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FCC OPENS PROCEEDING ON SMART RADIOS

Washington, D.C. – In light of the ever increasing demand for radio spectrum, and to facilitate new technologies and services and permit more intensive and efficient spectrum use, the Federal Communications Commission today adopted a Notice of Proposed Rulemaking (Notice) and Order that sets forth proposals and seeks comment on the use and applications for cognitive "smart" radio systems. The Commission's proposals would provide additional technical and operational flexibility for service providers, particularly in rural and underserved areas, and also offer the potential for facilitating increased interoperability for public safety first responders. As a result, consumers may benefit from new and enhanced services.

Smart radios have the technical capability to adapt their use of spectrum in response to information external to the radio. For instance, a system could use geolocation information to determine whether certain transmissions are permissible. Alternatively, such radios could sense their operating or radiofrequency (RF) environment and use this information to determine the optimal frequencies and transmit powers to use, while avoiding harmful interference. Many smart radios also can interpret and transmit signals in different formats or modulation schemes. Because of their technical and operational flexibility, they also make it possible to use vacant spectrum channels – that is, spectrum that may be available in a particular geographic location or during a particular period of time – spectrum that would otherwise go unused.

Certain smart radio capabilities are employed to some extent today in applications such as commercial mobile wireless services and wireless local area networks (WLANs). Further advancements in the technology promise greater future benefits.

The Notice seeks comment on the ways in which the Commission can encourage and remove regulatory impediments to continued development and deployment of smart radio technologies, including, for example, facilitating the ability of licensed spectrum users to deploy them for their own use to increase spectrum efficiency, and to facilitate secondary markets, allowing licensees to lease their spectrum access to third parties using such technologies. The Notice also seeks comment on ways in which smart radios can facilitate opportunistic use of the spectrum by unlicensed devices, while protecting incumbents from harmful interference.

In addition, the Notice seeks comment on rules permitting additional technical flexibility, including allowing unlicensed devices in limited bands to use higher transmit powers in rural and underserved areas. This would potentially reduce network infrastructure costs, facilitating broadband and other services in these areas. The Notice also seeks comment on a specific technical approach that would provide licensees with the ability to retain real-time access to spectrum they lease to third parties, such as public safety entities, if the Commission decides to permit such leasing. Also, the Notice seeks comment on how smart radios could facilitate public safety interoperability. Specifically, because of their frequency agility, smart radios may potentially be used as a communications bridge between two different radio services – effectively translating the signals from one service into the format and frequency of another. This could enhance the ability of different public safety entities to communicate with one another in the event of an emergency.

The Notice also seeks comment on specific applications for smart radios, such as mesh networks and real-time frequency coordination between NGSO satellite and other services. Further, the Notice proposes changes to the Commission's equipment authorization processes to better accommodate software-defined radios and smart radio systems.

Action by the Commission December 17, 2003, by Notice of Proposed Rulemaking and Order (FCC 03-322). Chairman Powell, Commissioners Abernathy, Copps, Martin, and Adelstein, with separate statements issued by Chairman Powell, Commissioners Copps, Martin, and Adelstein.

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