Wireless Global Congress Americas

WGC AMERICAS

MAY 18 – MAY 21

Wi-Fi Innovation: Connecting Our Digital World

IRVING CONVENTION CENTER AT LAS COLINAS, DALLAS, USA

#WGCAMERICAS | #wifirevolution | #lovewifi

Wireless Global Congress Americas

Tiago Rodrigues

President & CEO, Wireless Broadband Alliance

WGC Welcome and CEO Introduction

BRIDGING THE DIGITAL DIVIDE WITH WI-FI

WORLD™ Wi-Fi Day

Wireless Broadband Alliance

Wi-Fi enables human potential

Wi-Fi acts as a global equalizer

Wi-Fi accelerates economic, social, and environmental impact

WORLD™ Wi-Fi Day

Wi-Fi as an Economic Engine

Wireless Broadband Alliance

Economic Value of Wi-Fi

$5 trillion global economic value of Wi-Fi

7.54 million jobs generated by Wi-Fi in US by 2027

3.4% GDP contributed by Wi-Fi across large economies

Online Population & Device Usage

6 Bn People on earth **are online**

21.1 Bn **Devices/connections in use**

4.1 Bn Annual **Wi-Fi device shipments**

269.1 Mn Wi-Fi 7 **device shipments**

Wi-Fi 7 Market value growth

2030 **$26.2 Bn**

Key Message: Wi-Fi is foundational to global economic growth

Sources: Cisco FCC IDC ITU GESI MarketDigits McKinsey Global Institute UNICEF Universitat Obertabe Catalunva WBA Wi-Fi Alliance WIK-Consult Wi-Fi Forward

WORLD™ Wi-Fi Day

Wi-Fi is vital for affordable connectivity

Wireless Broadband Alliance

Gender Disparity

70% men

65% women

are using the internet

90% of adolescent girls and young women in low-income countries remain offline.

Internet Users

6 Bn Internet users.

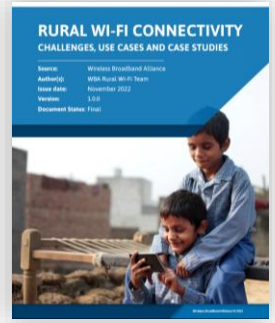
2.6 Bn Individuals worldwide are still offline, with **96%** of them residing in developing countries

Key Message: Access remains unequal and must be addressed

Connectivity Challenges

75% of world's population is online **(6 billion people)**. Just **37%** of the population uses the Internet in Africa today.

DOWNLOAD THE WBA RURAL WI-FI REPORT



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WORLD™ Wi-Fi Day

Wi-Fi as a sustainable technology

Wireless Broadband Alliance

Remote Control and Monitoring

Wi-Fi facilitates the remote operation and monitoring of devices, enhancing IoT applications and helping reduce energy waste.

Smart City Initiatives

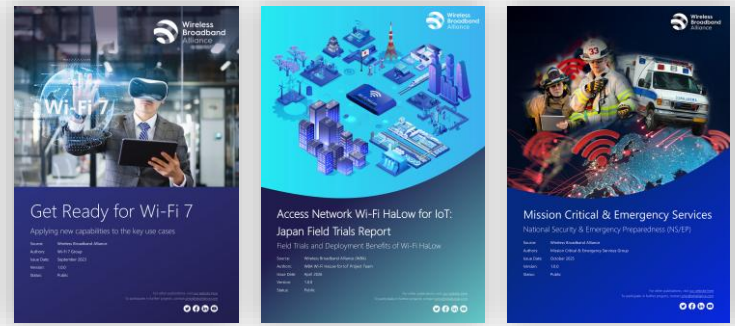
Wi-Fi is crucial in smart city projects, helping reduce traffic congestion and improve traffic management for more efficient transportation.

Wi-Fi 6 & Wi-Fi 7 for Efficiency

Wi-Fi 6 and 7 boost network efficiency and speed, supporting the increased use of mobile and IoT devices.

OpenRoaming for frictionless connectivity

Devices connect automatically, securely, and without password to access Wi-Fi hotspots.



VIEW THE RESOURCE CENTRE

LEARN MORE ABOUT OPENROAMING

Key Message: Wi-Fi supports sustainable and inclusive development

Sources: Cisco FCC IDC ITU GESI MarketDigits McKinsey Global Institute UNICEF Universitat Obertabe Catalunva WBA Wi-Fi Alliance WIK-Consult Wi-Fi Forward


I ♥ WI-FI
Wireless Broadband Alliance
Join World Wi-Fi Day (20th June) to bridge the digital divide and expand global connectivity
WORLDWIFIDAY.COM

Wireless Global Congress Americas

Connecting Citizens in Chicago

Derek Underwood

Regional VP Americas,
Cambium Networks

Dwayne Douglas

CEO, The QUILT

Connecting Citizens in Chicago

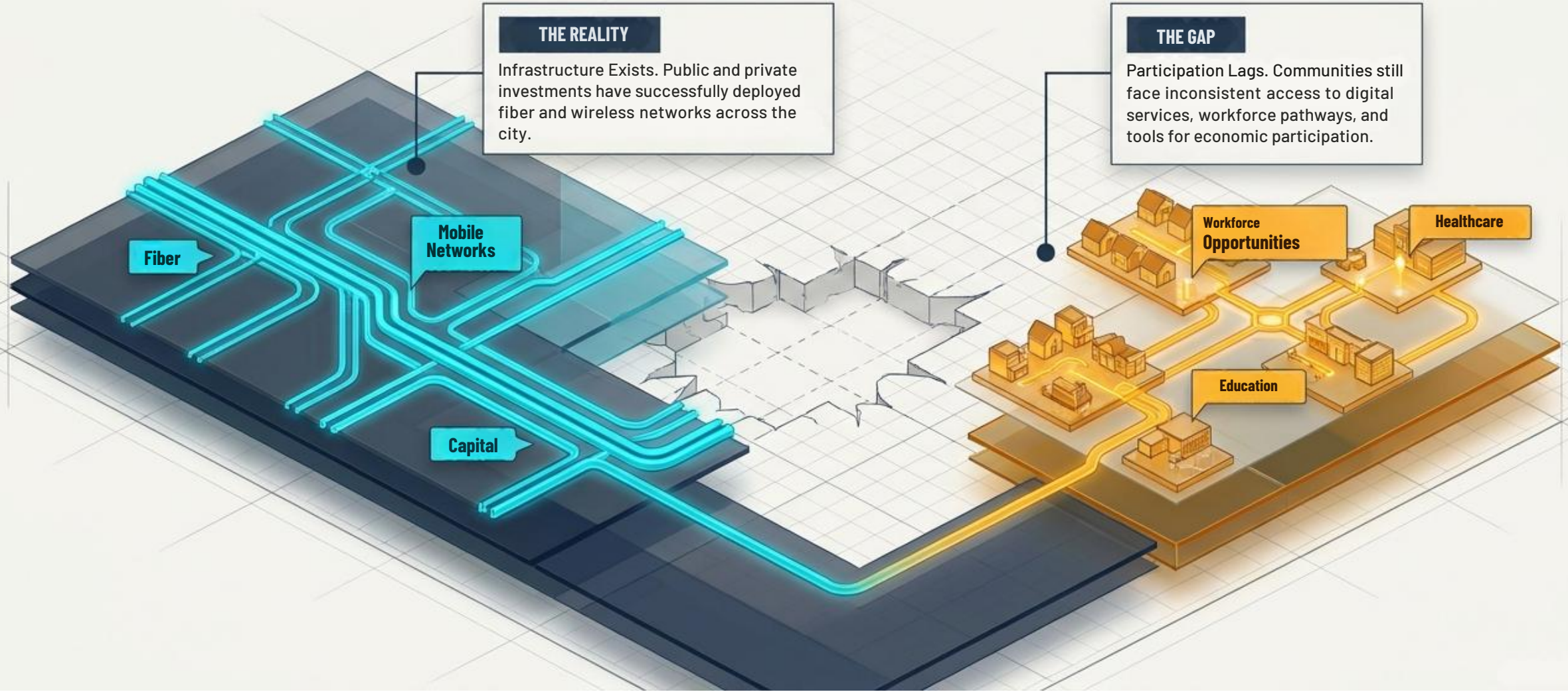
Building Sustainable Community Connectivity Through Infrastructure, Participation, and Scalable Last-Mile Enablement

QUILT

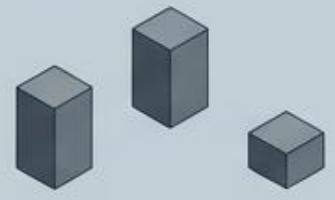
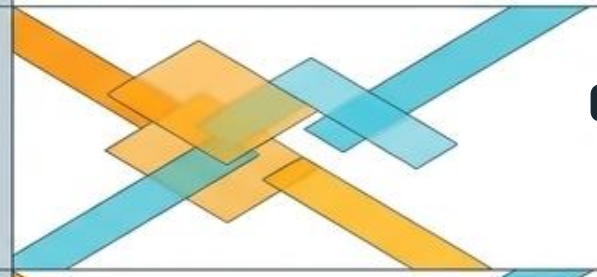
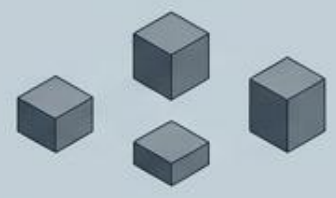
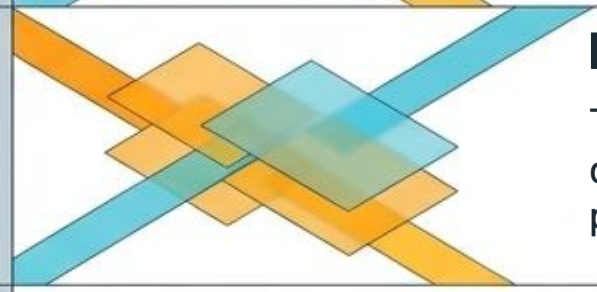
NODE Networks

Cambium™ Networks

The challenge is no longer whether technology exists. The challenge is whether communities can sustainably participate in the digital economy.



Why Connectivity Alone Is Not Enough

Traditional Deployment Model	Sustainable Participation Model
 **CORE FOCUS** Standalone infrastructure efforts	 **CORE FOCUS** Integrated local ecosystems
 **METRICS OF SUCCESS** Coverage Maps, bandwidth, deployment milestones, subscription counts	 **METRICS OF SUCCESS** Trusted local engagement, digital readiness, workforce pathways, operational support
OPERATIONAL OUTCOME Often results in limited affordable options, poor adoption, and disconnected workforce pathways.	**OPERATIONAL OUTCOME** Technology creates value because communities understand how to engage with it, trust it, and use it in meaningful ways.

QUILT creates the participation layer.
NODE operationalizes the infrastructure layer.

QUILT

Role: Community ecosystem convener.
Functions: Local engagement, workforce participation facilitation, digital readiness, partnership coordination.

NODE NETWORKS

Role: Scalable network operations.
Functions: Infrastructure operator, fiber and wireless integrator, deployment execution, operational sustainability.

Building Sustainable Connectivity Ecosystems

1. Infrastructure Execution:
Deploying fiber and wireless distribution to community specifications.

2. Trusted Engagement:
Onboarding residents and institutions via local partnerships.

3. Workforce Participation:
Connecting network usage to economic opportunity and technical training.

4. Operational Support:
Long-term network health and user digital readiness.

5. Sustainability:
Creating durable, self-reinforcing community participation.

Key Takeaway: Sustainable community connectivity requires infrastructure, participation, and operational support to work together as one unified ecosystem.

Why Cambium?

Built for the operational and economic realities of community infrastructure deployment.

01

Simple Disruptive Economics

Funding for community connectivity projects is complex. Cambium's solution is designed to fit distributed economic models — low upfront cost, right-sized hardware, and scalable deployment paths that align with grant and public funding structures.

02

Frequency Flexibility

Development efforts span all bands available in North America — licensed and unlicensed spectrum. Purpose-built products for every application ensure the right tool for every urban, suburban, and mixed-use community deployment scenario.

03

Simplified Onboarding & Management

All products unified under one single management platform — cnMaestro™. AI-assisted troubleshooting reduces the operational burden on local teams, enabling sustainable long-term network health without deep technical resources on-site.

What This Means

- Hardware that scales to community needs — without forcing a one-size-fits-all architecture.
- Spectrum options that match real-world RF conditions across Chicago's dense urban neighborhoods.
- One platform to manage, monitor, and troubleshoot — reducing the burden on local operational teams.

Cambium removes the infrastructure complexity — so NODE and QUILT can focus on community outcomes.

Cambium Networks — Purpose-built for scalable community connectivity.

Chicago as a Real-World Operating Environment

Dense Urban Neighborhoods

Navigating complex RF environments and older building structures.

Anchor Institutions

Integrating schools, churches, nonprofits, and libraries into the network fabric.

Workforce Sites

Connecting training centers directly to community infrastructure.

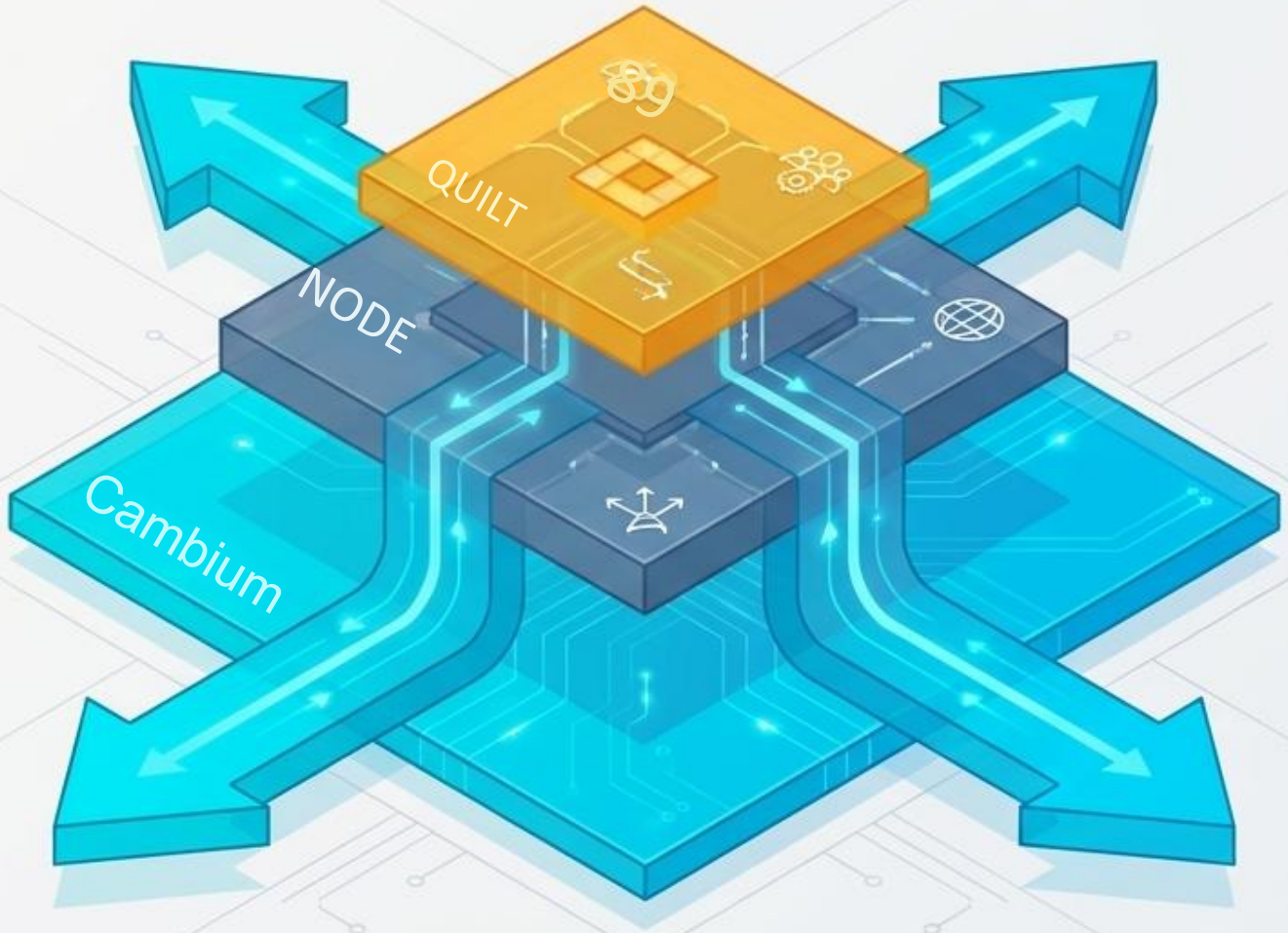
Mixed Infrastructure Realities

Bridging the gap between existing public/private fiber and required last-mile wireless.

A practical, scalable deployment environment for testing and proving operationally realistic connectivity models.

Scalable Last-Mile Infrastructure Enablement

Cambium Networks provides the infrastructure platform that allows NODE to scale efficiently.



Deployment Flexibility

Supporting diverse architectures across community conditions.

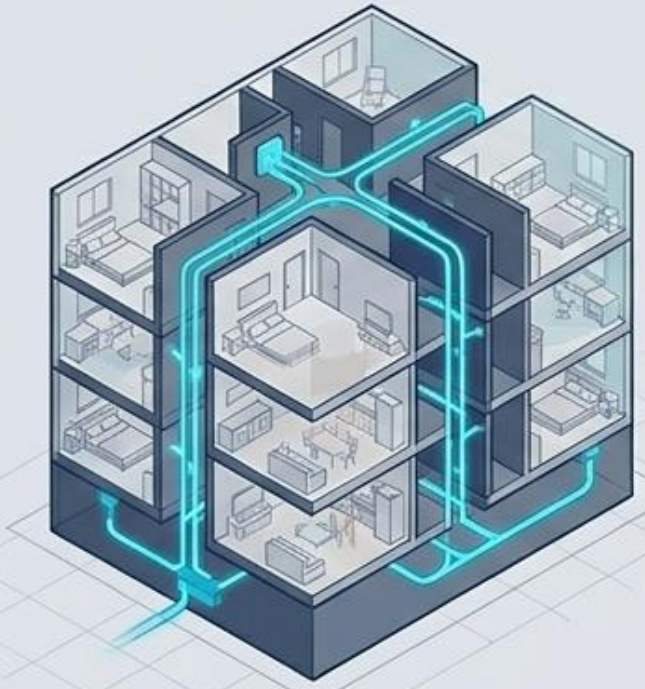
Operational Simplicity

Reducing network complexity to ensure deployments remain economically and technically supportable over time.

Fiber + Wireless Integration

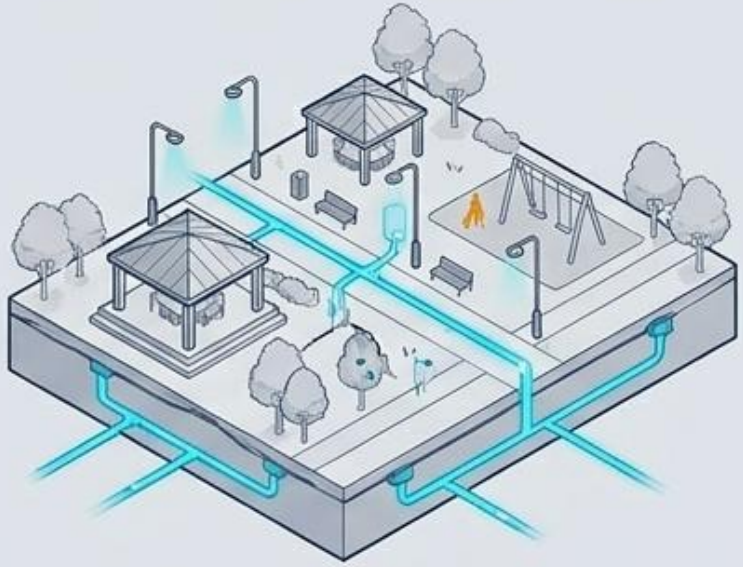
Efficiently extending network reach without rigid infrastructure limitations.

"Infrastructure must adapt to the operational realities of communities — not force communities to adapt to rigid deployment models."



MDU

Community Center/school



Distributed Outdoor Neighborhood Site

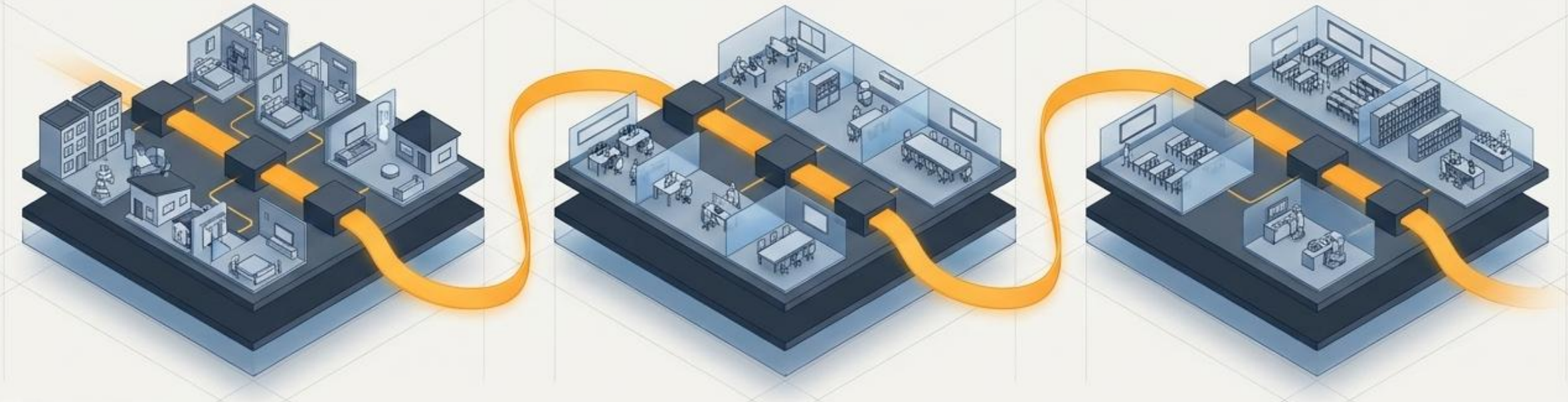
Community environments feature limited existing infrastructure, varied density, and unique operational restrictions. Cambium enables a vendor-aware, adaptable strategy that prevents deployment stalls caused by rigid hardware limitations.

Future Connectivity Ecosystems: The Shift Toward Seamless Access

Zone 1: Housing Environment

Zone 2: Workforce Center

Zone 3: Educational Space



Key Concepts

Reducing Participation Friction

Moving away from fragmented access, repeated logins, and disconnected networks.

Interoperability (OpenRoaming)

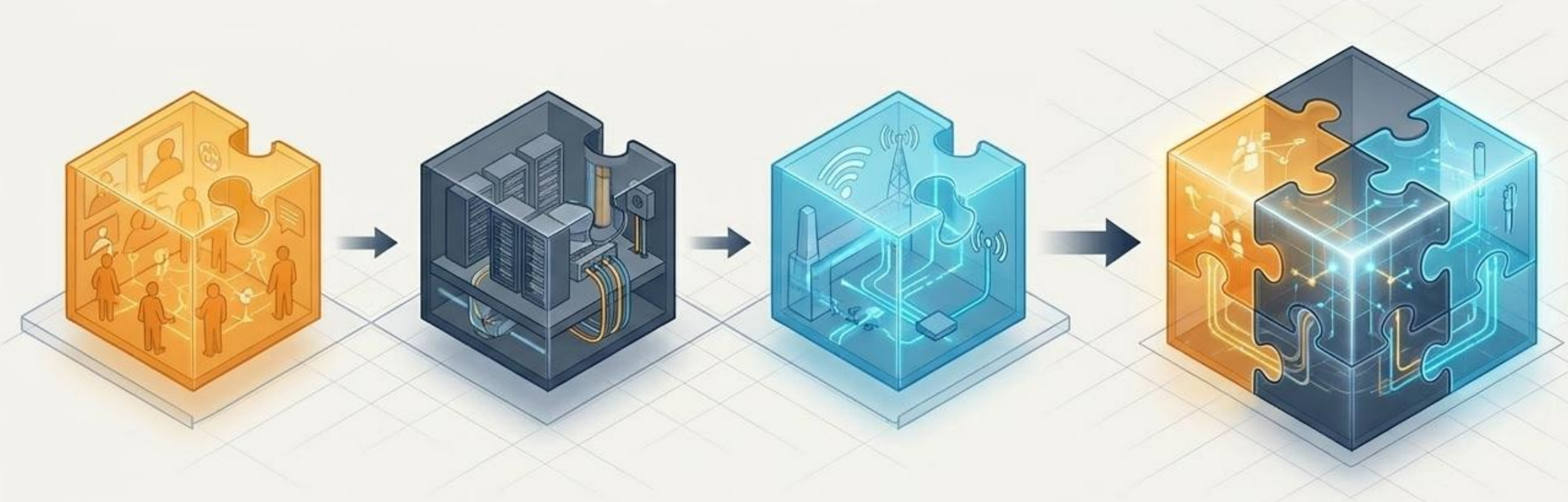
Leveraging identity-based access frameworks to allow users to move securely across distributed community ecosystems.

Vendor-Agnostic Collaboration

Ensuring infrastructure, community organizations, and standards bodies work together to support continuous participation.

The future of connectivity is not simply more infrastructure. It is seamless participation across distributed environments.

"Connectivity becomes transformational when infrastructure and participation move together."



QUILT: Trusted engagement and workforce participation.

NODE: Scalable operations and Infrastructure deployment.

Cambium: Flexible, future-ready last-mile enablement

We are seeking collaboration with partners interested in scalable community infrastructure, sustainable operational models, and future-ready connectivity ecosystems.

Wireless Global Congress Americas

Mark Grayson

Cisco Fellow, Cisco

Developing a Resilient Infrastructure with Mission Critical and Emergency Services

Mission Critical Communication Services over Wi-Fi

Mark Grayson
Cisco Fellow

May 2026

Agenda

1. Why a focus on Mission Critical Services?
2. Components of Mission Critical Services
3. Emergency Calling over Wi-Fi
4. First Responder (NS/EP) Services
5. Emergency Alert Notifications
6. Key Take Aways

1. Why Wi-Fi for Mission Critical Services?

Wi-Fi is the de facto standard for in-building wireless connectivity and is often the only available access in many environments.

IMT 2030 and 6G requirements for deep in-building service continuity are being used to justify more cellular deployments.

Demonstrating Wi-Fi's readiness is critical to ensure it remains part of the solution.

Regulatory codes, such as International Fire Code Section 510, require approved emergency responder radio coverage in all new buildings.

2. Components of Mission Critical Services

Emergency Calling

Ability for a Wi-Fi capable device to make an emergency 911/112 call over Wi-Fi. Credential-less access is sometimes an existing national regulatory requirement.

National Security & Emergency Preparedness

Wi-Fi APs granting prioritized access for NS/EP (e.g., first responders, and other emergency personnel) users during emergency situations.

Emergency Warning Systems

A system that delivers emergency alerts such as tsunami warnings, earthquake notifications, or AMBER alerts to Wi-Fi users.

