WBA’S VISION IS TO CONTINUE DRIVING THE SEAMLESS AND INTEROPERABLE SERVICES EXPERIENCE VIA WI-FI WITHIN THE GLOBAL WIRELESS ECOSYSTEM.

WORK GROUPS & PROJECTS
2019 Programs and Projects

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Founded in 2003, the vision of the Wireless Broadband Alliance (WBA) is to continue driving the seamless and interoperable services experience via Wi-Fi within the global wireless ecosystem. Our mission is to enable collaboration among service providers, technology companies and organizations in the industry who share the same vision. We undertake programs and activities that aim to address business & technical issues, as well as opportunities for member companies.

WBA work areas include advocacy, industry guidelines, trials and certification. Our key programs include NextGen Wi-Fi, 5G, IoT, Roaming, Testing & Interoperability with Work Groups led by the membership to resolve standards and technical issues that support end-to-end services and accelerate business opportunities. Today, membership includes major operators and leading technology companies such as AT&T, BT, Comcast, Deutsche Telekom, Korea Telecom, Cisco, Intel, Microsoft, Google and Huawei.

The WBA Board includes AT&T, Boingo Wireless, BT, Cisco Systems, Comcast, Intel, KT Corporation, Liberty Global, NTT DOCOMO and Orange. For a complete list of current WBA members, please click here.

Follow Wireless Broadband Alliance at:

Learn from the combined expertise and experience of our members. Get insight into global trends in the converged and unlicensed wireless ecosystems in addition to industry best practices.

Leverage networking and partnership-building opportunities at our world-class industry events. Join us at the Wireless Global Congress, Vision Forum, or one of our many one-on-one meeting opportunities, attended by the world’s largest telecommunications companies.

Influence the development of technical specification and Guidelines. Have your say on key WBA initiatives through involvement in our Work Groups and our projects.

Engage the community of leading operators, global LTE and Wi-Fi convergence partners, business leaders and technical experts that form our membership.

Raise your business profile by engaging with senior executives from fixed and wireless operators, service providers, enterprises, cities, Industry partners and regulatory bodies.
WBA WORK GROUPS AND PROJECTS

BUILDING ON OUR PIONEERING NEXT GEN WI-FI FOUNDATIONS

The key activities of the WBA aim to address the ever-changing market requirements and opportunities through advocacy, industry guidelines, trials and certification. Our key programs include NextGen Wi-Fi, 5G, IoT, Roaming, Testing & Interoperability with Work Groups led by the membership team.

WE RESOLVE STANDARDS AND TECHNICAL ISSUES THAT SUPPORT END-TO-END SERVICES AND ACCELERATE BUSINESS OPPORTUNITIES

OUR MISSION

Enable collaboration among service providers, technology companies and the organizations in the industry who share the vision.

Undertake programs and activities to address business and technical issues & opportunities for the member companies.

WBA WORK GROUPS

NEXTGEN WORK GROUP >

ROAMING WORK GROUP >

5G WORK GROUP >

IOT WORK GROUP >

TESTING & INTEROPERABILITY WORK GROUP >

STRATEGIC PROJECTS

- Wi-Fi 6 Program
- 802.11ax Guidelines & Trial - Enhanced Wi-Fi
- In-Flight Connectivity Guidelines
- In-Home Wi-Fi Deployment Guidelines
- Wi-Fi Sensing
- Wi-Fi Calling (end-to-end)
- Quality of Service on Carrier Wi-Fi
- Wi-Fi Deployment Guidelines (Enterprise and Public)
- Wi-Fi Value Add - Location Based Services (LBS) and Advertising
- Roaming Evolution (Federation, Interconnect)
- NGH Live Initiatives
- Security & Privacy over Wireless Networks
- WBA Roaming Standards & Compliance
- Ran Convergence
- Multi-Access Edge Computing (5G & Wi-Fi)
- Fixed Wireless Access
- Unlicensed Integration with 5G Networks
- Unlicensed Spectrum LTE
- Convergence of Cellular and NGH networks – ANDSF/ HS2.0 Policy
- Deploying Wi-Fi and LoRa
- Connected Car
- IoT Interoperability and Roaming
- Captive Network Portal Standards for Wi-Fi
- NGH User Provisioning Standardization & Trial
- Testing & Interoperability Umbrella Group
- NGH User Provisioning Standardization & Trial
- New Wireless Technologies Trial
- Connected City Advisory Board
Wi-Fi 6 (802.11ax)

PROJECT LEADERS

Boingo Wireless | Broadcom Inc | Cisco | Intel

Contact Project Leads: wba-11ax@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Fast-tracking the new Wi-Fi 6 generation for operators leveraging unprecedented Carrier-Grade capabilities
• Assess the new set of capabilities of Wi-Fi 6 that best cater to different operator types, mobile, fixed, neutral host
• Look at the investment case for Wi-Fi 6 deployments as well as the technical case and commercials to advocate the benefits
• Dissect the theoretical benefits via practical fields trials with partners across segments and use cases (In-Home, Industrial, Cities and Carriers)

Target Audience

Target Audience includes WBA members, Wi-Fi 6 Device vendors, Wi-Fi 6 device service provider, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers.

PROJECT DESCRIPTION

Contact Project Leads: wba-11ax@connectedcommunity.org

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Target Audience

Target Audience includes WBA members, Wi-Fi 6 Device vendors, Wi-Fi 6 device service provider, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers.

TARGET OUTCOMES

• Establish Wi-Fi 6 deployment guidelines as the new industry standard
• Enable equipment providers to bring their Wi-Fi 6-ready equipments to the forefront
• Showcase service capability of Wi-Fi 6 offerings by Wi-Fi operators and cellular operators
• Provide a platform for Wi-Fi 6 trials & testing of pre-certified devices for interoperability
• Panoply of new enabled use cases and test plans with Wi-Fi 6

CLICK BELOW TO DOWNLOAD RELATED WORK

Enhanced Wi-Fi – 802.11ax Decoded
Unlicensed Integration with 5G Networks
Wi-Fi Sensing
In-Flight Connectivity Guidelines
In-Home Wi-Fi Industry Guidelines

Keywords
Wi-Fi 6, 5G, Convergence, Integration, Next Gen Wi-Fi, 802.11ax
Unlicensed Integration with 5G Networks

PROJECT LEADERS

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Necati Canpolat
Intel

Nigel Bird
Orange

Contact Project Leads: wba-5gworkgroup@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Advocate and clarify the role of Wi-Fi in 5G and avoid duplication of efforts at a standardization level
• Generate business opportunities for WBA members by early testing of recent Wi-Fi <> Cellular aggregation technologies

Project information

5G intends to enable a seamlessly connected society in the 2020 timeframe and beyond that brings together people along with things, data, applications, transport systems and cities in a smart networked communications environment.

