

Connecting IoT Mesh Networks with Broadband Infrastructure: A New Path for Service Providers

 **THREAD** GROUP

 **broadband**
forum

Speaker Introductions



**Jason
Walls**

**MARKETING CHAIR
BROADBAND FORUM**



**Ann
Olivo**

**VP MARKETING
THREAD GROUP**



**Daniel
Egger**

**CHIEF ARCHITECT
BROADBAND FORUM**



**Craig
Babcock**

**BOARD DIRECTOR
THREAD GROUP**



**Jonathan
Hui**

**VP TECHNOLOGY
THREAD GROUP**



Agenda

- ❖ What is Thread?
- ❖ What is Broadband Forum?
- ❖ How Thread Group & Broadband Forum will work together
- ❖ Q&A



WHAT IS THREAD?



What is Thread?



Thread is a secure, low-power mesh networking protocol built for the Internet of Things. Unlike traditional wireless technologies, Thread was designed from the ground up to support large numbers of devices with minimal power consumption and no single point of failure.

About Thread Group

Launched in 2014

- **Delivering an impactful networking technology** through a market-driven approach
- **Educating the market** on the benefits and uses of this technology
- Ensuring a great user experience through rigorous, meaningful **product certification**
- A Delaware 501 (c) (6) Non-Profit Corporation for the mutual benefit of its members

Thread Group's Mission

Through industry collaboration, **Thread Group's mission** is to deliver an open and global wireless mesh networking protocol that extends IP infrastructure in homes and buildings. This low-power, reliable, and secure network enables the most diverse ecosystem of IoT devices.