Built on a foundation of secure and seamless guest access, using Passpoint and OpenRoaming

2. WBA Driving Mission Critical Industry Programs

Emergency Calling

National Security & Emergency Preparedness

Emergency Warning Systems

Built on a foundation of secure and seamless guest access, using Passpoint and OpenRoaming

3. Emergency Calling

80% of all E911 calls are made over wireless

80% of all data is consumed indoors

20% of all carrier-provided wireless voice calls are made using Wi-Fi Calling

FCC CSRIC VIII recommends extending 911 to Wi-Fi

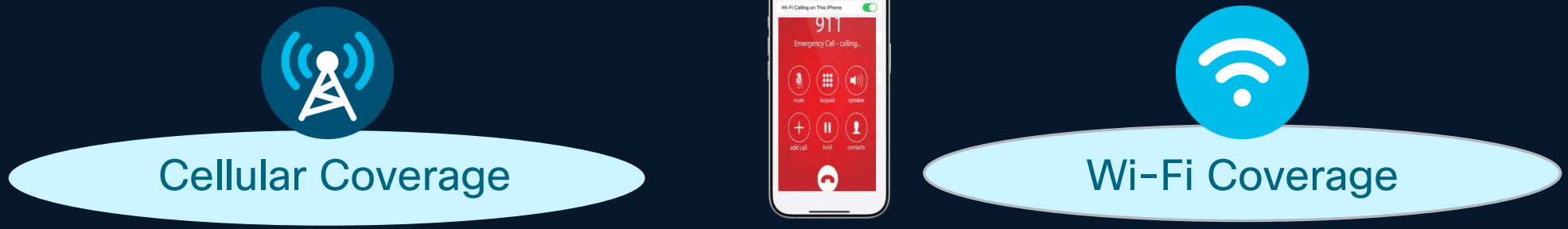
3. Emergency Calling over Wi-Fi: The End Goal

A Wi-Fi capable mobile device in a Wi-Fi only environment is able to place an emergency call using native dialer.

Device seamlessly and securely authenticated to Wi-Fi access network

Device location is available to route the call to the correct Public Safety Answering Point

Dispatchable Location is available when making an emergency call over the Wi-Fi network



3. Wi-Fi 911 Caller Location

- Location-based routing determination functionality is necessary to decide how to route emergency requests towards the correct Public Safety Answering Point (PSAP)
- Once routed to the correct PSAP, location information is again necessary for PSAP operations to determine a dispatchable location to be able to serve the emergency user.
- There is considerable misunderstandings when it relates to using Wi-Fi networks to make emergency calls.
- Much of this is rooted in earlier phone user interface settings that required the user to register an “emergency address” to “help emergency response services respond to calls”.

3. Reporting location of Wi-Fi access

RADIUS LOCATION RFC 5580

RADIUS Protocol
  Access-Request (1)
  Called-Station-Id = "88-15-44-50-0F-1C"
  AVP: t=Location-Information(127), val=0x00016a0312bc6a0313e80000012c4d616e75616c
  AVP: t=Location-Data(128), val=0x00016a0312bc6a0313e80000012c4d616e75616c
Location-Data:
  > Country: "US"
  > CAType: 01 (State), CAValue: "California"
  > CAType: 03 (City), CAValue: "San Jose"
  > CAType: 24 (Postal), CAvalue: "95135"

SIP Private Access Network ID, RFC 7315

REGISTER sip:example.com SIP/2.0
From: <sip:user@example.com>;tag=12345
To: <sip:user@example.com>
Call-ID: 98765@192.168.0.1
Cseq: 1 REGISTER
Contact: <sip:user@192.168.0.1>
Max-Forwards: 70
P-Access-Network-Info:IEEE-802.11ac;i-wlan-node-id=881544500f1c

3. Cellular: historical use of Sector-ID routing

- The Alliance for Telecommunications Industry Solutions (ATIS) estimated that on average 12% of wireless legacy E911 voice calls nationwide, routed on tower-ID were misrouted
- Experiencing along PSAP boundaries was even worse, sometimes as high as 20-50% mis-routing.
- Industry has transitioned to Device Based Hybrid/Advanced Mobile Location for determining emergency call location.
- Totally transparent to the user, with guard rails around location privacy

3. Transition from Network-provided Location to Device-provided

- Device Based Hybris/Advanced Mobile Location Estimates emergency caller's location using cell towers and on-device data sources like GPS and Wi-Fi Access Points.
  1. 2018: Android introduces Emergency Location Service (ELS) delivers DBH location to carriers in USA.
  2. 2017-18: Hybridized Emergency Location (HELO) delivers DBH location to carriers in USA.
  3. 2018: DBH delivered direct to PSAPs through RapidSOS integration, bypassing traditional carrier-to-dispatcher relay
- DBH can be transported using different technologies, according to national requirements:
  - SMS, HTTPS, SIP

3. Device Based Hybrid Transport

SMS

A"ML=1;lt=+51.453520;lg=-0.165978;rd=29.558122;lc=95;top=20260401100000;ei=353586942964984;mcc=234;mnc=15;pm=W

HTTPS

V=1&device_number=%2B4474775931102&location_latitude=55.85732&location_longitude=-4.26325&location_time=14761894444435&location_accuracy=20.4&location_source=GPS&location_confidence=95&location_altitude=0.0&device_imei=354773072099116&device_imsi=262019176307582&ce11 home mcc=262&cell_home_mnc=01&cell_network_mcc=262&cell_network_mnc=01

