



ANNUAL REPORT 2024



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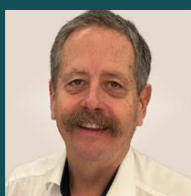
The Broadband Forum Board of Directors



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CHAIRMAN'S LETTER

Dear members of the Broadband Forum and industry colleagues,

In 2024, we celebrated 30 years of our commitment to advancing broadband-delivered services. Over these three decades, the broadband landscape has changed dramatically, evolving from various DSL technologies and G.Fast to the widespread adoption of Fiber to the Premises (FTTP), as well as the convergence of fixed and mobile access.

The broadband services available today are greatly enhanced by the standards and certification programs developed by the Broadband Forum. These innovations address the connectivity needs and best practices required by the market. Now is also an ideal time to reflect on our focus and strategy to better understand the emerging demands on the broadband ecosystem. We believe these demands can be aptly described by the Forum as “services-led broadband.”

Services-led broadband goes beyond the connectivity and ever-increasing theoretical speeds of that connection and pushes towards intelligent broadband that is cognizant of subscriber-specific application performance requirements. We recognize the need for broadband service providers to offer differentiation, new services on demand, network agility and efficiencies, and new AI/ML capabilities. Ultimately, adding more value and ARPU opportunities.

Our membership continues to evolve as does the focus of our work to deliver meaningful technical reports, marketing collateral, test plans, and certification programs for the broadband industry. We also maintain our efforts to collaborate with other standards bodies and increase the cooperative work between open standards and open-source software organizations. In this exciting time, the need for deployable industry standards to ensure interoperability between solution providers and open-source initiatives has never been more significant.

The volume of our published work continues to grow at an incremental pace. In 2024 alone, we published 29 separate technical reports, marketing reports, test plans, and best practices. In addition, our Open Broadband projects and open-source software initiatives continue to grow with three new releases and the launch of OB-CAS and OB-STAMP.

We also simplified our services-led broadband approach to be more intuitive to three focus areas: Connected User, Network Architectures, and Provider Cloud. All of our Work Areas prove to be closely aligned with this vision and strategy.

Please see a few notable highlights of published and newly initiated work during 2024:

- Our Innovation Demonstrations at Network X showcased several real-world use cases that are ensuring Quality of Experience (QoE), improving network efficiency and performance, and accelerating time-to-market of new services for broadband service providers

- We celebrated 20 years of TR-069, and why this marks the perfect opportunity for the baton to pass from TR-069 to USP (TR-369) for device management
- Important new projects were launched, including the initiation of L4S work

The Spring, Summer, and Fall Member Meetings in 2024 were an overwhelming success, marked by a high number of attendees and progress in our ongoing initiatives. The open discussion forums, particularly our Town Hall Innovation Series, fostered engaging debates, educational opportunities, and generated new possibilities for the Forum concerning key trends in our fast-paced industry.

The ongoing activities within the Forum have highlighted the need to re-establish our Marketing Committee. I strongly encourage both our current and new members to invite your marketing leaders to participate. Their involvement will help us promote and educate the market about the great work you are all doing through industry standards.

Our membership continues to thrive with growth across all three of our paid membership levels (Principal, Auditing, and Regional Operators). During 2024, in total, our membership grew nearly 10%.

Our members are actively involved in launching and driving forward new projects, certification programs, and industry education events. Currently, we have over 60 projects in progress, including new initiatives and updates to existing

published work. The relevance of our standards is demonstrated by the significant volume of work we continue to pursue. All of these initiatives are driven by contributions from the broadband service provider and vendor communities.

As an organization, we are continually evolving to meet the needs of the industry and strategically addressing the growing demands for future 'services-led' broadband. Our focus across all work areas and Open Broadband projects is to fulfill the requirements of connected users, the operator's broadband network architecture, and the provider's cloud services.

It is essential for the Forum to educate and support the deployment and advancement of broadband services for all providers, both large and small, ultimately benefiting every Internet user. Your ongoing contributions, dedication, and expertise are crucial to this mission. This is evidenced by the work we have accomplished over the past year and the significant projects currently underway.

On behalf of the Board of Directors, I thank our members for their commitment to realizing the potential of broadband and making it a reality.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'John Blackford'.

John Blackford
Chair of The Board



2024 IN REVIEW

Membership:

The Forum continued to experience elevated levels of membership, with over 180 members. We have seen substantial year-over-year growth in our start-up Principal membership. In total, the number of member companies grew by over 10% for the calendar year.

