



**PUBLIC CONSULTATION PAPER  
WIRELESS LOCAL AREA NETWORK (WLAN)  
IN THE 6 GHz FREQUENCY BAND**

**APPENDIX 11**

[11] M. Gibson, 6 GHz Automated Frequency Coordinating System: Basic Requirements & Testing / Certification, 16<sup>th</sup> European Spectrum Management Conference, 23-25<sup>th</sup> June 2021,  
<https://www.youtube.com/watch?v=kdEvIaVrP2M&list=PL-w3m3Fi4ZVns7rzgP6JIVdf1IQTDkzfD&index=11>

**2021 Europe Spectrum Management Conference**

<https://www.youtube.com/watch?v=kdEvIaVrP2M&list=PL-w3m3Fi4ZVns7rzgP6JIVdf11QTDkzfD&index=11>

# 6 GHz Automated Frequency Coordinating System: Basic Requirements & Testing / Certification



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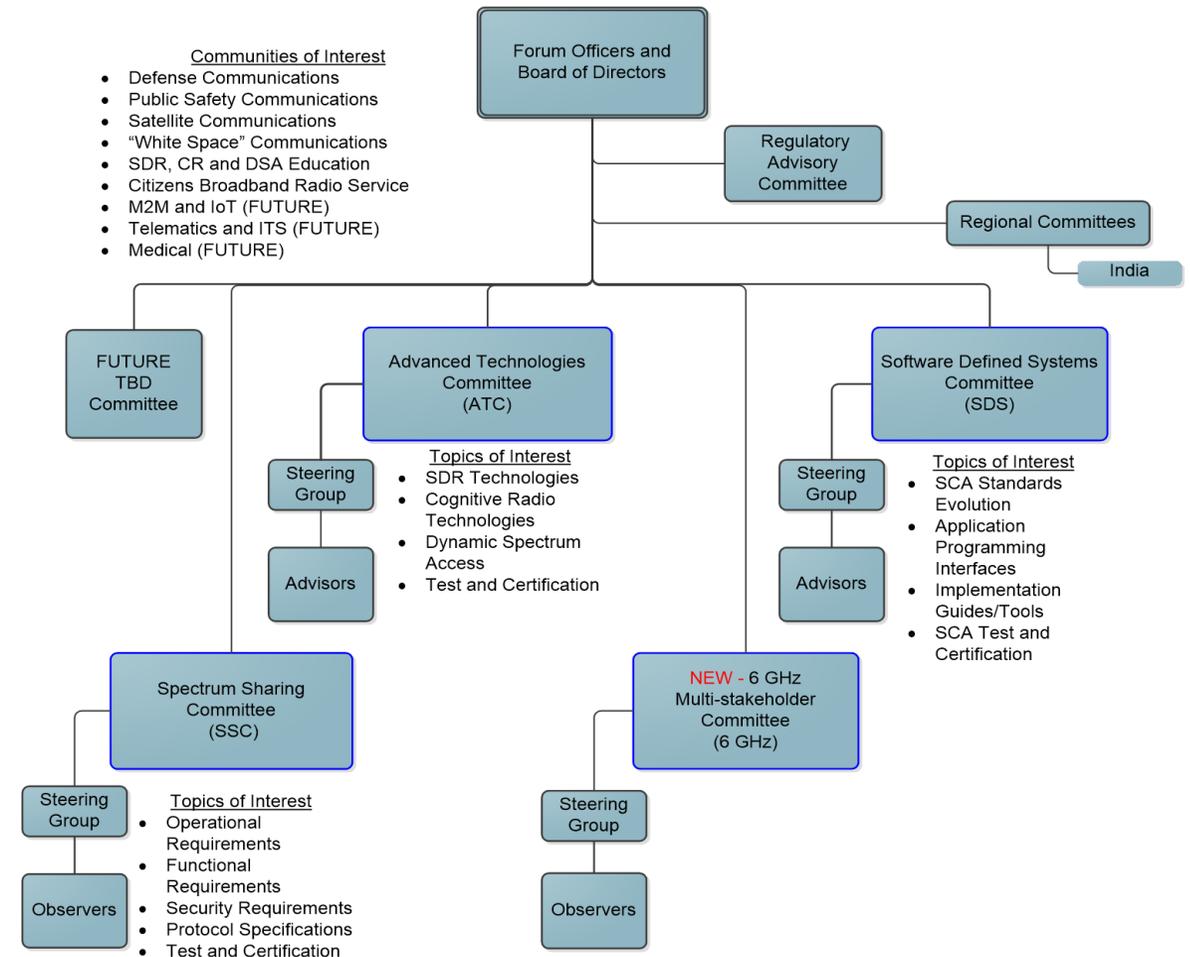
# About The Wireless Innovation Forum