SIP

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  <gp: location-info>
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ogc: def: crs: EPSG:: 4326">
      <gml: pos> 42.93156 -
78.89237</gml: pos>
      <gs: radius>33.150337
      </gs: radius>
    </gs: Circle>
    <con: confidence>95
    </con: confidence>
  </gp: location-info>
  <gp: method>DBH_HELO
  </gp: method>
</gp: geopriv>
```

3. HTTPS DBH to PSAP via Intermediary

On 911 dial, the device OS triggers a silent HTTPS POST carrying HELO or ELS location to the RapidSOS Emergency API. This transmission is asynchronous to and independent of the SIP/IMS voice call path.

iOS HELO; HTTPS Post · TLS 1.2+ ; Enhanced Emergency Data (EED)

Android ELS; HTTPS; TLS 1.2+; Advanced Mobile Location (AM)L Protocol

HTTPS

RAPDSOS (clearinghouse)

Supplementary Location

PSAP (non-i3-compliant)

E911 Center integration – supplements ALI screen

3. Removing the reliance on registered location (and GPS)

- FCC: The broad availability of DBH location technologies combined with the deployment of location-based routing has led to improvements in location information for 911 over Wi-Fi over supporting networks, reducing the reliance upon a user-inputted Registered Location and associated challenges

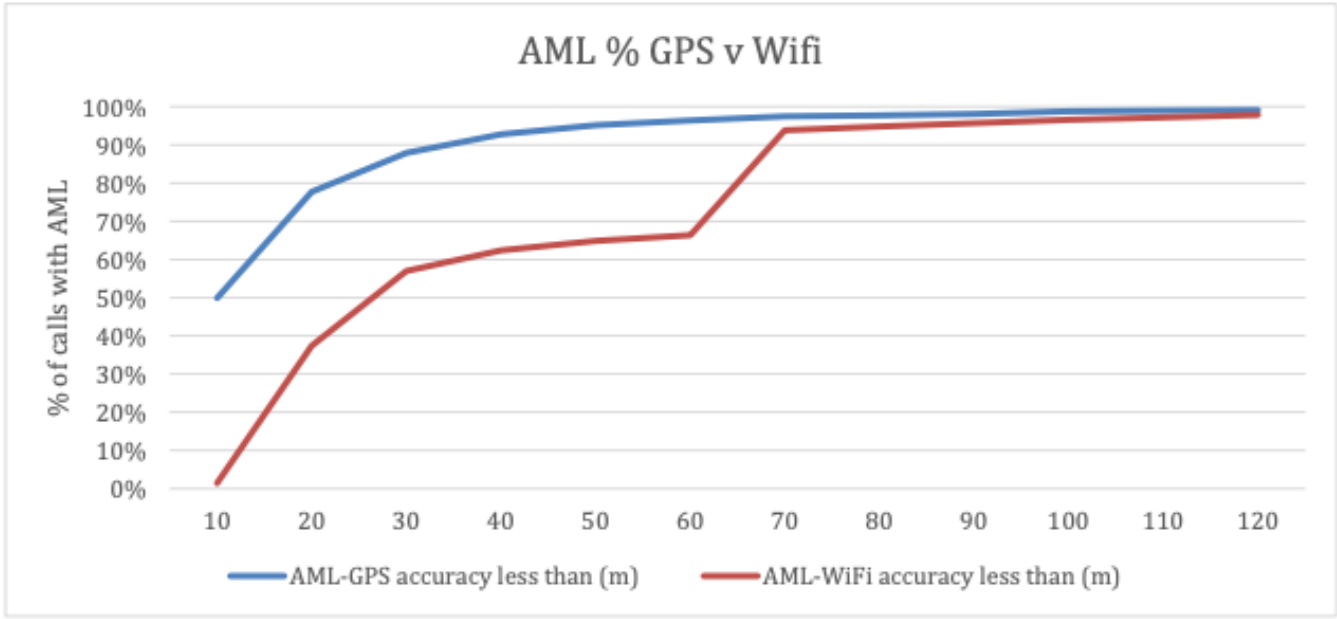
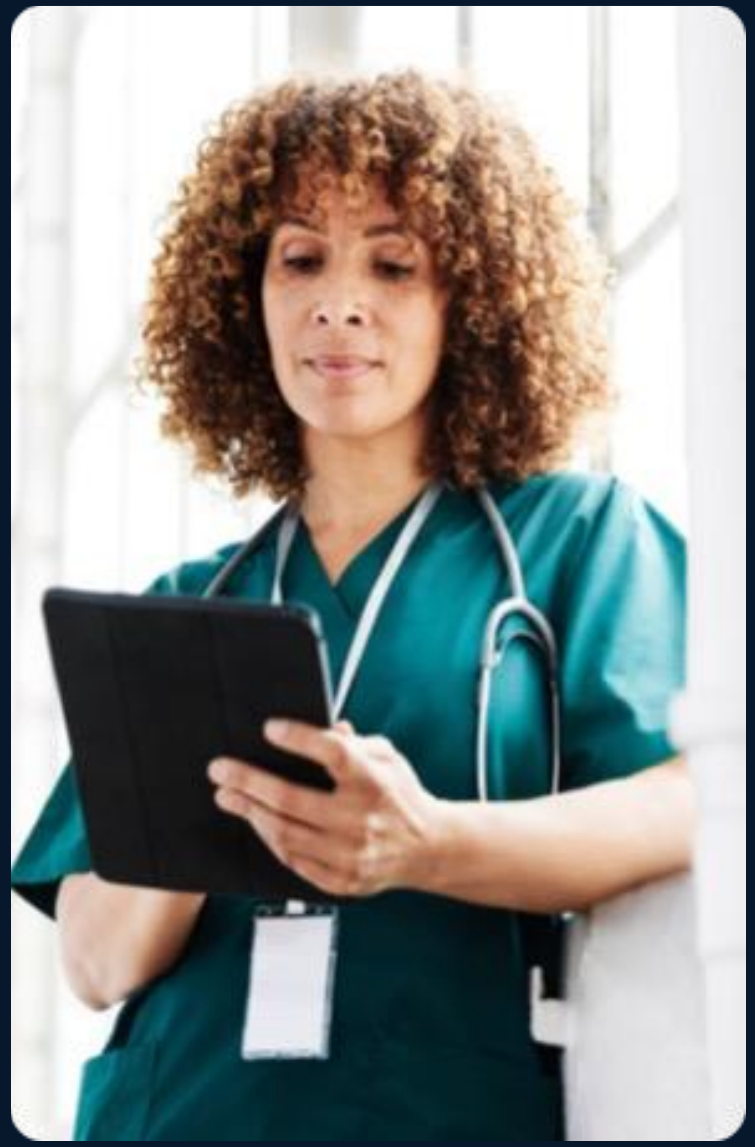


Figure 3 – Cumulative distribution of reported accuracy radii for AML

4. National Security & Emergency Preparedness Services (NS/EP)

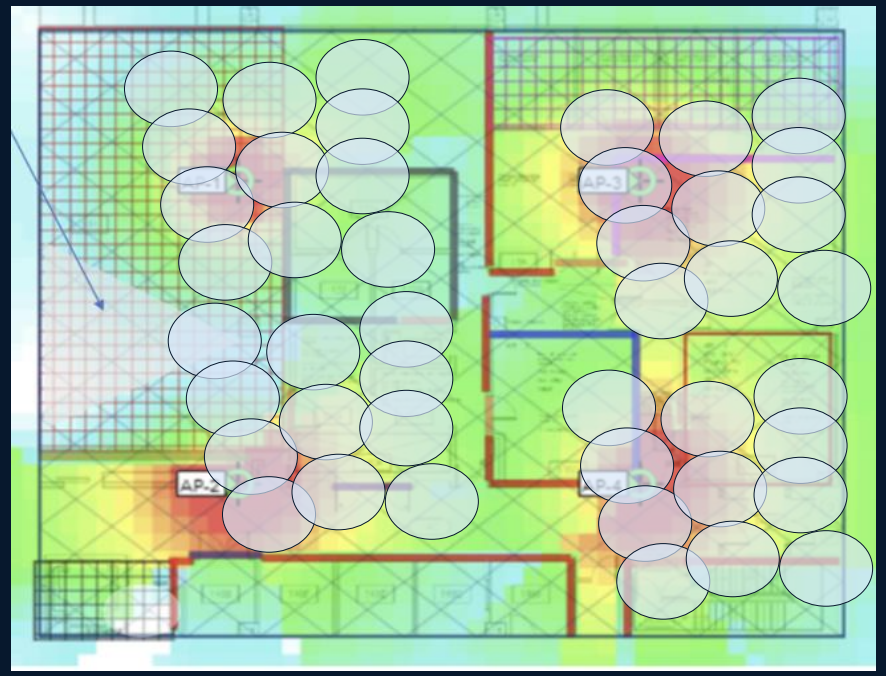
- NS/EP services provide prioritized access to communication networks for first responders, and other emergency personnel during emergencies, ensuring communication during network congestion or outages.
- Communication networks may be congested due to over utilization and ensuring priority access to NS/EP personal is a key regulatory requirement.
  - Cellular networks can implement access class barring to ensure emergency services can continue to access during congestion (AC14 for Emergency Services)
- Carriers receive NS/EP authorization from Cybersecurity and Infrastructure Security Agency (CISA).



4. Mapping indoor cellular RF coverage: From the client's perspective

- Heavy investment in cellular-based emergency responder services
  - While switching from 400 MHz PMR to 800 MHz LTE
- 10% of floor area lacks voice; 33% lacks mobile data (device-reported)
  - 802.11 MBO allows APs to learn about these gaps from devices
- First responders need rich media and multimedia sharing
- Challenge: Ensuring access to next-gen applications throughout all buildings

Cellular dead spots

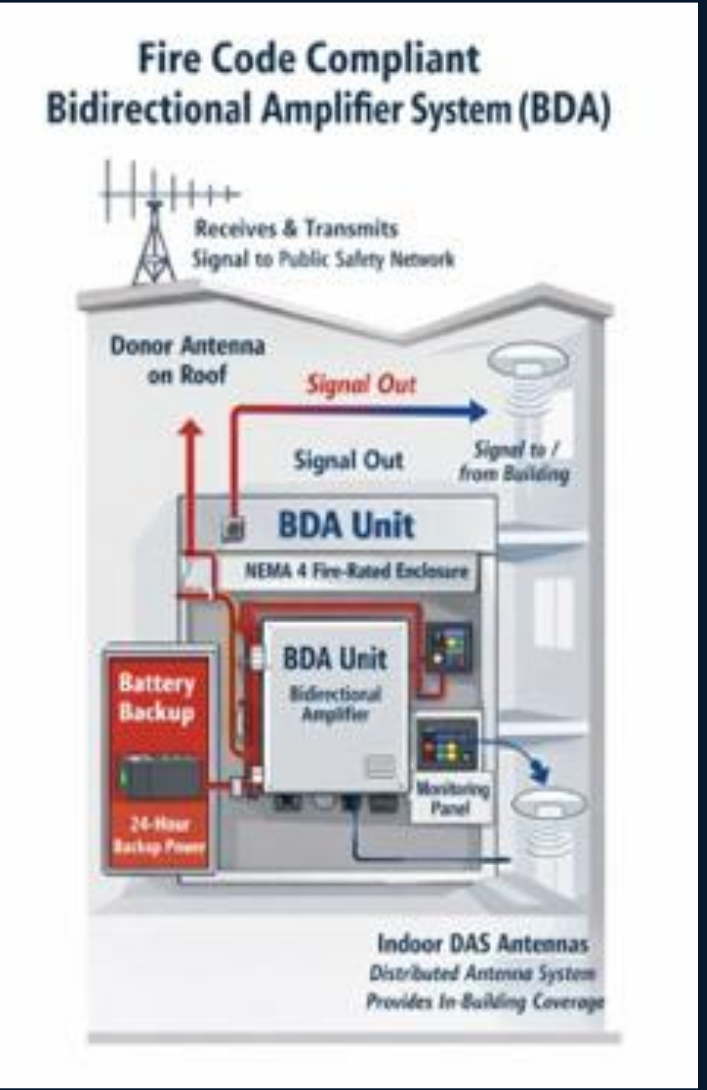


Based on Client Provided Data:

The heatmap is derived using Wi-Fi Alliance Multiband Operations (MBO)standards. The AP actively queries connected clients using 802.11k action frames. The clients "self-report" their cellular experience back to the network. This crowdsourced telemetry is then used for mapping to visualize "dead zones" from the actual device's perspective.

4. Emergency Responder Enhancement System

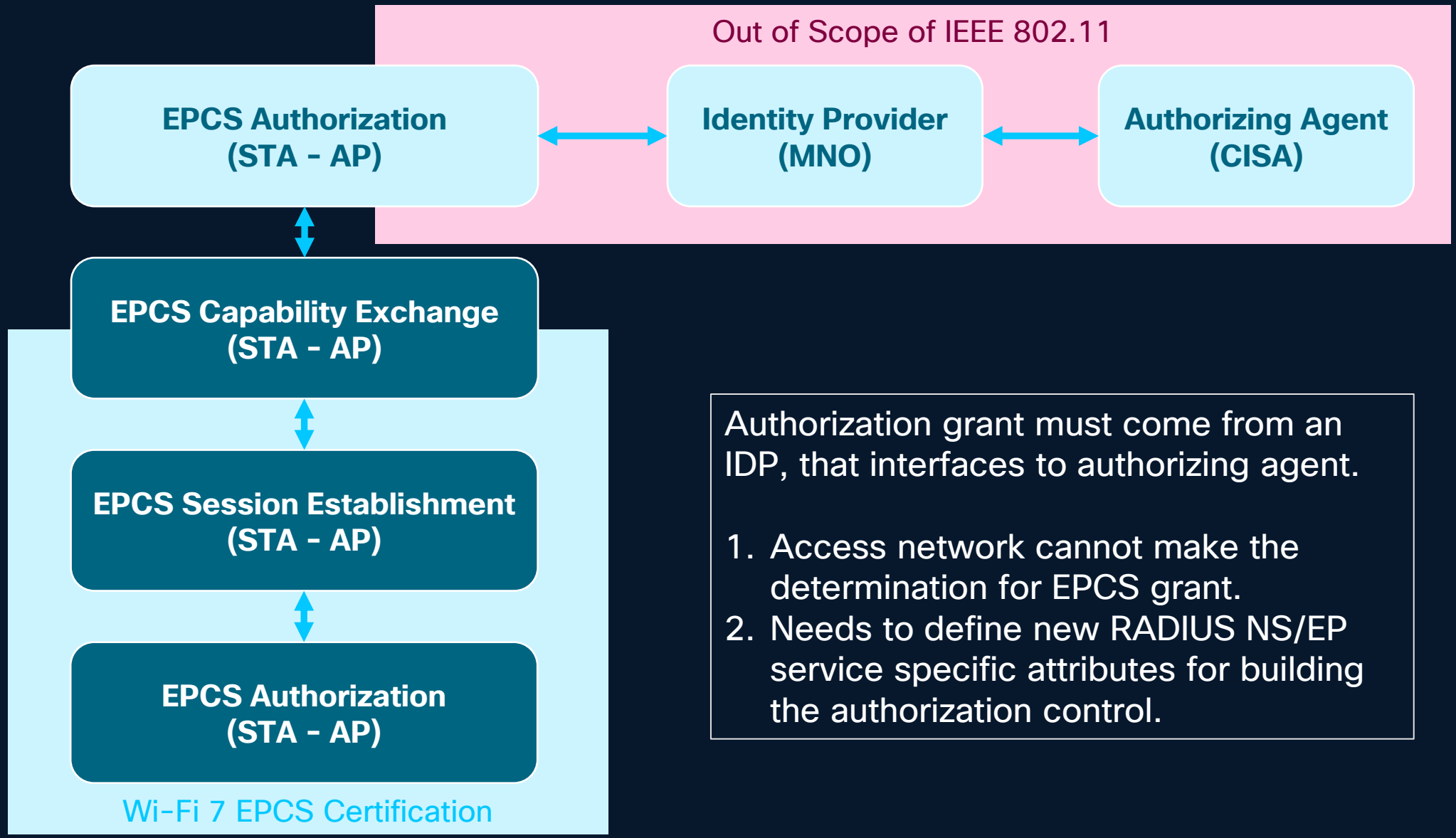
- Occupancy risk and safety determined requirements
- Required when Public Safety Radio System signal level less than -95 dBm in critical areas like stairwells, elevator lobbies and exit passageways
- 12–24 hour battery backups and NEMA 4 waterproof enclosures
- How can public LTE and private Wi-Fi systems complement existing LMR?
- If Wi-Fi is available in areas without LTE or PMR coverage, then how can it be leveraged?



4. Bringing NS/EP Capabilities to Wi-Fi

- While NS/EP services have traditionally been only supported over cellular networks, there is strong interest from federal agencies for enabling NS/EP services over Wi-Fi.
- Wi-Fi 7 includes EPCS (Emergency Preparedness Communications Service) as a feature for providing priority channel access to authorized National Security and Preparedness (NSEP) users.
- There is no WPS roaming in the US
  - All currently deployed roaming systems are unaware of priority-service enablement

4. EPCS Authorization Structure



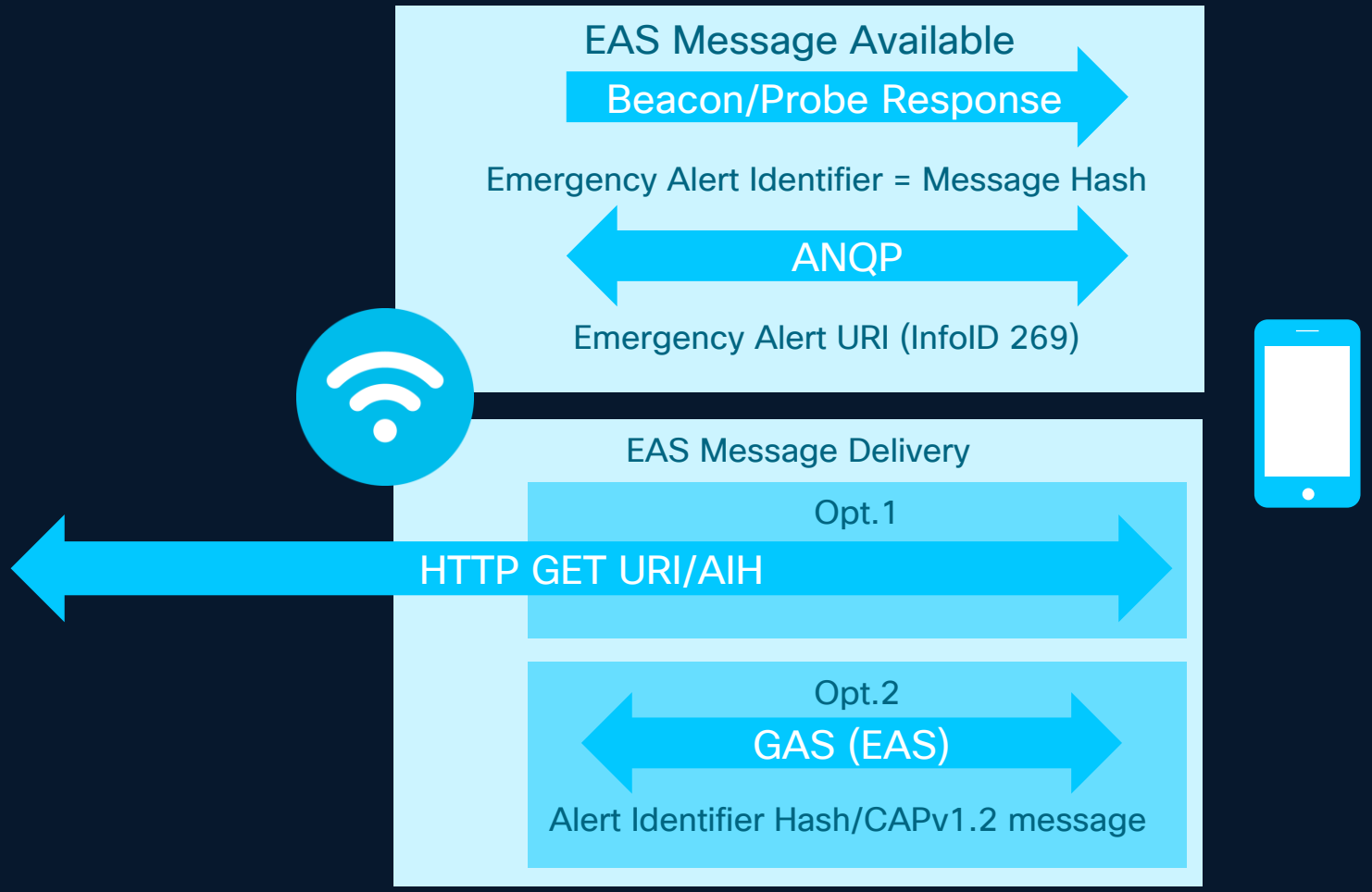
Authorization grant must come from an IDP, that interfaces to authorizing agent.

1. Access network cannot make the determination for EPCS grant.
2. Needs to define new RADIUS NS/EP service specific attributes for building the authorization control.

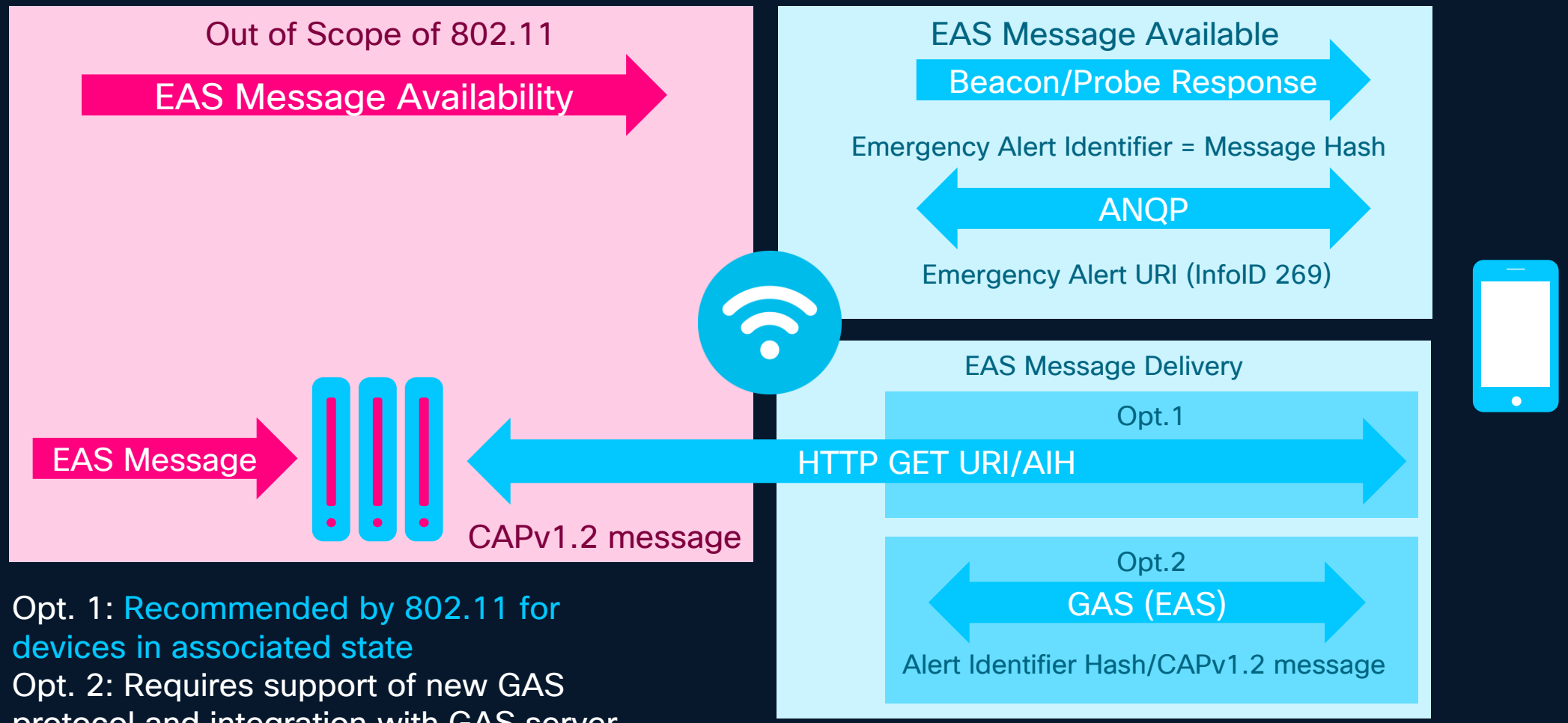
5. Public Warning Messages

- United Nations initiative ensuring that everyone on Earth is protected from hazardous weather, water, or climate events through life-saving early warning systems by the end of 2027
- Not just cellular: “Last-mile communication - All countries ensure the warnings reach those at risk by using multichannel dissemination and communication alerting”
- Ensure messages reach people through preferred and trusted communication channels.

5. IEEE 802.11 Integrated emergency alert system (EAS)

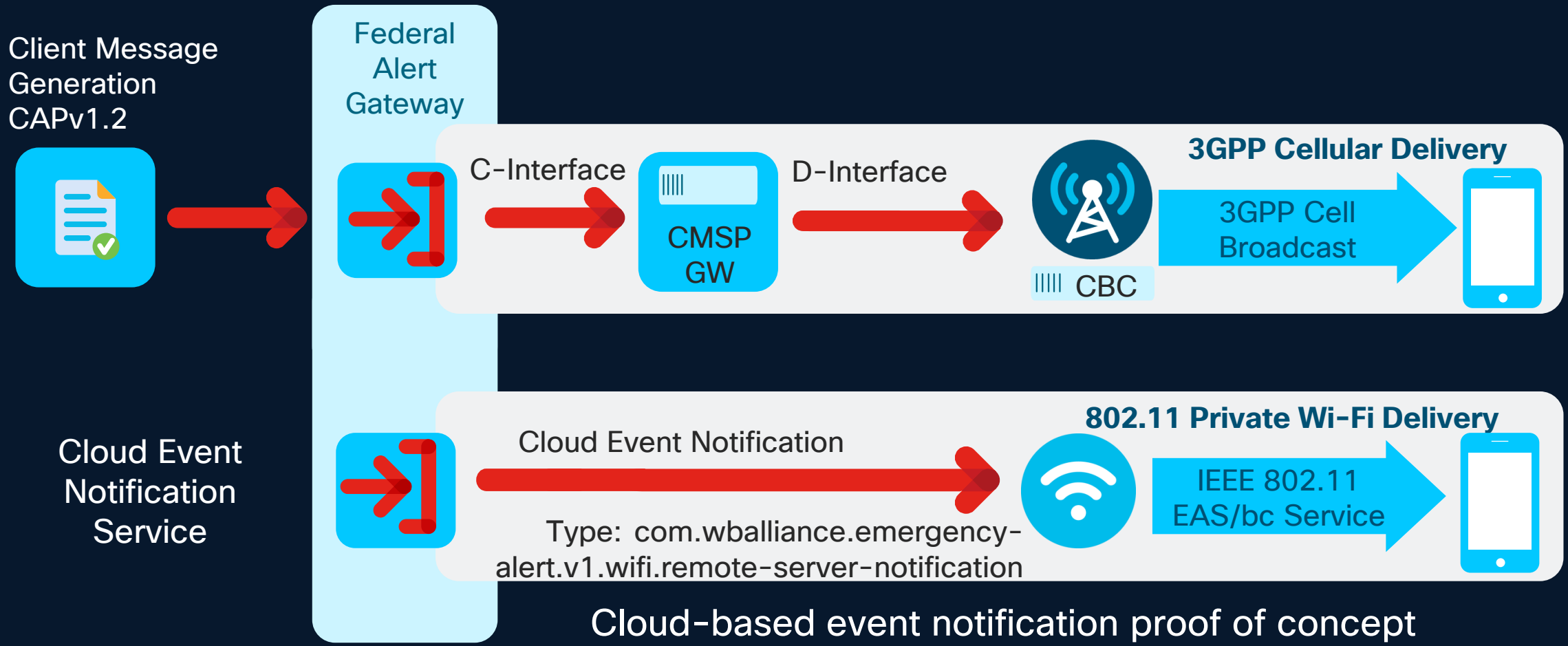


5. IEEE 802.11 Integrated emergency alert system (EAS)



- Opt. 1: Recommended by 802.11 for devices in associated state
- Opt. 2: Requires support of new GAS protocol and integration with GAS server

5. How to scale the delivery of public warning messages?



Cloud-based event notification proof of concept demonstrates that 0.5 Million notifications can be sent to Wi-Fi networks in under 2 seconds

6. Key Take-Aways

Mission-Critical Ready

Wi-Fi now delivers the low-latency, deterministic performance required for emergency calling and public safety.

Precision Location

Transition to DBH and delivery using SIP/PIDF-LO enables location to be used to route and dispatch all emergency calls.

Seamless Access

OpenRoaming eliminates credential barriers, ensuring secure, automatic connectivity for emergency services.

Industry Standards

We are driving WBA standards to ensure these capabilities are interoperable and ready for global enterprise deployment.


CISCO

Wireless Global Congress Americas

Panel: Connected Communities Forum

Vincent DePalo

CEO
The Telecom Company

Derek Underwood

Regional VP Americas
Cambium Networks

Dwayne Douglas

CEO
The QUILT

Mark Grayson

Cisco Fellow
Cisco

Wireless Global Congress Americas

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11.30 AM CDT

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MAY 18 – MAY 21

Wi-Fi Innovation: Connecting Our Digital World

IRVING CONVENTION CENTER AT LAS COLINAS, DALLAS, USA

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Wireless Global Congress Americas

ENTERPRISE CONNECTIVITY REINVENTED FOR HOSPITALITY, RETAIL AND VENUES

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Wireless Global Congress Americas

Steve Namaseevayum

VP Industry Engagement, Wireless Broadband Alliance

Moderator Introduction

Wireless Global Congress Americas

Time	Presentation
11:30 AM (CDT)	**Moderator Introduction** Steve Namaseevayum – VP Industry Engagement, Wireless Broadband Alliance
11:35 AM (CDT)	**Fireside Chat: Scaling Secure Wi Fi Across Hotel Properties: Identity, Policy, and the Path to Operational Excellence** Mark Charney – Senior Principal Consulting Engineer, HPE Rodney Linville – Head of IT Infrastructure, Nobu Hotels Jeff Parker – VP Property Technology, Sage Hospitality Group
11:55 AM (CDT	**Role of Wi-Fi for Itaú - Brazil's Largest Retail Bank** Diego Turi Oliveira – IT Manger Itaú Unibanco
12:10 PM (CDT)	**From Managed Wi-Fi to Continuous Compliance: Turning Networks into Operational Systems** Diwakar Kasibhotla – Eleven Software
12:30 PM (CDT)	**PANEL: Enterprise Connectivity Re-invented for Hospitality, Retail and Venues** Hannah Greenberg – CEO, Eleven Software Jeff Parker – VP Property Technology, Sage Hospitality Group Mark Grayson - Cisco
13:00 PM (CDT)	**LUNCH & NETWORKING**

Wireless Global Congress Americas

Fireside Chat: Scaling Secure Wi Fi Across Hotel Properties: Identity, Policy, and the Path to Operational Excellence

Marc Charney

Senior Principal Consulting Engineer, HPE

Rodney Linville

Head of IT Infrastructure, Nobu Hotels

Jeff Parker

VP Property Technology,
Sage Hospitality Group

Wireless Global Congress Americas

Diego Turi Oliveira

IT Manager, Itaú Unibanco

Role of Wi-Fi for Itaú Unibanco – Brazil's Largest Retail Bank

Role of Wi-Fi for Itaú Unibanco

Diego Turi
IT Manager Itaú Unibanco

Diego Turi

39 Years old

Married

3 children

IT Manager

Network Access
(LAN, SD-WAN, WLAN e 5G)

+20years
of IT experience

+8years
working for Itaú

Speaker experience
in events such as:

2023

Wi-Fi World Congress Americas

Zero Outage Industry Standard

Huawei ICT Innovation Day

Mobility Brazil Conference

Itaú 5G TechDay

2024

Cisco Engage Brazil

Security Leaders

2025

Wireless Global Congress US

Cisco Live US (2 Sessions)

101 years of history

3.200 bi