Focus and Strategy:

The Forum's leadership continuously focused on the evolution of Broadband from a 'Connectivity Driven' to a 'Services-Led' environment.

Aligned with this strategy, our ongoing focus in 2024 resulted in a large amount of work starting and specifications in areas related to our evolved new strategy. Areas including Close alignment of the Broadband Forum's User Services Platform (USP) and CloudCO with industry open source initiatives, 'Quality of Experience' and service measurement, connected user management, service containerization, Subscriber Session Steering, sustainability in the access network, AI/ML and Yang Management, and 5G, FWA and fixed convergence.

In total, 2024 saw ten new projects initiated and more than 50 new vendor certifications.

Financials:

The Broadband Forum recognized an operating surplus, excluding investment income, in 2024 of \$289,076, operating revenue decreased by 2.28%, while total operating expenses decreased by 1.9%.

Furthermore, interest and investment income was \$190,619, a year-on-year decrease of \$43,354.

In total, the Broadband Forum's Net Assets increased in 2024 by 16.4% to \$3,404,070.

Member Meetings:

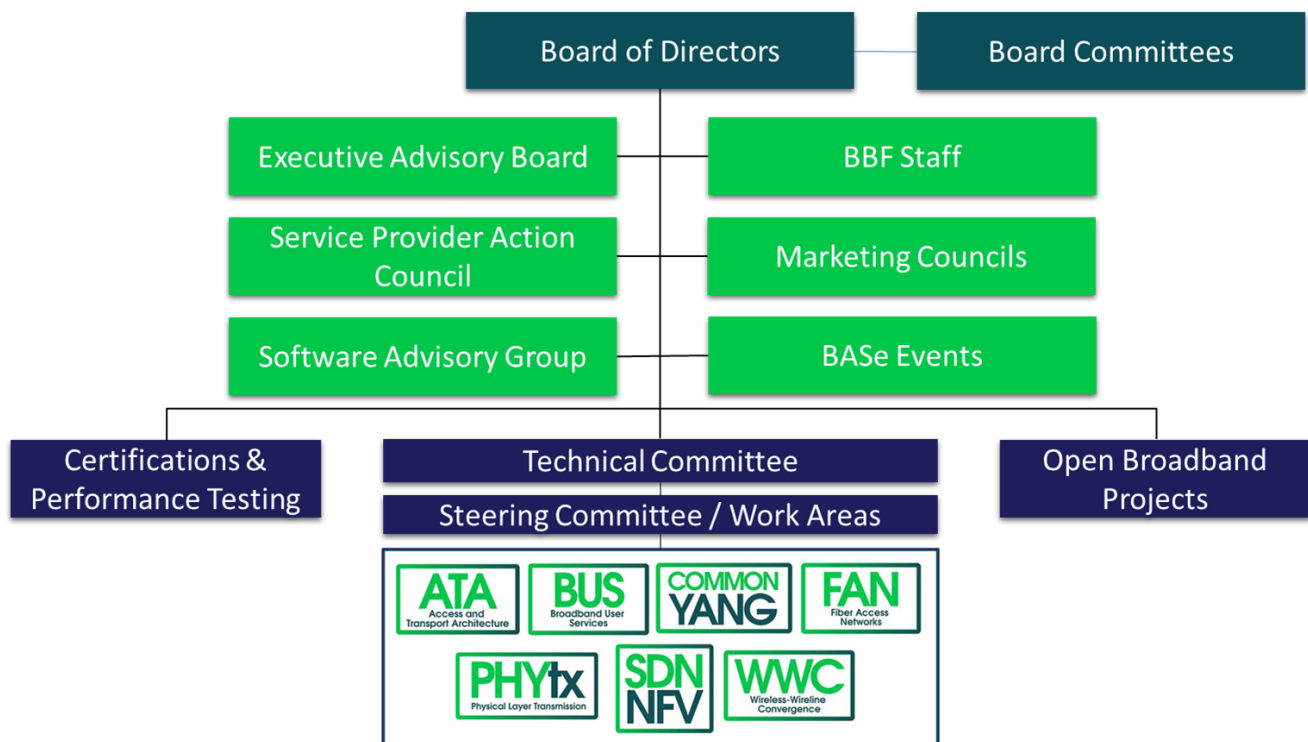
In 2024, the Forum moved to a seasonal cadence for our face-to-face Member Meetings: Spring (Mainz), Summer (Incheon), and Fall (San Diego), with average meeting attendance in excess of pre-pandemic levels. This was ably supported by each project stream running regular virtual interim meetings over the year.