The Wireless Innovation Forum is:

- A nonprofit “mutual benefit corporation” dedicated to: *“advancing technologies supporting the innovative utilization of spectrum and the development of wireless communications systems, including essential or critical communications systems”*
- Registered with the U.S. Government as a Standards Development Organization

## Organizational Structure for The Wireless Innovation Forum

23 August 2019



# 6 GHz Band in the U.S.

## BACKGROUND/OVERVIEW

• FCC opened the 6 GHz bands (5925-7125 MHz) for shared use by unlicensed devices in four segments:

- U-NII-5 5925-6425 MHz (500 MHz)
- U-NII-6 6425-6525 MHz (100 MHz)
- U-NII-7 6525-6875 MHz (350 MHz)
- U-NII-8 6875-7125 MHz (250 MHz)

• **Two types of devices have been specified (so far):**

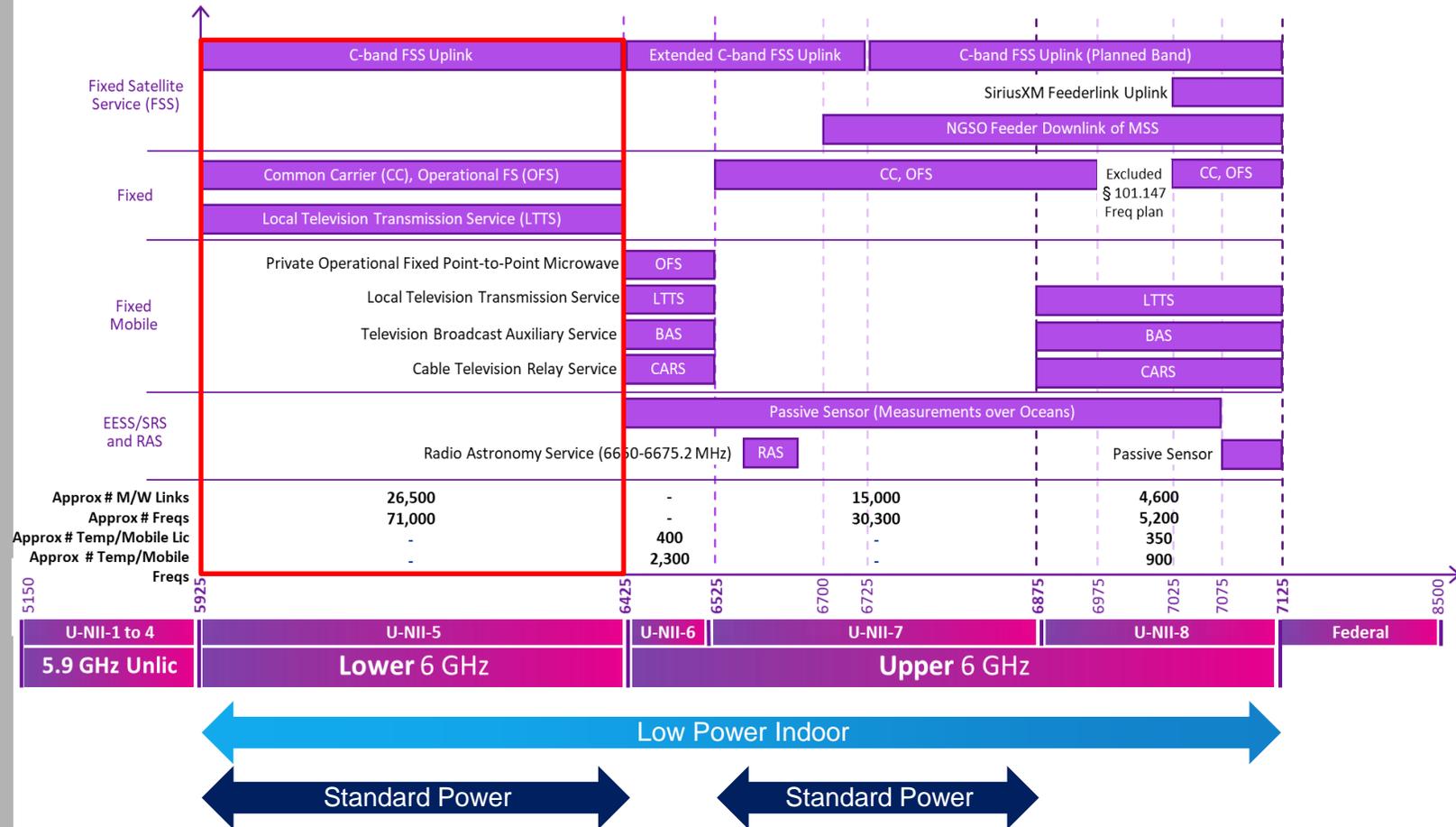
- Low Power Indoor (30 dBm / 5 dBm/MHz)
- Standard Power (36 dBm / 23 dBm/MHz)