total assets (R$)

2.4 k
branches

91.5 k
employees

70 M
customers

18
countries in which Itaú operates

96 bn
in market value (USD)

9.9 bn
in brand value (USD)

However, with
new Technologies
and hyperconnectivity
emerging customer habits have changed

Mobility

They do not want to **waste time** in traffic

Music

They take their favorite songs, playlists, and podcasts **wherever they go**

Traveling

They seek **new experiences** and convenience while traveling

Shopping

They want as **many product and service options as possible**, whenever they want and as they want

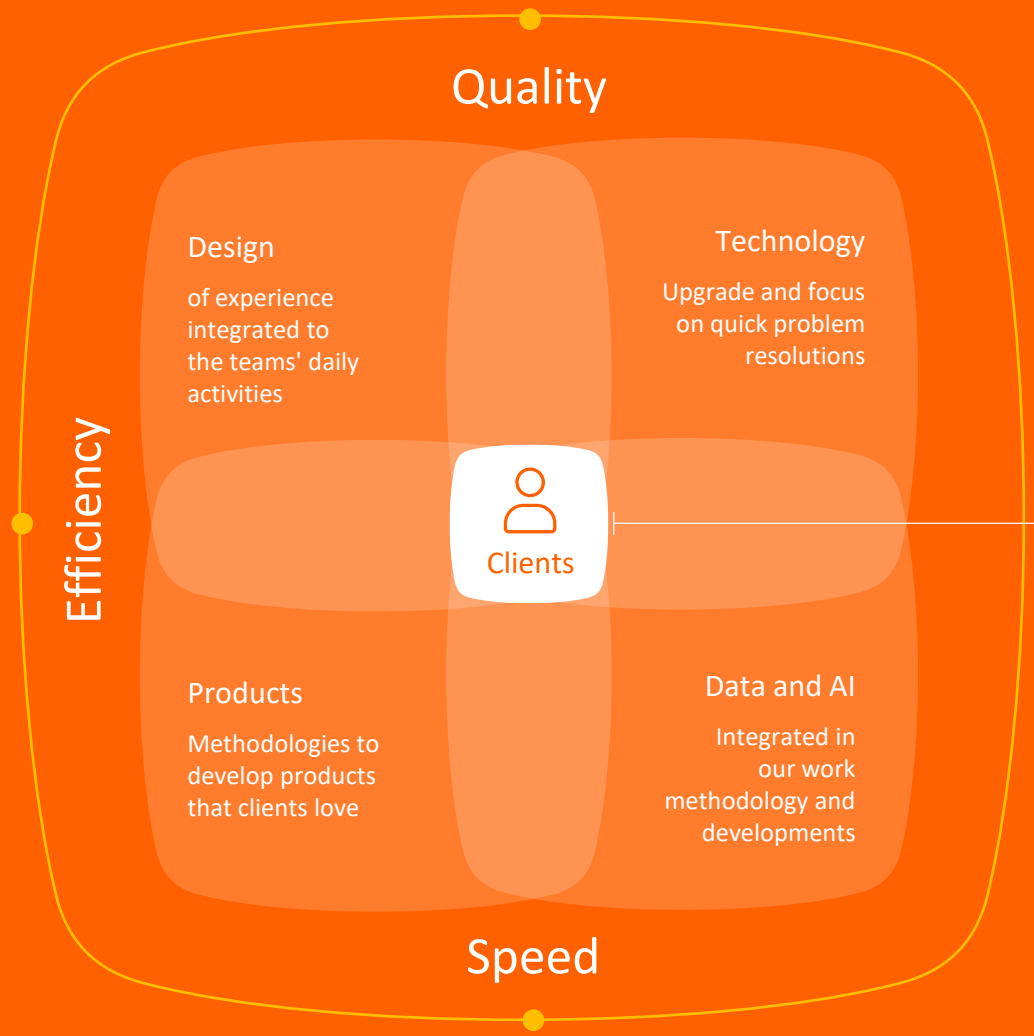
Entertainment

They want access to **custom content** any time

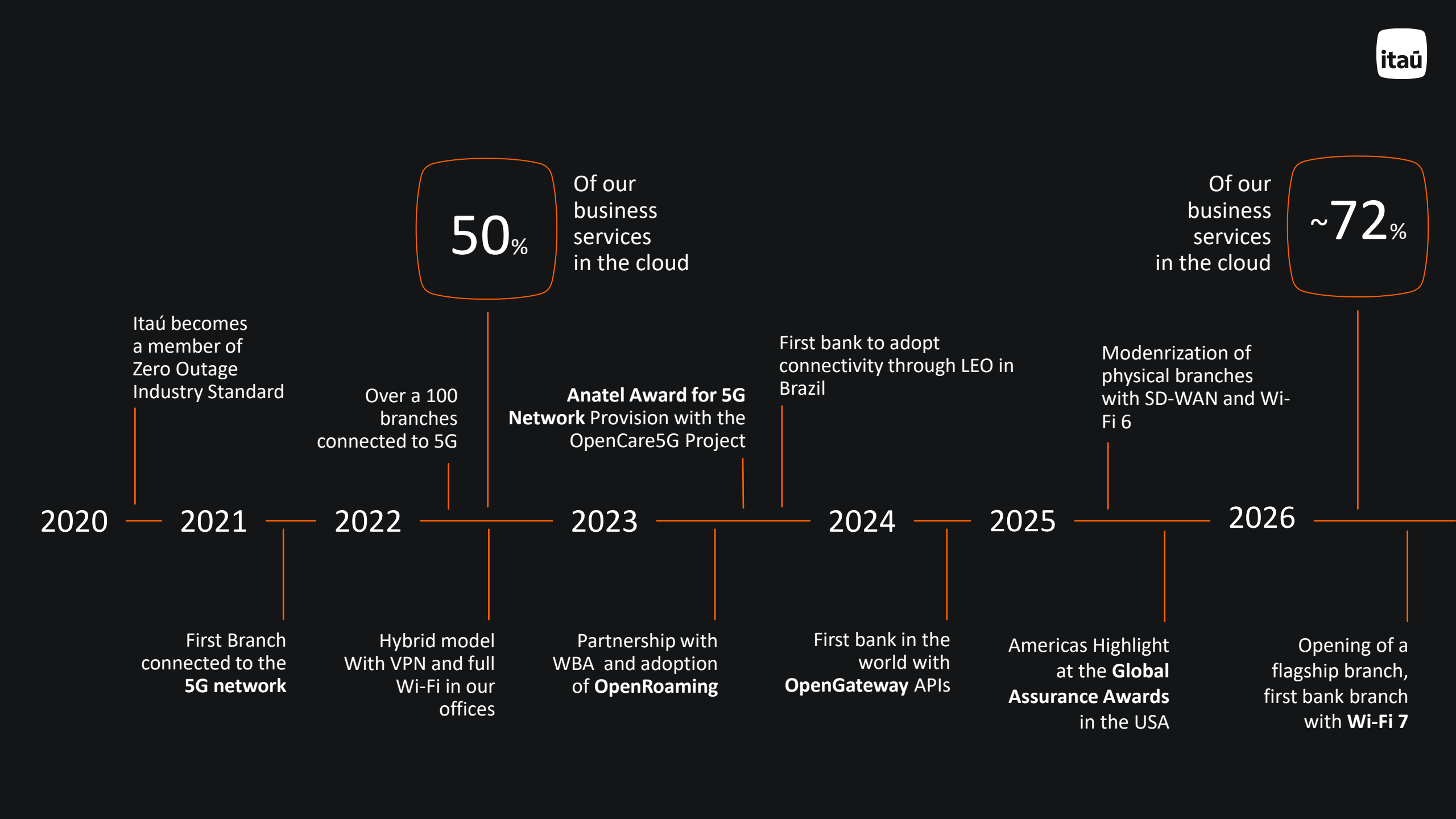
Social Media

They need to communicate with their **contact networks anytime, anywhere**

Therefore, we designed a strategy that allows us to keep the customer at the center of every decision



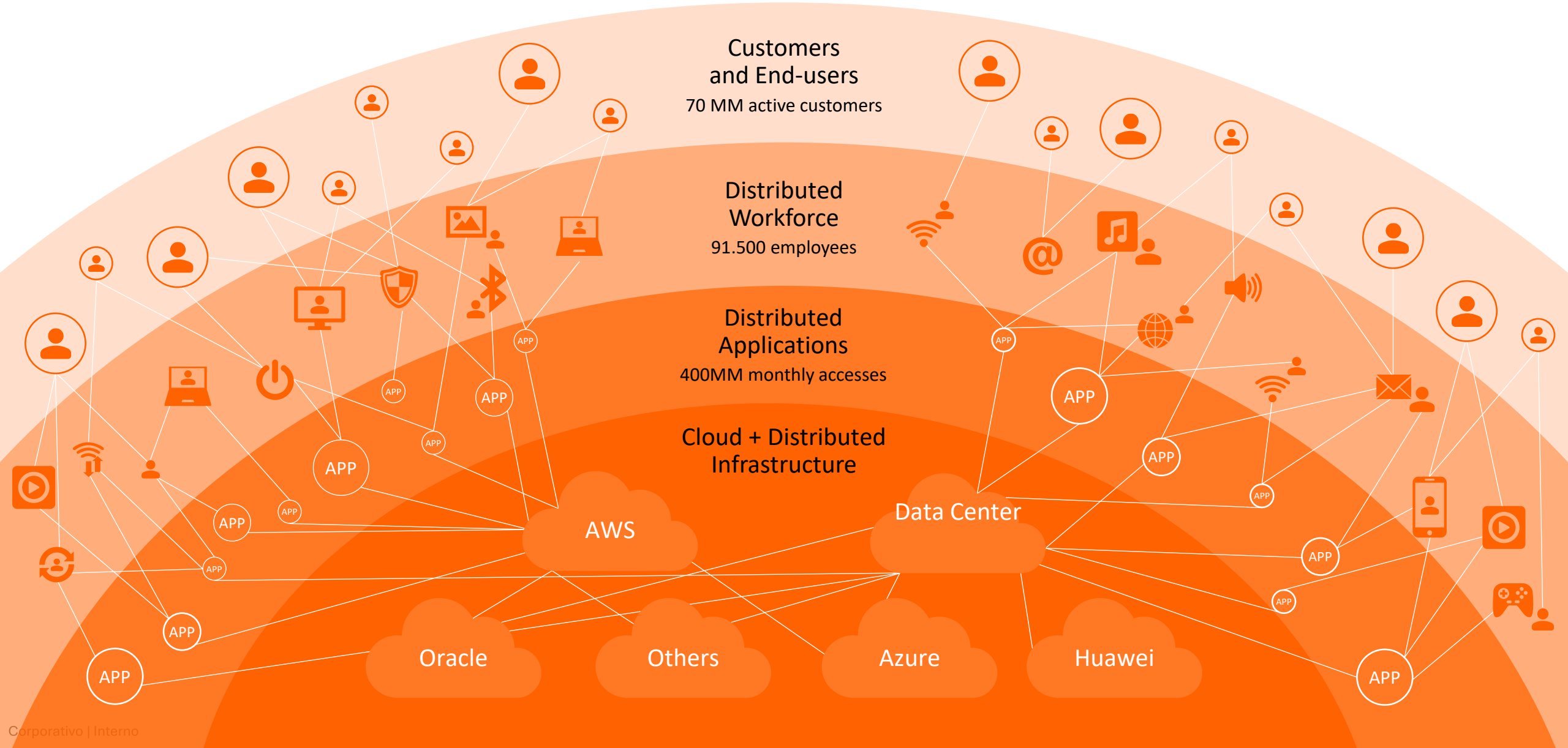
Integrated, they help us **create more value to customers and increase business competitivity**


itaú
50%
Of our business services in the cloud
~72%
Of our business services in the cloud
Itaú becomes a member of Zero Outage Industry Standard
Over a 100 branches connected to 5G
Anatel Award for 5G Network Provision with the OpenCare5G Project
First bank to adopt connectivity through LEO in Brazil
Modenrization of physical branches with SD-WAN and Wi-Fi 6
2020
2021
2022
2023
2024
2025
2026
First Branch connected to the 5G network
Hybrid model With VPN and full Wi-Fi in our offices
Partnership with WBA and adoption of OpenRoaming
First bank in the world with OpenGateway APIs
Americas Highlight at the Global Assurance Awards in the USA
Opening of a flagship branch, first bank branch with Wi-Fi 7

Branch Transformation

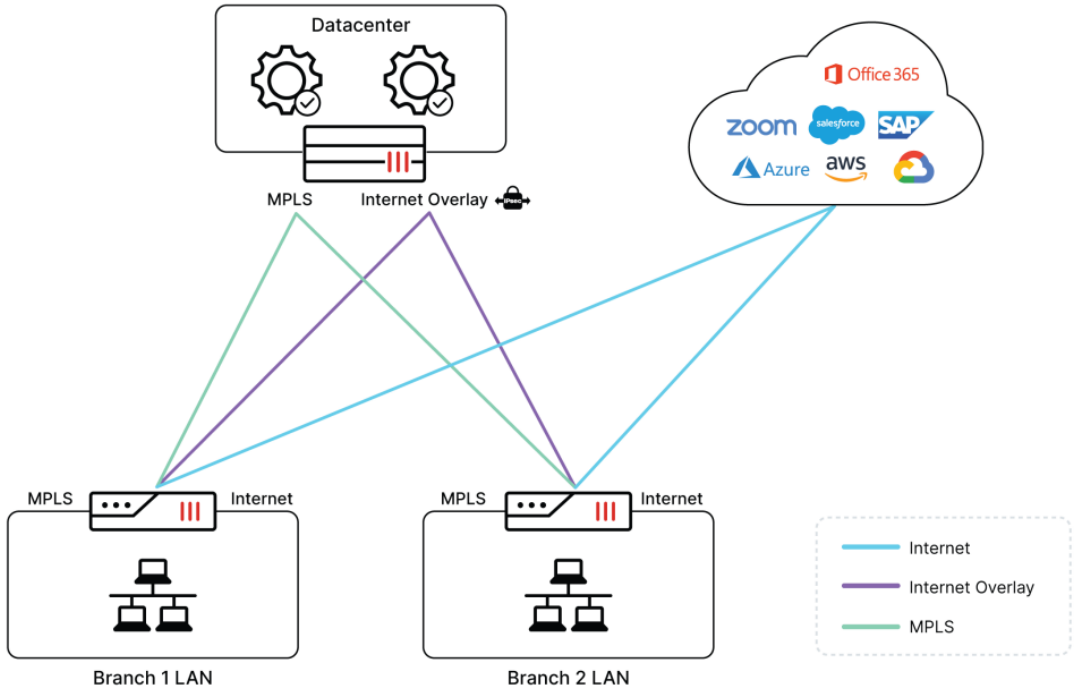
Users and Systems on premises		Levers		Cloud or Remote Users and Systems
Conventional telephony and video conferencing	→	Hybrid work	→	Full collaboration and telephony virtualization
User without mobility in agency	→	100% of users with laptops	→	Full mobility
Workloads working in the Data Center	→	New way to consume technology resources	→	IaaS, SaaS and PaaS dominance
Majority B2B traffic with end-to-end links	→	Internet access	→	B2B traffic through Internet and/or Cloud Connections
Infrastructure monitoring	→	Observability	→	Monitoring based on user experience, with full view of all elements , use of IA

Hyperconnectivity



This transformation was guided by our ambition to offer the best experiences to our customers, at any point of contact, through a

Phygital strategy



Modernizing our technology platform, adopting AI at scale and upgrading the infrastructure of our branches with SD-WAN (SASE), Wi-Fi 6, 6E anda 7, and cutting-edge connectivity was a strategic step in this direction.

Roaming

Endpoints

Wi-Fi 6, 6E and 7

High speed

Streaming quality

Battery efficiency

+96 K
laptops

+200
models

+09
manufacturer

~ 12 K
access points

~ 150 K
endpoints

Branch Transformation

VPN / SSE

45%

Available and Secure

Internet (Split traffic)

Unlimited Mbps

Internet

2,5 Mbps minimum per endpoint

Wi-Fi Corp

23%

High Density

Local

>20 Mbps minimum per endpoint

Internet

2,5 Mbps minimum per endpoint

Wi-Fi Agency

30%

Medium density

Local

>10 Mbps minimum per endpoint

Internet

2,5 Mbps minimum per endpoint

Wired

2% Exception

Access restriction

Local

>20 Mbps minimum per endpoint

Internet

2,5 Mbps minimum per endpoint

Through this journey,

state of the art connectivity technology was key

SD-WAN, SSE

Helps us ensure smarter and more resilient network management that adapts dynamically to the best traffic routes, reducing latency and improving safety and performance.

Wi-Fi 7

Has brought a significant improvement in the in-branch experience - with more stable connections, higher speed, and capacity for multiple devices to connect simultaneously.

Fiber, LEO and 5G

Helps us ensure high availability even in remote regions, extending our reach and maintaining the same quality standard at all service points.

OpenRoaming

Allows customers to automatically connect to the Wi-Fi in branches without the need for manual authentication, security, enhancing mobility and convenience.

Creating better experiences through connectivity

Wi-Fi Only | Contact center | Traders | Lives | Video calls

+150 K
Wi-Fi connections per day

+12 K
Access Points among 3 manufacturers

+96 K
corporate laptops

+40K
VPN Connection per day

Brazil's most expensive office building ~ US$ 300 MM, operating Investiment Bank

Largest building with more than 19 K connections per day, 100 Floors and 6 Towers operating with Wi-Fi 6E and SD-WAN

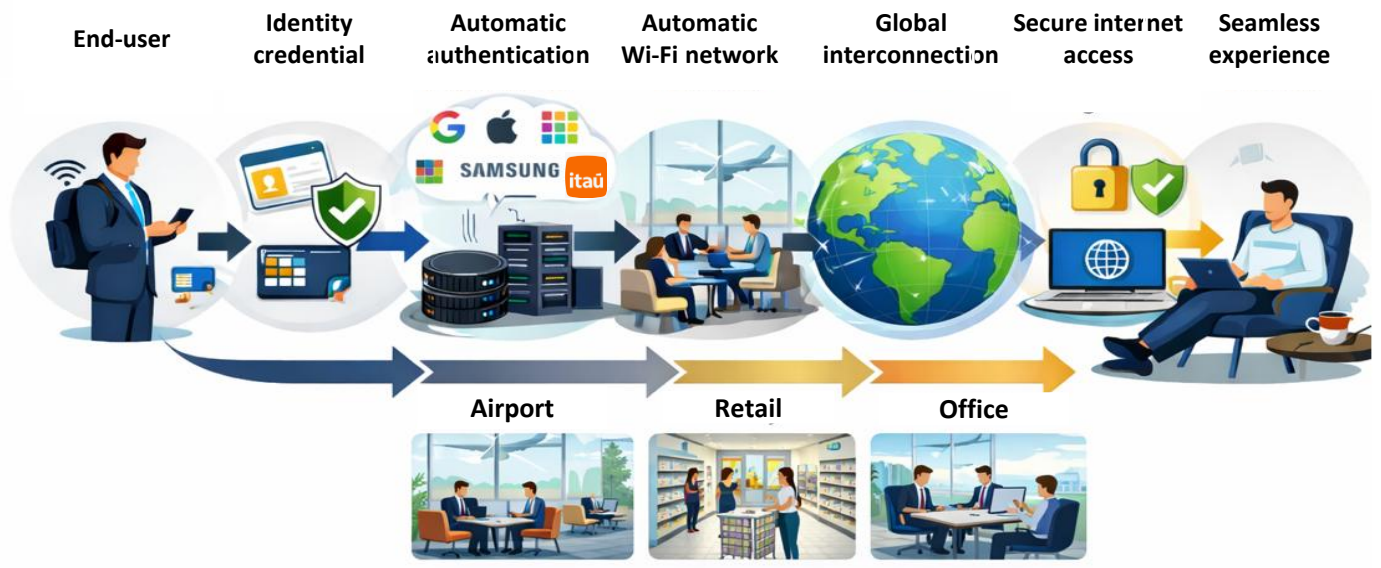
OpenRoaming is a strategic enabler for new services, revenue streams, and a stronger presence within the digital ecosystem.

Partnership with WBA since 2023.

The initiative brings real benefits on the path to connecting customers in a transparent and safer way, with automatic access and visibility.

We already have OpenRoaming available in our large offices and are in the process of expanding it to all offices and branches.

OPENROAMING™ WIRELESS BROADBAND ALLIANCE → **The network that creates opportunities**



Technical Benefits

- Reduced guest portal friction (Passpoint)
- Usage analytics
- Traffic prioritization (QoS)
- Global interoperability
- Seamless roaming between 5G and Wi-Fi

Business Benefits

- Campaign delivery (communications / promotions)
- Partnerships with mobile operators for indoor traffic offload
- New business opportunities through partnerships and sponsorships
- 20+ identity providers
- 3.5M+ access points worldwide

Key Differences The value of OpenRoaming

	Guest Wi-Fi	OpenRoaming
Authentication	Captive Portal via redirect or CoA, with authentication options through internal users, Active Directory (AD), or social login	Profile-based authentication using digital certificates
Security	Layer 2 authentication (Web Authentication) or Layer 3 authentication (MAB with CoA)	802.1X with Hotspot 2.0
Onboarding	Individual registration required on each network, with some requiring re-authentication throughout the day	Profile-based to network access
User Experience	Manual network identification, manual connection steps, and exhaustive forms	Automatic connection with seamless transition between Wi-Fi and mobile network

As we make over thousands of new deployments per day, we keep a close eye on governance, observability and data that helps us

measure our customers' experience

We have an NPS 80 and connection Health 99% (benchmark).

Partnership with ZOIS for the implementation and evolution of our framework, processes, and tools allows us to be even more agile while preserving the stability of the environment.

More than a technological update, this renewal is entirely connected to our

vision for the future:

An agile, secure network ready to support the bank's next leaps in innovation - be it with artificial intelligence, hyper-personalization, or increasingly digital services.

Thank you!

Wireless Global Congress Americas

Diwakar Kasibhotla

CTO, Eleven Software

From Managed Wi-Fi to Continuous Compliance: Turning Networks into Operational Systems

From Managed Wi-Fi to *Continuous Compliance*

Turning Networks into Operational Systems

Diwakar Kasibhotla · CTO, Eleven

eleven

When was the last time a guest complimented your Wi-Fi?

Connectivity is invisible when it works, and catastrophic when it doesn't.

WHO WE ARE

Proven at the scale of every major brand you stay with.

Eleven's Mission: Connect people with what they need, when they need it, wherever they are.

- Hospitality & residential, purpose-built
- Uptime exceeding 99.95%
- Guest satisfaction that compounds into loyalty
- Tailored to each operator's brand standard
- Deep integrations across the hospitality stack

TRUSTED BY

Accor · Hilton · Marriott · Four Seasons · Wyndham · Granite

30,000+	PROPERTIES UNDER MANAGEMENT
12B	AUTHENTICATIONS PER YEAR
140	COUNTRIES SERVED
24/7	GLOBAL SUPPORT

THE ARGUMENT

The baseline has moved.

01 **Invisible by design.**

Guests expect connectivity the way they expect running water. Instant. Always on. Never thought about.

02 **An outdated definition.**

“Managed Wi-Fi” used to mean keep it up and fix it when it breaks. The industry has moved on. So have guests.

03 **The question has changed.**

From “are guests connected?” to “is every property performing to standard right now?”

Connectivity is table stakes. Compliance is the new differentiator.

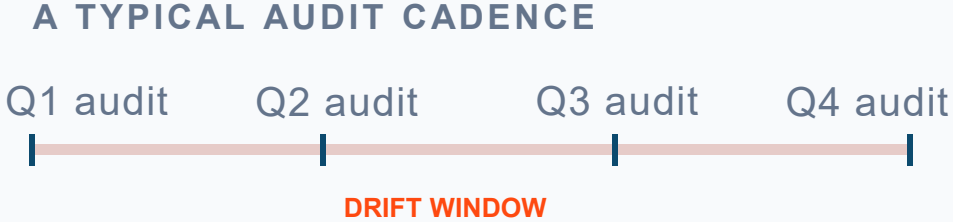
WHY TODAY'S MODEL BREAKS

Periodic audits were built for a simpler era.

Property complexity exploded. Thousands of devices, dozens of SSIDs, PMS integrations, IoT, and BLE all sharing one infrastructure.

