Leveraging Open Source/prpl & Standards for Operator Managed Wi-Fi

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By:

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Challenges of Broadband Operators

Customer experience

Ever more devices, connections & simultaneous streams

Stability of service

Increased real time use cases requiring low latency and consistency (gaming, AR/VR, WFH, etc.)

Cost to serve

Operational costs: support calls, truck rolls

Debug, upgrade and maintain software

Repair, replace equipment

Manage legacy platforms

Future-proofing business

Understand consumer trends to anticipate expectations of tomorrow

Stay ahead of competition by differentiation

Roll out new services generating additional revenues

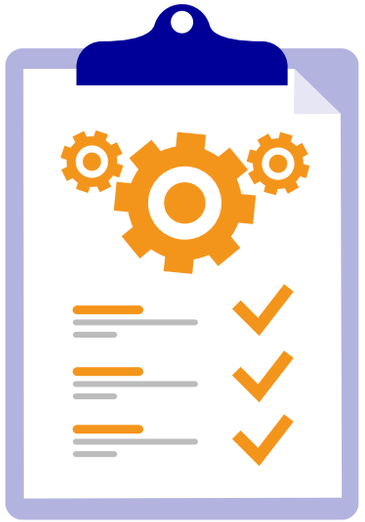
How to Cope with Ever Evolving Challenges?

Frequent and quality software rollouts improvements and new features

So far, SW rollouts have been slow, risky and costly

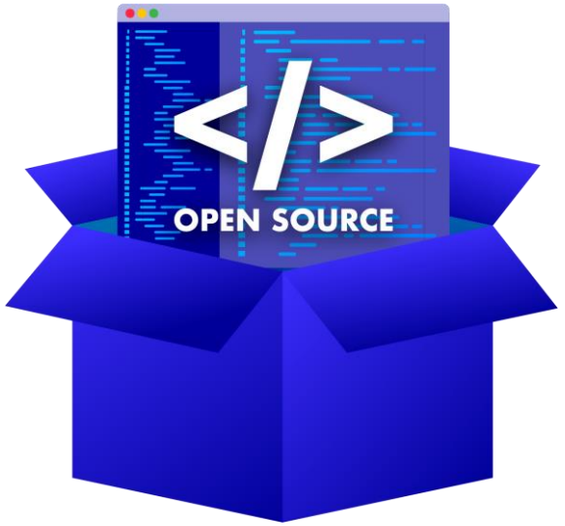
Key components of a scalable software

For operators craving simplification, velocity & innovation



Standards

Interoperability



Open Source SW

Community/Collaboration

Applications and Data

Services/Innovation

Mission statements of standards and open source bodies

PRPL Foundation:

Velocity by de-complexifying the process of integrating a Gateway (GW) stack onto multiple platforms,
Service-driven innovation by enabling proprietary differentiation from a 3rd-party services ecosystem,
Harmonized APIs through collaboration & convergence among member companies and other industry organizations to help companies scale up their businesses,
An open-source community needed to jointly coalesce the largest possible ecosystem to avoid duplication and wasted efforts,
Cultivating a community of knowledgeable developers to help speed deployments

Wi-Fi Alliance:

Drives global Wi-Fi adoption and evolution through thought leadership, spectrum advocacy, and industry-wide collaboration. Our work includes the development of innovative technologies, requirements, and test programs that help ensure Wi-Fi provides users the interoperability, security, and reliability they have come to expect.

Broadband forum:

is the communications industry's leading organization focused on accelerating broadband innovation, standards, and ecosystem development. Our passion – delivering on the promise of broadband by enabling smarter and faster broadband networks and a thriving broadband ecosystem.

Wireless Broadband Alliance (WBA):

is the global organization that connects people with the latest Wi-Fi initiatives. We are here to resolve business issues and enable collaborative opportunities for service providers, enterprises and cities, enabling them to enhance the customer experience on Wi-Fi and optimize business opportunities that are being built on evolving technology and commercial developments.
Our program initiatives support the development of services; our marketing and events enable members to network, advocate and do business and the WBA membership ecosystem provides the support infrastructure to drive the industry forward. We are passionate about Wi-Fi and we are passionate about driving results

Cross-industry collaboration is crucial to long-term success

Standards-based open-source software that is implemented as a common platform is the best way forward

Airties is driving standards-based Wi-Fi software

Increase innovation and interoperability with a faster TTM

Airties is driving the evolution & adoption of Wi-Fi EasyMesh™

Airties actively contributing to extensions of the Data Elements standard

Airties is a WBA board member, leading key working groups:

- Operator Managed Wi-Fi reference architecture (cross-industry spec with EasyMesh and TR-369)
- End-to-End QoS

Airties supports extensions to TR-181 with the Broadband Forum, referenced by the Operator Managed Wi-Fi specification from the WBA

Active contribution of EasyMesh™ Controller code to RDK community; working towards pre-integration and providing EasyMesh™ Controller northbound APIs prplOS

Operator Managed Wi-Fi Reference Architecture Project

Cross-Industry effort coordinated by WBA

1 Installation	Initial setup of a home network with standalone Gateway, or a Gateway with extenders
2 Configuration	Allocating and selecting channels, onboarding client devices, setting SSIDs and security
3 Operation	Channel efficiency and possible interference, acting proactively to mitigate congestion
4 Management	Capability to have visibility and manage remotely the Wi-Fi connections
5 Standards	Interoperability between solutions – gateways, nodes, protocols, security, software versions, etc.