The Forum continued its open-to-all-members "Town Hall Innovation Series," which featured sessions on key industry topics. This included AI/ML and the future managed smart home, focusing on its impact on broadband service providers and industry standardization needs.

PUBLISHED WORK

MR-410	Legacy Video Support in Residential Premises
OD-360a2	BBF YANG Best Current Practices Amendment 2
TP-247i4c1	G-PON & XG-PON & XGS-PON ONU Conformance Test Plan
TP-255i2	G-PON & XG-PON & XGS-PON Interoperability Test Plan
TP-469a3	Conformance Test Plan for User Services Platform Agents
TR-106a13	Data Model Template for CWMP Endpoints and USP Agents
TR-106a14	Data Model Template for CWMP Endpoints and USP Agents
TR-124i9	Functional Requirements for Broadband Residential Gateway Devices
TR-167i4	GPON-fed TR-101 Ethernet Access Node
TR-181i2a17	Device Data Model for CWMP Endpoints and USP Agents
TR-181i2a18	Device Data Model for CWMP Endpoints and USP Agents
TR-181i2a18c1	Device Data Model for CWMP Endpoints and USP Agents
TR-285i2c1	Broadband Copper Cable Models
TR-301i2a3	Architecture and Requirements for Fiber to the Distribution Point
TR-309i3	PON TC Layer Interoperability Test Plan
TR-331i2	Architecture and Technical Requirements for PON Mobile Backhaul
TR-369a4	User Services Platform (USP)
TR-383a8	Common YANG Modules for Access Networks
TR-385i3	YANG Modules for PON Management
TR-386i2	Fixed Access Network Sharing – Access Network Sharing Interfaces
TR-390.2a1	Performance Measurement between Customer Equipment and IP Edge
TR-398i3	Wi-Fi In-Premises Performance Testing
TR-458c1	Wireless & Wireline Convergence - Control and User Plane Separation
TR-471i4	Maximum IP-Layer Capacity Metric, Related Metrics, and Measurements
TR-477	Cloud CO Enhancement – Access Node Functional Disaggregation
TR-493	IMS for 5G-RG Architecture
TR-494	IMS for 5G-RG Residential Voice Requirements
TR-497	Public Wi-Fi user authentication and data local forwarding requirements
TR-499	TR-499 Broadband Service Metrics
OB-UDPST 8.2	Multi-Key and Header Checksum
OB-USPA 8.0	Heron Release: Incl. USP support additions & integrator enhancements
OB-USPA 9.0	Ibis Release: Incl. MQTT, WebSocket's & STOMP, & USP Broker enhancements

FORUM ORGANIZATION AND LEADERSHIP



Executive Advisory Board (EAB)

Introduced in 2017, the EAB provides an executive C-level and strategic lens through which the Forum can gain insights into major industry trends and investments that shape our future. The EAB's purpose is to give direction and recommendations for the industry - and hence, ensure that the broadband standards and open source requirements align with BSPs' significant investment plans.

Service Provider Action Council (SPAC)

The SPAC is a key influential committee keeping the Forum connected to service provider needs and end-user requirements. Open exclusively to service provider membership, it offers continuous direction and recommendations to ensure strategic direction is accurate. The group also helps drive many new project initiations and working texts.

Software Advisory Group (SAG)

The SAG comprises of contributing member companies and provides a center of software expertise within the Forum. It advises on engagement with external SDOs and OS organizations on the processes and modeling tools to enable the Broadband Forum to work as an agile software-focused organization.

Steering Committee

The Steering Committee's primary goal is to execute the Forum's strategy via the work areas of the Technical Committee. The sitting members monitor work in progress across the Forum. The Steering Committee influences our technical work and oversees the formation of project streams and the appointment of Work Area Directors. The Forum's procedures, use of tools, liaison program, and the technical content of Broadband Forum meetings also falls within the remit of the Steering Committee.

Broadband Forum's Open Broadband initiative

brings the best of open source software and open standards together, paving the way for transformative changes in our industry and brings the full promise of broadband to fruition. The future of broadband will be as a result of the marriage between flexibility, innovation, and speed of open software with the discipline, efficiencies, and global scale made possible by open standards.

By bringing the best ideas of open source together with the interoperability and standards required for mass market solutions, the Forum is delivering true innovation and scale to the industry. These open source initiatives deliver reference implementations, which are examples of how Broadband Forum specifications can be implemented. They act as baseline platforms for more services and applications, with updates to the code available as the implementation matures.

