AFC Status and Momentum

- Jennifer McCarthy, VP of Legacy Advocacy
  Federated Wireless

- Tiago Rodrigues, CEO
  Wireless Broadband Alliance (WBA)

- Chris Szymanski, Director of Product Marketing
  Mobile Connectivity Division, Broadcom

- **Moderator**: Michael Calabrese
  Director, Wireless Future Project, New America
Connecting you to the future
AFC + Wi-Fi6E
Sept 2022
Federated Wireless
transforming wireless

Founded in 2012
Leader in shared spectrum
Wireless expertise at cloud-scale
Fully funded and supported
AUTOMATED FREQUENCY COORDINATION

Technology supports multiple use cases and bands
Differentiated AFC Product
Making more 6 GHz spectrum available

- Proprietary Cloud Architecture
  - Unique cloud architecture that utilizes offline computations for maximum responsiveness at scale

- Precise RF Environment Models
  - Massive GeoData database combined with machine learning for refined propagation modeling

- Precise Incumbent User Models
  - Proprietary database of Incumbent microwave antenna Radiation Pattern Envelopes (RPEs) to optimize spectrum availability

- Dashboards & Analytics
  - Solutions to provide unique insights into spectrum utilization, improve manageability, and troubleshoot issues
Federated Wireless + HPE Aruba
WI-FI 6E

- Partnering since 2018 on 6 GHz
- Joint demo in 2019 as early proof point for AFC viability at enterprise Wi-Fi prices
- Focused on applying Wi-Fi 6E to Industry 4.0
  - railyards
  - shipping terminals,
  - university campuses
  - oil fields
  - stadiums
  - airports

Federated Wireless’ deep experience in this complex area, and the proven performance and security of their cloud infrastructure, are key reasons why Aruba has chosen to integrate the Federated Wireless AFC System into our products.

Chuck Lukaszewski
Chief Wireless Technologist, Aruba
• Significant momentum towards global adoption of 6 GHz for RLANs

• Some countries initially approving LPI while studying use of AFC for standard power and outdoor operations
  - ECC SE45

• United States, Canada, Brazil, Saudi Arabia, and Korea are actively engaged in SP + AFC implementation

https://6ghz.info/
6 GHz AFC

Christopher Szymanski
September 9, 2022
Standard Power With AFC will fulfil the promise of 6 GHz

- Up to **20 gigabit per second** outdoor coverage (e.g., parks, stadiums, LinkNYC)
- Provides **multigigabit point-to-multipoint rural connectivity**
- Can deliver **low-latency Wi-Fi calls, and next-gen fan experiences with AR/VR**
Open AFC can enable standard power globally

- The United States and Canada expected to enable SP Wi-Fi under control of an automated frequency coordination (AFC) system
- Other countries are expected to rapidly follow
- Industry needed to be ready to scale AFC quickly to meet the regulatory and market requirements
- Success of SP device class dependent on reliable access to AFC system that meets market and regulatory requirements across the globe
- Enter the Telecom Infra Project Open AFC
Open AFC: catalyst for standard power 6 GHz Wi-Fi

- Spearheaded by Broadcom, Cisco and Meta
- Over 220 engineers affiliated with 89 member entities
- Fully functional, configurable, and scalable cloud-based AFC
- Designed to support US/Canada requirements, configurable for any regulatory domain
AFC is a cloud database system which allows a standard power access point to operate in frequencies that are not used in those locations.

The access point must know its geolocation and transmit the coordinates to the AFC.

The AFC has access to regulatory database containing 6 GHz incumbent licensing information and various building and terrain databases.

The AFC conducts interference calculations based AP location, incumbent licensing information, and building/terrain databases.

AP is informed by the AFC of available channels and power levels (up to 63x higher power) it is allowed to operate at, which greatly extends the range.
Protects hundreds or even thousands of fixed link receivers to determine spectrum availability

Outdoor access points will be able to operate in up to 850 MHz of spectrum in venues, where the spectrum is needed most

Bringing gigabit speeds

Setting the stage for new device classes

Enabling digitally immersive applications that can change the way we participate in sporting events, concerts, and other events
Wi-Fi 7 With AFC Brings Gigabit Stadiums to Life
AFC enabled Wi-Fi 7 devices can operate to their fullest potential, increasing power by up to 63x

Media applications throughout the premises

Rapid outdoor automobile updates

Enabling outdoor equipment, such as home security
Wi-Fi 7 With AFC Turbocharges Residential Wi-Fi
SPONSORS

aruba
BROADCOM
Meta
Microsoft

amazon
Google

Fairspectrum
federated wireless
Internet Society

© DSA 2022 Global Summit