Rather than focusing on the definition of 5G standards, WBA vision is to focus on the use cases being discussed, their context for application throughout the real world, and how Wi-Fi and other unlicensed technologies can play a key role in enabling those under 5G framework, include assessing the approaches of how to integrate Wi-Fi and 5G:

• Access Centric Integration (e.g. LWA / LWIP)
• Core-Centric Integration (e.g. ePDG)
• Above-the core integration (e.g. Multi-Path TCP)

Outcomes / Target Audience

In this whitepaper, WBA will advocate and clarify the role of Wi-Fi in 5G and avoid duplication of efforts at a standardization level. We aim to help the industry identifying business opportunities through early testing of recent Wi-Fi VS Cellular aggregation technologies.

The paper will cover:

1 Definition of 5G networks and its components, technologies and architecture, leveraging on ongoing key forums work and use cases
2 Explore how 5G will increase network capacity, offload, services enablement, policy, etc.
3 Explore how to combine licensed and unlicensed technologies on the 5G architecture to meet the broad range of IMT-2020 requirements
4 Explore how to address gaps between the different technologies (authentication, user usability, devices management, etc.)
5 Foreseen Wi-Fi evolution to cope with 5G predicted requirements and use cases – How WBA Members (Vendors & Operators) can work together to promote upcoming Wi-Fi capabilities, including standardization of interfaces
6 Early trials on approach to aggregate Wi-Fi and 5G (e.g. Multi-Path TCP)

MAIN AREAS COVERED

1 Summarize the definition of 5G networks and its components/technologies/architecture, leveraging on ongoing key forums work and use cases
2 Explore how 5G will increase network capacity, offload, services enablement, policy, etc.
3 Explore how to combine licensed and unlicensed technologies on the 5G architecture to meet the broad range of IMT-2020 requirements
4 Explore how to address gaps between the different technologies (authentication, user usability, devices management, etc.)
5 Foreseen Wi-Fi evolution to cope with 5G predicted requirements and use cases - How WBA Members (Vendors & Operators) can work together to promote upcoming Wi-Fi capabilities, including standardization of interfaces
6 Future vision of mobile networks evolution to cope with 5G

CLICK BELOW TO DOWNLOAD RELATED WORK

Roadmap for Coexistence and Convergence in 5G
5G Networks – The Role of Wi-Fi and Unlicensed Technologies
Unlicensed Integration with 5G Networks

Keywords

5G, Next Generation Network, Use Cases, Coexistence, Convergence, Slicing
Multi-Access Edge Computing (5G & Wi-Fi)

PROJECT DESCRIPTION

Business objectives
• Expand WBA actuation to new areas and take the lead in defining a set of services for Wi-Fi
• Grow WBA members business and protect Wi-Fi propositions

Project information
WBA’s 5G Project identified the evolution of Mobile Edge Computing towards Multi-Access Edge Computing (MEC) to better reflect non-cellular operators’ requirements, including Wi-Fi.

MEC Computing provides an IT service environment and cloud-computing capabilities at the edge of the mobile network, within the Radio Access Network (RAN) and in close proximity to mobile subscribers. The aim is to reduce latency, ensure highly efficient network operation and service delivery, and offer an improved user experience.

WBA is taking the leading role to define a set of services for Wi-Fi and working with ETSI MEC ISG to ensure that the MEC APIs are suitable for supporting Wi-Fi use cases.

Outcomes / Target Audience
In this project, WBA will include the analysis of the use cases that necessitate the exposure of radio network related information from Wi-Fi access networks, and possible definition of an RNIS API for supporting Wi-Fi use cases. The industry will be benefited with the finding of issues associated with exposing and/or normalizing different delays and/or averaging algorithms which will likely need cross industry analysis.

The scope of this project:
• Focus on the a practical MEC objective and deliverable
• WBA statement on the MEC arena, setting the scene for future work
• Project to align with ETSI MEC to maximize its impact and deliverables

MAIN AREAS COVERED

• Include analysis of the use cases that necessitate the exposure of radio network related information from Wi-Fi access networks
• Possible definition of an RNIS API for supporting Wi-Fi use cases
• Issues associated with exposing and/or normalizing different delays and/or averaging algorithms will likely need cross industry analysis

CLICK BELOW TO DOWNLOAD RELATED WORK

Software defined networking (SDN) and network function virtualization (NFV) for Wi-Fi networks
WBA 5G paper
Unlicensed Integration with 5G Networks

Keywords
5G, Wi-Fi, Wi-Fi Virtualization, API, Use Cases, RAN optimization, Multi access
### Project Leaders

<table>
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<th>Name</th>
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</table>

Contact Project Leads: pmo@wballiance.com

### Project Description

**Business Objectives**

- Validate business opportunity of uLTE technologies
- Capitalize on Wi-Fi investments to augment range of services provided to LTE providers as offload

**Project Information**

As the technologies for LTE in unlicensed bands approach readiness for operational deployment, the use cases and real-world deployment considerations will become more clear and targeted by vendors and operators.

This, in turn, will provide more clarity about how the technology will impact the wireless market, and impact incumbent technologies (especially Wi-Fi) in nearby deployments.

The recommendation is to update the sections in previous WBA work outlining the anticipated deployment of unlicensed LTE on its LTE – Wi-Fi RAN interworking variations (e.g. LWA, LWIP, MulteFire), and discussing these impacts, in situations such as:

- LTE/Wi-Fi RAN interworking and Carrier Wi-Fi coverage overlapping scenarios
  - Indoor/Outdoor deployment
  - Macro and Small Cell usage and interaction
  - Integrated (into licensed nodes) or standalone unlicensed nodes
- Neutral host support

**Outcomes / Target Audience**

Current Unlicensed LTE work streams are evolving in the following order:

1. Market Drivers
2. Deployment Guidelines
3. Trial (LWA, LWIP, MulteFire)

### Main Areas Covered

- General description of LTE-WLAN Aggregation and its implications
- Relation with Carrier Wi-Fi
- Anticipated Deployment Scenarios for Unlicensed Spectrum LTE Proposals
- Expected Timelines for the Various Proposals

### Click Below to Download Related Work

Unlicensed Spectrum LTE – Market Drivers and Roadmap ➢

**Keywords**

Unlicensed Spectrum, LTE-U, LAA, LWA, LWIP, Standalone access, Policy, Use Cases, End-to-end trial
# Captive Network Portal Standards for Wi-Fi

## Project Leaders

- Aruba Networks
- Boingo Wireless
- Global Reach
- Maxima Telecom

Contact Project Leads: wba-captiveportalstandards@connectedcommunity.org

## Project Description

### Business Objectives

- Bring awareness of Captive Network Portal limitations and the fragmented use cases across platforms and manufacturers
- Simplify the deployment and operation of premium and free public Wi-Fi networks based on advertising marketing monetization

### Project Information

Wi-Fi access is part of our basic needs in daily life. In locations such as coffee shops, airports, hotels, hospitals and public transport many enterprises are offering short-term or temporary Internet access.