Open Broadband projects within the Forum continue to thrive since their inception in 2017. The following are the currently active Open Broadband projects:

- **Open Broadband—WWC Reference Implementation for 5G-RG (OB-WWC)**
Focused on creating a Wireless-Wireline reference implementation for 5G-capable Residential Gateways (5G-RG). Developing a production-grade 5G-RG solution stack for integration into OpenWRT/RDK-B RG platforms.
- **Open Broadband—Broadband Access Abstraction (OB-BAA)**
Enabling standardized, automated, and accelerated deployment of new cloud-based access infrastructure and services.
- **Open Broadband Multi Access Point (OB-MAP)**
Ensuring that the software of open-source innovators like prpl Foundation and RDK-B, and their mesh software projects will be scalable for service providers deployments via carrier-grade manageability.
- **Open Broadband—UDP Speed Test (OB-UDPST)**
Enabling an open source implementation tool to perform IP Layer Capacity metrics and measurement for gigabit broadband connectivity.
- **Open Broadband—User Services Platform Agent (OB-USP-Agent)**
Creating a reference implementation of the User Services Platform (USP) specification from an “agent” perspective.
- **Open Broadband—CloudCO Application Software (OB-CAS)**
The OB-CAS project objective is to lower the barriers for developers to embed their software applications in a CloudCO/access management environment, creating a network management application ecosystem for the broadband industry.
- **Open Broadband—Simple Two-Way Active Measurement Protocol (OB-STAMP)**
The project aims to create an OS implementation of a STAMP Sender and Reflector. A containerized application within the CPE following USP paradigms, facilitating the capacity to perform performance measurement.



INTEROPERABILITY AND CERTIFICATION

The Forum has a responsibility to establish interoperability in the broadband marketplace. Today, our interoperability and certification programs encompass end-to-end broadband testing requirements, including fiber, copper access, and home networking-related interoperability and conformance testing.

The BBF testing and certification programs include:

- Developing common test requirements
- Establishing a test suite that includes functional and performance tests
- Hosting test events (Plugfests), which can include members-only multi-vendor Plugfests, conformance testing, public interoperability demonstrations, and/or certification

Certification impact:

- Creates confidence and minimizes risks
- Establishes a trusted industry standard for implementation and high customer satisfaction
- Leverages vast experience and expertise
- Avoids extensive provider testing before purchase
- Significantly reduces costs and accelerates time to revenue for all stakeholders
- Interoperability certification critical for developing the choice of products for provider integration
- Provides a starting point for service provider integration and promotes a diverse marketplace

Certification programs:

BBF.369 USP Certified Products

The Forum offers a comprehensive set of testing options for the USP Agent that span both interoperability and certification.

BBF.069 Certified Products

Created to assure platforms consistently adhere to the BBF TR-069 protocol for remote lifecycle management, billing, customer support, and deployment of customer CPE and devices.

BBF.247 GPON/XGS-PON Certified Products

BBF.247 is a globally accepted industry standard that ensures multi-vendor GPON and XGS-PON interoperability. Offering Optical Network Unit (ONU) choice and flexibility for service providers and broadband consumers.

BBF.337 Gfast Certified Products

Gfast Certification and Interoperability program consisting of interoperability Plugfests, test results, official certification, and logo rights.

BBF.398 Carrier-Grade Wi-Fi

The BBF.398 Carrier-Grade Wi-Fi Testing Program for Wi-Fi devices. The program, based on the Broadband Forum's TR-398, measures a Wi-Fi Access Point (AP) device's performance against a set of absolute requirements.

Access Network Testing (G.hn)

Based on TR-476 Access Performance Test Plan, ensuring G.hn products meet specific performance parameters.

xDSL testing

To drive interoperability, the Broadband Forum has developed a set of Technical Reports that provide the testing parameters for various DSL specifications.



BASE EDUCATION AND EVENTS



The Broadband Forum continues to educate and share industry-wide knowledge to accelerate broadband innovation and deployments. Our proven Broadband Acceleration Seminar (BASE) series is renowned for providing thought leadership, key insights, and technological advancements that result in the development of standards, and deployable use cases.

BASE events are held in conjunction with major industry conferences, with each BASE event drawing hundreds of key influencers from global broadband service providers, suppliers, analysts, and government officials that appreciate our uncompromising educational focus and our members' leading-edge perspectives.

