

6 GHz Incumbent – AT&T

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6 GHz Incumbents - Background

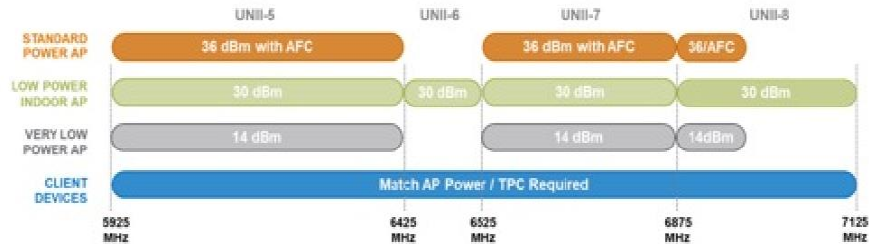
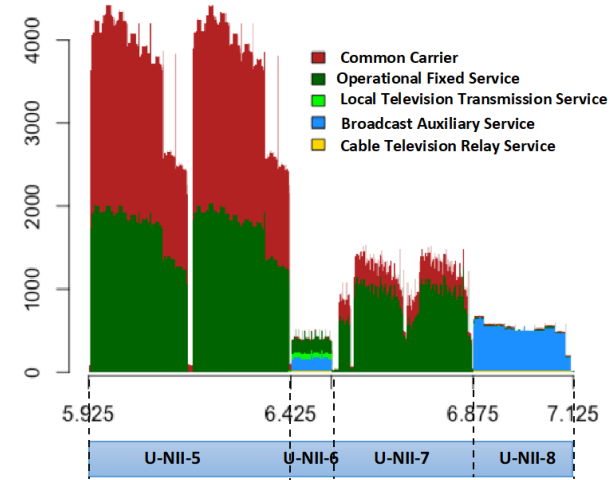
Mobile services : Common carrier and operational fixed services, co-ordinated under FCC 101. Incumbent use 105,727 links in ULS at 37,033 distinct locations

FCC Proposed Rules: Allow unlicensed devices to operate under the Commission's Part 15 rules only in locations and frequencies where they would not cause harmful interference to the licensed services in the band. For the UNII-5 and UNII-7 GHz sub-bands, the FCC proposed that unlicensed devices would only be allowed to transmit under the control of an automated frequency control (AFC) system, although RLAN advocates have sought relaxation of the AFC requirement for low power outdoor devices. For the UNII-6 and UNII-8 sub-bands, FCC proposed that unlicensed devices would be restricted to indoor use and would operate at lower power, without an AFC system, although FS advocates have argued AFC should still be required for indoor, low power operation.

Proposed RLAN power classes : Standard power AP 36 dBm, Low power Indoor AP 30 dBm, Very Low power AP at 14 dBm

AT&T position: 6 GHz licensed incumbents are entitled to the same protection standards that FCC has afforded to incumbents in other bands. AFC is critical requirement for all indoor and outdoor class of RLAN devices to protect Fixed services from harmful interference. Allow Phased approach. WINNF as a technology neutral multi-stakeholder group.

Financial Impact from degradation of incumbent services : With an average cost of \$200,000 per link, the 101,000 FS links in the band equates to a \$20B capex investment supporting critical applications for railroads, utility pipelines, the electric grid, public safety, and communication systems, including backhaul for unlicensed network from remote locations, etc. Given the general 5X multiplier for investment effects, the FS band has a \$100B impact on the US economy overall.



Requirements

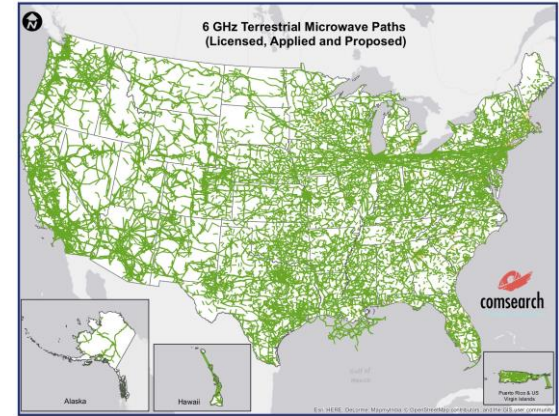
Maintain and allow addition of new fixed service at current reliability standards: Most links operate at 99.999% or 99.9999% reliability allowing for total outages not exceeding 5 min. or 30 sec. per year, respectively. There is a significant cost by operators to design the 25 to 40 dB of fade margin required to maintain these reliability standards. Daily updates and channel availability confirmation is required as CommSearch filing shows daily average of 16 coordination and 21 filing activities.

AFC certification Testing and Security: All AFC operators must be certified with FCC oversight and multi-stakeholder participation. Per FCC final rules, parameters for testing includes, propagation models for exclusion zone determination, co/adjacent channel aggregate interference protection, registration, location accuracy, and channel availability.

Allow for a Interference Resolution and Enforcement process: Must not place obligations on microwave license to monitor, detect and identify sources of interference. Microwave operators are primary under 101 rules. The AFC must implement protocols to manually discontinue operations and deregister RLANs in response to enforcement action.

Ensure security and reliability for all RLAN devices using 6 GHz: In short, AFC must check security credentials to ensure that the RLAN devices operating in this band are FCC certified and no alteration of modifications of hardware or software by unauthorized third party. AFC must employ protocols and procedures to ensure that all communications and interactions between RLAN and AFC are accurate and protected from unauthorized data input or alterations of stored data.

<https://www.attpublicpolicy.com/fcc/a-wifi-router-a-soup-can-and-an-extension-cord-walk-into-a-bar/>



WINNF Role

- Set up requirements based on the FCC final rules in R&O
- Set up technology-neutral protocols for message exchange between AFC and RLAN
- Set up testing and FCC certification requirements in a technology neutral manner
- Set up security protocols and processes
- Setup enforcement protocol and processes
- Set up interference reporting, determination and reporting framework
- Incorporate mutually agreed upon technical parameters including
 - Propagation models, clutter models and building penetration losses model and default parameter settings
 - Accuracy of registration information
 - Location accuracy in terms of latitude, longitude and height
 - Protection against co and adjacent channel interference
 - Calculation of Aggregation limits within Interference Protection Criteria