PROJECT LEADING TEAM

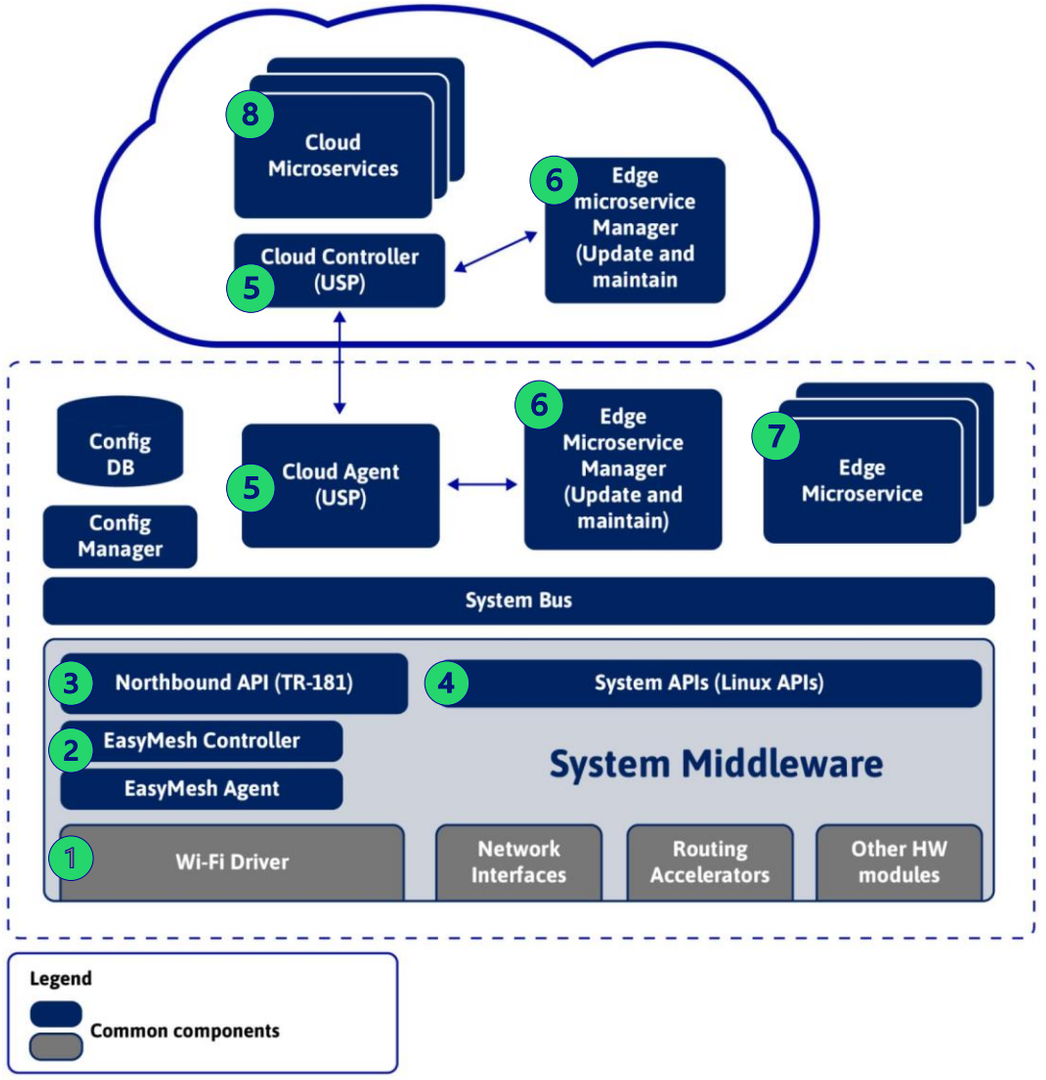
airties BT MaxLinear prpl T··

+400 Participants representing +80 companies

ASSIA COMMSCOPE® CableLabs® Charter COMMUNICATIONS COMCAST intel NOKIA RDK

Examples of participants

WBA OMWi reference architecture



1 **Wi-Fi Driver**
- WFA Certified Components and Features: Wi-Fi 5, Wi-Fi 6, Wi-Fi 6E, Wi-Fi 7, WPS, EasyConnect (DPP), WFA Vantage, WFA OCE, etc.

2 **WFA EasyMesh module**
- EasyMesh Agent allows managing the Wi-Fi interfaces of Gateways and Extenders, and EasyMesh Controller is used by both local and cloud applications
- Liaising with WFA for additional features/TLVs to be added to future versions

3 **TR-181 Northbound APIs**
- Provides standards based Data Model and APIs to local and cloud microservices
- Wi-Fi Data Elements is already in TR-181, Liaising with Broadband Forum to add control/command APIs to the data model

4 **System APIs**
- Linux standard APIs for additional microservices
- Liaising with BBF smart gateway architecture workgroup on additional APIs for other services

5 **Cloud Controller/Agent (USP)**
- Liaising with Broadband Forum to adopt USP (TR-369)

6 **Edge Microservice Manager**
- Collaborate with industry players such as open source communities, cloud service providers etc. to deliver an industry standard architecture

7 **Edge Microservices**
- Value-added edge-installed microservices by vendors/operators

8 **Cloud Microservices**
- Value-added cloud-installed microservices by vendors/operators