Thread Group is powered by 240+ members

SPONSORS

amazon

 **Fortune Brands**
Innovations

 **LUTRON**

Qualcomm

Schneider
Electric



Google

 **NORDIC**
SEMICONDUCTOR


SILICON LABS

ASSA ABLOY

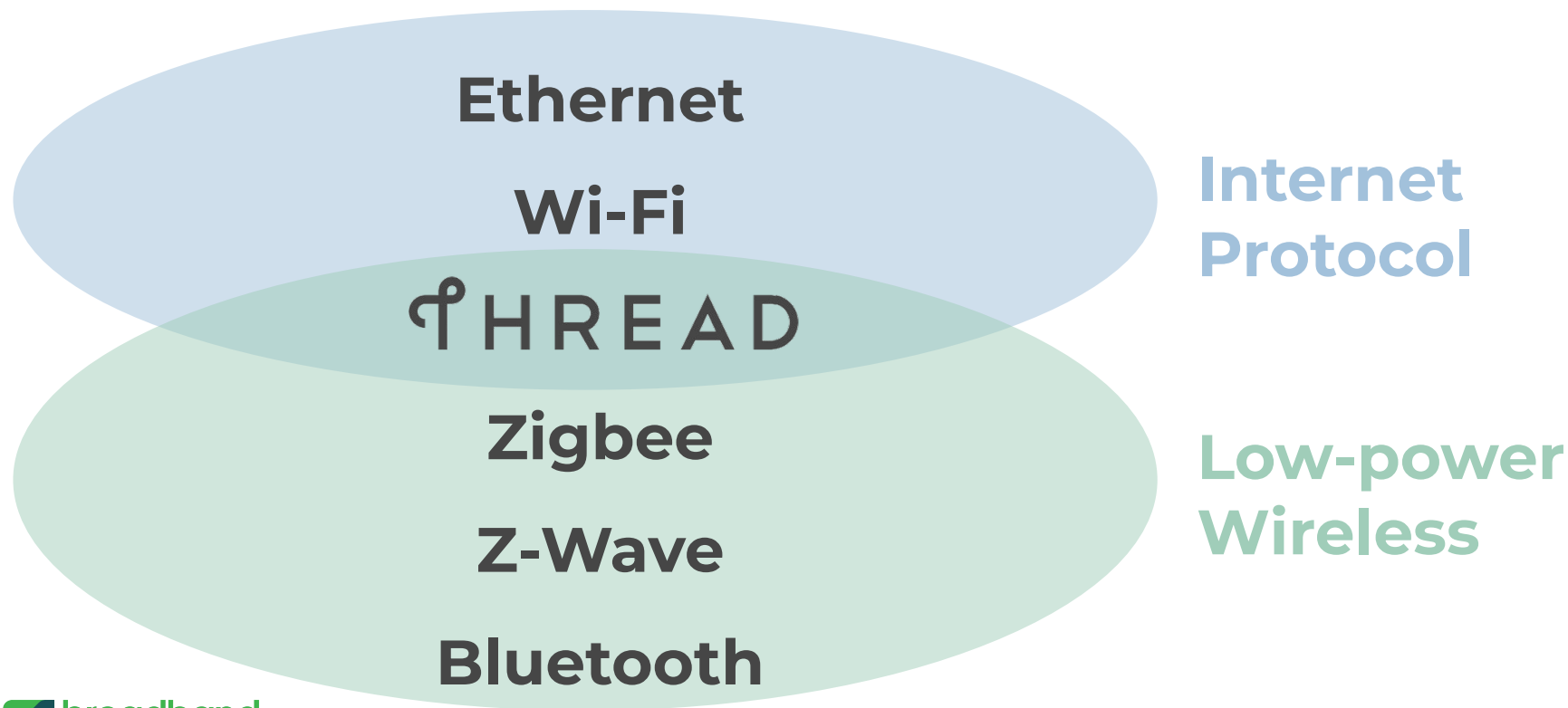
inventronics

SIEMENS

NXP

 **SmartThings**

Thread for Home and Building Communication



Smart Home Benefits

Thread

Fast, long-range, and reliable network technology built to elevate and secure your smart home experience.

RESPONSIVE

- Low latency
- Instant control, automation
- Delivers positive user experience
- Reliable (it just works)

SHARED MESH

- Eliminates need for dedicated hub
- More Thread devices means stronger and wider coverage network
- No dropped connections (self-healing network)

ENERGY SAVING

- Thread-enabled devices require less power
- Lower energy footprint
- Supports small battery powered devices
- Extends battery life

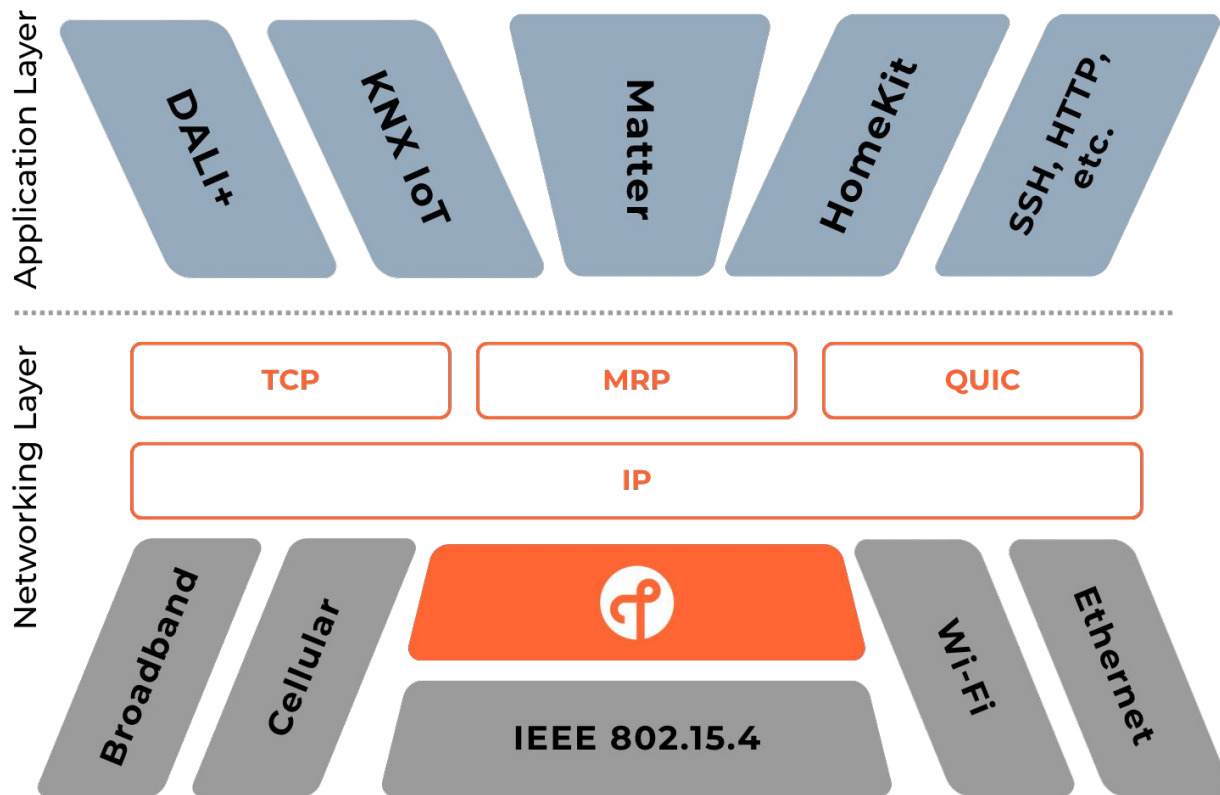
FLEXIBLE

- Works with range of ecosystems and application layers
- Pairs with any device that acts as Thread Border Router
- Communicates with other Wi-Fi devices and cloud services