It is common to start new connections by using a Captive Portal presented as a landing or log-in page which may require authentication, payment, acceptance and EULA/T&C or other valid credentials that both the host and users agree to adhere by. To illustrate the challenges and opportunities, the paper will also provide real use cases and recommendations on how to enhance seamless user experience with on-boarding tactics, which will also include Passpoint™ enablement as well as various other options which allow venues & enterprises to increase brand awareness, business opportunities and improve their monetization models.

### Target Audience

Target Audience includes WBA members, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers, app developers.

## Target Outcomes

- Analyze features of Captive Portals display on different platforms
- Address key challenges, limitations for enterprises on network control, security implications and user experience, aligning tactics for presentation and user tracking
- Establish deployment guidelines and standards for a secure end user experience
- Provide solutions and recommendations to technical problems related to captive portals and the provision of paid access through online-payment

## Click Below to Download Related Work

- Carrier Wireless Services Certification (CWSC)
- Wi-Fi Deployment Guidelines
- In-Flight Connectivity
- In-Home Wi-Fi Industry Guidelines
- Enhanced Wi-Fi – 802.11ax Decoded
- Testing & Interoperability
- Roaming Evolution (Federation, Interconnect)
- NGH Provision

### Keywords

In-Home, In-home Wi-Fi, Chipset, Wi-Fi 6, 802.11ax, Home portal, Internet of things, IoT, Security, QoS, Smart home
## WBA & NGMN RAN Convergence Joint Taskforce

### Project Leaders

**WBA | NGMN**

**Contact Project Leads:** wba-ngmnjt@connectedcommunity.org

### Project Description

#### Business Objectives

- To address the challenges and potential solutions for converged RAN deployments of Wi-Fi 6 with 5G, ensuring the best user experience using both Wi-Fi and cellular access
- Examine business opportunities with Wi-Fi, Wi-Fi 6 and 5G with recommendations for architecture designs and use cases

#### Project Information

As we move into the 5G era, connectivity is becoming increasingly important. New, emerging use cases and URLLC use cases, including autonomous driving and industrial automation, are at the forefront of the history. In addition, the delivery of a harmonized set of 5G services - whether accessed through Wi-Fi, cellular or both. NGMN and WBA have joined forces to address the very important topic of RAN Convergence. The alliances are working together to address some of the requirements and key challenges that need to be addressed to realize service and network convergence over 3GPP Access and Wi-Fi.

#### Target Audience

Target Audience includes WBA members, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers, app developers.

### Target Outcomes

- Better simultaneous use of cellular and Wi-Fi connections
- Better network load management
- Enablement of authentication and access
- Enablement of service reachability between Wi-Fi and 5G
- Business opportunities for WBA members
- Manageability of Wi-Fi over Cellular through RAN optimization

### Click Below to Download Related Work

- Ran Convergence Whitepaper
- Unlicensed Integration with 5G Networks
- Enhanced Wi-Fi – 802.11ax Decoded
- Multipath Technologies
- Wi-Fi, network slicing & enhancing the delivery of 5G capabilities
- Multi-Access Edge Computing (5G & Wi-Fi)

### Keywords

5G, Wi-Fi 6, Wi-Fi, RAN optimization, Multi access, Convergence
**PROJECT LEADERS**

Accuris Networks | Aruba Networks | BT | Cisco | Google | Intel | Ruckus Networks

Contact Project Leads: pmo@wballiance.com

**PROJECT DESCRIPTION**

**Business objectives**

- Investigate different approaches for above-the-core integration for Wi-Fi with 5G
- Demonstrate and test the above-the-core capability using Google Android and OS/iOS11 functionality
- Document best practices and recommended approach

**Project information**

In WBA’s white paper, ‘Unlicensed Integration with 5G Networks’; there was a consensus on three broad approaches of how to integrate Wi-Fi with 5G: 1) Access Centric, 2) Core Centric and 3) Above the Core integration. The market has seen significant adoption of ‘above the core’ approaches yet there is no industry body leading the definition of a common architecture. (3GPP has focused on access and core centric integration)

The market is dependent on the support of the device ecosystem and both Apple and Google have been championing integration of Wi-Fi and Cellular since 2014/15 with MP-TCP and MP-QUIC respectively – now opened to the developer community.

This results in:

- Handover mode supported for applications requiring high reliability
- Interactive mode supported for applications requiring low latency
- Aggregation mode supported for applications that want to benefit from combined link capacities

**Target Audience**

Target Audience includes WBA members, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers and app developers.

**TARGET OUTCOMES**

- Outlines the approaches for the core integration and includes results from proof of concept with demonstrations of Google Android OS and Apple iOS11 capabilities.
- Provide potential testing of applications in WBA defined scenarios

**CLICK BELOW TO DOWNLOAD RELATED WORK**

Unlicensed Integration with 5G Networks
Enhanced Wi-Fi – 802.11ax Decoded
Ran Convergence Whitepaper
Wi-Fi, network slicing & enhancing the delivery of 5G capabilities
Multi-Access Edge Computing (5G & Wi-Fi)

**Keywords**

Wi-Fi 6, Convergence, Integration, 5G
Wi-Fi Sensing

PROJECT LEADERS

C-DOT | Cognitive Systems | Intel | SK Telecom

Contact Project Leads: wba-wifisensing@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Bring awareness to the industry about Wi-Fi Motion Sensing
• Highlight the business opportunities of Wi-Fi Sensing technology
• Examine the potentials of integrated into different kinds of systems
• Analyze the requirements and identify gaps the fine-timing-measurement (FTM) location services & Wi-Fi Sensing technologies
• Identify the key use cases

Project information

Wi-Fi Sensing is a new technology which enables motion detection using existing Wi-Fi signals. This technology works by allowing Wi-Fi devices to behave like a bi-static radar system, with the focus of detecting motion and providing information which can be used to enable new Wi-Fi based services. This program is focused on exploring and introducing the technology to the industry, identifying options to increase network efficiency and full compliance for the end user.

Target Audience

Target Audience includes WBA members, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers, chip set providers.

TARGET OUTCOMES

• Establish Wi-Fi Sensing & Location deployment guidelines as a new industry standard
• Enable scalable interoperable solutions by working with WBA members and WBA’s industry partners such as IEEE 802.11 and WFA
• Provide a testing platform for Wi-Fi Sensing and Location services for interoperability
• Panoply of new enabled use cases and test plan with Wi-Fi Sensing
• Develop a set of recommendations on behalf of WBA members for future applications of the solution

CLICK BELOW TO DOWNLOAD RELATED WORK

Wi-Fi Deployment Guidelines
In-Flight Connectivity Guidelines
In-Home Wi-Fi Industry Guidelines
Enhanced Wi-Fi – 802.11ax Decoded
Wi-Fi 6 - 802.11ax

Keywords
Wi-Fi 6, Wi-Fi Sensing, location-based, 802.11
Roaming Evolution (Federation, Interconnect)

**PROJECT LEADERS**

**BSG Wireless | CableLabs | Cisco**

*Contact Project Leads: wba-roamingevo@connectedcommunity.org*

**PROJECT DESCRIPTION**

**Business objectives**

- Introduce new opportunities to improve Wi-Fi Roaming business
- Identify deployment guidelines for interconnection and simplification of the user experience
  - Enable and extend the Wi-Fi Roaming footprint to spread across the globe
- Scale up the ecosystems and leverage synergies between the WBA and LoRa Alliance

**Project information**

Roaming Evolution is a special subgroup within the WBA Roaming Work Group that is focused on developments on a “taskforce” basis to provide industry standards on Roaming.

