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4.9 GHz Public Safety Band: Competing Views on Use

During the terrorist attacks on September 11, 2001, public safety agencies experienced communication issues. In 2002, citing earlier congressional directives to reallocate spectrum from federal to nonfederal use, and in response to the 9/11 Commission's call for additional public safety spectrum, the Federal Communications Commission (FCC) allocated the 4.9 GHz band (4940-4990 MHz) exclusively for public safety use. The band was to support new broadband applications for public safety use, including high-speed data and mobile applications to provide officers with access to public safety databases from vehicle-mounted laptops, data transmission (e.g., videos), enhanced dispatch operations, and the ability to establish local area networks for incident management. The FCC granted licenses to state and local public safety and nongovernmental entities. Secondary users, including transit agencies, critical infrastructure operators, utilities, and federal agencies that support public safety, homeland security, and safety of life missions, could enter into sharing agreements with licensees.

In 2018, the FCC sought comment on proposed changes to 4.9 GHz band use. The FCC found that band use was fragmented (i.e., licensees using the band in different ways, using different technical terms), resulting in a lack of economies of scale, equipment and devices, and use. The FCC observed, "although nearly 90,000 public safety entities are eligible under our rules to obtain licenses in the band, there were only 2,442 licenses in use in 2012 and only 3,174 licenses in use ... in 2018." The FCC noted, "the 4.9 GHz band remains underused outside of major metropolitan areas," with stakeholders citing high equipment costs and limited availability of broadband equipment, among other reasons.

2020 – Rules for the 4.9 GHz Adopted

On September 30, 2020, the FCC, under Chairman Ajit Pai, adopted new rules for the 4.9 GHz band, changing the leasing framework by granting states the option to lease spectrum access in the band through a single statewide entity called the "State Lessor." The State Lessor could lease unused spectrum to state and local public safety and non-public safety, commercial, or other private entities, or could use the band for non-public safety purposes themselves. While the order protected incumbent public safety operations, it also created a new framework for managing the band, resting with the state, and opened the band to commercial use, reversing the initial intent to grant spectrum exclusively for public safety use. Per the FCC, the order would "empower states to determine the best use of the 4.9 GHz band, by enabling them to balance the needs of public safety agencies with the benefits that can come from non-public safety use." The FCC also froze any new applications for new or modified licenses.

Petitions Filed

In December 2020, several entities filed petitions for reconsideration before the rules took effect.

Public Safety Spectrum Alliance (PSSA)

PSSA, a coalition of public safety officials and organizations interested in preserving the 4.9 GHz band for public safety, filed petitions for a stay and reconsideration. PSSA opposed the FCC's rules stating that 10 public safety associations and 800 public safety leaders signed a petition in support of its position, advocating for a new 4.9 GHz framework like that used by the First Responder Network Authority (FirstNet) and its federally funded nationwide public safety broadband network (NPSBN). PSSA argued that using a nationwide governance model, predictable spectrum rules, and financial incentives, FirstNet, with its partner AT&T, created economies of scale and developed an ecosystem of equipment for public safety in the 700 MHz band.

Association of Public-Safety Communications Officials (APCO)

APCO, a group of over 35,000 state and local public safety officials, also filed a petition for reconsideration. It argued that ceding this spectrum to states would create a scenario whereby local public safety agencies' access to spectrum would be contingent on the state or whereby states could lease spectrum to the highest bidder. APCO asserted that this approach could lead to band fragmentation (different rules in each state) and lack of economies of scale. It argued for local control of use and a national-level framework governing future use to create economies of scale and spur vendor interest and investment in the band.

National Public Safety Telecommunications Council (NPSTC)

NPSTC also filed a petition for reconsideration. Founded in 1997, NPSTC is a federation of 16 major public safety organizations that represent public safety interests in telecommunications. NPSTC argued that the FCC did not provide adequate notice of the rule for public comment and that state management of the band would risk existing public safety users losing priority or protection from interference. NPSTC also stated that the FCC's decision to freeze applications would result in fewer uses in the band—the issue the order intended to fix.

2021 – FCC Reconsiders the Rules

On September 30, 2021, the FCC, under Chairwoman Jessica Rosenworcel, granted the petitions to stay and reconsider the 2020 rules, finding they were not in the public interest; it also lifted the freeze on existing licensees.

2023 – New 4.9 GHz Rules

In January 2023, the FCC adopted rules centralizing management of the 4.9 GHz band in a single Band Manager, while also allowing local control over local operations and use. Per the order, a committee of public safety representatives selects the Band Manager, which would work with public safety licensees to identify and ensure efficient spectrum use and to enable opportunities for secondary use, which would be subject to preemption by public safety operations. The FCC rules require public safety users to coordinate with the Band Manager on frequency use and on new applications before submitting them to the FCC. The FCC allowed non-public safety users to lease spectrum from public safety licensees, with approval by the Band Manager. The Band Manager is to establish consistent, nationwide rules governing band use to create economies of scale, spur investments in the band, drive innovation, and expand use.