SECURE

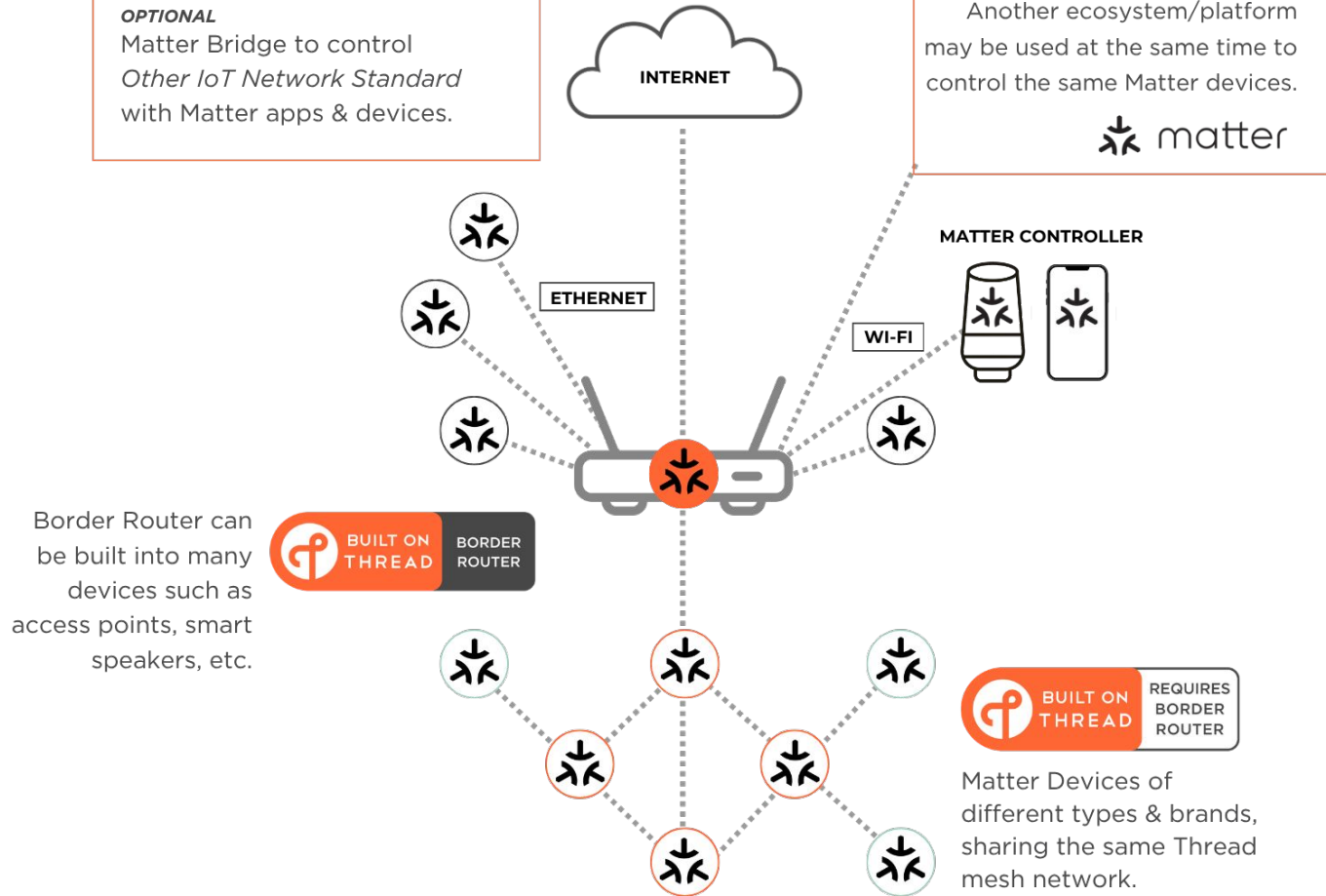
- Devices authenticated before joining network
- Proven security algorithms
- Messages on Thread networks encrypted to prevent unauthorized access

What is Thread?



OPTIONAL
Matter Bridge to control
Other IoT Network Standard
with Matter apps & devices.

Another ecosystem/platform
may be used at the same time to
control the same Matter devices.



KEY	
	Matter Device
	Thread Mesh Extender
	Thread Border Router
	Thread Battery Operated Device

Border Router can
be built into many
devices such as
access points, smart
speakers, etc.