Drift hides between inspections. The gap between audits is exactly where incidents live, and where guests feel them first.

Reactive operations are expensive. Truck rolls, escalations, and reputation damage compound faster than they can be repaired.



Every hour between checkpoints is an hour the network could be drifting from standard. Guests don't schedule their experience around your audit cycle.

PUTTING A NUMBER ON IT

Manual audits cost roughly $6.5M per year.

Modeled on a 1,200-property portfolio, audited monthly by human engineers. Labor only.

VARIABLE	PER NETWORK	PORTFOLIO (1,200)
Engineer time per audit	540 min · 9 hrs	648,000 min · 10,800 hrs
Audit cadence	Monthly	12× per year
Labor rate	$50 / hr	–
Annual audit cost		**≈ $6.5M / year**

Excludes the cost of a breach. That is the larger number, and it is the one nobody budgets for.

THE RISK SIDE OF THE LEDGER

Breaches: facts & figures.

73%

of security leaders have experienced an incident because **IT assets were unmanaged or unknown.**

58%

have **no continuous monitoring** in place: a prerequisite for catching risk before it impacts operations.

31%

of **hospitality organizations worldwide** have reported a data breach in their company's history.

89%

are affected **more than once in the same year.**

WHERE THE HOLES COME FROM

What causes network vulnerabilities?

01 **Configuration & patch drift.**

Misconfigurations and firmware/OS updates that never get applied. The single largest source of severe findings, year after year.

02 **End-of-life equipment.**

Hardware and firmware running past vendor support. Unpatched, undefended, and quietly ubiquitous in mature portfolios.

03 **Identity & access gaps.**

Weak segmentation, stale credentials, rogue access points. The holes that don’t announce themselves until they’re used.

04 **Unmanaged service providers.**

Third parties with network access and no governance. Convenience today, audit finding tomorrow.

THE NEW OPERATING MODEL

Compliance as a continuous state.

01

Always under observation.

Real-time monitoring replaces periodic snapshots. Every AP, every session, every moment.

02

Detect before guests notice.

Issues are triaged before a complaint is filed. Not after a one-star review.

03

Auto-enforced standards.

Configuration drift is caught and corrected automatically. Not surfaced in next quarter's audit.

04

Portfolio-wide baseline.

Every property runs to the same standard, all the time. No exceptions, no gaps.

Compliance is not a checkpoint. It is the default operating condition.

EXAMPLE CUSTOMER ROI

Continuous audits run 98% faster, daily, with 100% accuracy

Same 1,200-property model. Continuous monitoring replaces monthly human audits.

VARIABLE	HUMAN ENGINEER	CONTINUOUS AUDIT
Time per network	540 min	10 min
Time across 1,200 networks	10,800 hrs	200 hrs
Audit cadence	Monthly	Daily
Annual cost	**$6.5M**	**< $1.7M ***

* Estimate based on a 90-room average property. Hardware not included. Cost of breach not included.

CLOSING

The question for every operator in this room.

01

Your guests have moved on.

They no longer expect connectivity. They expect flawlessness. The bar is set; the question is whether your network meets it.

02

Your competitors are already moving.

The shift from reactive to proactive is underway. The window to differentiate is open, but it isn’t open indefinitely.

03

The technology exists today.

This is not an R&D question. It is an adoption question. Continuous compliance systems are available, proven, and deployable now.

Stop managing Wi-Fi. Start operating a system.

LET'S TALK ABOUT YOUR PORTFOLIO

How many properties in your portfolio are operating *to standard?*

Let's find out together.

SCAN TO CONTINUE THE CONVERSATION

Diwakar Kasibhotla
CTO · Eleven
dkasibhotla@elevensoftware.com

eleven

Wireless Global Congress Americas

PANEL: Enterprise Connectivity Re-invented for Hospitality, Retail and Venues

Hannah Greenberg

CEO, Eleven Software

Jeff Parker

VP Property Technology,
Sage Hospitality Group

Mark Grayson

Cisco Fellow, Cisco

Wireless Global Congress Americas

WGC AMERICAS

LUNCH & NETWORKING
BE BACK IN 70 MINUTES AT
2.10 PM CDT

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WGC AMERICAS

MAY 18 – MAY 21

Wi-Fi Innovation: Connecting Our Digital World

IRVING CONVENTION CENTER AT LAS COLINAS, DALLAS, USA

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ENTERPRISE NETWORKS: OPEN, SECURE AND AUTOMATED

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Wireless Global Congress Americas

Pedro Mouta (Moderator)

Senior Program Manager,
Wireless Broadband Alliance

Moderator Introduction

Wireless Global Congress Americas

Time	Presentation
14:10 PM (CDT)	**Moderator Introduction** Pedro Mouta – Senior Program Manager, Wireless Broadband Alliance
14:15 PM (CDT)	**Connecting Changes Everything** Chip LaCorte – Head of Distribution Strategy and Strategic Partnerships, AT&T
14:30 PM (CDT)	**Self-Driving Networks Are Real And Here** Mittal Parekh – Senior Director, Product and Solutions Marketing, HPE
14:50 PM (CDT)	**The security layer Wi-Fi never had** Taylor Swanson – Advisor, IronWifi
15:10 PM (CDT)	**PANEL: Connecting the fabric and architecture for Enterprise Technology Innovation 2030** Vaseem Kazia – Product Manager, Silicon Labs Bradley Kalgovas – Senior Manager, Detecon Tracy Holmquist– Director of Sales Engineering, Campus & Branch, HPE
15:40 PM (CDT)	**Wi-Fi Halow - Real World Delivery, Real World Performance** Paul Lai- Founder & CEO, AsiaRF
15:55 PM (CDT)	**COFFEE & NETWORKING**

Wireless Global Congress Americas

Chip LaCorte

Head of Distribution Strategy and
Strategic Partnerships, AT&T

Connecting Changes Everything

Connecting *Changes* Everything™

AT&T

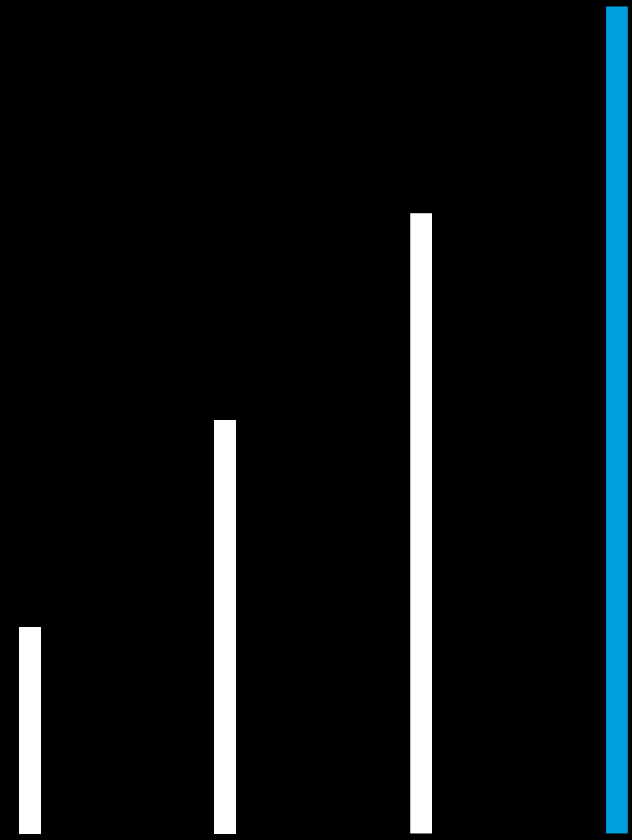
At AT&T, we start with the customer. Period.

WIRELESS NETWORK

FIBER

SATELLITE

CONNECTIVITY



SEA

OUR PURPOSE

Connecting people to greater possibility – with expertise, simplicity, and inspiration.

AMERICA'S LARGEST WIRELESS NETWORK

Compares ground-based cellular networks

We cover more than 99% of the U.S. population

Based on overall coverage in the U.S. Coverage not available everywhere

AMERICA'S LARGEST FIBER NETWORK

37M+ total consumer and business locations reached with fiber[1]

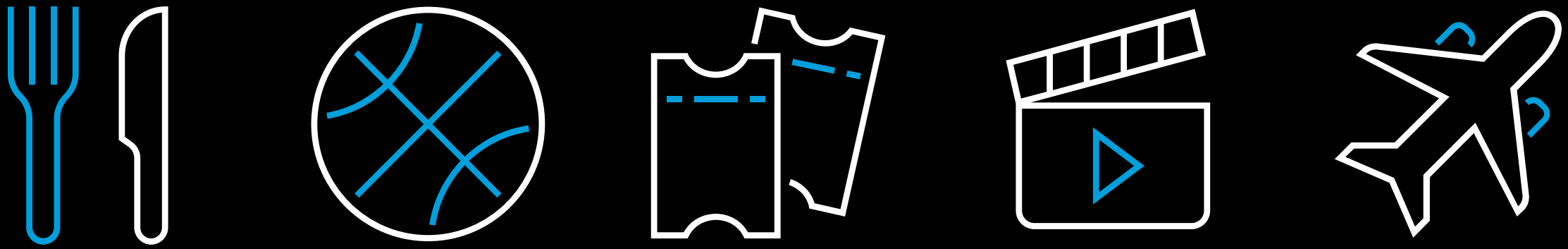
1 Total consumer and business locations reached with fiber represents the sum of: (1) AT&T Owned and Operated locations, which reflect its customer locations passed by AT&T's fiber network and (2) Fiber Ventures locations, which represent locations served from the acquired Mass Markets fiber business, Gigapower, and other commercial open access providers

AST SpaceMobile

AT&T

STRATEGIC PARTNERSHIPS

KEEPING CUSTOMERS CONNECTED
WHERE THEY ARE



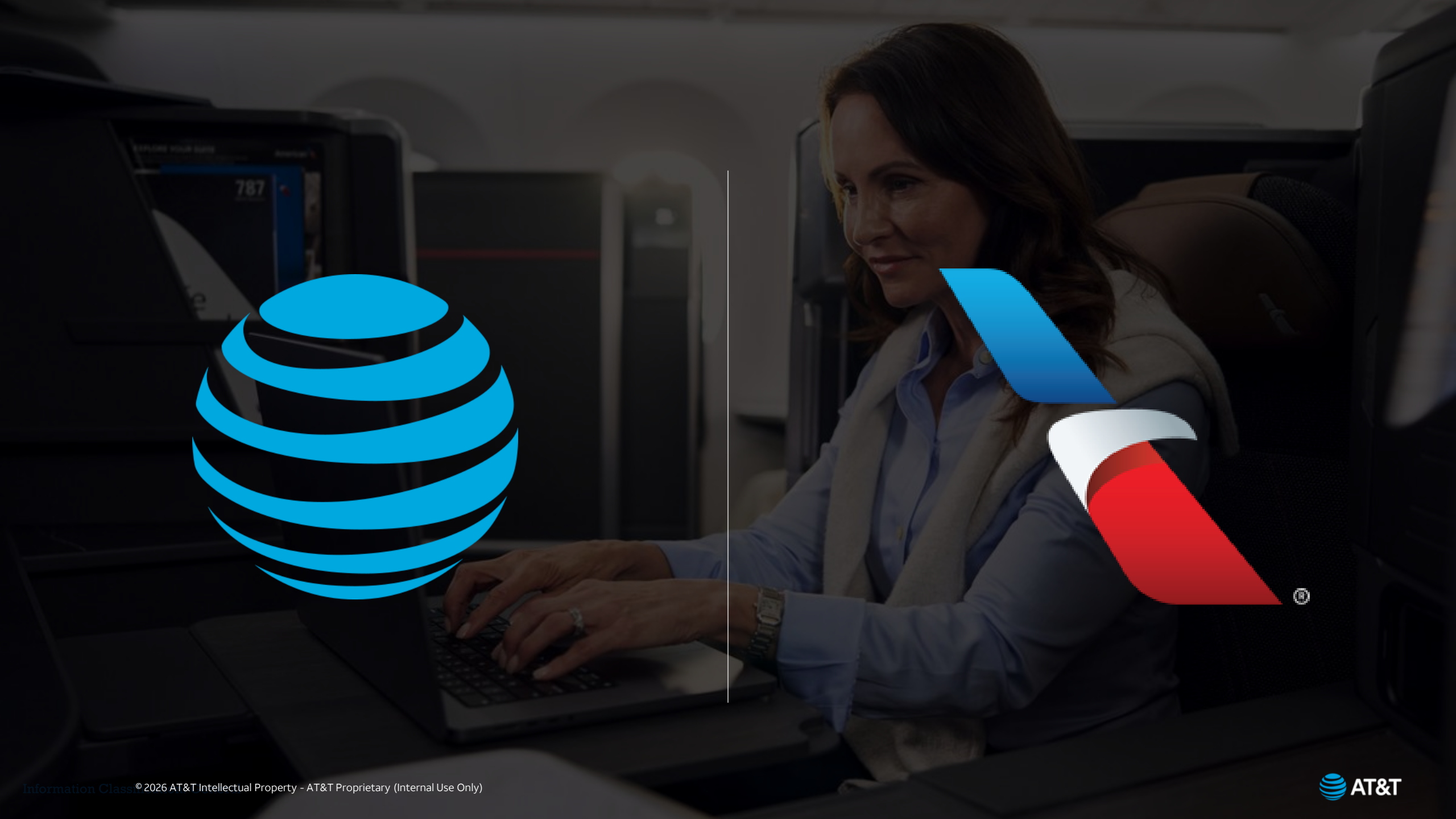
DOLLOP COFFEE Co.

COFFEE ON US – BECAUSE CONNECTION MATTERS

AT&T | Fanatics

The Official Connectivity Provider of the Fan

AT&T



Connecting *Changes* Everything™

AT&T

Wireless Global Congress Americas

Mittal Parekh

Senior Director, Product and Solutions Marketing, HPE

Self-Driving Networks Are Real And Here

Self-Driving Networks Are Real And Here

Mittal Parekh
Senior Director, Product and Solutions Marketing
HPE Networking

Wireless Global Congress | Irving, Texas, USA | May 2026

Self-driving network automation is already changing our lives

After 7 million miles, autonomous vehicles have 85% fewer crashes

In the lowest visibility conditions, your airline flight can *only* be landed by autopilot.

Why is Self-Driving becoming MANDATORY In Enterprise Networking

50% Network Engineers to retire in the next 5 years

Network Operation Costs are set to increase by 15% YoY for next 5 years

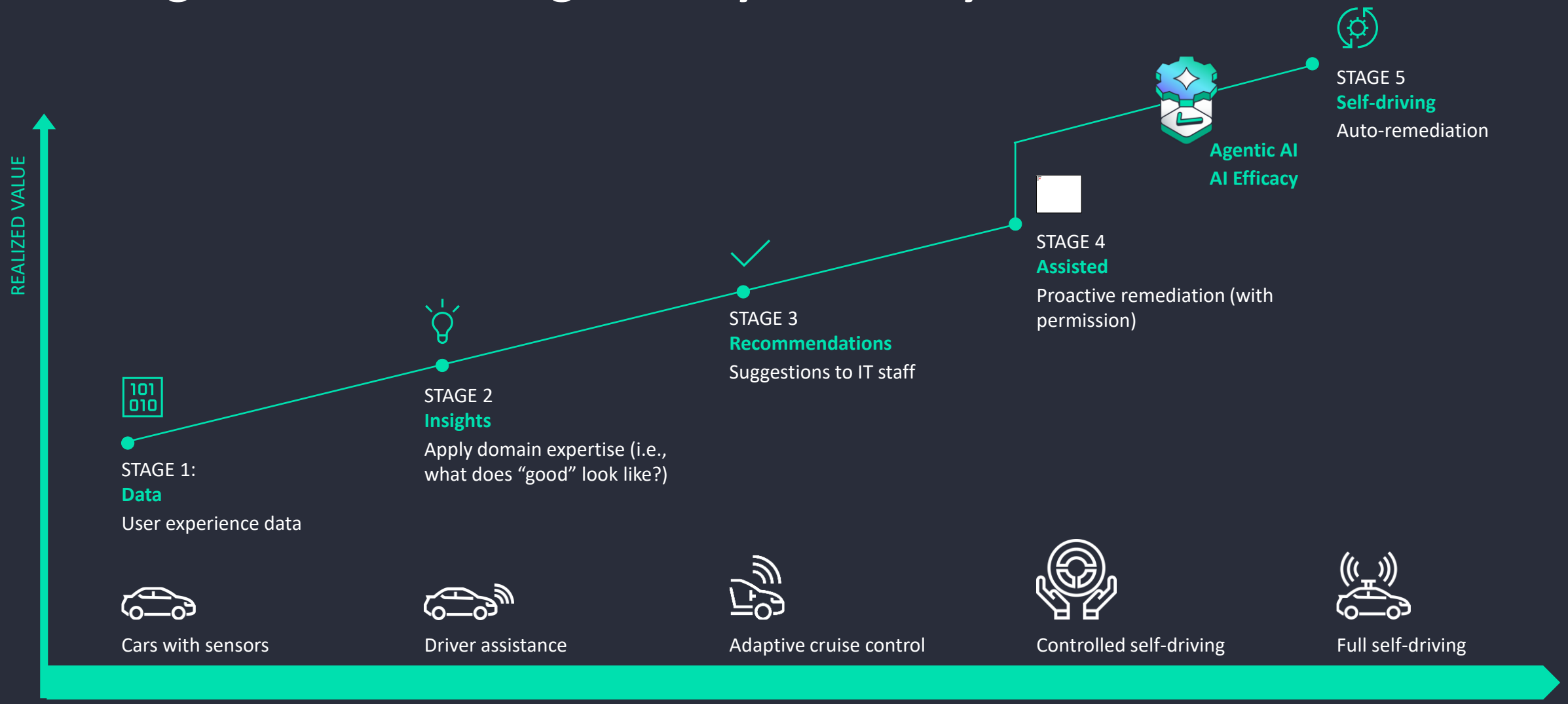
Service Degradation is THE silent killer

Inflationary and Market Pressures are demanding that we do more with less

Digital Transformation Starts With The Network

There is a GOOD NEWS!

Yes! Stage 5 of Self-Driving Journey is Already Here!



Nuts and Bolts of a Self-Driving Network

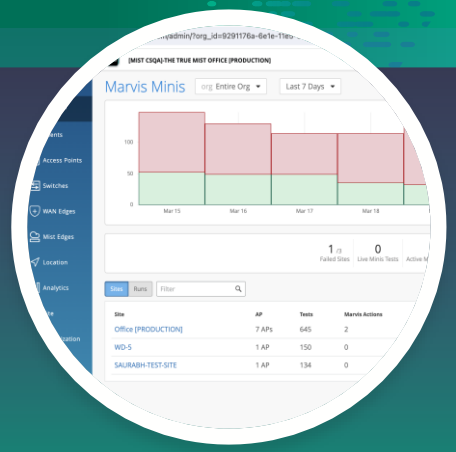
Everything you always wanted to know but were afraid to ask

Anyone can automate.
Self-Driving Takes Learning & Experience

Minis

101
010

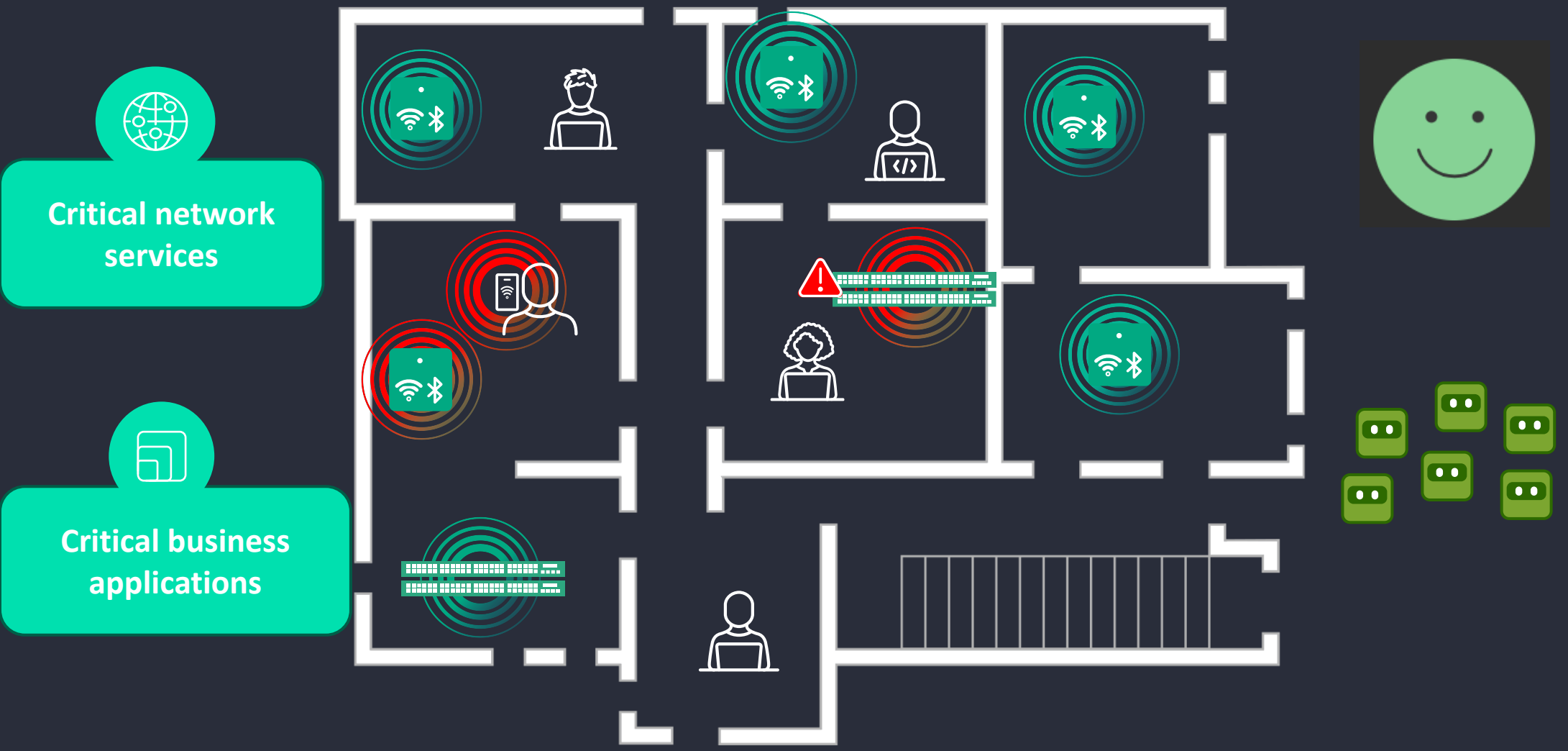
Data

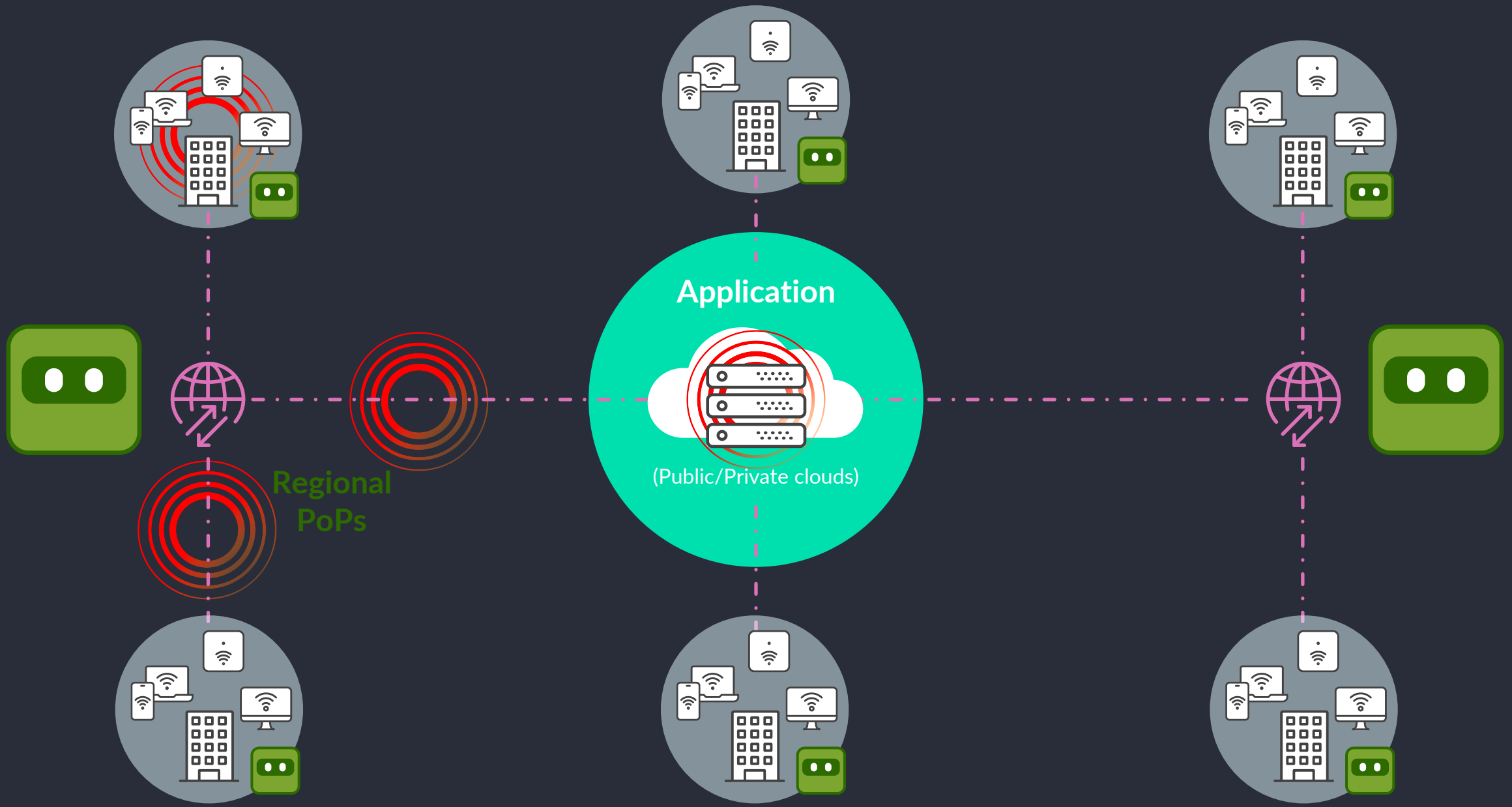


CLIENT | WIRED | WIRELESS | SD-WAN | EDGE | DATACENTER | 3RD PARTY

Secure micro service cloud architecture

Only Trust The Network That Tests Itself
End to End Digital Twin




Application
(Public/Private clouds)
Regional
PoPs

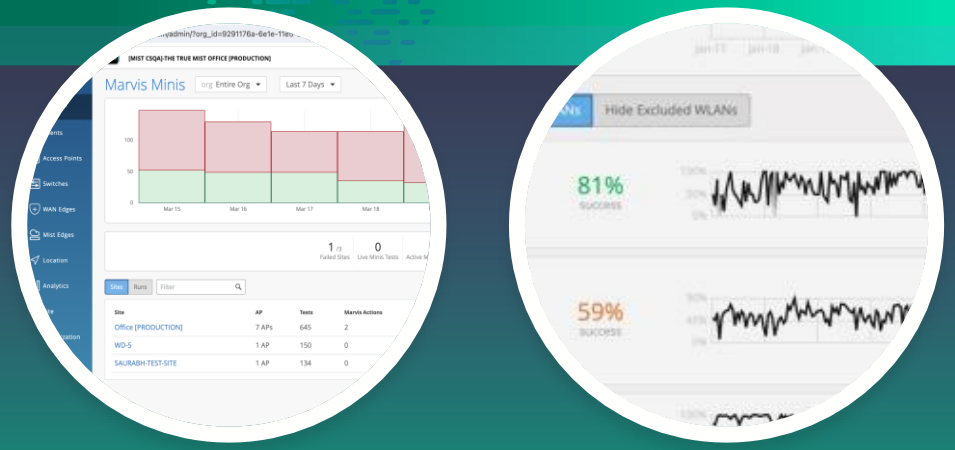
Anyone can automate.
Self-Driving Takes Learning & Experience

Minis

Generalized LEM

Data

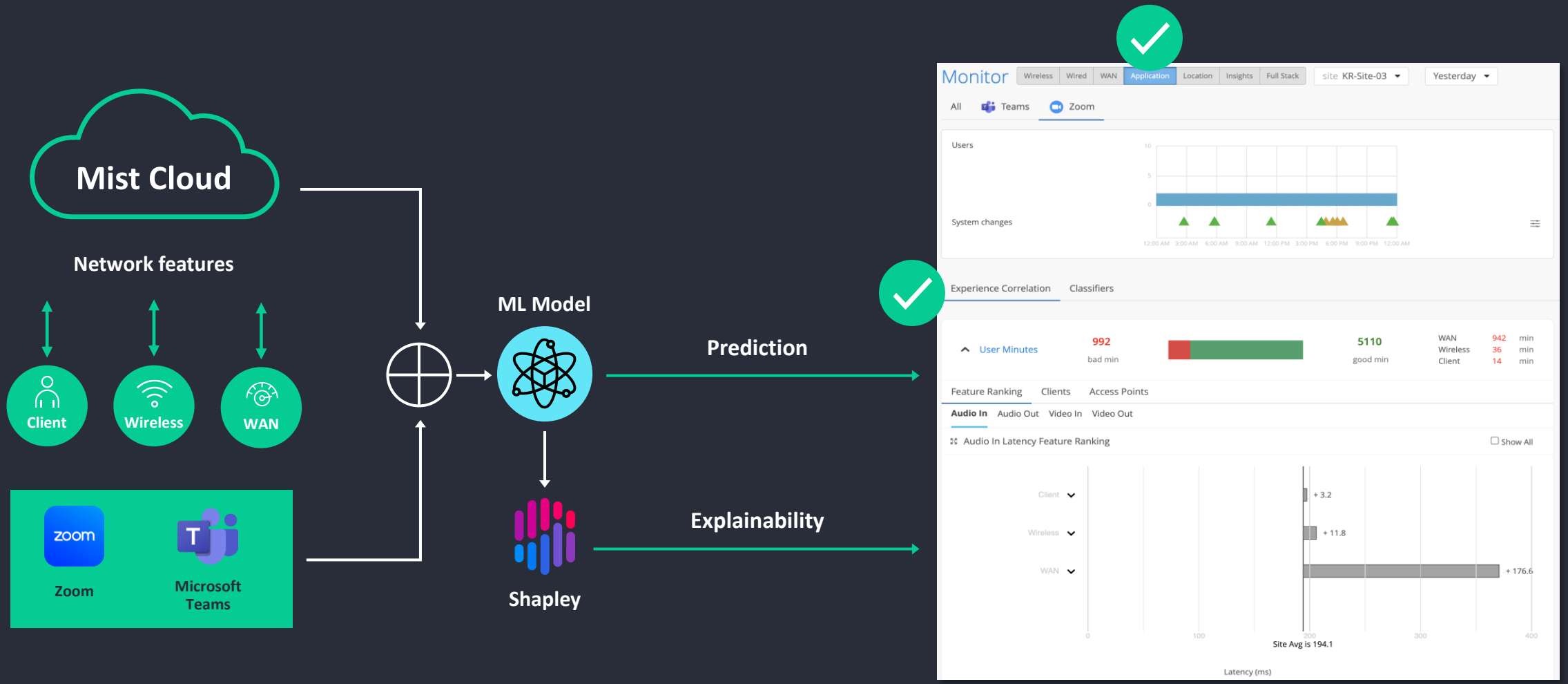
Service Level Experience



CLIENT | WIRED | WIRE

Secure micro service cloud architecture