**Target Audience**

Target Audience includes WBA members, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers, app developers.

**TARGET OUTCOMES**

- Offer RadSec trial with simplified interconnection model, without the need to create IPSec tunnels, between visited and home networks
- Define the standard to create a single Network ID to simplify all the process of data clearing and increase data and networks intelligence
- Establish NGH Roaming Federation, in which participants (venues, operators, cities) will be able to provide Wi-Fi Roaming by using a single Roaming Consortium ID.

**CLICK BELOW TO DOWNLOAD RELATED WORK**

- Wi-Fi Roaming Standard (WBA WRIX)
- Wi-Fi Roaming Business Case
- Next Gen Wi-Fi (NGH)
- Carrier Wireless Services Certification (CWSC)
- Wi-Fi Roaming Guidelines
- IoT Interoperability: Dynamic Roaming
- WBA Roaming Standards and Compliance

**Keywords**

Wi-Fi Roaming, NGH, Live Testing, Wi-Fi Roaming, Passpoint™, HS2.0 R1&R2, RADIUS, City Roaming
INTERNET OF THINGS

IoT Interoperability and Roaming - IoT Dynamic Roaming

PROJECT LEADERS

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<td>Cisco</td>
</tr>
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Contact Project Leads: wba-iot@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

- Identify business requirements for IoT roaming and interoperability
- Improve the identity management for IoT and open up a new business driver for WBA

Outcomes / Target Audience

In this project, WBA is focusing on delivering a new perspective to the IoT space facilitating the definition of identities which in the near term will result in broad interoperability and roaming capabilities. The whitepaper provides key insights and analysis of:

- Current roaming solutions across a myriad of wireless technologies
- Extrapolate roaming patterns for IoT applications
- Baseline the WRIX framework as a foundational standard
- Recommendation to support IoT expansion with Wi-Fi
- Key recommendations to address the business issues of IoT Roaming

The paper is one of the must-read items for Industry players such as Integrated Operators, Cable Operators, IT Vendors, Infrastructure Vendors and Chipset Vendors, etc.

MAIN AREAS COVERED

Definition of vertical markets and respective un-licensed access technologies

- Enablement platforms, capabilities and IoT identities which impact WBA Members
- Interoperability between technologies (IoT verticals)
- Analysis of the evolution of existing value chains

- IoT Identities and Roaming
- IoT Dynamic Roaming
- Evolution of Passpoint/NGH based roaming to accelerate the deployment of IoT services

CLICK BELOW TO DOWNLOAD RELATED WORK

IoT New Vertical Value Chains and Interoperability

Keywords

Unlicensed Access for IoT, New Value Chains, IoT Identities, Roaming, Verticals Interoperability
Wi-Fi & LoRa Deployment Synergies

PROJECT LEADERS

C-DOT | Intel | LoRa Alliance | Semtech

Contact Project Leads: wba-wifilorasynergies@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Address the gaps of IoT use cases with licensed band technologies
  • Explore additional use cases that can be addressed.
  • Address IoT use cases through the combination of Wi-Fi and LoRa strengths for future deployment
  • Scale up the ecosystems and leverage synergies between the WBA and LoRa Alliance

Project information

WBA and LoRa Alliance technologies are fully complementary with similar go-to-market, and can providing a tremendous boost to the IoT landscape. This program aims to demonstrate the potential benefits of integrating Wi-Fi & LoRaWan technologies.

Target Audience

Target Audience includes WBA members, LoRa Alliance members, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers, IoT solution providers.

TARGET OUTCOMES

• Develop a deployment guideline with an unlicensed approach
• Showcase Wi-Fi technology and its technical complementarity
• Provide a market assessment of a potential footprint that can be covered by Wi-Fi combined with LoRa.

• Identify the potential challenges of business and technical aspects of the market with recommendations of possible solutions
• Provide IoT use case studies on Smart Building, Smart Hospitality, Smart Cities, Smart Venue, etc.

CLICK BELOW TO DOWNLOAD RELATED WORK

IoT Interoperability and Roaming
Connected City Advisory Board Blueprint
Wi-Fi Deployment Guidelines
Connected Car
IoT New Vertical Chains and Interoperability
Location Based Services (LBS) Over Wi-Fi

Keywords
IoT, LoRaWan, Wi-Fi, Smart Government, Smart Cities, Smart Building, Smart Hospitality, Smart Venue
Connected Car

PROJECT LEADERS

Aruba Networks | Cisco | C-DOT | Syniverse

Contact Project Leads: wba-connectedcar@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• With the huge potential opportunity of the connected car, the objectives of this program are to articulate and document the relevance of WBA published works to connected car use cases.

• Provide a co-operation framework with Automotive Edge Computing Consortium on the use of Wi-Fi.

• Provide a framework for engagement and advocacy with suppliers and operators serving the automotive industry.

Project information

Over the course of the next three years, cars will increasingly come with embedded connectivity addressing both vehicle-to-vehicle requirements as well as vehicle-to-cloud. Today’s connected vehicles come with Wi-Fi included as a component of the vehicle’s communication capabilities. This provides strong synergies between the future multi RAT vehicle environment and the existing multi-RAT environment which exists today for smartphones, on which the WBA has already published a great deal of work. Furthermore, this project will look at areas such as secured Wi-Fi for the connected car, looking at the use of Hotspot 2.0 to address ‘roaming’ scenarios and in addition reassess the connected city blueprints to enable the connected car over this common infrastructure. This can be further extended into other works WBA has completed including, automated Wi-Fi authentication, access network selections, Wi-Fi role in supporting new IoT value chains; Wi-Fi 6 enhancing connected car support and Wi-Fi with 5G.

Target Audience

Target Audience includes WBA members, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers, app developers and automotive industry.

TARGET OUTCOMES

• Delivery of a white paper that collates existing deliverables and highlights their relevance to connected cars.

• Co-operation with AECC to cooperate on Wi-Fi supporting automotive use cases.