REQUIRES
BORDER
ROUTER

Matter Devices of
different types & brands,
sharing the same Thread
mesh network.



WHAT IS the BROADBAND FORUM?

The Broadband Forum is powered by 170+ members

Including Board Representatives from

Adtran



NOKIA



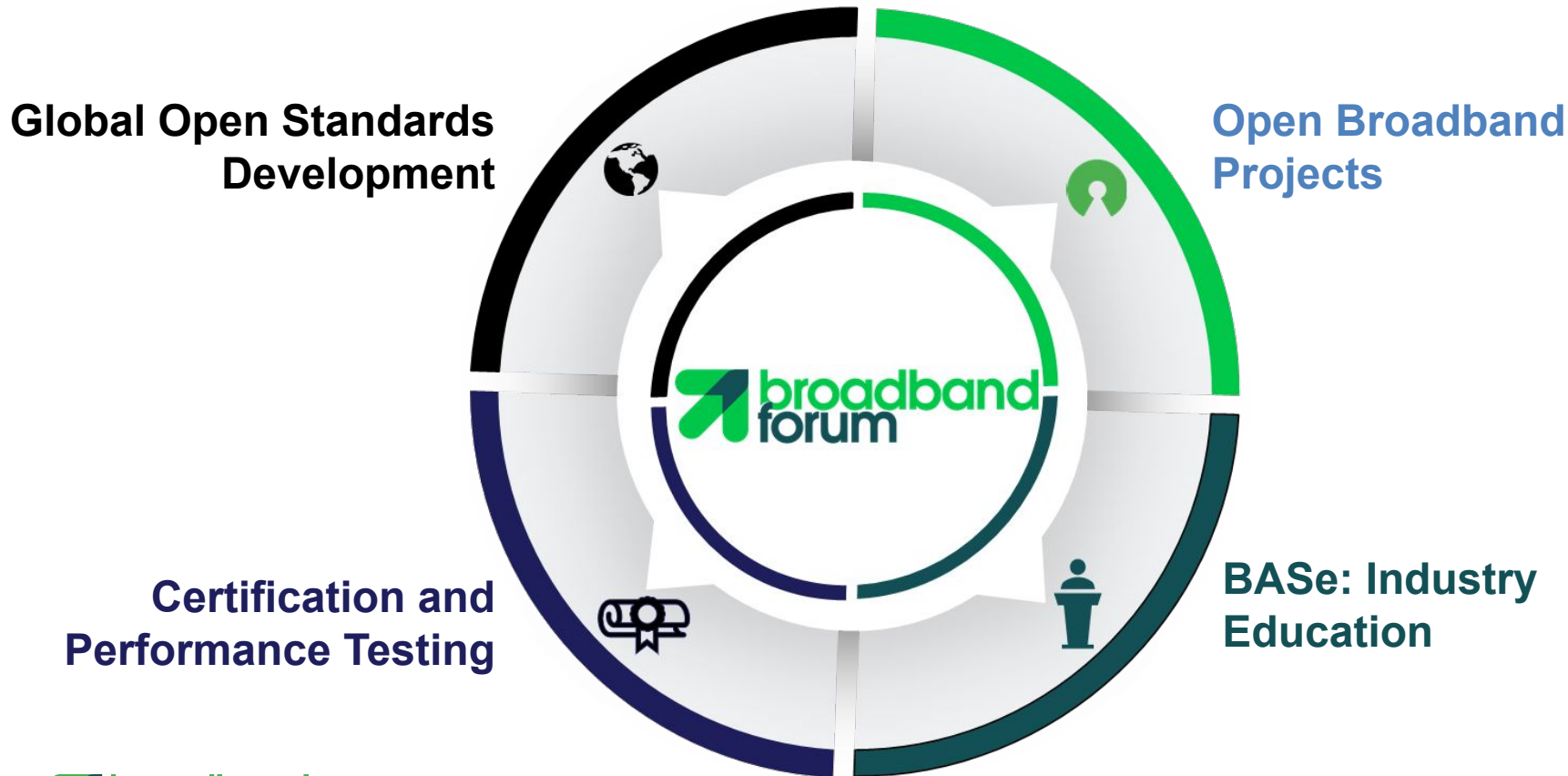
What is the Broadband Forum?

The Broadband Forum is the communications industry's leading organization focused on accelerating broadband innovation.

We unite service providers, vendors, **and other SDOs** to develop open, interoperable standards and solutions that drive the future of broadband.

Members have a powerful platform to shape the industry, expand market share, and deliver enhanced services to their customers.

Broadband Forum Scope



Our Work Areas and Focus

Service Requirements

Support the BBF's work for Services-Led Broadband by defining user-centric service requirements, advancing broadband service definitions, and fostering service.