Not a Language Model. An Experience Model.
Predict application experience



Anyone can automate.
Self-Driving Takes Learning & Experience

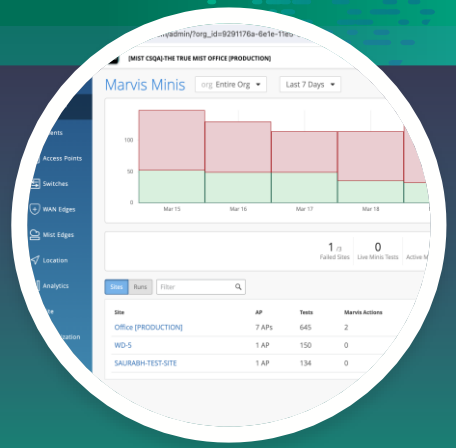
Minis ✓ Generalized LEM ✓ AIOps Efficacy ✓

AI AGENTS

101
010
Data

Service Level Experience

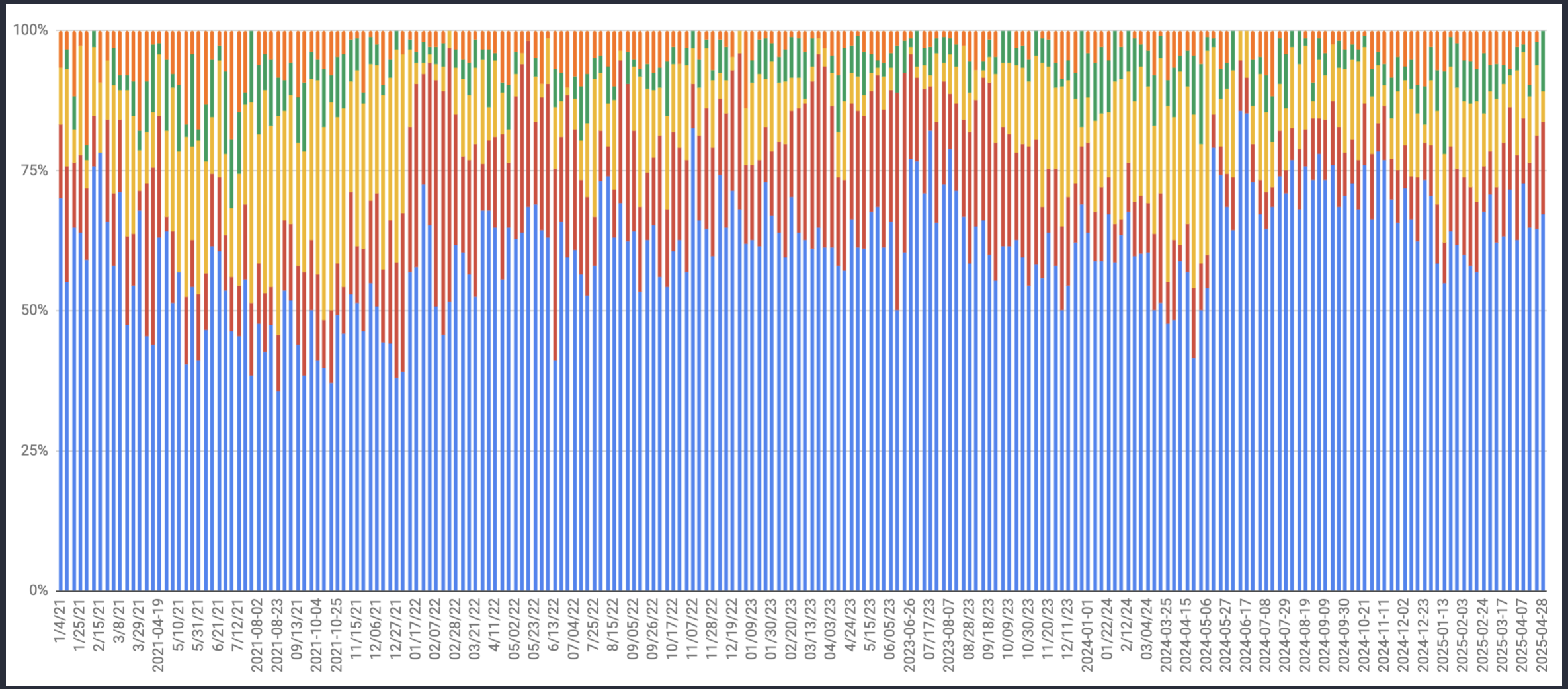
Data Science



CLIENT | WIRED | WIRELESS | SD-WAN | EDG

Secure micro service cloud architecture

AI Model Efficacy



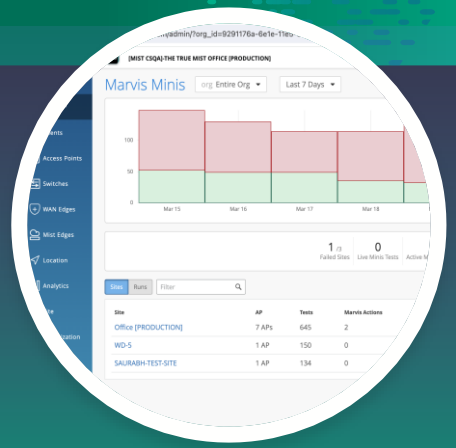
Ask your favorite vendor to share with you hard data about efficacy of their AI model

Anyone can automate.
Self-Driving Takes Learning & Experience

Minis ✓ Generalized LEM ✓ AIOps Efficacy ✓ Agentic AI ✓

AI AGENTS

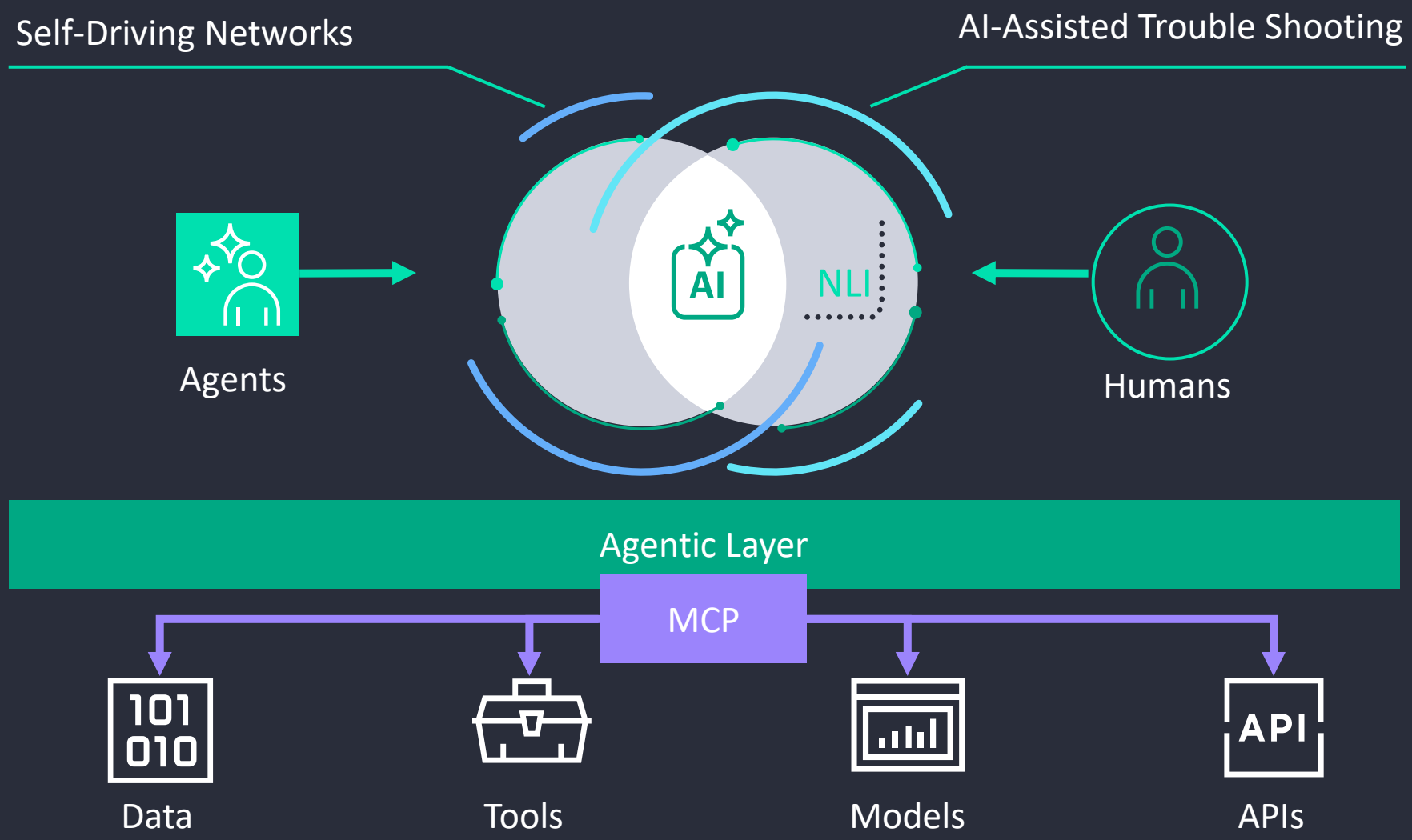
Data → Service Level Experience → Data Science → Conversational Assistant



CLIENT | WIRED | WIRELESS | SD-WAN | EDGE | DATACENTER | 3RD PA

Secure micro service cloud architecture

Agentic AI Framework

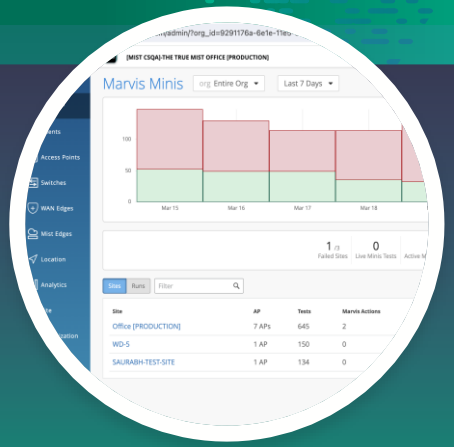


Anyone can automate.
Self-Driving Takes Learning & Experience

Minis | Generalized LEM | AIOps Efficacy | Agentic AI | Self-driving Actions

AI AGENTS

Data → Service Level Experience → Data Science → Conversational Assistant → Self Driving Action Framework



CLIENT | WIRED | WIRELESS | SD-WAN | EDGE | DATACENTER | 3RD PARTY

Secure micro service cloud architecture

When AI Doesn’t Just Recommend — It Resolves!
Marvis actions

Assisted-driving actions

AI filtered events
Marvis is highly confident that you should inspect and take action

Webhook notifications
Assisted actions can be sent as webhooks

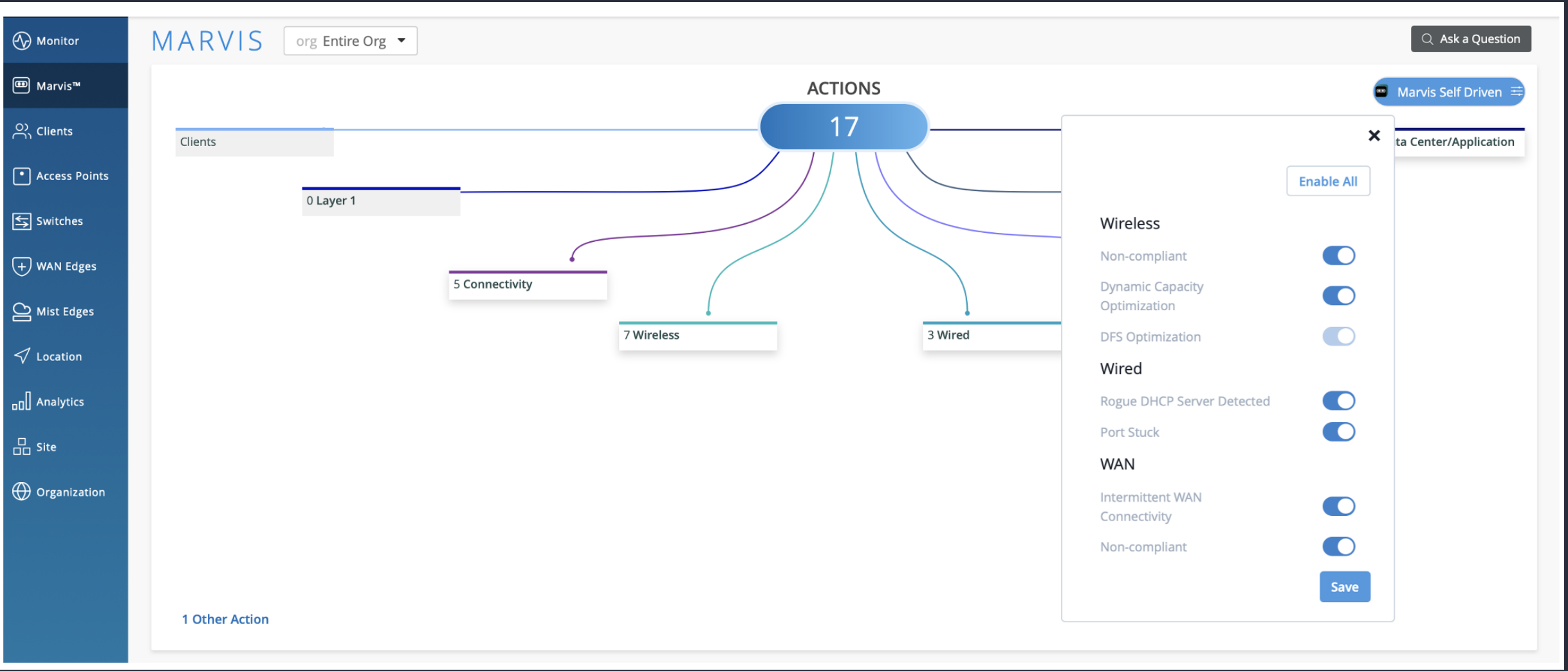
Self-driving actions

Marvis action
Marvis is highly confident action should be taken

List of trusted actions
If the self-driving action is on the trust list Marvis takes action without asking

Permission requested
If not on the trusted list Marvis requests permission and ask if you wanted it added to the trust list

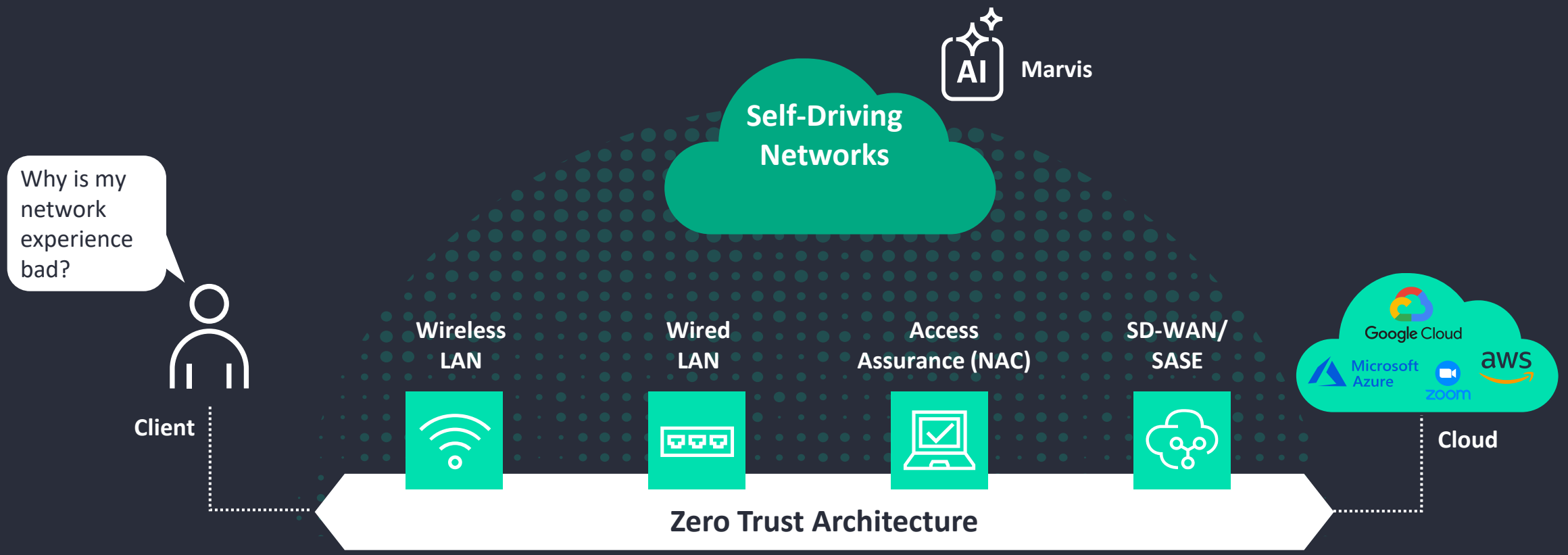
Self-Driving In Action



Ask your favorite vendor for a Proof of Concept on self-driving actions

Full-stack self-driving assures end-to-end experiences

More than just a "single-pane-of-glass" dashboard | AI-native view



Ask your favorite vendor for a FULL-STACK Self-Driving PoC

Secure, AI-native network platform differentiators

From a "single-pane-of-glass" dashboard to an AI-native view

Client level visibility

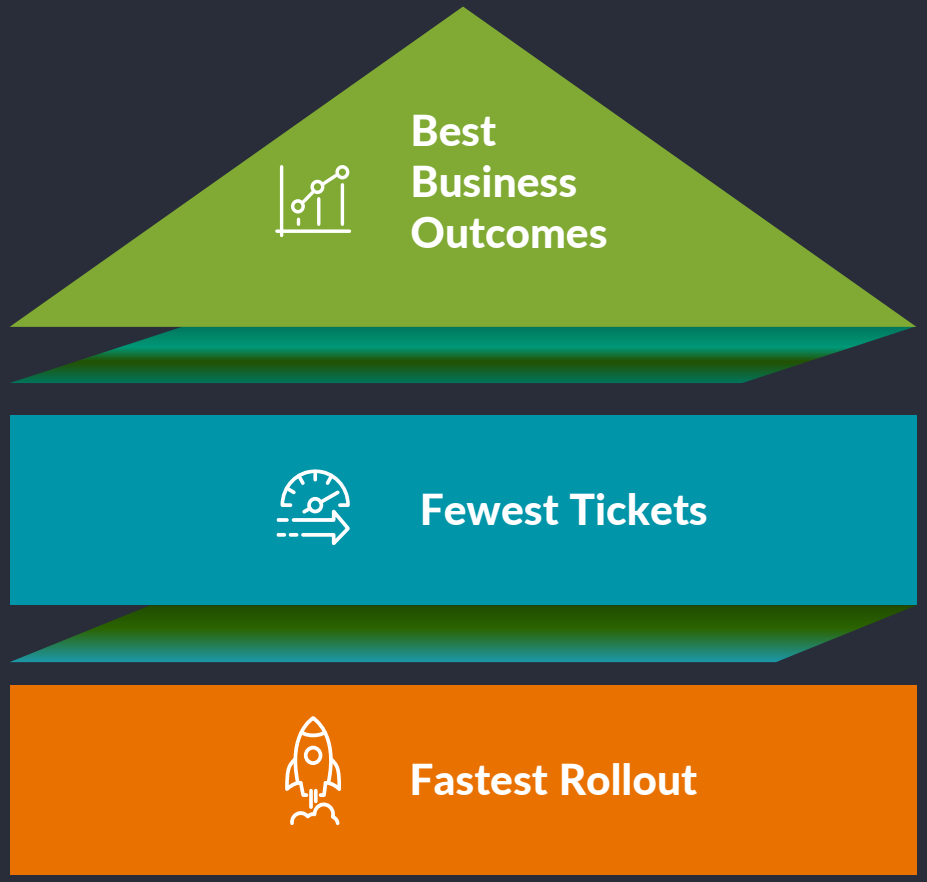
AI-native operations and support

Microservices cloud for agility

Digital engagement with virtual BLE

100% open API native architecture

Benefits of Self-Driving Networks



DARTMOUTH

"…since Marvis, escalated tickets are down by factor of 10"

"…120K hdPhones onboarded to 100 stores per week"

GAP

"…85% reduced site visits"

Henkel

"…90% faster network deployments to enable hybrid-by-design"

servicenow

"…over 90% reduction in user-opened network support tickets"

A global Logistics Company

"…MTTR down 96% on average per ticket"

A Top 3 Fast Food Retailer

"…best technology we have ever deployed in restaurants"

"…fastest most efficient technology roll out in our history"

Is your favorite vendor able to share such quantifiable benefits from renowned customers?

HPE Mist: CRN 2025 Product of the Year

Category: Artificial Intelligence: Software

THECHANNELCO.

CRN®

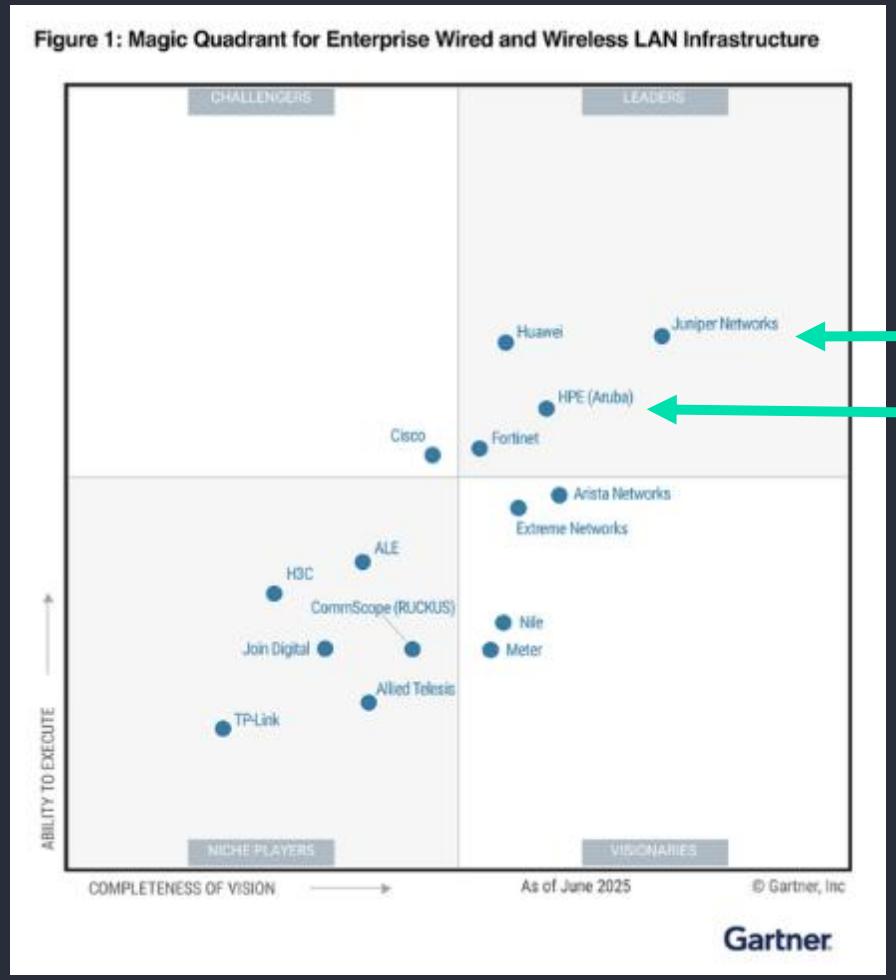
"Scored highest for technology and customer need...."

HPE Mist

Finalists

Cisco AI Canvas | Microsoft Copilot | IBM Watsonx.AI | Google Gemini | Amazon Web Services Bedrock

HPE Offers Two Such Self-Driving Solutions Under One Roof



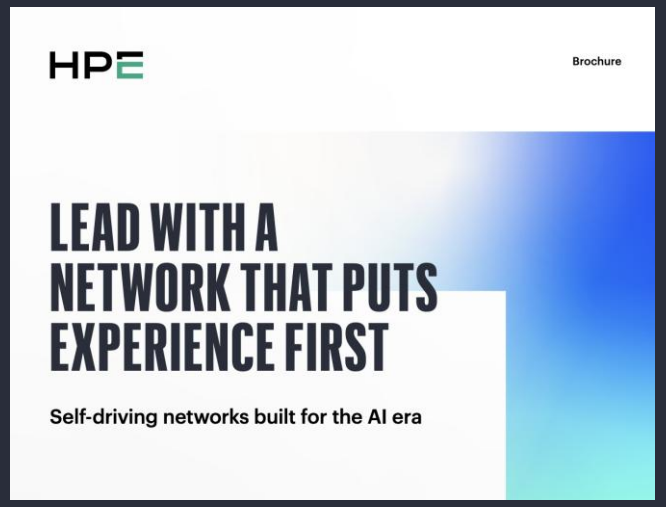
Juniper Networks (Mist)

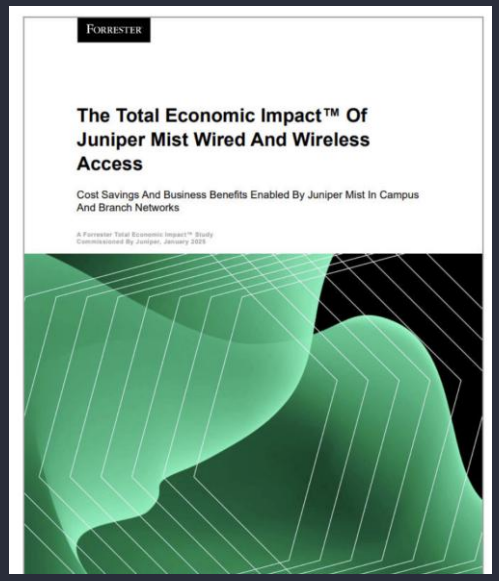
HPE (Aruba)

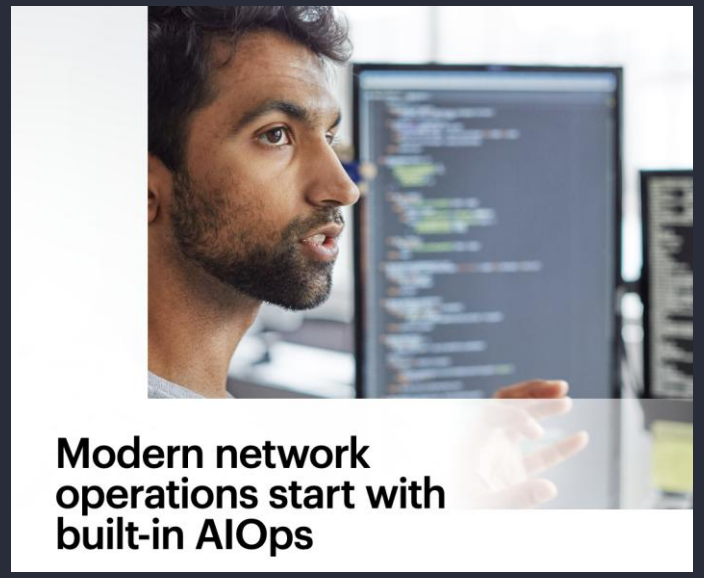
Goods You Can Use!

The state of AI in networking

AI is here to make things easier for IT. Explore key challenges, opportunities, and benefits of AI in networking, supported by industry data.

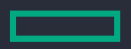






Thank You

Mittal Parekh
mittal.parekh@hpe.com



Wireless Global Congress Americas

Taylor Swanson

Advisor, IronWifi

The Security Layer Wi-Fi Never Had

IRONWIFI

WIRELESS GLOBAL CONGRESS · 2026

Everyone Is Talking About OpenRoaming.

Nobody Is Talking About This.

The Security Layer WiFi Never Had

From the OpenRoaming Standards Group co-chair.

Presented by Taylor Swanson · External Advisor, on behalf of IronWiFi

You have a WiFi security problem.

It's getting worse with the explosion of non-human identities.

A new identity layer is required.

THE BLIND SPOT

WiFi Without Identity Security = Open Attack Surface

IRONWIFI

WiFi TODAY — WITHOUT ITDR

Credential abuse — **undetected**

Identity anomalies — **invisible**

AI agents — **unmonitored**

Insider abuse — **hidden**

Roaming abuse — **opaque**

WiFi + IronWiFi ITDR

Credential abuse → **flagged**

Identity anomalies → **detected**

AI agents → **baselined**

Insider abuse → **surfaced**

Roaming abuse → **traced**

THIS LAYER DOES NOT EXIST IN THE WI-FI STACK TODAY

Existing vendors stop at authentication or observability — none operate at the identity-behavior layer at RADIUS.

Based on publicly available product information, as of 2026-05.

VENDORS REVIEWED

Cisco ISE · Fortinet · Juniper Mist

Aruba ClearPass · Microsoft Sentinel · Splunk

If a credential roams across continents in a minute — the identity layer is where you see it.

WiFi connectivity is built everywhere. The security layer is not.

IRONWIFI

Why This Layer Becomes Necessary Now

Four structural shifts make the identity-behavior layer inevitable.

Certificates Replacing Passwords

EAP-TLS adoption is accelerating. Certificate threats — expired, revoked, unknown CA, cert-user mismatch — are not visible to AD-centric ITDR.

Non-Human Identities Exploding

AI agents, automation, APIs, CI/CD pipelines, IoT controllers. All authenticate via RADIUS. None are governed at the identity plane today.

Federation Scale

OpenRoaming and Passpoint extend the identity surface across millions of hotspots. Blast radius for any compromised credential is now federation-wide.

SOC Shift to Identity-First

Zero Trust frameworks (NIST SP 800-207, CISA ZTMM) place identity behavior at the center. WiFi auth is the missing identity surface in those mandates.

This layer becomes necessary once identity is the control plane.

IRONWIFI

Where the Identity Layer Fits

WiFi stack today: no system evaluates identity behavior between auth and SOC.

ENTERPRISE & SOC
Splunk · Sentinel · QRadar · ServiceNow

IDENTITY LAYER (NEW)
IronWiFi ITDR · AI Agent Identity · Behavioral Baselines

NEW

FEDERATION & ROAMING
Passpoint · OpenRoaming · RoamingConsortium

AUTHENTICATION & POLICY
RADIUS · FreeRADIUS · Cisco ISE · ClearPass · NPS

WiFi INFRASTRUCTURE
Cisco · Aruba · Mist · Fortinet · Meraki · Ruckus · 70+ vendors

WHAT'S NEW

WBA V1.0.0 = prevention baseline (authentication, encryption, transport). The **detection layer** between auth and SOC — has not been built on WiFi.

WHERE IT SITS

- **Above RADIUS** — observes every auth and accounting signal.
- **Below the SOC** — feeds CEF / webhook detections upstream.
- **Alongside OpenRoaming** — additive, not corrective.

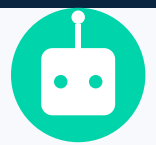
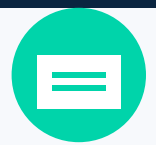
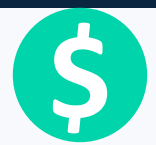
Reference: WBA Wi-Fi Security Guidelines V1.0.0, April 2026 — defines the prevention baseline.

Vendor names listed for context. Per public product information, as of 2026-05.

IRONWIFI

WiFi Identity Threat Detection and Response

First purpose-built threat detection for WiFi / RADIUS auth. · 60+ detection types across 8 engines — and growing.

Credential Attack	Identity Anomaly	Certificate Threat	Device Threat	Agent Anomaly	Portal Security	Insider Threat	Quota & Usage
							
Brute force Password spray Credential stuffing Replay & EAP downgrade	Impossible travel Time anomaly AP anomaly Frequency anomaly	Expired / revoked Unknown CA Mass issuance Cert-user mismatch	MAC spoofing Device cloning Rogue device Rapid MAC rotation	Rate spike New NAS / AP Cert change Off-hours New VLAN segment	Bot submissions Social-login abuse Session hijack Payment fraud Credential reuse	After-hours access Excessive roaming Privilege escalation Terminated user Concurrent sessions	Octet-volume exfil Bandwidth anomaly Dormant reactivation Trust-tag-scaled Charging anomaly

- Every detection mapped to MITRE ATT&CK.
- AI-driven behavioral baselines per identity (EMA).
- Automated response: CoA disconnect, VLAN quarantine, deny-list update.
- Shadow / Detect / Enforce modes — start safe, promote when confident.

IRONWIFI

What That Looks Like in Practice

Impossible Travel

User JFK (09:00) → SFO (09:45). Haversine limit exceeded.

MITRE T1078 — Valid Accounts

RESPONSE

Quarantine VLAN + alert SOC

