

2023 Spectrum Developments

May 15, 2023

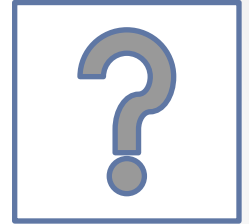
What We'll Cover

- Lead Agencies and Regulators
- Recent Spectrum Developments
- Upcoming Spectrum Developments

Lead Agencies and Regulators

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The Current FCC



- **Chairwoman**

- Jessica Rosenworcel (D) (Term expires June 2025)

- **Commissioners**

- Geoffrey Starks (D) (Term expires June 2022)
- Brendan Carr (R) (Term expires June 2023)
- Nathan Simington (R) (Term expires June 2024)
- *Vacant – 28 months*

The Current NTIA



- **Assistant Secretary of Commerce for Communications and Information and NTIA Administrator**
 - Alan Davidson (January 2022 –)
- **Associate Administrator, Office of Spectrum Management**
 - Charles Cooper (July 2019 –)

Other Major Federal Players



Congress

- Has the power to dictate spectrum policy



White House

- Influential spectrum policy role when it wants
- OSTP/CTO plays a coordinating role



Other Agencies

- Other incumbent systems



Department of Defense

- Mission-critical incumbent systems



Department of Transportation

- Safety-critical incumbent systems

Recent Spectrum Developments

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2.5 GHz (2496-2690 MHz)

- July 2022 – Auction of new flexible-use licenses available on a county-based area that are “overlaid” on top of the existing incumbent licenses.
 - There are about 2,000 existing Educational Broadband Service licenses in the band, the majority of which are subject to active spectrum leases.
 - Winning bidders may operate in existing “white spaces” and if incumbent licensees cease operating.
- The FCC has announced application grants for approximately 700 of the more than 7,800 licenses won in Auction 108.
- The FCC appears to have paused the grant of additional licenses when its auction authority expired in March 2023.

Lower 3 GHz Band (3100-3450 MHz)

- The IIJA requires DoD to study the band, and if NTIA and DoD determine that spectrum can be made available for shared use with commercial operators without impacting federal operations, the FCC is required to conduct an auction.
 - Report due by August 15, 2023 regarding the frequencies that could be made available on a shared basis between federal and non-federal commercial licensed use, subject to flexible-use service rules.
 - Any relevant auction could begin no earlier than November 30, 2024 and no later than November 15, 2028.
- Discussions between federal stakeholders and the commercial industry are ongoing.
 - Discussion through the National Spectrum Consortium's PATHSS Task Group.
 - Stakeholders expressing various positions regarding the suitability of the band for commercial use and any potential allocation framework.

3.45 GHz (3450-3550 MHz)

- Auctioned in 2021; raised \$22 billion.
- May 4, 2022 – Licenses granted.
- Federal incumbents and winning bidders are working to implement a framework that includes Cooperative Planning Areas and Periodic Use Areas where federal and commercial users share the band.
- Relocation Payment Clearinghouse is being established to manage relocation of secondary radiolocation incumbents.

C-Band (3700-3980 MHz)

- February 2021 – Auction concluded; raised more than \$81B.
- Incumbent satellite operators committed to “accelerated clearing” schedule.
- Deployments underway.
- Engagement regarding coexistence with aviation uses continues.
 - The FCC evaluated the technical record and found that a 220-megahertz guard band between the new wireless operations and radio altimeters in the 4.2-4.4 GHz band, coupled with other technical rules, would protect aviation services.
 - 3.7 GHz Service licensees committed to voluntary measures.
 - FAA has pending Airworthiness Directives and Policy Guidance and the airline industry is engaged in a retrofit process to modify or replace radio altimeters.

4.9 GHz (4940-4990 MHz)

- January 2023 – 7th R&O and 9th FNPRM released.
 - Order allowed secondary, preemptible, non-public safety use as agreed to by public safety licensees through a new leasing model and established a nationwide Band Manager.
 - FNPRM seeks comment on matters relating to the Band Manager (Comments due May 15).
- March 2023 – Petition for Reconsideration filed by American Association of State Highway and Transportation Officials (AASHTO) (Oppositions due May 16).
 - AASHTO is asking the FCC to preserve the 4.9 GHz band for use by state and local agencies and specifically to reconsider the decisions to 1) establish a national spectrum plan for the 4.9 GHz band, 2) appoint a single Band Manager to administer frequency coordination, 3) incentivize use of the latest commercially available technologies, and 4) facilitate secondary uses beyond public safety.

5.9 GHz (5850-5925 MHz)

- November 2020 – Report and Order
 - Adopted new band plan for 45 megahertz of indoor unlicensed use and 30 megahertz for Cellular Vehicle-to-Everything (C-V2X) use. FNPRM teed up technical rules for C-V2X operations, among other issues. FNPRM remains pending.
 - August 2022 – D.C. Circuit dismissed suit brought by ITS America and AASHTO.
 - Petitions for reconsideration remain pending.
- April 2023 – Order granting waivers to permit C-V2X operations in the band.

6 GHz (5925-7125 MHz)

- April 2020 – Report and Order opened 1,200 megahertz to unlicensed use with safeguards for incumbent operations (fixed microwave, BAS, FSS).
 - Wireless, broadcast, public safety, and electric utility stakeholders sought review by the D.C. Circuit and reconsideration at the FCC.
 - Among other concerns, incumbents have argued that low-power indoor operations would cause harmful interference to fixed links and BAS.
- Petitions for reconsideration remain pending.
- February 2022 – D.C. Circuit denied petitions for review with one exception, which the FCC has a pending proceeding to address.