CLICK BELOW TO DOWNLOAD RELATED WORK

Wi-Fi Deployment Guidelines >>
In-Home Wi-Fi Industry Guidelines >>
Wi-Fi Roaming Guidelines >>
Connected City Advisory Board Blueprint >>
In-Flight Connectivity Guidelines >>
Wi-Fi Value-add and Advertising >>
IoT Interoperability and Roaming >>
WBA/LoRa Deployment Synergies >>

Keywords

Connected car, Smart Car, IoT, IoV, V2V, Intra vehicle connectivity
Connected City Advisory Board & Blueprint

PROJECT LEADERS

Contact Project Leads: wba-ccab@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

- Identify the business opportunities and challenges for a connected City
- Practical templates and requirements to facilitate connectivity management

Project information

Under the umbrella of the Connected City Advisory Board (CCAB) and the Wireless Broadband Alliance (WBA), the Connected City Blueprint is intended to work as a guideline to support cities and government authorities to develop their connected city plans, and for the broader wireless industry, including citizens, entrepreneurs, operators, regulators, equipment manufacturers and service developers to better understand the challenges and opportunities of the Connected City and Smart City ecosystem.

- Overall connectivity is important to a city on many layers;
- Citizens: Providing greater convenience and better quality of life;
- Businesses: Create new economic opportunities for companies in all sectors including tech, media, healthcare, logistics and many more;
- Government: Efficiently manage and run the city by anticipating needs and providing improved services to its people

Outcomes / Target Audience

The Connected City Blueprint 2017/18 serves as a guideline for cities and government authorities looking for support in the approach and development of their Connected City Plans. It includes valuable lessons to be learned from the most successful early adopters, and is a source for the broader wireless industry to better understand the challenges and opportunities the Connected City and Smart City ecosystem offers.

This latest edition also explores how different technologies can help cities develop their Connected City Plans to tackle urban challenges, whilst highlighting the need for engagement with and collaboration between the different stakeholders, including the Citizens, City Authorities, Private Sector Companies, Innovators and Entrepreneurs and Academia, in order to achieve success.

MAIN AREAS COVERED

- Smart City Definition
  (The importance of the Smart City and its Challenges)
- Connected City Ecosystem and Stakeholders
- Connected City Value Proposition
- Assessing the role of different technologies
  (Technology Landscape, Wireless Broadband Technologies, IoT and Smart Cities Technologies)
- Connected City architectures & framework
  (Modelling City Services, Overview over Standardization) efforts
- Interoperability and Roaming
- Public-Private Partnerships Business models
- Big Data: Challenges, opportunities and benefits for Cities

CLICK BELOW TO DOWNLOAD RELATED WORK

Connected City Blueprint

Keywords

Smart City, Connected City, Unlicensed Access for IoT, New Value Chains, IoT Identities, Roaming, Verticals Interoperability
## Wi-Fi Deployment Guidelines (Enterprise, In-Home and Public)

### PROJECT LEADERS

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**Contact Project Leads:** wba-ngworkgroup@connectedcommunity.org

### PROJECT DESCRIPTION

#### Business objectives
- Harmonize Wi-Fi networks for best practice deployment addressing multiple verticals
- Give more confidence to service providers to deploy Wi-Fi networks

#### Project information
Nowadays, Wi-Fi deployments face several challenges that benefit from a collaborative industry effort to create a new level of efficiency, performance and reduced time-to-market. Given the inconsistencies in deployment methods and resulting differences in meeting end-user expectations, an industry-wide set of deployment guidelines will help ensure a more standardized approach in effectively deploying Wi-Fi networks, across industry verticals.

This project defines an industry standardized approach encompassing different deployments phases across different types of environments:

1. Pre-installation guidelines
2. Design
3. Installation and testing
4. Configuration and operation

#### Outcomes / Target Audience
The Wi-Fi Deployment Guideline Series help operators & technology players to make the best decisions when deploying their networks. The Guidelines and the Checklists cover a collection of baseline standards that encompass the lifecycle deployment phases including: Planning Guidelines, Site Survey, Radio Spectrum Analysis, Wi-Fi Network Implementation, and Configuration and Operation to targeted vertical market.

This umbrella forms the basis of the Wi-Fi Deployment Guidelines Series that the WBA will extend to key industry verticals and applications. The focus areas making up the series in 2018 include: In-Flight Connectivity, In-Home Wi-Fi, Enterprise Wi-Fi, Venue/Stadium Wi-Fi, City Wi-Fi, and Hospitality Wi-Fi.

### MAIN AREAS COVERED

#### Wi-Fi Deployment Baseline:
1. Pre-installation guidelines (Site survey, Radio spectrum analysis)
2. Design (Design objectives & KPI targets, Wi-Fi network design)
3. Installation and testing (Channel management, Performance considerations)
4. Configuration and operation

#### Leverage different industry perspectives coming from selected sectors:
- Enterprise wireless
- Airplane case (In-flight)
- Fixed Wireless Access (Point to point links)
- City wide case
- Ground transportation

Services perspective – how this implicates the installation and testing (e.g. LBS, new HD video)

### CLICK BELOW TO DOWNLOAD RELATED WORK

- [Wi-Fi Deployment Guidelines Checklist](#)
- [In-Flight Connectivity Guidelines](#)
- [In-Home Wi-Fi Industry Guidelines](#)

### Keywords
- Wi-Fi Deployment
- Installation
- Design
- Testing
- RF management
- Configuration
NGH Provisioning Standardization & Trial

PROJECT LEADERS

CableLabs | Comcast | Global Reach

Contact Project Leads: wba-nghprovisioning@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Improve customer experience on NGH networks by eliminating barriers (devices and infrastructure)

• Give more confidence to service providers to invest in NGH and device vendors to develop support NGH

Project information

NGH Provisioning efforts focus on Wi-Fi adoption and growth while addressing the need for an industry standardized approach to discover a NGH network and related services, associate automatically and securely, be provisioned with network access credentials with minimal user interaction, and use the service without delay. Such a flow would also reduce the friction to NGH adoption and simplify deployments by eliminating the need to use a separate on-boarding network like an open network.

PROJECT DESCRIPTION

Target Audience

Target Audience includes WBA members, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers, app developers.

TARGET OUTCOMES

• Benchmark of current NGH networks and analyze the gap of current NGH state

• Identify provisioning standardization use cases

• Develop a set of deployment guideline for NGH Provisioning including requirements of User Equipment, Access Point, Controller/WAG, AAA and NGH Roaming Database, etc

• Develop a set of Global test plan document

• Provide a trial platform and test bed scope with proof of concepts

• Provide Certificates and policies to enable such ecosystem

CLICK BELOW TO DOWNLOAD RELATED WORK

Carrier Wi-Fi Guidelines

Wi-Fi Deployment Guidelines

Wi-Fi Roaming Standard (WBA WRIX)

Wi-Fi Roaming Business Case

Carrier Wireless Services Certification (CWSC)

Roaming Evolution (Federation, Interconnect)

Captive Network Portal Standards

Keywords

Provisioning, EAP, Onboarding, Online Sign-up, Captive Portal, Trial
Wi-Fi Calling (end-to-end)

PROJECT LEADERS

Mark Hamilton
Ruckus Wireless

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Necati Canpolat
Intel

Contact Project Leads: wba-wificalling@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Harmonize Wi-Fi Calling architecture for best practice deployment
• Give more confidence to service providers to deploy Wi-Fi Calling

Project information

Wi-Fi Calling Opportunities and Challenges towards 5G - With the support from leading device vendors and leading operators globally, for Wi-Fi Calling, the momentum for Wi-Fi Calling in the industry is increasing rapidly. WBA provides an ongoing assessment of all critical factors regarding the implementation of Wi-Fi calling.