Provider Cloud

Frameworks and specifications to enable services, and the networks providing those services, to utilize cloud-based deployment approaches, including automation leveraging ML/AI.



Connected User

Technical specifications, implementation guides, reference implementations, test plans for device management, data models and consumption of services by broadband end users

Access

Broadband Forum technical specifications and test plans to enable multi-vendor interoperability for last-mile broadband network deployments

Network Architecture

The architecture and nodal requirements for end-to-end broadband deployments, across traditional and converged networks. To enable and measure the best possible quality of experience for network users.



Subscriber Device and Service Management

Focus and Direction

Develop technical specifications, implementation guides, reference implementations, test plans, and marketing white papers for the deployment, management, and consumption of services by broadband end users.

User Services Platform (USP)

The project stream handles the development and maintenance of User Services Platform (USP).

Data Modelling

Data model objects to manage connected devices using the USP and/or CWMP TR-069. In addition, it defines the data model schema and necessary support tools.

Smart Home

Smart Home product and application requirements based on SP expectations. Smart Home device management, connectivity & Quality Assurance within USP, including the new MatterService data model.

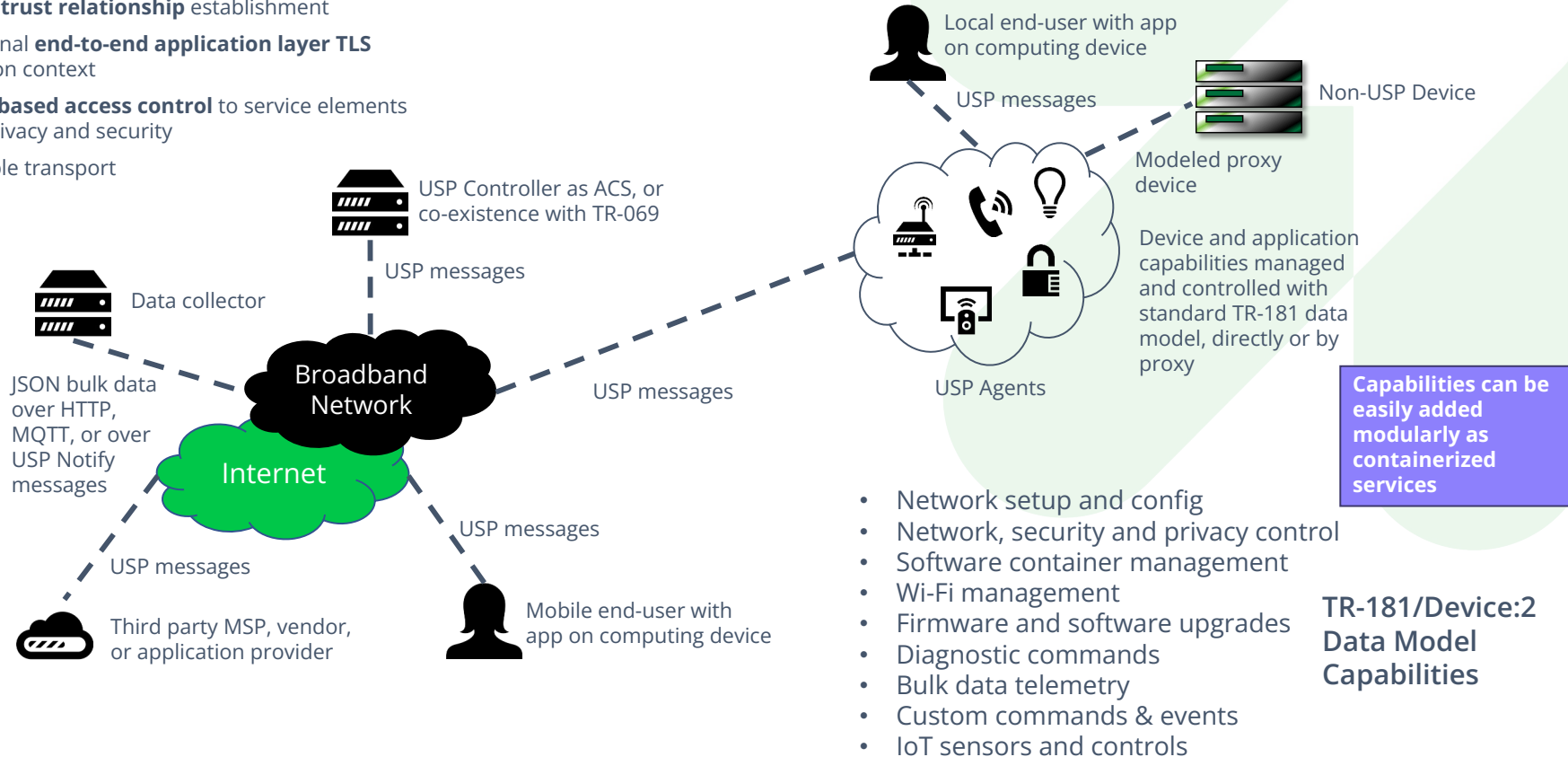
Sub. Networking

Architecture and performance specs for sub. network. Produces hardware and software design guidelines and requirements for subscriber devices and compute platforms.

