM CERTIFIED
- USP CERTIFIED
- BBF.069 Certified
- BBF.247 GPON
- Gfast certified

Councils

Connected Home Council (CHC)

Service Provider Action Council (SPAC)

Broadband Forum Membership Levels

Principal

Access open to all companies

- ✓ Drive the direction of the industry
- ✓ Contribute to work in progress through forum tools
- ✓ Develop best practices, test plans & software
- ✓ Participate in current project teleconferences and quarterly meetings
- ✓ Collaborate with industry leaders
- ✓ Marketing benefits: Certification programs, BASe and Industry events and logo placements
- ✓ Voting rights

Associate or Regional Operator

Access level for educational & non-profit organizations

- ✓ Work closely with industry leaders
- ✓ Participate in current project teleconferences and quarterly meetings
- ✓ Contribute to work in progress through forum tools
- ✓ Marketing benefits: Certification programs, BASe and Industry events and logo placements
- ✓ Regional Operators can participate in meetings and teleconferences

Auditing

Access open to all companies

- ✓ "Track development of standardization & elevate exposure in the industry"
- ✓ Read-only access to work in progress through forum tools
- ✓ Marketing benefits: Certification programs, BASe and Industry events and logo placements

Observer

Access open to everyone with an interest in the broadband industry

- ✓ Track the development of standardization
- ✓ Read-only access to work in progress through forum tools
- ✓ Observe meetings and teleconferences

Current Subscriptions
Pricing based on Membership level and Annual Revenue in USD

- Annual (Jan. 1 – Dec 31, 2020) Subscription
- 5 Quarter (Current date – Dec 31, 2021) Subscription
- *2021 rate is locked in a 2020 pricing

Thank you

Learn more about Broadband Forum at:
http://www.broadband-forum.org/

Interested in getting more involved?
Contact Director of Membership Development
Rhonda Heier at: rheier@broadband-forum.org

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