Wi-Fi Calling End-to-End System Standardization – WBA is addressing the identified gaps on previous work to develop a specification impacting all players in the ecosystem. This ranges from; Emergency Call Support, Location, Quality of Experience, Regulatory work, among others.

Outcomes / Target Audience

WBA looks into the opportunities of Wi-Fi Calling in the industry by producing guidelines documentation that will help the ecosystem including operators, service providers and device/infrastructure vendors currently exploring this opportunity. Furthermore, WBA is creating a Focus group to review technology, business case, risk, strategic alignment, among others.

MAIN AREAS COVERED

• What’s Wi-Fi calling - Overview of Wi-Fi Calling Technologies
• Business Drivers, Market Opportunities and Use Cases
• Wi-Fi Calling Functional & Business Requirements
• What are the challenges/impediments to Wi-Fi calling? (Business & Technical)
• Develop and deliver an end-to-end Wi-Fi Calling specification on which standards based solutions could be implemented and deployed
• Define the scope for Wi-Fi Calling interoperability trials that cover various deployment models and options providing inputs to the Carrier Wireless Services Trial Project

CLICK BELOW TO DOWNLOAD RELATED WORK

Wi-Fi Calling Opportunities and Challenges towards 5G

Keywords
Wi-Fi Calling, Native Dialer, VoWi-Fi, VoLTE, Roaming, Emergency Services, Interworking Cellular <> Wi-Fi
Security & Privacy over Wireless Networks

PROJECT LEADERS

Contact Project Leads: wba-securityprivacyoverwirelessnetworks@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Contribute to ensure the security and privacy of WBA members networks and their customers
• Give more confidence to service providers to invest in Wi-Fi

Project information

With the convergence of heterogeneous networks to maximize service offering and flexibility to the users, the ecosystem players need to develop, interoperate and deploy proper security for various the network technologies, device types and services required by the operators.

As the Wi-Fi roaming business grows more and more accounting traffic is generated and therefore, roaming fraud management mechanism arise as a priority.

Moreover, privacy aspects are becoming pivotal in several regions throughout the world, a common industry approach intends to remove barriers when using Wi-Fi networks.

Outcomes / Target Audience

This project aims to write a guidelines paper to facilitate the understanding and identify challenges that service providers and vendors need to address to bring security to various services, especially those offered over trusted and untrusted Wi-Fi networks.

MAIN AREAS COVERED

• Joint collaboration between operators and vendors to discuss policy and methods to facilitate security policy, credential provisioning, remediation, and management
• Promote collaboration between 3GPP, NGH, devices, and ISV ecosystem vendors /providers to promote strong and flexible authentication and transport security, as well as interoperability / test
• Identify policy interoperation gaps and work toward improvement proposal through liaison
• Identify guidelines and best practices on security policy and management

CLICK BELOW TO DOWNLOAD RELATED WORK

Carrier Wi-Fi Guidelines >>

Keywords

Security mechanisms, L2/L3 security, 802.11i, Wi-Fi Protected Access
CARRIER WI-FI SERVICES

Quality of Service on Carrier Wi-Fi

PROJECT LEADERS

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Benu Networks

Kishore Raja
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Contact Project Leads: wba-qualityofservice@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Improve service experience for of customers using Wi-Fi networks
• Remove barriers to service providers to invest in Wi-Fi and NGH

Project information

Wi-Fi Standards are evolving with Carrier Grade Wi-Fi deployment steadily picking up. Evolution of existing services and proliferation of new services is causing the industry to emphasize on the quality of experience to the end user. Also, Operators would like to offer differentiated services over a Carrier Wi-Fi network with guaranteed Quality of Service (QoS). The traditional 3GPP style of imperative QoS model unfortunately does not work for WLAN Access technology due to federated deployment architecture.

Outcomes / Target Audience

Statement to the industry identifying the minimum set of requirements that operators would like to have for Wi-Fi QoS. Development of guidelines document, including standards, protocols and metrics which will be regarded as the one standard for QoS resulting in wide adoption by the industry.

MAIN AREAS COVERED

• Business Drivers
• Quality of Service Metrics
• KPI Reporting
• Service flow prioritization
• Network Monitoring
• Metrics database and reporting
• Security

QoS Metrics Service Offering

• QoS Requestor Layer
• QoS API Specification Layer
• QoS Provider Layer
• QoS Provider Service Framework Layer

CLICK BELOW TO DOWNLOAD RELATED WORK

Quality of Service on Carrier Grade Wi-Fi

Keywords

Quality of Service; Quality of Experience; Wi-Fi performance; Reporting; Metrics; Analytics
Convergence of Cellular and NGH networks – ANDSF/ HS2.0 Policy (Guidelines & Trial)

PROJECT LEADERS

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Vivek Gupta
Intel

Contact Project Leads: pmo@wballiance.com

PROJECT DESCRIPTION

Business objectives

• Open new revenue streams by using innovative technology options
• Identify the business opportunities and challenges for ANDSF

Project information

Policy is becoming a key tool for operators to manage networks and deliver the best experience possible to the customers.

This WBA efforts assess the following dimensions to make the interworking a reality:

• Access Network Discovery
• Selection Policy
• Mobility Policy
• Routing and Flow Policy
• Non-seamless Offload Policy
• Enforcement Preference and Overriding
• User subscription plan awareness

A scope document and respective test plan are used to conduct and end-to-end trial between different players in the ecosystem.

Outcomes / Target Audience

This paper introduces two important standards in networking policy – 3GPP Access Network Discovery and Selection Function (ANDSF) and Hotspot 2.0 Policy – and to propose a path toward convergence and improvement of these two policy standards with recommended actions. Both ANDSF and HS2.0 specifications define policy objects and protocols for intelligent and seamless automatic next-generation network selection and enhanced user experience.