The FCC sought comment on the selection and role of the Band Manager, including efforts to coordinate operations, facilitate leasing to non-public safety users, mitigate harmful interference, and ensure preemption rights for public safety use. It also sought input on integration of 4.9 GHz operations with public safety broadband networks.

Comments on FCC 2023 Rules

The FCC received over 200 comments on the January 2023 order. Selected positions are discussed below.

FirstNet as a Nationwide Licensee

PSSA initially urged the FCC to establish a single nationwide overlay license and grant it to an entity that can establish an operational framework that enables full use of the band by first responders, to spur investment and innovation. The nationwide licensee, rather than local licensees, would authorize leasing of spectrum to secondary users and ensure priority and preemption for first responders. FirstNet asserted that it could leverage the 4.9 GHz band to provide enhanced broadband services for public safety use and that the band could be integrated into the NPSBN. PSSA urged the FCC to adopt this approach—to grant a nationwide license to FirstNet and allow FirstNet to appoint a nationwide Band Manager. AT&T, a few public safety associations, and several individual commenters supported this proposal.

Opposition to FirstNet as a Nationwide Licensee

Several coalitions opposed the PSSA proposal, such as the Coalition for Emergency Response and Critical Infrastructure (CERCI), representing several public safety associations, industry and utilities groups, and commercial cellular service providers (except AT&T). CERCI asserted that the 4.9 GHz band should be maintained for state and local use, that state and local users should be free to make choices about band use, and that the 4.9 GHz band should not be absorbed into the NPSBN—a network owned and operated by a commercial carrier (AT&T). The American Association of State Highway and Transportation Officials, and the 4.9 GHz Coalition, whose members include the American Petroleum Institute, the Utilities Technology Council, and the National Sheriffs' Association, joined CERCI in opposing the PSSA proposal. They argued for local public safety control and said licensing or leasing to FirstNet would give the band to AT&T for integration into

its commercial network. Verizon argued that such a grant would produce a windfall for AT&T and disrupt the marketplace; it suggested competitive bidding (e.g., auction) if the band were made available for commercial use. CERCI argued that the FCC lacks authority to grant a license to FirstNet. In P.L. 112-96, Congress authorized the FCC to grant a license and spectrum to FirstNet and for FirstNet to hold the license; CERCI argued that the FCC and FirstNet lack such authority for the 4.9 GHz band.

While some commenters supported the PSSA plan and saw FirstNet as effective in spurring new technologies and use, other state and local public safety entities (e.g., Michigan, Florida, Boston) opposed the PSSA plan, raising concerns about the loss of local control, especially in terms of their point-to-point communication systems used during disasters and emergencies. The National Sheriffs' Association opposed the PSSA plan, noting that the band has been “available for us to use as we need and see fit, and not part of a nationalized process controlled by a central authority that can only provide a limited set of [vendor-specific] products to choose from.” The Maryland Department of Information Technology said coverage varies in areas, and agencies may use other cell providers (e.g., Verizon Frontline) for public safety services; thus, flexibility and choice are needed. Some public safety groups raised concern over loss of redundancies if the 4.9 GHz band is absorbed in the NPSBN; public interest groups noted the AT&T outage that affected FirstNet users and raised concerns about consolidating all services under one provider's network and loss of local control.

Requests from Critical Infrastructure Industry (CII)

While primary use in the 4.9 GHz band is public safety, secondary use includes CII users (e.g., electric, gas, pipeline). Some critical infrastructure operators asked the FCC to limit secondary use to CII or prioritize CII use over other non-public safety uses. Some entities asked the FCC to permit additional uses in the band. For example, although aeronautical use in the band has been restricted due to interference with radio astronomy use, CII operators asked the FCC to permit unmanned aerial vehicles for CII operations and emergency incidents, with interference protections. Citing the need for spectrum for other uses (e.g., intelligent transportation systems, indoor uses, communication-based train control systems, robotics), some questioned whether FirstNet needs additional spectrum.

Issues for Congress

Congress could take no action on the band and let the FCC decide on band management and control. Congress could also permit or prohibit FirstNet involvement by clarifying FCC and FirstNet authorities in relation to the 4.9 GHz band. While appointing a nationwide licensee and Band Manager could spur innovation in the band and increase use, it could also affect local choice and control on critical communication systems. Given demand for spectrum, Congress may consider expanding permissible uses in the band to accommodate new technologies and avoid interference, which may pose technical challenges. Members of Congress may also examine how changes to the band could affect public safety in their state or district.

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