Credential Stuffing

20+ failed auths for one User-Name across many MACs in 10 min, baseline-flagged.

MITRE T1110.004

RESPONSE

Alert SOC + CoA disconnect

MAC Spoofing

Same MAC on different NAS/APs in conflicting locations.

MITRE T1036.005 — Masquerading

RESPONSE

CoA disconnect unregistered device

Rogue AI Agent

LLM agent off-hours auth on new VLAN; baseline drops 2σ.

MITRE T1078.004

RESPONSE

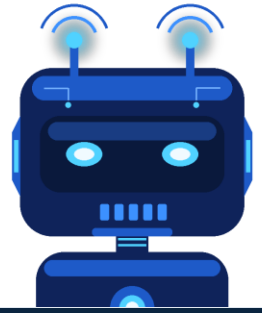
Auto-quarantine + notify SOC

AI-GENERATED RESPONSE PLAYBOOKS

Every detection ships with a playbook — drop straight into your SOC runbook. No manual writing.

IRONWIFI

Network Identity for AI Agents



Anything using certificates + automation already behaves like an agent — CI/CD pipelines, API clients, bots, controllers.

AI agents are the next category, not the only one. Who registers them? Who detects when one goes rogue?

AGENT IDENTITY

- Certificate-based 802.1X auth.
- Purpose-scoped VLAN per agent type.
- Behavioral baselines + anomaly detection.
- Auto-quarantine via RADIUS CoA.

SHADOW AI DISCOVERY

- Detect unregistered agents in RADIUS traffic.
- 5 heuristics — confidence scored.
- Surface agents nobody deployed.
- Register before they become incidents.

IRONWIFI

What Your NOC Team Sees

Seven views of the IronWiFi management console — what your NOC sees in the live console.

DESIGN PARTNER PREVIEW

1

ITDR Dashboard

KPIs, threat timeline, risk distribution.

2

Incident Detail

Drill-down, MITRE technique, forensic context.

3

ITDR Settings

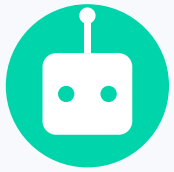
Engine cards, mode toggles, thresholds.

4

SIEM Integration

Provider selector, webhook, CEF preview.

5



Agent List

Registered agents — type, status, baseline.

6

Agent Detail

VLAN, behavioral events, quarantine.

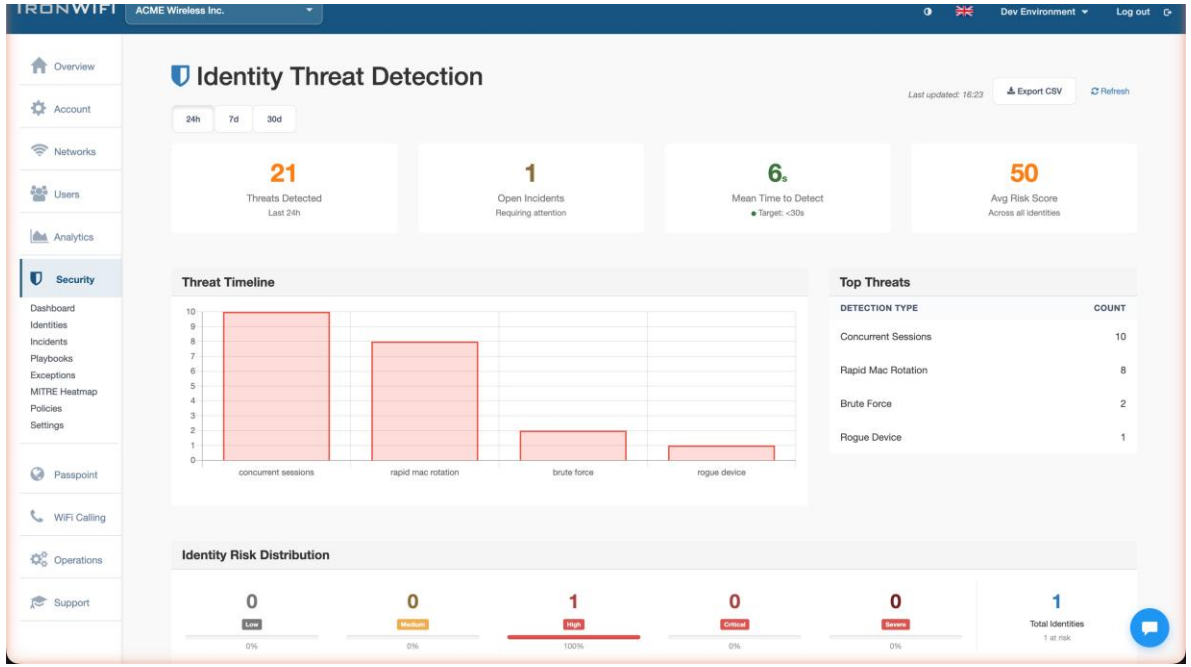
7

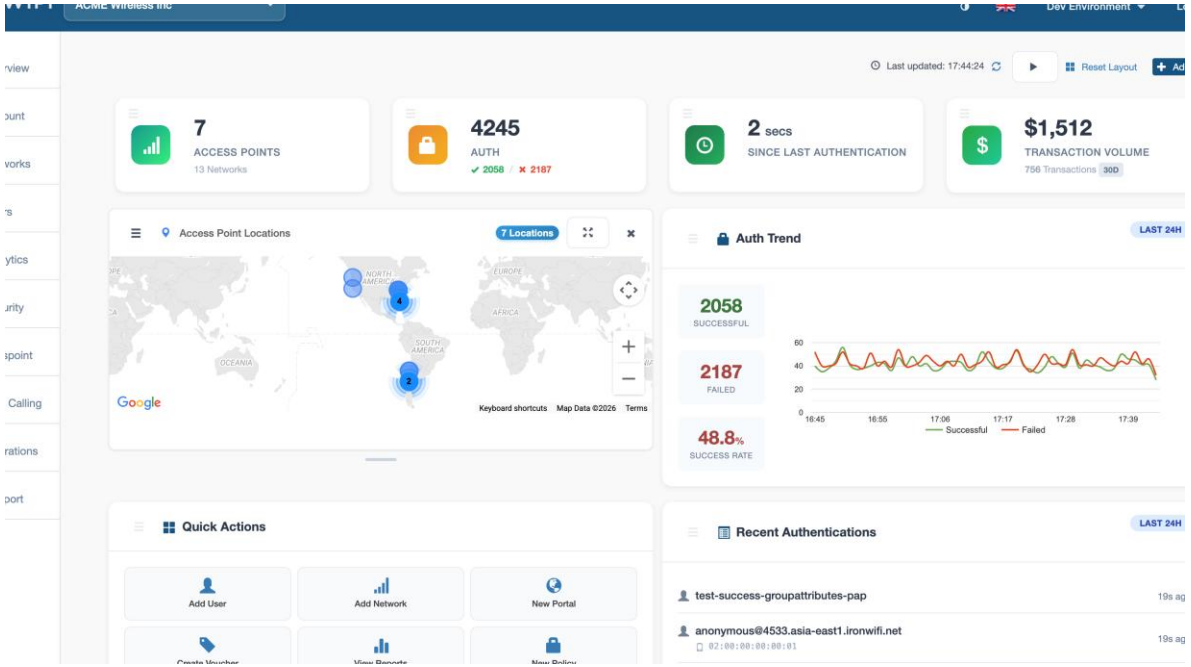
Shadow AI Discovery

Unregistered agents with confidence scores.

IRONWIFI

ITDR Dashboard

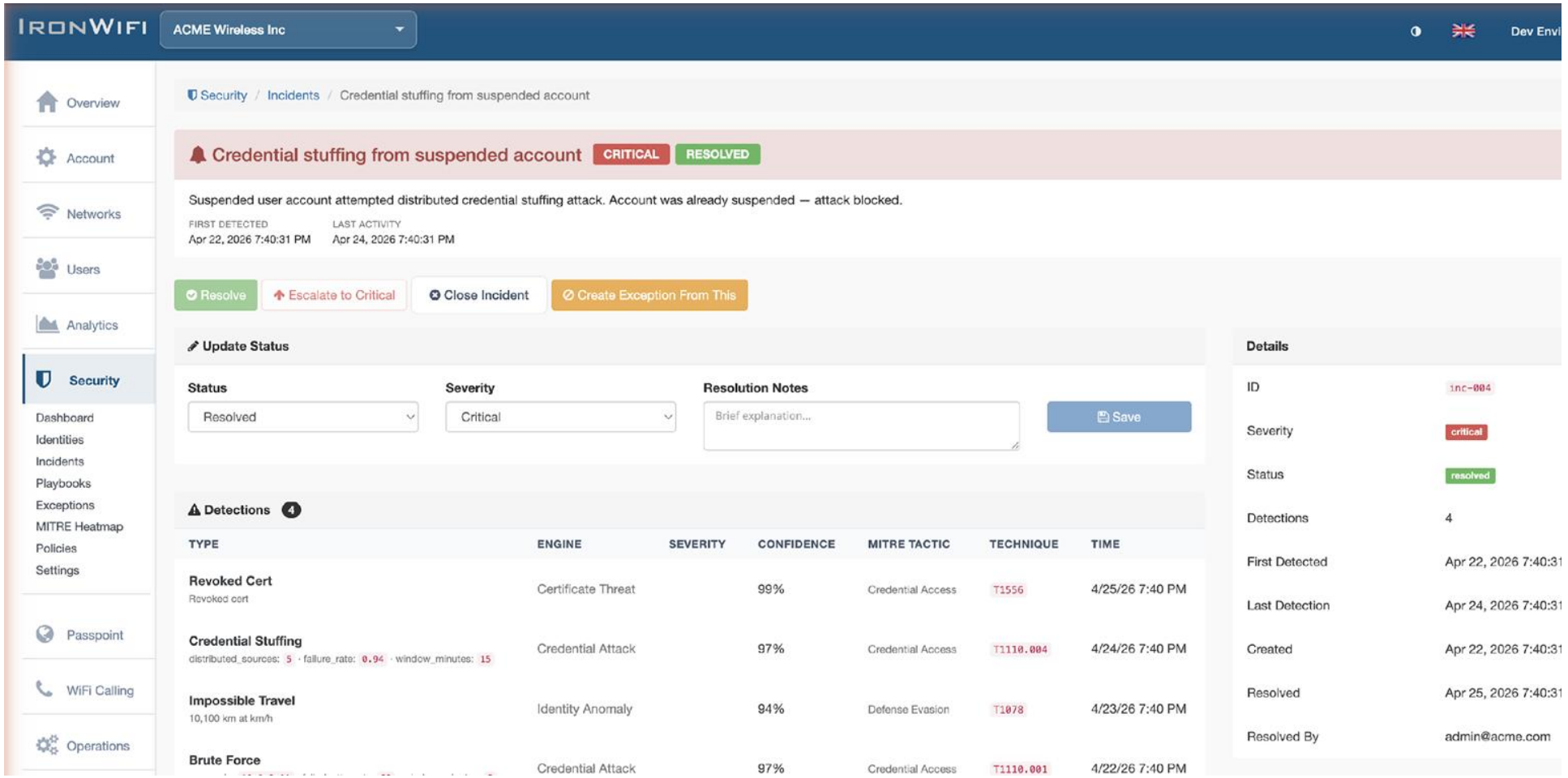




Real-time visibility into every identity-based threat on your WiFi network.

IRONWIFI

Incident Detail



Every incident mapped to MITRE ATT&CK with full forensic context.

IRONWIFI

Built on Production RADIUS Infrastructure

IronWiFi co-chairs the OpenRoaming Standards Group at the Wireless Broadband Alliance.

VENDOR-NEUTRAL	CLOUD-NATIVE	STANDARDS-ALIGNED	AUDITED	PATENT-PENDING
Cisco, Aruba, Mist, Fortinet, Meraki, Ruckus. 70+ supported.	**Multi-region on Cloud Spanner.** Carrier-grade async.	**RADIUS, 802.1X, EAP, Passpoint, OpenRoaming (settlement-free + settled).** SCEP, RADSEC.	**SOC 2 Type II audit completed.** Report issuance pending.	**8 patents pending.** ITDR · Agent ID · Trust-tag · Anomaly

- **Cloud RADIUS + PKI + Captive Portal + OpenRoaming** on one platform.
- Certificate-based auth via **SCEP** (Intune, Jamf, Google Admin).
- Built once, runs anywhere — your hardware, your federation.
- **ITDR and Agent Identity** sit on top — the layer this room is missing.

Vendor names listed for context. Per public product information, as of 2026-05.

IRONWIFI

What This Enables

Carriers — Federation Security

Credentials roam across OpenRoaming. We flag "impossible-travel" and reuse patterns that local hotspots miss.

Enterprises — Multi-Site Campus

Cloud-native certificate auth for any access point. Cisco, Aruba, Mist, Meraki—managed in one console.

Venues — IoT & AI Agents

Treat IoT and AI agents as identities. Govern with scoped access and discover unauthorized shadow AI.

IRONWIFI

Two Categories. One Missing Layer.

Every vendor in this category does one of two things. **Nobody evaluates identity behavior at the network layer.**

Based on publicly available product information, as of 2026-05.

AUTHENTICATE: ACCESS CONTROL

Cisco ISE
On-prem campus identity. No multi-vendor cloud roaming, no WiFi ITDR.

Aruba ClearPass
Policy + AAA. Not behavioral baselines or MITRE detection.

Fortinet NAC
Network admission control. Not identity threat detection.

OBSERVE: POST-EVENT LOGGING

Juniper Mist
AI-driven WiFi assurance. Network ops, not identity-plane detection.

Microsoft Sentinel
SIEM that ingests events. Not the source of WiFi detections.

Splunk Enterprise Security
SIEM and SOAR. Consumes detections — does not generate WiFi-identity ones.

ZERO TRUST = IDENTITY + ACCESS + BEHAVIOR

IDENTITY	ACCESS	BEHAVIOR
Microsoft · Okta	Cisco · Aruba (NAC)	IronWiFi (ITDR)

All three are required. Remove one, and you get a blind spot.

IRONWIFI

Six Ways to Plug Into the Security Layer

COMMERCIAL ENGAGEMENT

OEM

Embed identity layer in your hardware.

For: AP & gateway vendors

WHITE-LABEL

Offer ITDR under your brand.

For: MSSPs & carriers

CARRIER INTEGRATION

Usage-based pricing at carrier scale.

For: Tier-1 / Tier-2 MNOs

TECHNICAL INTEGRATION

FEDERATION SECURITY

Identity threat detection across OpenRoaming.

For: WBA contributors

AI AGENT IDENTITY

Identity for the non-human workforce.

For: AI platforms & enterprises

SOC INTEGRATION

CEF + webhook to Splunk, Sentinel, Elastic.

For: SOC / SIEM teams

Pick your path. The next slide shows where to start.

Patent-pending architecture · 8 patents pending

DESIGN PARTNER PROGRAM

IRONWIFI

Limited Partner Slots Open for Q3 2026

WHAT WE PROVIDE

- WiFi ITDR — full deployment
- Agent Identity + Shadow AI
- AI-generated playbooks
- Dedicated engineering support
- Zero cost during the program

WHAT WE NEED

- Real federation traffic
- Access to RADIUS auth flows
- Feedback on detection tuning
- Joint case study post-launch
- 90-day evaluation window

WHAT YOU GET

- First-mover access
- Influence on product roadmap
- Locked-in pricing at GA
- Joint go-to-market
- Security layer competitors lack

wgc2026@ironwifi.com · meetings.ironwifi.com/#/wgc2026

IRONWIFI

Questions?

The Security Layer WiFi Never Had

wgc2026@ironwifi.com

meetings.ironwifi.com/#/wgc2026

SCAN TO SCHEDULE

meetings.ironwifi.com/#/wgc2026

IRONWIFI

LET'S BUILD THIS TOGETHER

Every WiFi network already trusts identities. None of them verify behavior. That is the layer we're building.

IronWiFi Team

Sales & Partnerships

wgc2026@ironwifi.com

SCAN TO SCHEDULE

meetings.ironwifi.com/#/wgc2026

Direct to the IronWiFi partnerships team

Presented by Taylor Swanson · External Advisor

Wireless Global Congress Americas

PANEL: Connecting the Fabric and Architecture for Enterprise Technology Innovation 2030

Vaseem Kazia

Product Manager, Silicon Labs

Bradley Kalgovas

Senior Manager, Detecon

Tracy Holmquist

Director of Sales Engineering,
Campus & Branch, HPE

Wireless Global Congress Americas

Paul Lai

Founder & CEO, AsiaRF

Wi-Fi Halow - Real World Delivery, Real World Performance

Please note: The video clip featured at this point in the presentation is not included in this PDF version, but will be available as part of the session replay.

Wireless Global Congress Americas

WGC AMERICAS

COFFEE & NETWORKING
BE BACK IN 35 MINUTES AT
4.30 PM CDT

#WGCAMERICAS | #wifirevolution | #lovewifi

Wireless Global Congress Americas

WGC AMERICAS

MAY 18 – MAY 21

Wi-Fi Innovation: Connecting Our Digital World

IRVING CONVENTION CENTER AT LAS COLINAS, DALLAS, USA

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Wireless Global Congress Americas

INNOVATION FORUM: VISIONING THE FUTURE

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Wireless Global Congress Americas

Bruno Tomas

CTO, Wireless Broadband Alliance

CTO Welcome and Introduction to Innovation Forum

Wireless Global Congress Americas

Time	Presentation
16:30 PM (CDT)	**CTO Welcome and Introduction to Innovation Forum** Bruno Tomas – CTO, Wireless Broadband Alliance
16:35 PM (CDT)	**Operator Address: AI & Autonomous Networks** Dr Jennifer Yates – Assistant Vice President - Inventive Science, Network and Service Automation, AT&T
16:50 PM (CDT)	**Analyst Address: Wireless Trends and Impacts for the Wi-Fi Industry** Ruth Brown - Principal Analyst Mobile Analyst, Omdia
17:10 PM (CDT	**PANEL: Innovation Forum by CTO Group** **Interactive industry roundtable/Q&A – Audience participation invited** Dr. Derek Peterson – CTO, Boingo Matt MacPherson – Wireless CTO, Cisco Dr Necati Canpolat – Snr Staff Wireless Systems Architect, Intel Corp Ruth Brown – Principal Analyst Mobile Analyst, Omdia
18:00 PM (CDT)	**END OF DAY 1**

Wireless Global Congress Americas

Dr Jennifer Yates

Assistant Vice President - Inventive Science, Network and Service Automation, AT&T

Operator Address: AI & Autonomous Networks

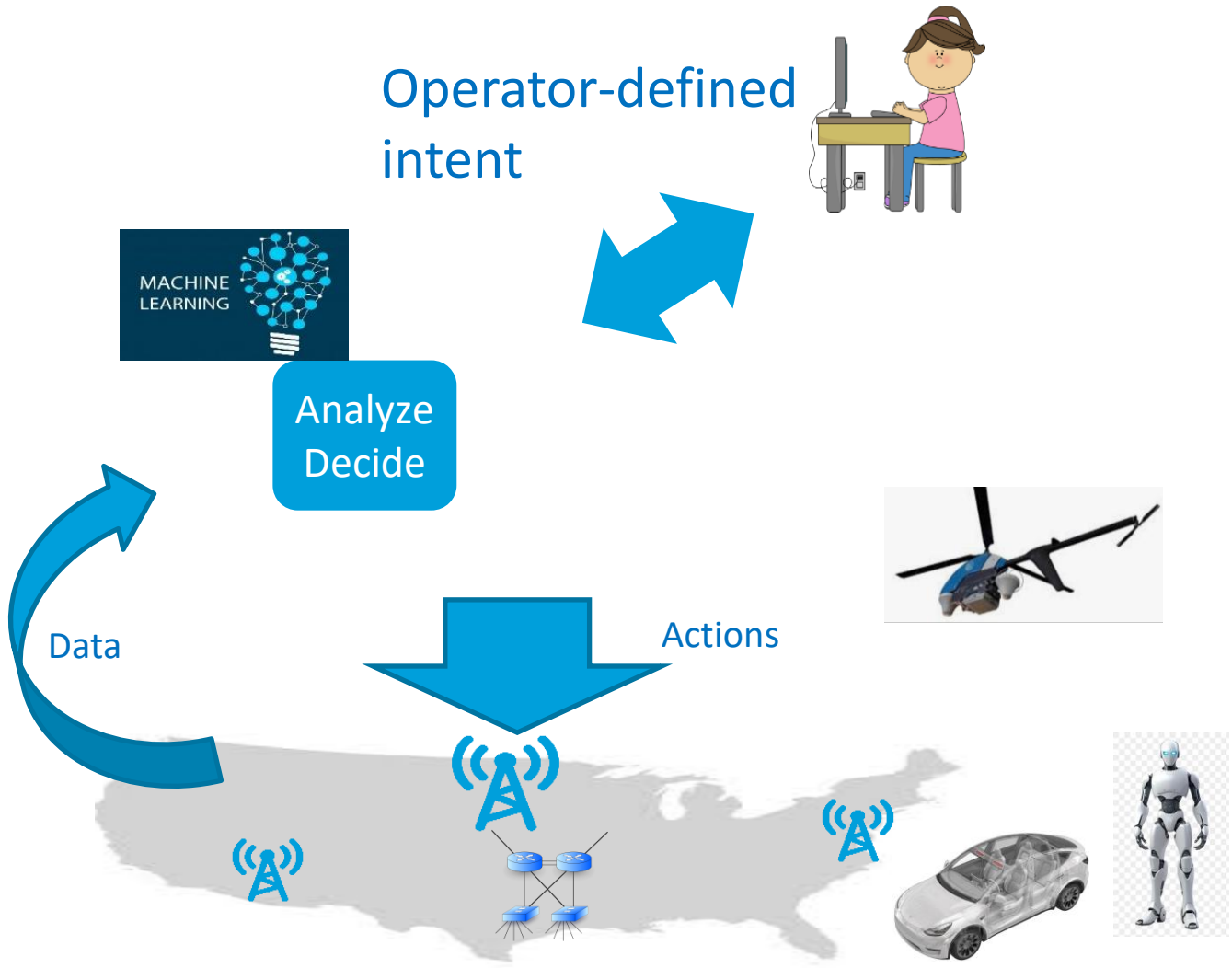
AI and Autonomous Networks

Jennifer Yates

AVP, Inventive Science
Network Analytics and Automation
AT&T Labs

May 2026

Autonomous Network (AN) Vision



Level 4 autonomous network – operator defined **intent** translates to autonomous network

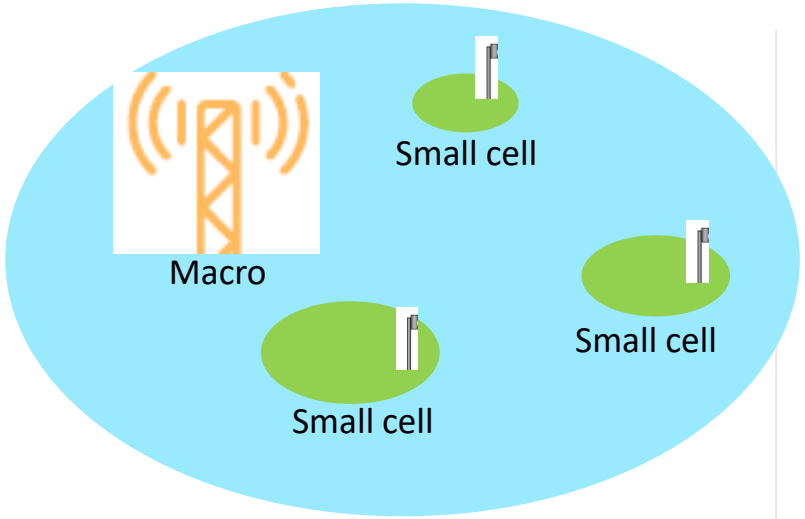