MAIN AREAS COVERED

• State-of-the-art - Operator’s policy
• Use cases, business models & opportunities for WBA members
• Current challenges that operators face to implement solutions for policy
• Guidelines and best practices for operators on policy

• Policy interoperation gaps & recommendations to relevant industry bodies
• Scope for trial the of ANDSF & Passpoint Release 2 solutions for policy

CLICK BELOW TO DOWNLOAD RELATED WORK

Convergence of Cellular and Next Gen Wi-Fi Networks – ANDSF and HS2.0

Keywords

Convergence of Wi-Fi and Cellular; New Policy Mechanisms; Use Cases; ANDSF & HS2.0 Overview
Wi-Fi Value Add - Location Based Services (LBS) and Advertising

PROJECT DESCRIPTION

Business objectives
• Identify the business opportunities and challenges for LBS and advertising
• Foster the deployment of LBS and advertising

Project information
Indoor Location-Based Services over Wi-Fi networks have become very important for many venues globally, where Wi-Fi networks are already available. However, there are significant Wi-Fi network related concerns and issues that need to be addressed for reliable, scalable and standard-based enablements to take place and all ecosystems to benefit from. The Industry should study the possibility of standardizing the Wi-Fi based LBS analytics, to develop a harmonized mechanism to make device MAC Address and the detailed information (RSSI, Time Stamp) available to the analytics engine and servers, and enabling for value added services. User device information is available through 802.11 standard frames such as Probe request, Data messages and ACK Messages from devices and these frames are transmitted regularly (different period depending on OS version). Some vendors and service providers have their own proprietary solutions for gathering above message frames for LBS solutions, but these solutions are not interoperable with one another. Operators and LBS service providers which have AP provided from different vendors can extend their LBS business if each solution is interoperable by standard or certificate program.

Outcomes / Target Audience
Driven by the needs of the operators, WBA, leveraging its earlier work on LBS in 2015 and new industry developments to study how to address identified issues and explore the creation of a reliable, scalable and standard based solution available to the industry.

MAIN AREAS COVERED

• Opportunities for operators and various venues for Indoor Wi-Fi based analytics, including the use cases that will support and benefit from a standardize LBS analytics. Provide a guideline for an end-to-end system enabling the Wi-Fi based analytics solution. Develop minimum set of requirements. Identify the gaps for standard based solutions. Specify the systems behavior with its components. Field trials based on this set of standards that differentiate from other efforts in the Industry

• Leverage the previous WBA work on LBS over Wi-Fi. Identify the market opportunities and related Use Cases that justify the development of a standardization of a minimum set of requirements for AP Interfaces for LBS analytics over Wi-Fi, based on geographic outreach and criticalness

• Identify the challenges for an industry standardization or recommendation of device based LBS over Wi-Fi metrics measurement. Also, analyse industry standardization items addressing Emergency related topics

CLICK BELOW TO DOWNLOAD RELATED WORK

Location Based Services (LBS) Over Wi-Fi

Keywords
Location, end-user device, analytics, RSSI, MAC Address, Probe, business case, geofencing, Wi-Fi coverage
In-Flight Connectivity

PROJECT LEADERS

Accuris Networks  |  BSG Wireless  |  iPass  |  iBwave  |  Panasonic  |  Deutsche Telekom  |  Viasat

Contact Project Leads: wba-inflight@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Showcase of monetization models to maximize revenue and differentiating services of the investment /ROI in the In-Flight connectivity business

• Definition of standard architecture and deployment guidelines for interoperable, scalable and high-quality services and connectivity with air to ground Wi-Fi on flights

Target Audience

Target Audience includes WBA members, Airline Transportation & Manufacturers, Satellites and Air-to-ground Operators, In-Flight connectivity hardware/software providers, Touristic Industry service providers, IoT Players exploring in-flight data analytics, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers.

Project information

There are over 80 airlines offering in-flight Wi-Fi worldwide, and Wi-Fi will further spread its wings in the years to come. With the increased demand for connectivity amongst passengers, in-flight connectivity, particularly in the form of Wi-Fi, is becoming increasingly important.

The WBA’s In-Flight Connectivity project is the first vertical focus in the Wi-Fi Deployment Guidelines series.

TARGET OUTCOMES

• Provide industry deployment guidelines for in-flight connectivity

• Set the benchmark for the value proposition of in-flight connectivity and recommendation of monetization tactics for airlines

• Analyze the challenges and opportunities for inflight connectivity enablement options with user experience cases

• Develop a set of test cases and checklist for optimal In-flight Wi-Fi Connectivity

• Offer Wi-Fi Roaming and Offload Certification for In-flight Connectivity

CLICK BELOW TO DOWNLOAD RELATED WORK

Wi-Fi Deployment Guidelines  >>  Enhanced Wi-Fi – 802.11ax Decoded  >>

In-Home Wi-Fi Industry Guidelines  >>  Wi-Fi 6 - 802.11ax  >>

Wi-Fi Roaming Guidelines  >>  Wi-Fi Sensing  >>

Keywords

In-Flight, Tower, Satellite, Airline, Connectivity, In-Flight Internet, In-Flight Broadband, Hotspot 2.0, EAP
In-Home Wi-Fi

PROJECT LEADERS

CableLabs  |  Fontech  |  Intel  |  Liberty Global

Contact Project Leads: wba-inhome@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Identify In-Home Broadband Carriers requirements towards the improvement of the in-home Wi-Fi customer experience to better delivery a wide range of Smart home capabilities and services

• Provide market assessment of the current In-Home Wi-Fi issues and gaps and analyse the market landscape with recommendation for future work on the Internet of Things (IoT)

Project information

In this new white paper, the WBA tackles the challenges that have contributed to inconsistent performance in the home, including a lack of uniform coverage and visibility into the in-home Wi-Fi experience. The paper provides an industry go-to reference when preparing for ‘Smart Home’ deployments. It identifies the gaps in current in-home Wi-Fi standards and services and highlights the need for intelligent network optimization. WBA has proposed key guidelines and recommendations for different functional areas and as a follow up this paper identifies future lines of work and possible directions the In-Home Wi-Fi network may take.

To find out more and/or participate in the Smart Home 2025 initiative and programs please click here.

Target Audience

Target Audience includes WBA members, IoT service providers, Wi-Fi advocates, industry analysts, Wi-Fi operators, Cellular Operators, networking equipment providers, chip set providers.

TARGET OUTCOMES

• Delivery of prioritized In-home Wi-Fi carrier requirements
• Roadmap of standardization efforts across industry bodies
• Symbiotic assessment on residential gateway provider, device provider and chipset vendors collaboration opportunities
• Identification and actuation plan on current issues / gaps
• Value-add performance testing on areas that can transversally help the industry

CLICK BELOW TO DOWNLOAD RELATED WORK

In-Home Wi-Fi Industry Guidelines  >>
Wi-Fi Deployment Guidelines  >>
In-Flight Connectivity Guidelines  >>
Quality of Service on Carrier Grade Wi-Fi  >>
Wi-Fi 6 - 802.11ax  >>
Wi-Fi Sensing  >>

Keywords

In-Home, In-home Wi-Fi, Chipset, Wi-Fi 6, 802.11ax, Home portal, Internet of things, IoT, Security, QoS, Smart home
**PERMANENT WBA GROUPS**

**Testing & Interoperability Umbrella Group**

### PROJECT LEADERS

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Contact Project Leads: wba-testing@connectedcommunity.org

### PROJECT DESCRIPTION

**Business objectives**

- Improve customer experience on NGH networks by eliminating barriers (devices and infrastructure).
- Give more confidence to service providers to invest in NGH and device vendors to develop support NGH.