2024 was another busy year for BASE, both in terms of our number of sponsors and also the total number of events. BASE held 13 separate workshops across seven industry conferences.

In addition, annually, BASE hosts its own Summit, incorporating two whole days of technical discussion and plenary sessions highlighting broadband technical advancements, service provider plans, and future requirements. In 2024, this was successfully run in parallel with our own USP Summit, attracting more than 200 attendees.

BASE continues to be the only industry education program created by tech innovators for tech leaders.



Through vBASE we host a series of virtual online events. In 2024, we held eight webinars and a large number of standards knowledge and training events. In total, we had over 40 thought leaders deliver presentations across our calendar of virtual events, creating more than 16 hours of video content.

BASE 2024 sponsors:



RECOGNIZING LEADERSHIP & EXCELLENCE

In 2024, the Broadband Forum recognized the outstanding contributions and leadership of those who continue to help shape the future of broadband.

Distinguished Fellow

The Broadband Forum bestows the Distinguished Fellow title to exceptional individuals who have over time provided a major influence on the direction and success of broadband development.

Jonathan Newton, **Vodafone**

Circle of Excellence

The Broadband Forum recognizes the exceptional ongoing contributions of its members through the “Circle of Excellence” award, which is awarded at our annual meetings for continuous service and excellence.

Fabio Giudici, **OutSys**
Tom van Caenegem, **Nokia**

Outstanding Contributors

The Outstanding Contributor awards are given to individuals who, during the previous year, went above and beyond the call of duty within The Forum work areas.

Hagen Woesner, **BISDN**
Aihua Guo, **Futurewei**
Jian Zhu, **Huawei**
Helge Tiainen, **InCoax**
Shiya Ashraf, **Nokia**
Robert Peschi, **Nokia**
Nadine Staelens, **Nokia**
Hiroshi Ou, **NTT**
Hugues Le Bras, **Orange**
Hans-Joerg Kolbe, **Radisys**
Madhura Paduvalli, **Liberty Global**

FINANCIAL REPORT

John Wadell & Co, Certified Public Accountants, conducted the audit of the 2024 Broadband Forum financial statements. The Following tables provide an overview of the financial position and key financial metrics of the organization at the close of 2024.

Statement of Financial Position

December 31, 2024

(With Comparative Totals for December 31, 2023)

ASSETS		
	2024	2023
Cash and Cash Equivalents	\$ 2,019,337	\$ 2,158,455
Investments	\$ 2,516,811	\$ 1,814,248
Accounts receivable	\$ 14,623	\$ 400
Prepaid expenses and deposits	\$ 16,116	\$ 15,593
Website and website in development, net amortization	\$ 20,000	-
	\$ 4,586,887	\$ 3,988,696
LIABILITIES AND NET ASSETS		
Liabilities		
Accounts payable	\$ 133,323	\$ 217,808
Accrued liabilities	\$ 96,194	\$ 144,477
Deferred membership dues	\$ 953,300	\$ 702,036
Total Liabilities	\$ 1,182,817	\$ 1,064,321
Net Assets		
Without donor restrictions:		
Designated for reserves	\$ 1,000,000	\$ 1,000,000
Undesignated	\$ 2,404,070	\$ 1,924,375
Total Net Assets	\$ 3,404,070	\$ 2,924,375
	\$ 4,586,887	\$ 3,988,696

Statement of Activities

For the Year Ended December 31, 2024

(With comparable Totals for December 31, 2023)

	2024 Total Without Donor Restrictions	2023 Total
Revenue:		
Membership dues	\$ 1,816,640	\$ 1,746,952
Meeting fees	\$ 152,882	\$ 187,270
BASe event fees	\$ 13,570	-
Sponsorship fees	\$ 293,000	\$ 395,000
Interest & Investment Income	\$ 190,619	\$ 233,973
Total Revenue	\$ 2,466,711	\$ 2,563,195
Expenses:		
Program Services:		
Meetings	\$ 568,242	\$ 543,931
Member Services, tools & other	\$ 234,703	\$ 309,780
Marketing, tradeshow, & PR	\$ 560,313	\$ 570,459
Total program services	\$ 1,363,258	\$ 1,424,170
General and administrative	\$ 623,758	\$ 601,365
Total Expenses	\$ 1,987,016	\$ 2,025,535
Change in Net Assets	\$ 479,695	\$ 537,660
Net Assets:		
Beginning of Year	\$ 2,924,375	\$ 2,386,715
End of Year	\$ 3,404,070	\$ 2,924,375

ENDS