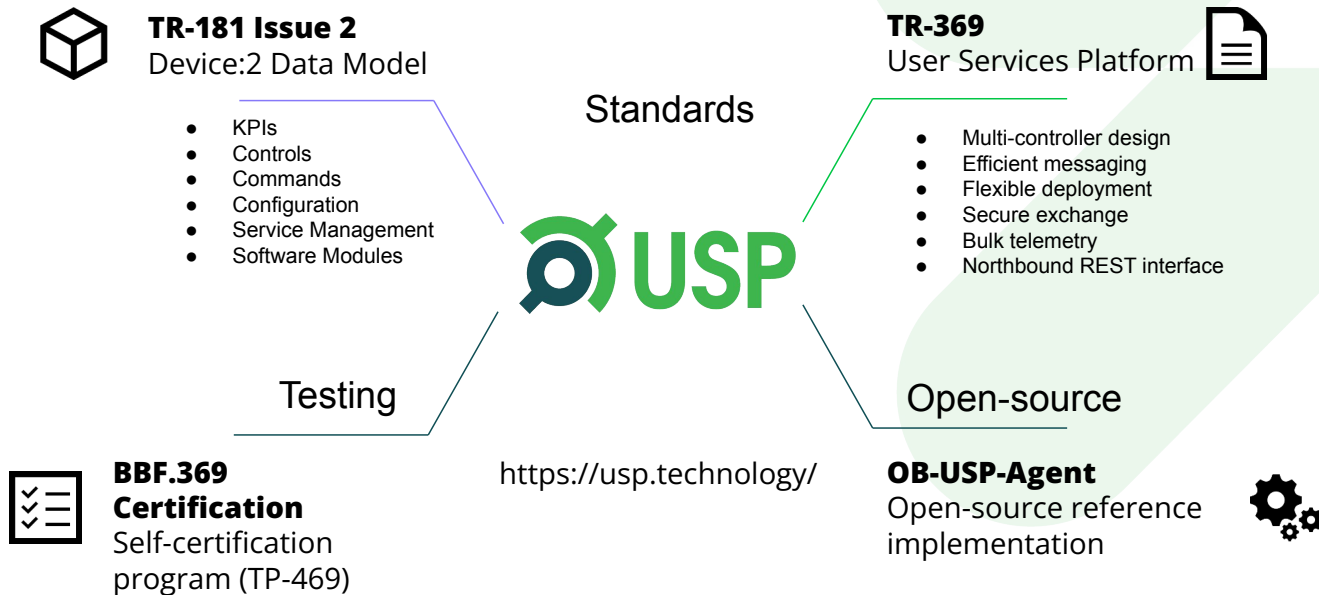
USP Ecosystem

USP Controllers and USP Agents have:

- **Persistent connections** to reduce handshakes
- Clear **trust relationship** establishment
- Optional **end-to-end application layer TLS** session context
- **Role-based access control** to service elements for privacy and security
- Flexible transport



What makes up the User Services Platform?



Implemented in e.g.:

Complemented by:



BBF.398 Carrier-Grade Wi-Fi Certification
TR-124 Residential Gateway Device Requirements

RDk

prpl

What is TR-181/Device:2?

- ❖ Set of objects, parameters, commands, and events for hundreds of functions for connected devices, defined in XML
- ❖ Relies on InterfaceStack to define network configuration
- ❖ Updated every 6-9 months
- ❖ Supported by “Service Data Models” that can follow a separate revision path (i.e., MatterService coming soon)