• **Low Power Indoor devices can operate across the full 1200 MHz**

• **Standard Power devices can only operate in the U-NII-5 and -7 segments**

• **Standard Power devices must be controlled by an Automatic Frequency Coordination (AFC) system**

## 6 GHz Bands: Incumbent Use & U-NII\* Designations



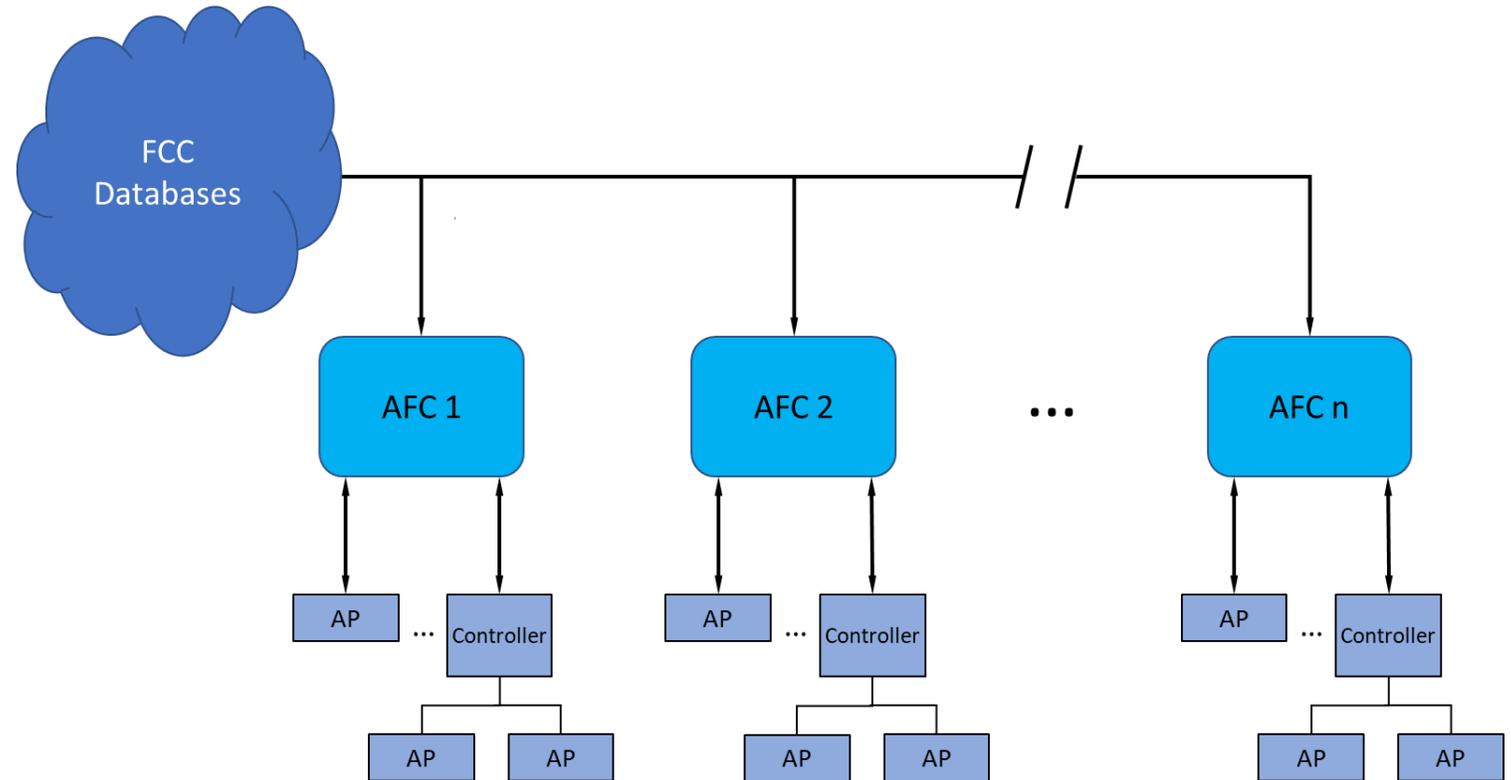
\*Unlicensed National Information Infrastructure