6 GHz (Cont'd)

- April 2020 – FNPRM
 - Proposes to permit very low-power unlicensed operations across the band; increased transmit power for indoor devices without Automatic Frequency Coordination (AFC); standard-power mobile operations; and higher-powered uses. FNPRM remains pending.
- Client-to-Client Devices
 - January 2021 – Public Notice seeking comment on whether to permit direct communications between client devices.
- AFC Implementation
 - September 2021 – Process began to authorize AFC systems for standard-power operations.
 - November 2022 – 13 companies granted conditional approval.
 - Pending proceeding on Wi-Fi Alliance request for waiver regarding use of building entry loss for predictive modeling.

10 GHz (10.0-10.5 GHz)

- October 2022 – Petition for Rulemaking
 - Coordinated Sharing Coalition filed petition seeking allocation of the 10 GHz band for point-to-point use on a shared basis with federal and amateur radio users through nationwide, non-exclusive licenses coordinated through an AFC.
 - The 10 GHz band is currently allocated in the U.S. for radiolocation and amateur radio use. Internationally, the band is also allocated for fixed and mobile use in ITU Regions 1 and 3.
- The Petition has not yet been docketed for public comment.

12/13 GHz (12.2-12.7 GHz and 12.7-13.25 GHz)

- January 2021 – NPRM on 12.2-12.7 GHz band released.
- October 2022 – NOI on 12.7-13.25 GHz band released.
- May 18, 2023 – FCC to vote on next steps on these items:
 - 12.2 GHz Order: would decline to authorize two-way, high-powered terrestrial mobile use in the 12.2 GHz band;
 - 12.2 GHz Further Notice: would seek comment on expanding terrestrial fixed use and/or permitting unlicensed use;
 - 12.7 GHz NPRM: would propose to repurpose some or all of the band for mobile broadband or other expanded use and to grandfather, relocate, and/or repack incumbent non-federal licensees; and
 - 12.7 GHz Order: would direct fixed and mobile Broadcast Auxiliary Service licensees in the 12.7 GHz band to certify the accuracy of all information reflected on each license.

60 GHz (57-71 GHz)

- July 2021 – NPRM proposes to allow unlicensed FDS operations at higher power limits and in mobile devices.
 - Current rules permit unlicensed operations and limit field disturbance sensors (FDS) to 30 dB below the unlicensed level, with mobile restrictions. FCC granted waivers starting in 2018 to permit higher power mobile use.
- May 18, 2023 – FCC to vote on Order that would:
 - Clarify the relationship between radars and FDS applications;
 - Expand mobile FDS operations within the 61.0-61.5 GHz band;
 - Permit various EIRP levels along with specific duty cycle restrictions for FDS devices limited to the 57-64 GHz portion of the 60 GHz band; and
 - Permit FDS operation on-board unmanned aircraft.

Receiver Immunity Policy Statement

- April 2022 – FCC unanimously adopted a Notice of Inquiry taking a fresh look at the role of receiver performance in spectrum management.
- April 2023 – FCC unanimously adopted Policy Statement setting forth principles to help guide FCC decision-making and stakeholder action as the RF environment evolves, including principles related to the:
 - Physical realities of interference that apply to transmitters and receivers;
 - FCC’s expectations about the shared responsibilities of transmitter and receiver systems to co-exist with other services in spectrally proximate bands; and
 - Importance of reliable data in the FCC’s technical analyses.

Upcoming Spectrum Developments

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FCC Auction Authority

- March 9, 2023 – FCC’s general auction authority expired following a series of last-minute extensions.
 - Since the FCC first obtained auction authority in 1993, Congress had never let it expire.
- The FCC retains limited authority to auction certain bands.
 - Section 309(j)(11) of the Communication Act – speaks to the FCC’s ability to grant licenses assigned at auction after its auction authority lapses.
 - 2015 Spectrum Pipeline Act – authority for 30 megahertz below 3 GHz.
 - 2021 IIA – authority for spectrum in the 3.1-3.45 GHz band.
- Congress is currently evaluating options.

National Spectrum Strategy

- March 2023 – NTIA sought input on the development and implementation of a National Spectrum Strategy (NSS).
 - NTIA is targeting identification of at least 1,500 megahertz for in-depth study to determine whether it can be repurposed to allow more intensive use.
 - NTIA sought input on three pillars of the NSS: (1) a spectrum pipeline to ensure U.S. leadership in spectrum-based technologies; (2) long-term spectrum planning; and (3) spectrum access and management through technology development.
- April 2023 – More than 140 comments were submitted, addressing myriad spectrum bands and allocation models.
- NTIA has indicated it expects to finish the NSS by mid-November.

7-16 GHz

- Chairwoman Rosenworcel has indicated that the FCC is likely to look at bands in the 7-16 GHz range as wireless begins to move toward 6G.
 - The recent items related to the 12 GHz and 13 GHz bands are consistent with this vision.

“[I]t’s not too early to set our sights on bands with promise that can help lead us into the future, like airwaves in the 7-16 GHz range.”

– Chairwoman Rosenworcel (September 2022)

WRC-23

- The World Radiocommunication Conference (WRC) is held every three or four years to review and revise the Radio Regulations governing international use of spectrum. WRC-23 will be held November 20 to December 15, 2023 in Dubai.
- April 2023 – FCC sought comment on recommendations approved by the WRC Advisory Committee to inform U.S. positions. For example:
 - Agenda Item 1.2 considering identification of the 3.3-3.4 GHz, 3.6-3.8 GHz, 6.425-7.025 GHz, 7.025-7.125 GHz, and 10.0-10.5 GHz bands for International Mobile Telecommunications (IMT).
 - Agenda Item 10 considering recommendations for inclusion in the agenda for WRC-27, which includes discussion of study of the 7.125-15.35 GHz range.

Questions?

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