Name	Type	Write	Description
Device.	object	R	The top-level object for a Device.
RootDataModelVersion	string(:32)	R	Root data model version, e.g. 2.4. For a vendor-defined root data model, this Forum model on which the vendor-defined model is based. Possible patterns: • 2\.\d+(\.\d+)?
InterfaceStackNumberOfEntries	unsignedInt	R	The number of entries in the InterfaceStack table.
ProxiedDeviceNumberOfEntries	unsignedInt	R	The number of entries in the ProxiedDevice table.
Reboot()	command	-	Reboot the entity associated with the containing Device .
⇒ Input.	arguments	-	Input arguments.
⇒ Cause	string	W	The cause that will be contained within the Boot! Event. By default the Device RemoteReboot . Enumeration of: • <i>LocalReboot</i> (The reboot is triggered locally on the device (NOT as a r command triggered by a remote trigger, e.g. another remote manager • <i>RemoteReboot</i> (The reboot is triggered remotely by a remote controll
⇒ Reason	string	W	The reason of the boot (e.g. power on reset, watchdog, overheat, FAN fault, w When absent the implementation must set Reason to 'Unknown'.
Shutdown()	command	-	Shutdown the entity associated with the containing Device .
⇒ Input.	arguments	-	Input arguments.
⇒ Cause	string	W	The cause that will be contained within the Boot! Event. By default the Device RemoteShutdown . Enumeration of: • <i>LocalShutdown</i> (The shutdown is triggered locally on the device (NOT command triggered by a remote trigger, e.g. another remote manager • <i>RemoteShutdown</i> (The shutdown is triggered via the Shutdown() com trigger, e.g. another remote management protocol)

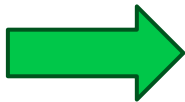
<https://usp-data-models.broadband-forum.org/>

TR-181: Thread Interface Object

```

  ○ Thread.
    ○ BorderRouter.{i}.
      Start()
      Stop()
    ○ Radio.{i}.
      Scan()
      EnergyScan()
    ○ Stats.
      Reset()
    ○ MLE.{i}.
      SetActiveDataset()
      SetPendingDataset()
      GetActiveDataset()
      GetPendingDataset()
    ○ Stats.
      Reset()
      LeaderData.
    ○ Dataset.{i}.
      SecurityPolicy.
    ○ AssociatedNode.{i}.
      Neighbor.{i}.
      Route.{i}.
      IPv6Address.{i}.
    Node.{i}.

```



Commands and Parameters for configuring
BorderRouter functions

Network map of associated nodes

Commands for statistics and monitoring

InterfaceStack links for Radio and MLE

<https://usp-data-models.broadband-forum.org/tr-181-2-21-0-usp.html#D.Device:2.Device.Thread.>

TR-517: MatterService Data Model

- ❖ Maps Matter functionality to USP data model concepts
- ❖ Programmatically consumes Matter specification at each revision (1.5 at release time) to produce a data model
- ❖ Able to onboard, configure, map, and monitor Matter devices
- ❖ Manage and monitor the network itself and interfaces to optimize, troubleshoot, and resolve issues
- ❖ Control Matter devices like a northbound API into Matter network

Application Enabled Services Gateway (WT-492)

Core Pillars

- ❖ Standard for Residential Gateway (RG) software containerization
- ❖ Use of User Services Platform for Life Cycle Management (LCM)
- ❖ Intelligent edge network with RG as hub
- ❖ Working closely with Prpl and RDK

Benefits

- ❖ Rapid deployment of security & feature updates
- ❖ Fast creation and roll-out of new services and applications
- ❖ Decoupling of hardware design from software
- ❖ Improved general feature set through collaboration
- ❖ Enables third party development



HOW THREAD AND BROADBAND
FORUM WILL WORK TOGETHER

From Coordination to Collaboration

CHALLENGE

- Broadband and IoT standards were evolving in parallel.
- Coordination often happened after specifications were published.