# Basic Automatic Frequency Coordination (AFC) Requirements

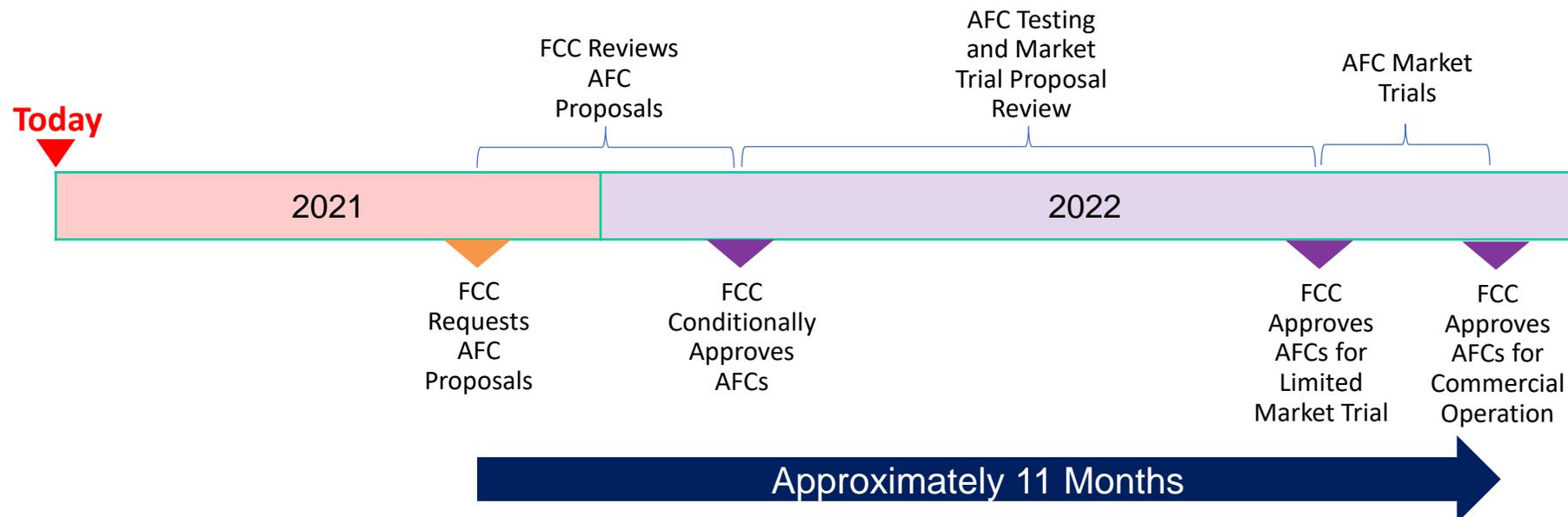
## AFC REQUIREMENTS & OPERATION

- Standard Power devices only
- Devices must register on AFC
- AFC stores registration information until devices stops transmitting at a given location
- AFC verifies device's FCCID
- Use FCC databases of incumbent information
- Device contacts AFC daily to get available frequencies and max powers at given location
- Device provides identifying information, location and location uncertainty to AFC
- AFC determines available frequencies and the max powers in each frequency range for a device at any given location including the area of uncertainty
- FCC will likely select multiple AFC providers
- All AFCs must be tested and certified by the FCC



# AFC Testing & Certification

- Testing & Certification of TV White Space databases took about 3.3 years
- Testing & Certification of Spectrum Access Systems took about 4.1 years
- However, these were essentially new market areas
- 6 GHz expands an existing unlicensed ecosystem with an estimated value in the trillions of dollars and represents billions of devices
- AFC Testing & Certification needs to recognize that:
  - There is likely a pent up demand for standard power devices
  - AFC providers will likely include device OEMs, third-party providers, and other entities who were not part of TVWS and SAS
- Possible AFC Testing & Certification timeline shown below:



*Thank you!*