End to end service design and delivery, network design, plan, build, operations and optimization, energy efficiency across all domains

State of the art AI/ML, closed loop control on multiple timescales

Benefits: Operational and capital efficiency, enhanced customer experience, faster pace of business

AT&T

AI Across Network Planning, Build and Operations Vision

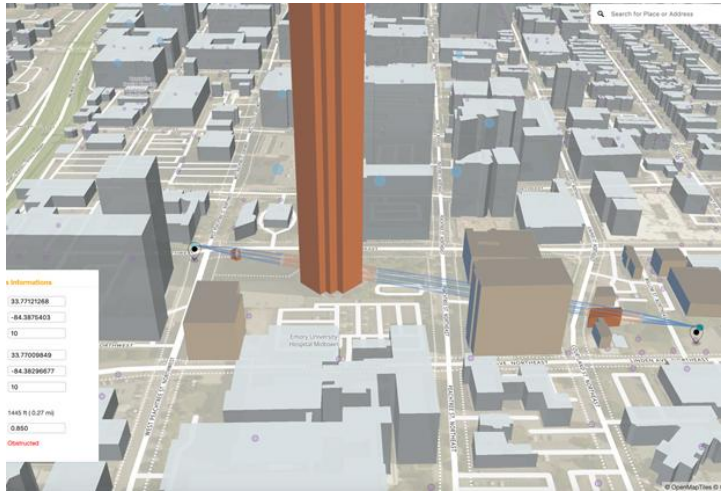


Planning

- Site selection, leases
- Forecasting
- Capacity planning
- Geo tagging
- Predictive customer impact

Build

- Deployment and scheduling
- Provisioning

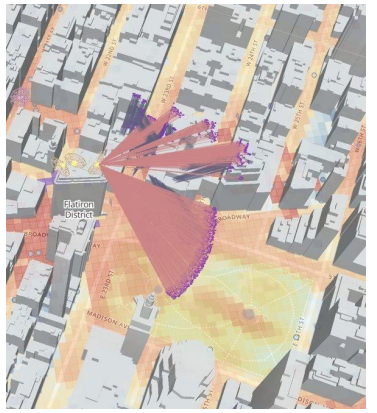


Operations

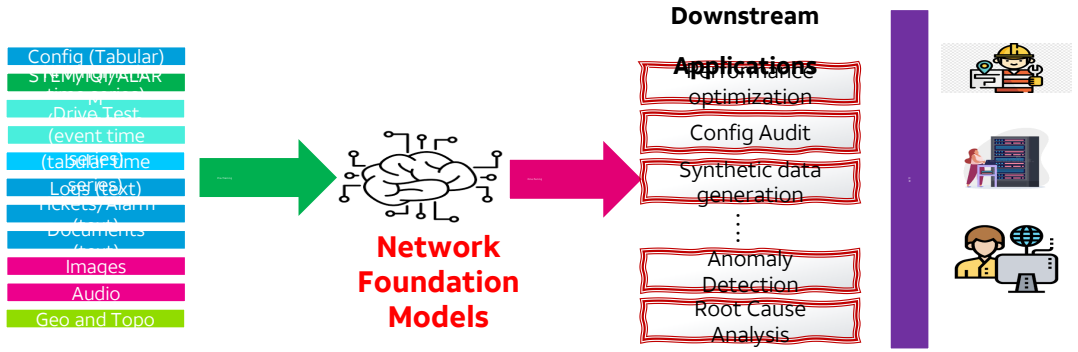
- Fault, performance and change, customer experience mgt
- Network optimization
- Energy savings
- Disaster recovery

AI-based Foundational Architectural Components

AT&T Geo Modeler: digital twin for RAN environment



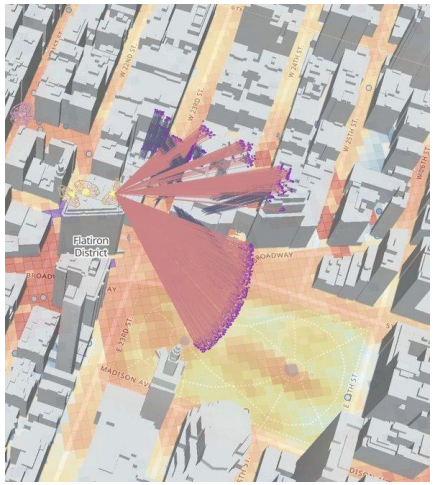
Network Foundation Model



Agentic AI & LLMs

AT&T

AT&T Geo Modeler – Propagation Modelling Digital Twin



Real-time RAN propagation digital twin for near real-time network changes

Geo Modeler AI geospatial RF engine

- 3D ray-tracing engine for training data
- Model signal strength, interference to 160km range
- Massive scale AI engine, 3D visualization, calibration free

Operational nationwide

4000x Geo Modeler speedup compared with commercial products

Up to 2x Improved accuracy compared with commercial products

4m Nationwide resolution (1600x more granular)

160km Prediction range (4x commercial)

Network Optimization: Coverage Optimization (Clusters, Outages)

Challenge: Optimize coverage

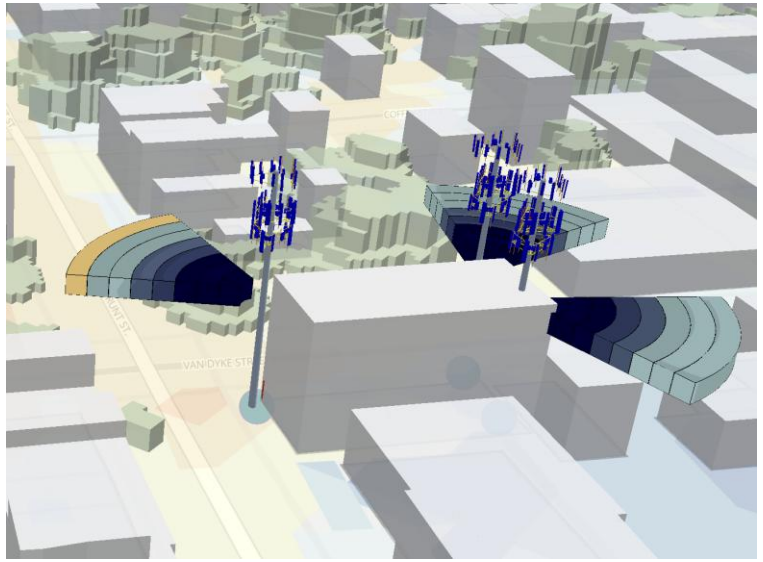
- Cluster optimization (longer term optimization)
- Outage impact mitigation (dynamic responses to outages)

Solution: Geo Modeler + intent-based closed loop control

- Cluster optimization < 5 secs (Geo Modeler) vs days today;
- Mitigate impact of outages – fully autonomous

Nationwide

Benefits: Improved customer experience, resource management

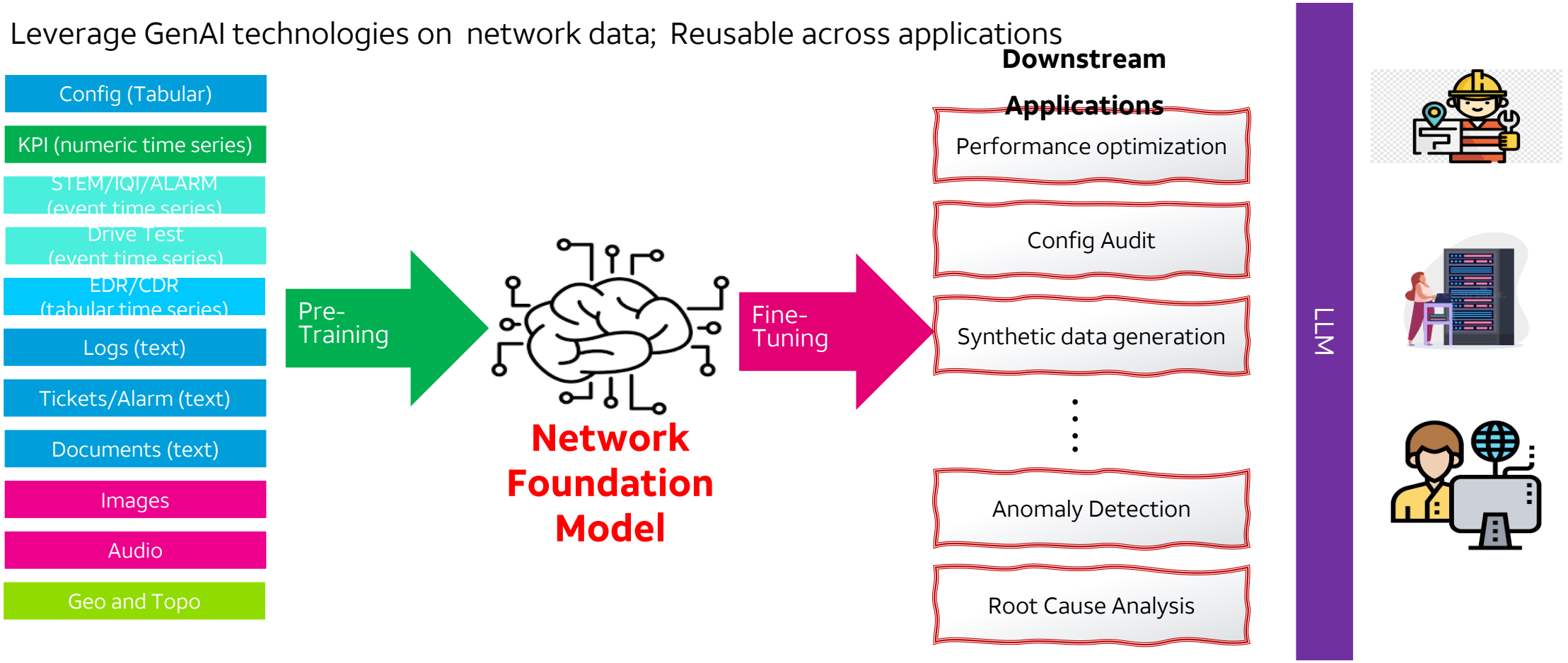


Optimization: 20-30% throughput improvement

Network Foundation Model (NFM)

Foundational model inventory, configuration, state, performance…

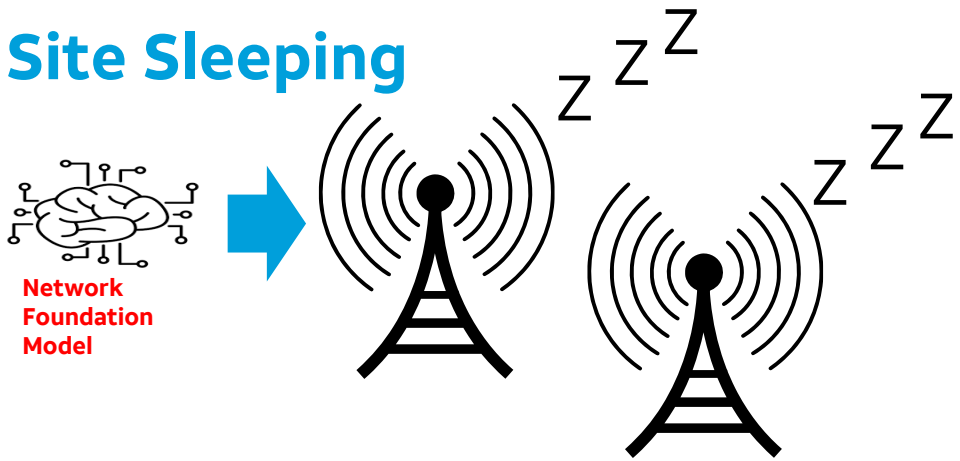
- Leverage GenAI technologies on network data; Reusable across applications



~4x faster use case creation; more accurate

Sustainability: Cell Site Energy Savings

Cell Site Sleeping



Goal: Maximize sleeping at low loads, negligible customer impact

- Intent and ML-based, fully autonomous (closed loop)
  - NFM 20% more sleeping than “traditional” ML

Nationwide

Excessive Cell Site Energy Consumption

Goal: Identify sites and radios with “excessive” consumption

- ML classification of “similar” sites (hardware, environment…), anomaly detection, co-pilot

Nationwide

RAN Automation: E.g., Parameter Optimization (Auric, NFM)

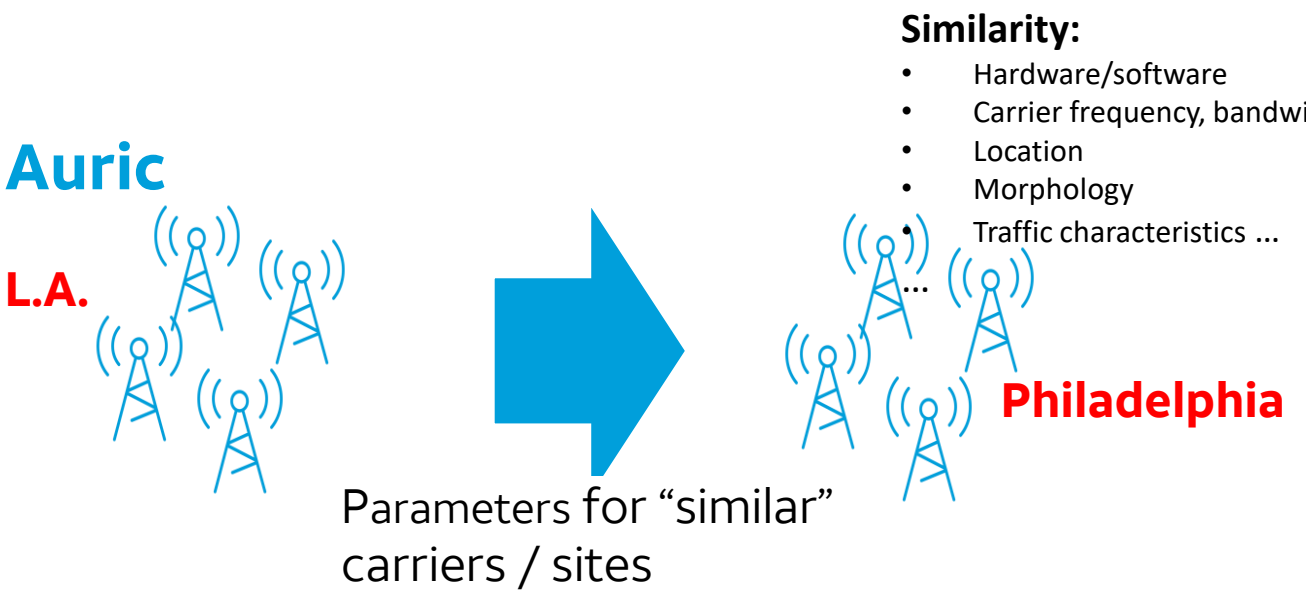
Challenge: Operational efficiency for RAN parameter selection

- 1000s parameters per site
- Challenging to pick “optimal” / best parameters

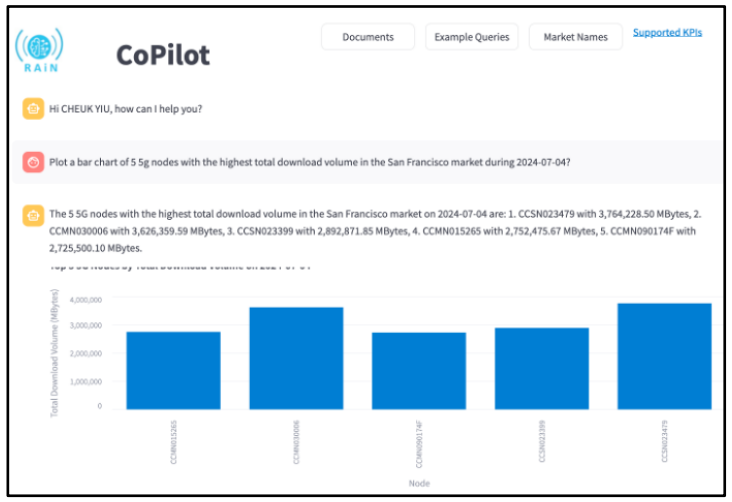
Solution: Intent based solution semi-autonomous solution (operator approval) based on Network Foundation Model (NFM)

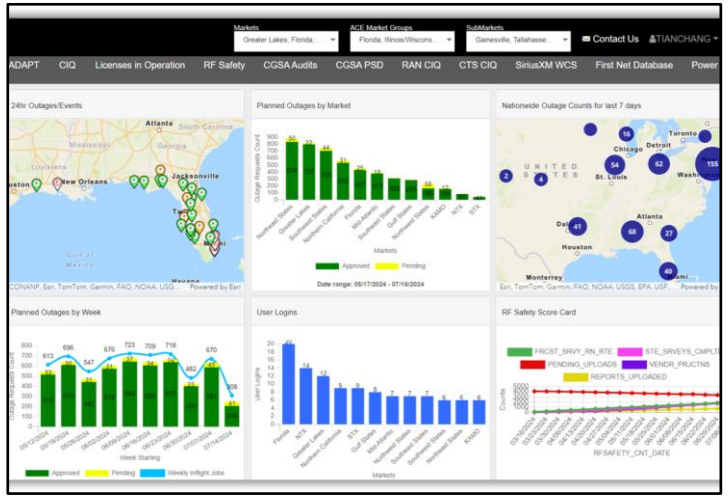
Benefits: Operational & capital efficiency, improved customer experience

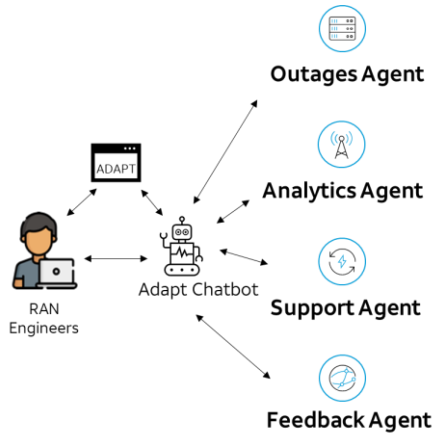
Nationwide



Human Interaction: Copilot, Agentic AI Examples







RAiN Copilot: Exploring RAN documentation & data

- Vendor, 3GPP docs
- FGA, FFA, Gold Standards
- AI-generated summarizations and visualizations of data
- Extensible agentic architecture

Operations

- RAN tower planned maintenance
- RF power, WEA/911 monitoring
- Energy anomalies….

Root Cause Analysis (RCA)

- Network troubleshooting / RCA
- Cell site dispatches
- OSS fallout RCA (provisioning, disconnects)
- Ticket correlation opportunity analysis

With AI and Automation Comes Risk… “Safe Automation”

Automation risks

- Software bugs, flawed policies / intent
- Malicious abuse
- Bad data, AI “bad decisions”
- Competing automation actions …

Safe Automation: Partnerships building **safe(r) automation** & **trust**

- A journey together…
- Solution design, automation intelligence (“AI watching AI”), test and rollout
- Explainable AI….
- Agent harness
- Coordination

Conclusions

AI used across network planning, build and operations

- And growing…

Foundational components enabling scale and speed automation

- Digital twins – e.g., AT&T Wireless Geo Modeler
- Network Foundation Model (NFM)
- Agentic AI, LLMs

Safe automation as **first class citizen**

Trust built on **partnerships**

Wireless Global Congress Americas

Ruth Brown

Senior Principal Analyst, Mobile Analyst, Omida

Analyst Address:
A Secure, Cognitive Airwave

A Secure, Cognitive Airwave

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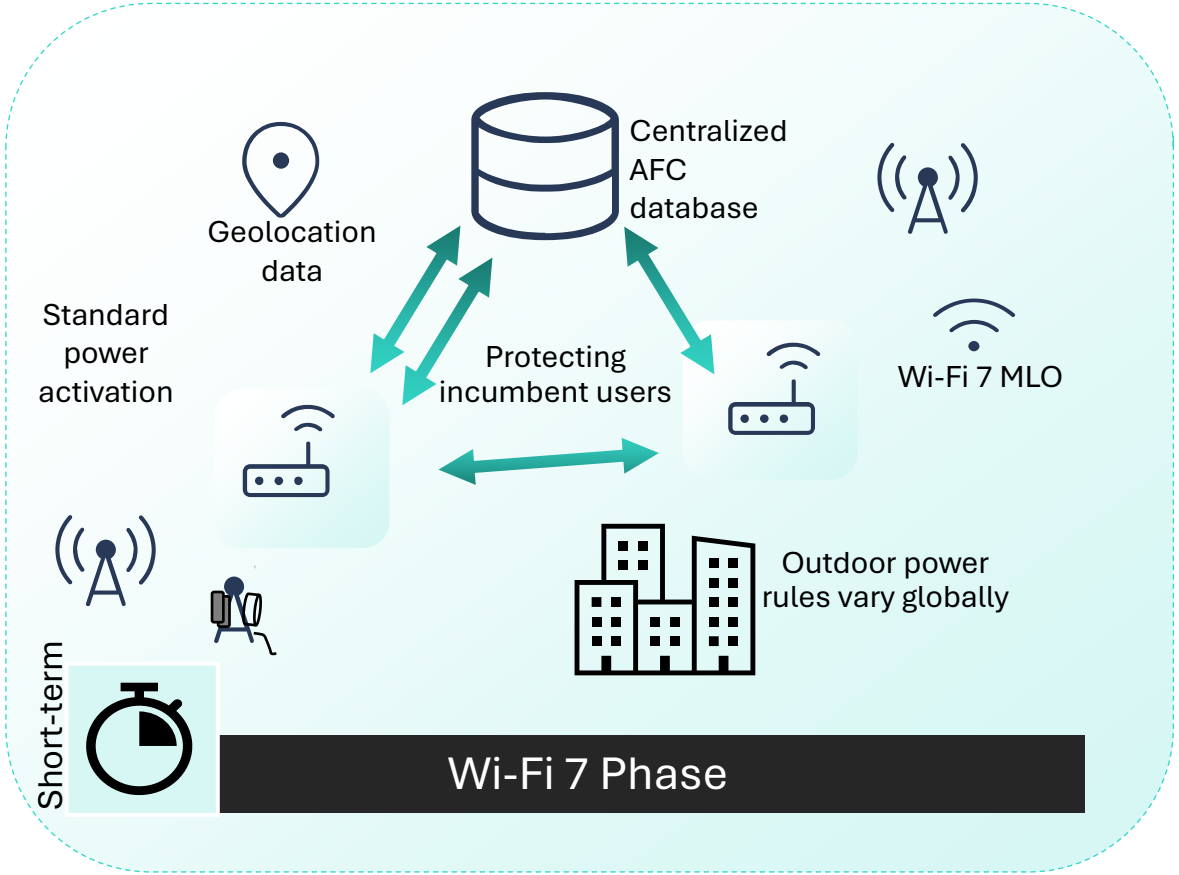
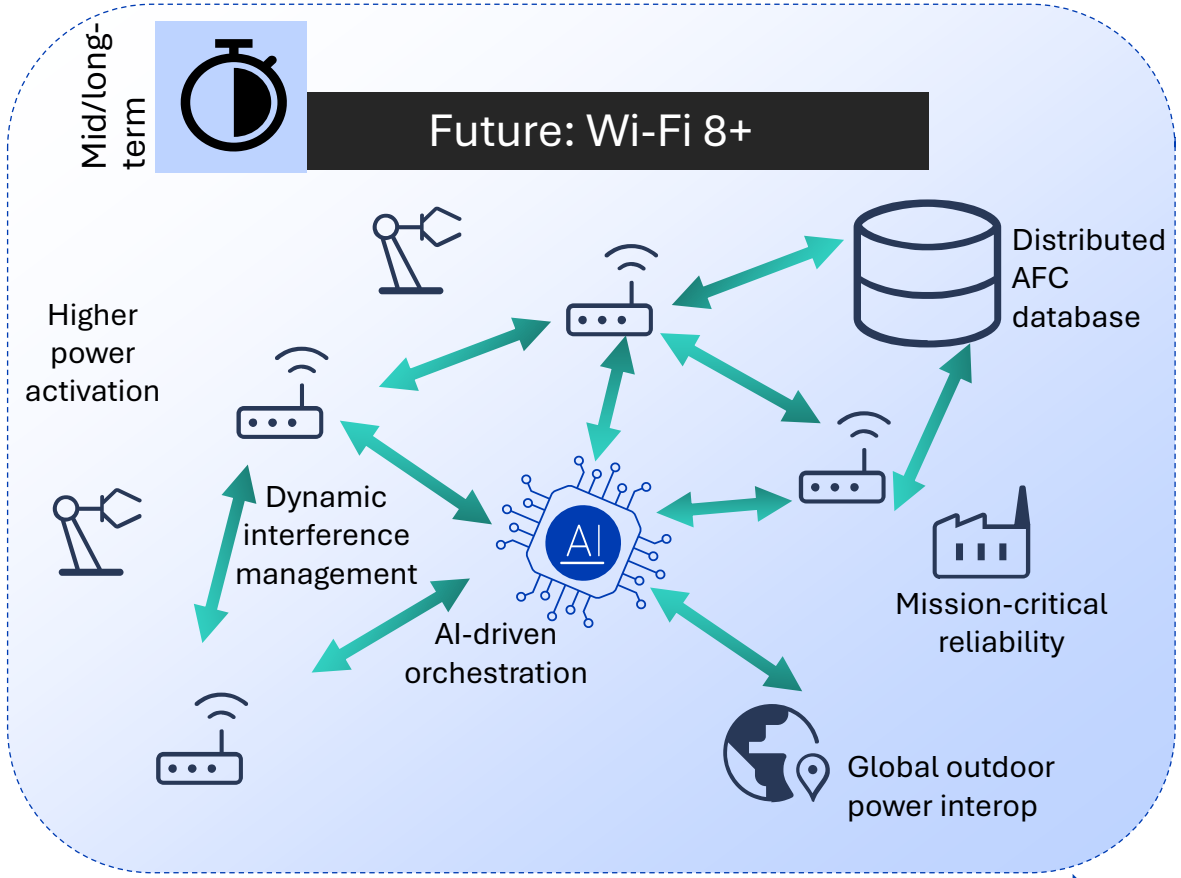
Outline

The High Power Era: AFC Evolution





Today
Standard Power Deployment

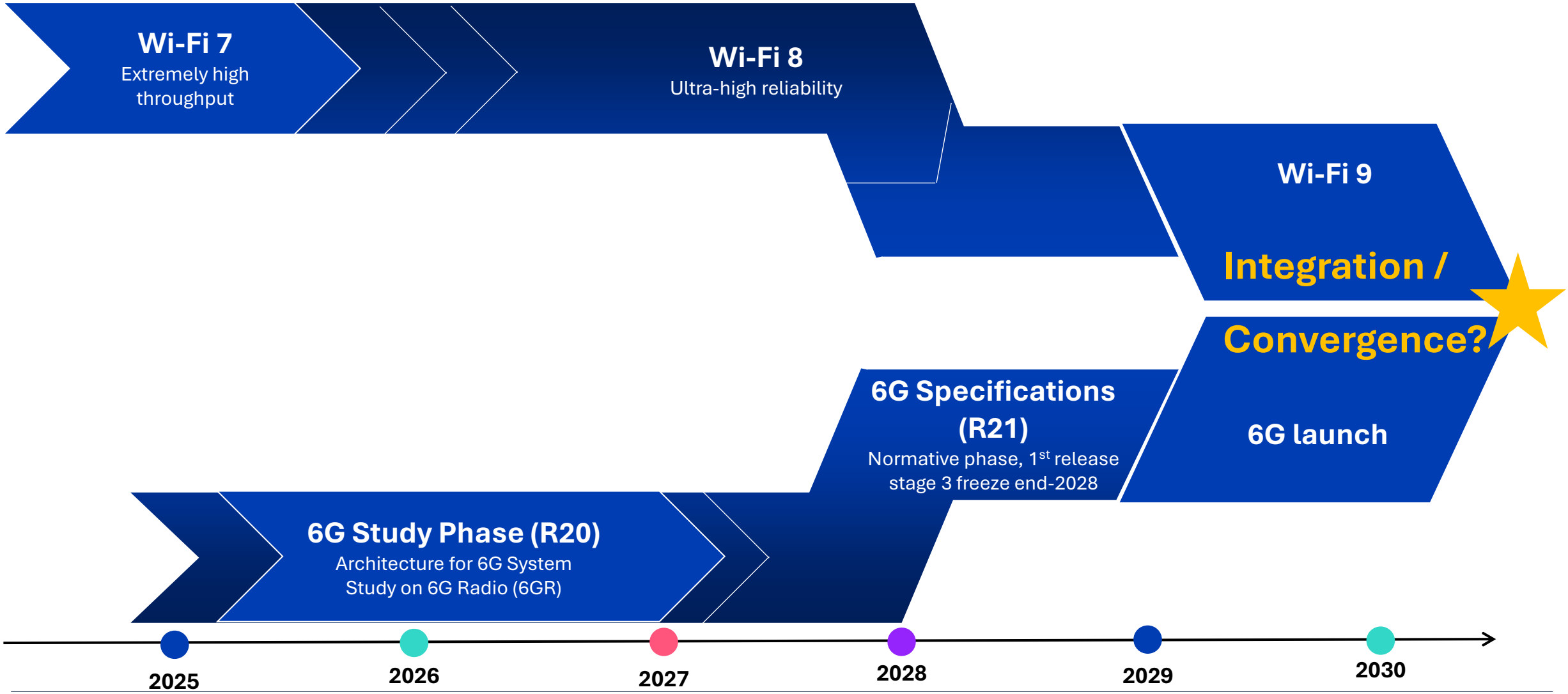
Evolution
Multi-AP Coordination (MAPC)

Future: 2030+
Managed spectrum fabric

Source: Omdia

Omdia by informa techtarget

Wi-Fi and Mobile Standards and Convergence



Source: Omdia

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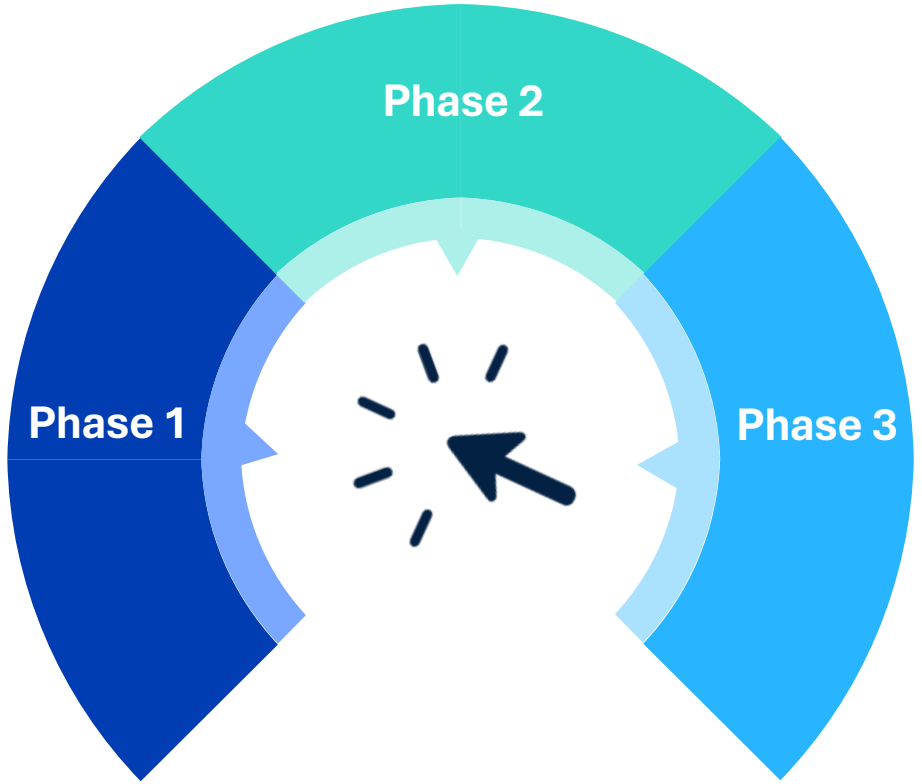
Towards a Unified Frictionless Fabric

Today - Reactive Handover

- VoWi-Fi
- Wi-Fi offload
- Openroaming
- Deep network-level convergence remains sparse

Wi-Fi 8 – Predictive Transition

- Multi-AP co-ordination
- Predictive offload
- Deterministic latency



BUT requires ecosystem buy-in

Wi-Fi 9/6G Era – Unified Fabric

- ISAC (sensing + data)
- AI-Native air interface
- Support for seamless Wi-Fi/5G/6G handoffs

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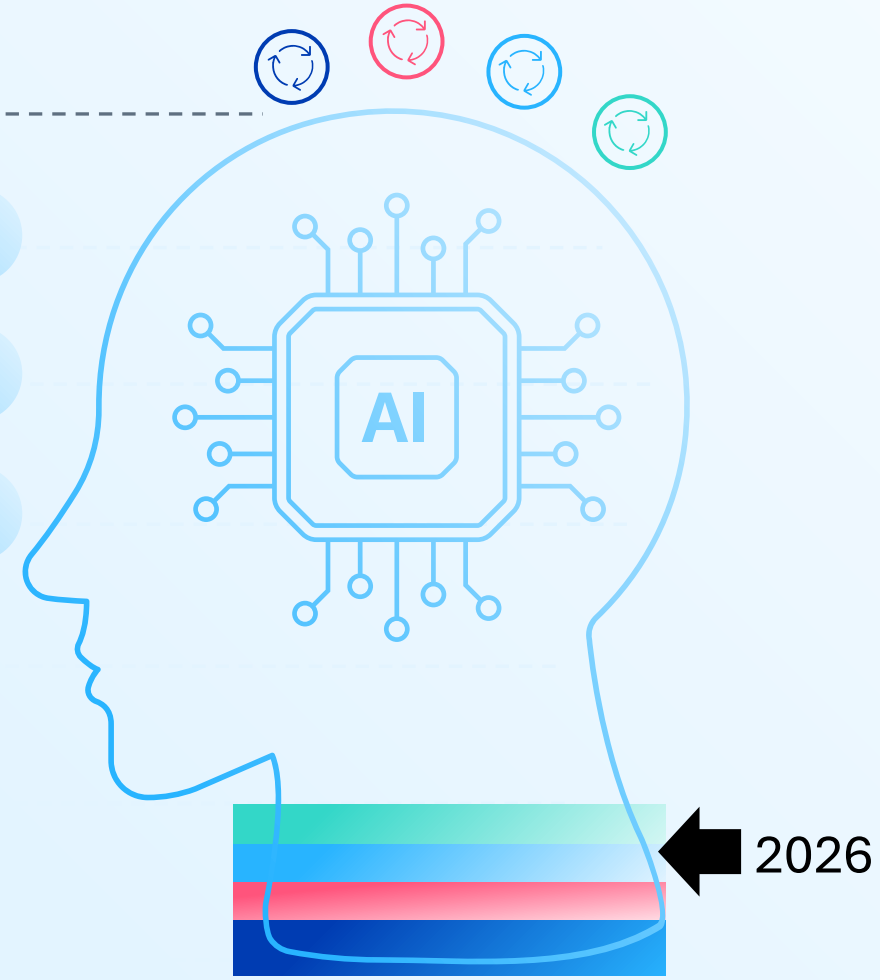
The Cognitive Airwave: Agentic AI at the Edge

The Cognitive Pivot:

1. **Dashboard to agent**
2. **Increasing AI traffic**
3. **On-device AI (the new edge)**



Legacy

Reactive
Traditional dashboards, alarms
Troubleshooting and AI as an advisor

Analytical

Predictive
Identifying patterns using machine learning and historical telemetry

Action

Proactive
Autonomous decision making and closed-loop automation

Reason & Adapt

Cognitive Airwave
AI-native self-learning fabric – system understands intent and evolves.

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The Quantum Clock is Ticking

Present Day Vulnerabilities

- **Key Exchange**: Quantum computers threaten exposing session keys despite AES-256 tunnel security.
- **WPA3 Encryption**: AES-256 is robust, but compromises handshake - traffic decryption and retroactive attacks.
- **Access Points**: Vulnerable to impersonation and man-in-the-middle attacks if key exchange is broken.
- **Stored Data**: "Harvest now, decrypt later" risks

Quantum-Resilient Wi-Fi (Long-term)

Quantum key distribution (QKD):

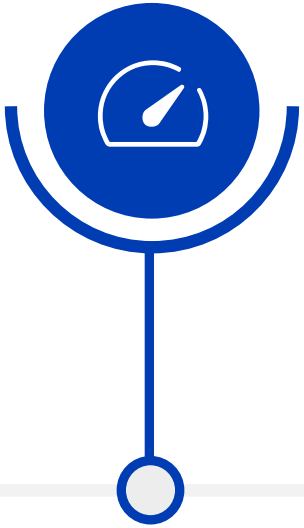
- Cost, complexity, and distance constraints will limit QKD links largely to fiber backbones; pilots underway for national security & finance use cases.

Post quantum cryptography (PQC): Software-based approach more viable for quantum-safe Wi-Fi:

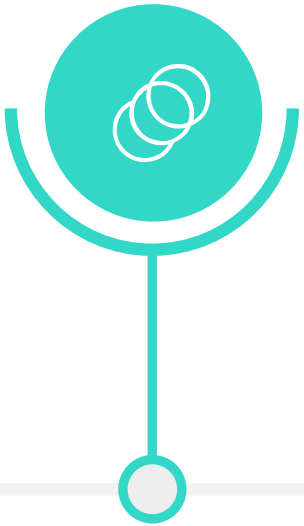
- **Corporate offices:** hybrid cryptography (PQC + WPA3) in 3-5 years
- **Home Wi-Fi:** 10+ years—constrained by router specifications and processing costs

Goal: Secure and futureproof

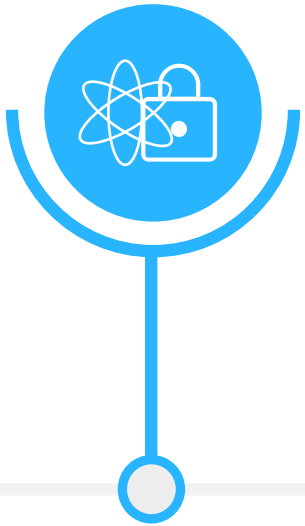
The next era of Wi-Fi isn’t about radio, but intelligence.



Speed is a commodity; connectivity must shift to outcome-driven



A unified network fabric is possible, but will remain selective, not universal



Software-driven PQC is the viable path for securing Wi-Fi in the near term

Thank you

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PANEL: Innovation Forum by CTO Group Interactive industry roundtable/Q&A – Audience participation invited

Dr. Derek Peterson

CTO, Boingo

Matt MacPherson

Wireless CTO, Cisco

Dr. Necati Canpolat

Snr. Staff Wireless Systems Architect, Intel Corp.

Ruth Brown

Senior Principal Analyst, Mobile Analyst, Omdia

Dr Jennifer Yates

Assistant Vice President - Inventive Science, Network and Service Automation, AT&T

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Coming on Day 2…

- Joint Keynote on Headline Stage, 4th Floor
- WGC Americas Executive Plenary
- Latest on In Home, Smart Home and MDU
- Wireless Technology Innovation – 2030
- WGC and Network X Networking Party 7pm @Bar Louie

- …. Meanwhile join us for drinks outside for a network mingle.

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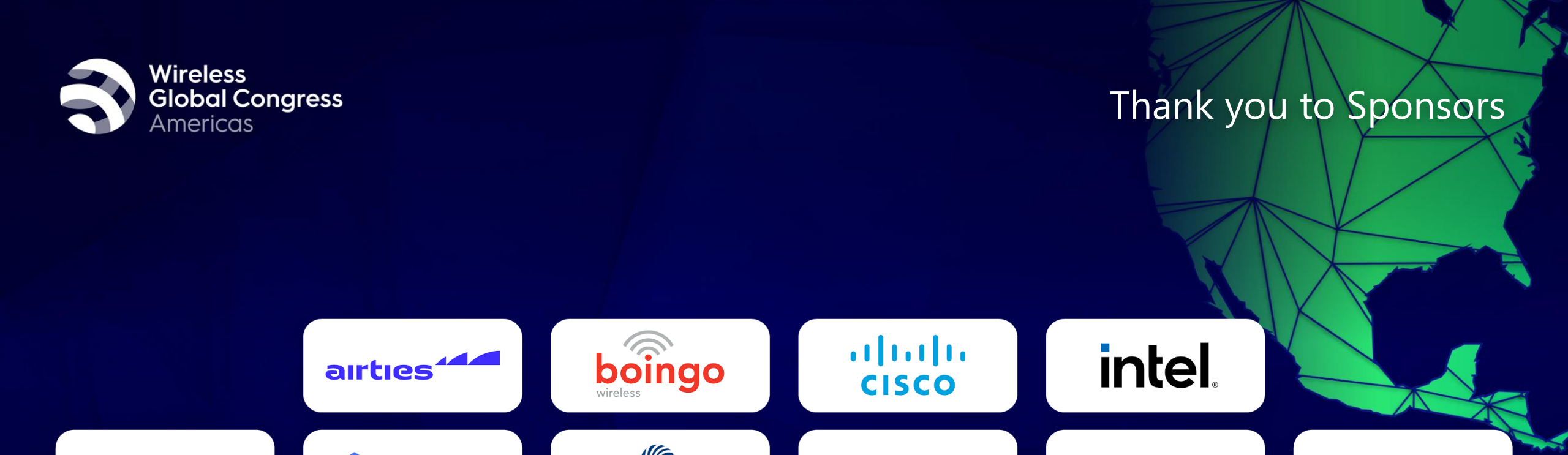

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THANK YOU

END OF DAY 1

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