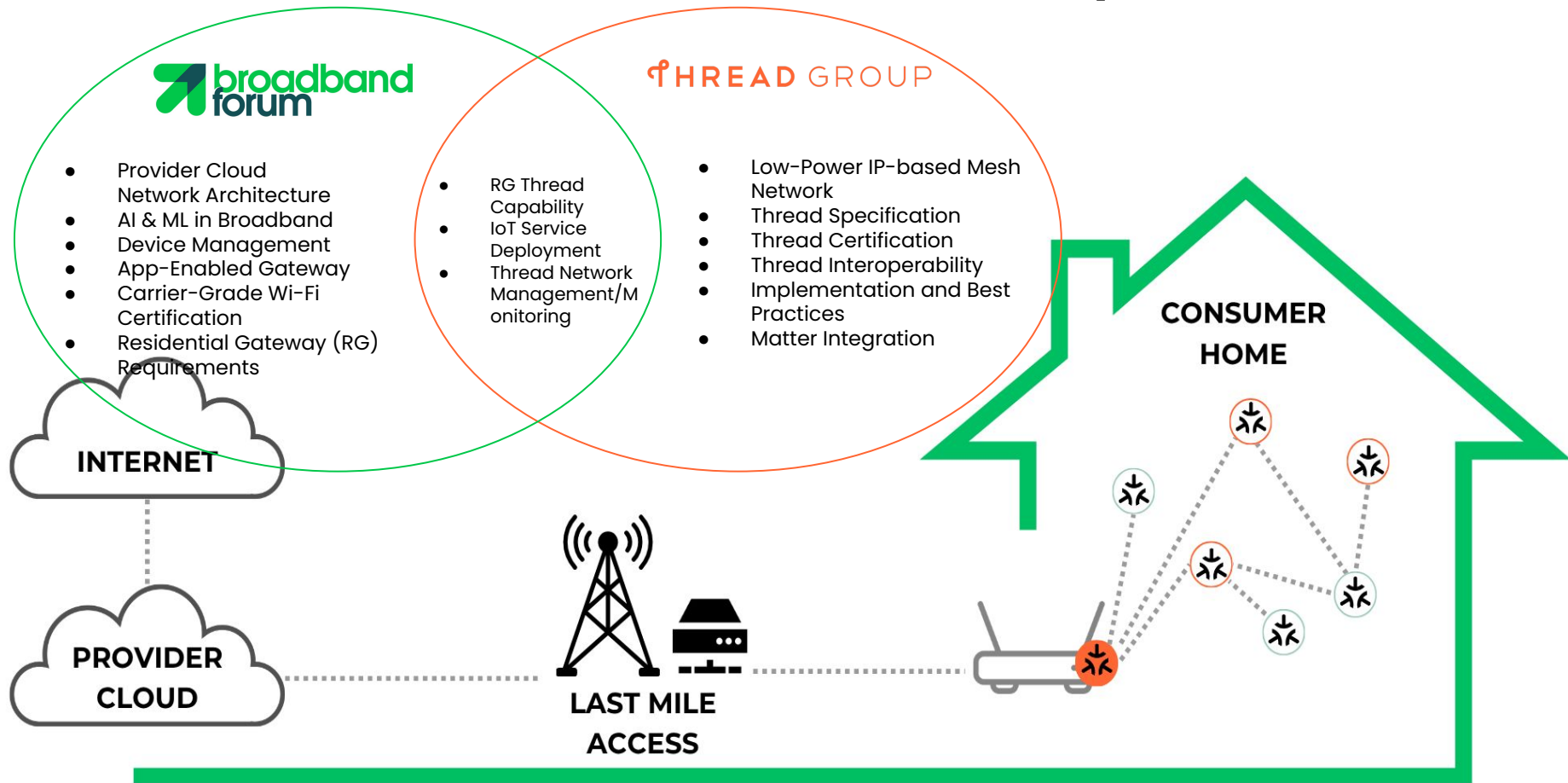
SOLUTION

- Formal liaison between Broadband Forum and Thread Group driven by service providers.
- Earlier collaboration and technical information sharing.

IMPACT

- Better aligned specifications.
- Faster implementation for members.
- Reduced integration risk.
- More consistent experience for the ecosystem.

Thread and BBF Unified Scope



New Opportunities in the Smart Home

Broadband Providers

- **Expand beyond connectivity**
- **New recurring revenue streams**
- **Differentiate broadband offerings**
- **Gain operational insights**
- **Future-proof the home network**
- **Strengthen customer retention**

OEMs

- **Larger addressable market**
- **Simpler customer onboarding**
- **Reduced integration effort**
- **Lower support costs**
- **Faster time to market**
- **Greater consumer confidence**

So... What's next?

Areas of Collaboration

01

Schedule joint calls between organizations to facilitate discussion

02

Review of requirements across specifications

03

Discuss possibility of certification flows between orgs

04

Create best practices guidelines for joint members to provide end-to-end managed services from a service provider

Join Us!

Got Questions?

info@broadband-forum.org

help@threadgroup.org

Upcoming Industry Events

Broadband Forum | Network X | October 13-15

Thread Group Social | IFA Berlin | September 5-7

([Request an invite!](#))

Attend a Members Meetings

Thread Group | New Orleans, LA | Oct 12-15, 2026

Broadband Forum | Denver, CO | Nov 2-5, 2026

Meetings rotate between major regions during the year.

Follow us on Social Media

Broadband Forum | [LinkedIn](#) | [X](#) | [YouTube](#)

Thread Group | [LinkedIn](#) | [X](#) | [YouTube](#)

A photograph of a modern building with a prominent triangular roofline and a balcony with a glass railing. The image is overlaid with large, semi-transparent geometric shapes in shades of blue and grey, including a large 'P' in the top right and a large 'f' in the bottom center. The text 'Q & A' is written in white in the bottom left corner.

Q & A