**Project information**

**Next Generation Hotspot (NGH) Trials** - In an effort to further bolster the expansion of NGH in the wireless ecosystem this testing effort is to build on the efforts performed in previous phases and expand the testing efforts beyond what is available in the HotSpot 2.0 (HS2.0) specifications and initial user experience. In this project the effort include testing and further validation of additional devices that declare themselves HS 2.0 compliant and not showing as certified on publicly available sources.

**Next Generation Wi-Fi Live Globalization / City Wi-Fi Roaming Trial**
- These initiatives deliver fully operational Next Generation Hotspot (NGH) Wi-Fi network in grand scale in straight partnership with City authorities and other venues raising participation numbers to a scale of tens of thousands.

If you would like to propose a deployment scenario or a partnership to deliver Next Gen Wi-Fi at a specific event please contact: nghlive@wballiance.com

### MAIN AREAS COVERED

- Definition of a scope document with use cases relating to practical usage of NGH networks
- Focus on roaming scenarios testing by multiple partners
- Focus on HS2.0 R1 and R2 capabilities testing in a real world environment
- Development of test plan spanning across all potential case scenarios
- Testing multiple devices currently available in the market
- Discussion forum to address NGH related topics

### CLICK BELOW TO DOWNLOAD RELATED WORK

- Wi-Fi Roaming Standard (WBA WRIX)
- Wi-Fi Roaming Business Case

**Keywords**

NGH, Live Testing, Wi-Fi Roaming, Passpoint, HS2.0 R1&R2, RADIUS, Online Sign-up, Operator/user policy, City Roaming
PERMANENT WBA GROUPS

Carrier Wireless Services Certification

PROJECT LEADERS

Contact Project Leads: pmo@wballiance.com

PROJECT DESCRIPTION

Business objectives

• For Carriers - test and validate wireless services saving extensive in-house testing.
• For Vendors - validate carriers requirements in order to facilitate sales and save testing resources.

Project information

WBA has launched Carrier Wireless Services Certification (CWSC) is a testing program for members (and sponsor partners) providing unprecedented capabilities to test the end-to-end Carrier wireless ecosystem to guarantee that the service operation and user experience is consistent.

The program allows carriers and vendors to independently test and certify devices. The program utilizes WBA Authorised Test Labs, working with Members and their partners to simulate end customer usability in a real network environment to ensure that devices are ready for worldwide commercial deployments, reducing customer support time for carriers and time to market for vendors.

Outcomes / Target Audience

Initial focus on Carrier Wi-Fi Roaming and Offload carrier services.

Evolving to Provisioning, Quality of Service, 5G Interoperability – Unlicensed integration.

For Carriers, the CWSC program offers the ability to test and validate their wireless services instead of performing in-testing.

For Technology Providers, the program offers them a platform to validate carrier requirements from a range of different service providers, to reduce time to market and expedite sales efforts as well as save valuable testing resources.

Tests are run based on the same principles of the Next Generation Hotspot (NGH) Trials but they are now run on independent fashion by recognized testing labs in equal scenario as performed on the different phases of the NGH Trials.

MAIN AREAS COVERED

• Specific framework for the Wi-Fi industry to perform end-to-end testing of operators' requirements
• Improving the end user experience of Wi-Fi in the growing marketplace with seamless connectivity, mobility and bandwidth demands
• Sustainable model to support end to end NGH compliancy testing on an on-going basis
• Testing key innovative services currently on the Wi-Fi industry (roaming, offload, quality of service, Wi-Fi Calling, policy interworking)

CLICK BELOW TO DOWNLOAD RELATED WORK

Carrier Wi-Fi Guidelines  Carrier Wireless Services Certification Program

Keywords

NGH, Live Testing, Wi-Fi Roaming, Passpoint, HS2.0 R1&R2, RADIUS, Online Sign-up, Operator/user policy, Quality of Service, Policy, Wi-Fi Calling
PERMANENT WBA GROUPS

WBA Roaming Standards & Compliance

PROJECT LEADERS

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Contact Project Leads: pmo@wballiance.com

PROJECT DESCRIPTION

Business objectives

- Accelerate Wi-Fi Roaming services by continuous improvements on WBA documentation
- Grow WBA members roaming business by providing the necessary tools to facilitate interconnections

Project information

The WBA acronym WRIX stands for Wireless Roaming Intermediary eXchange. One of the main aims of WRIX is the enhancement of the roaming experience for the customers of WBA wireless networks. The WBA WRIX Umbrella Document describes all the sub-parts of the WRIX portfolio: WRIX for Network (WRIX-n) (This Document); WRIX for Radius Interconnection (WRIX-i); WRIX for Clearing (Data and Financial) (WRIX – d/f); Location Feed Format & File Exchange Standard (WRIX-L).

Outcomes / Target Audience

This frameworks aims to help operators avoid some of the network configuration pitfalls and shorten the operator learning experience but also to standardise the approach between operators to ensure the best roaming experience for WBA wireless network users, and to promote the rapid set up of roaming agreements between WBA operators using standardised financial and technical approaches based on WRIX.

MAIN AREAS COVERED

Guidelines for Network Deployment for Operators to Create, Upgrade or Optimize Their Wi-Fi Networks to provide Wi-Fi roaming services and interoperability:

- Authentication Methods
- Connection Bandwidth Requirements
- Network Discovery and Selection Features
- NGH Network Security and management
- User Experience
- Information Exchange
- Profile Management
- Governance Model

The group also maintains Interoperability Compliance Program (ICP) promoting that operators work collaboratively on a common set of technical and commercial frameworks for Wi-Fi roaming.

CLICK BELOW TO DOWNLOAD RELATED WORK

- Wi-Fi Roaming Business Case
- Wi-Fi Roaming Standard (WBA WRIX)
- Wi-Fi Roaming Guidelines

Keywords

Wi-Fi Roaming, Carrier Wi-Fi, Accounting, Billing, Invoicing, Interconnect
PERMANENT WBA GROUPS

Policy & Spectrum

PROJECT LEADERS

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Derek Peterson
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Contact Project Leads: wba-policywhitepaperandsfhs20@connectedcommunity.org

PROJECT DESCRIPTION

Business objectives

• Influence regulatory bodies for better Wi-Fi (more spectrum, better security and user experience).
• Validate business opportunity of Coordinated Shared Spectrum technologies

Project information

WBA’s Policy & Regulatory Affairs Office, tracking relevant policy issues of concern to the Board and membership.

In terms of shared spectrum models, evaluating both the business models that will be supported by “Coordinated Shared Spectrum” management regimes and subsequent pre-commercial trials is key to the industry.

Outcomes / Target Audience

The end goal is to influence positions on public policy issues. The main outcomes of the group are guidelines, white papers, respond to regulators and authorities, among others.

MAIN AREAS COVERED

• Spectrum (3.5 GHz, 5GHz, mmWave, etc.)
• Worldwide bands allocation
• Public consultations consensus and responses

CLICK BELOW TO DOWNLOAD RELATED WORK

Coordinated Shared Spectrum

Keywords
Policy, Spectrum, Public Consultations, Advocacy