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**Federal Communications Commission**  
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**Washington, D. C. 20554**

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This is an unofficial announcement of Commission action. Release of the full text of a Commission order constitutes official action. See MCI v. FCC, 515 F.2d 385 (D.C. Circ 1974).

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FOR IMMEDIATE RELEASE:  
December 7, 2000

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## FCC PROPOSES RULE CHANGES TO FACILITATE SOFTWARE DEFINED RADIO DEPLOYMENT

Washington, DC – The Commission today proposed rule changes to accommodate the authorization and deployment of a new generation of radio equipment known as software defined radios (SDRs). Software defined radios can be quickly reprogrammed to transmit and receive on multiple frequencies in different transmission formats. This reprogramming capability could change the way users traditionally communicate across wireless services and promote more efficient use of spectrum.

In a software defined radio, functions that were formerly carried out solely in hardware, such as the generation of the transmitted radio signal and the tuning of the received radio signal, are performed by software that is in high-speed digital signal processors. Because these functions are carried out in software, the radio is programmable, allowing it to transmit and receive over a wide range of frequencies and to emulate virtually any desired transmission format. The operating parameters of such a radio can be readily altered by a simple software change.

In March 2000, the Commission released a *Notice of Inquiry* seeking comments on a number of issues related to software defined radios. These issues included the current state of technology, how this technology could facilitate interoperability between radio services, how it could improve the efficiency of spectrum use, and what changes may be required in the FCC equipment approval process.

Under the current rules, if a manufacturer wants to make changes to the frequency, power or type of modulation for an approved transmitter, a new approval must be obtained, and the equipment must be re-labeled with a new identification number. This requirement has not posed problems in the past because radio transmitters have not had the capability of having their operating parameters easily changed in the field. However, software defined radios will have the capability of being reprogrammed in the field and the requirements to file completely new applications and re-label equipment when changes are made could be overly burdensome and hinder the deployment of software defined radios to consumers.

Under the proposals in the *Notice of Proposed Rulemaking*, updates to the software in a software defined radio would be handled as a new class of “permissive change,” even if the updates resulted in changes to the frequency, modulation type or output power. Permissive changes are handled through a streamlined filing process. The FCC identification number of a transmitter would not have to be changed when software updates are made, so equipment in the field would not have to be re-labeled. These permissive changes could only be obtained by the

original grantee of the equipment authorization. To allow for changes to equipment by other parties such as software developers, the Commission proposed permitting an optional “electronic label” for software defined radios, in which the FCC identification number could be displayed on an LCD or similar screen. This would provide a method to re-label equipment in the field if a new approval were obtained for a previously approved device. It could allow another party to obtain an equipment approval in its name and become the party responsible for compliance instead of the original grantee.

Action by the Commission, December 7, 2000 by Notice of Proposed Rulemaking (FCC 00-430). Chairman Kennard, Commissioners Ness, Furchtgott-Roth, Powell and Tristani, with Commissioner Ness issuing a separate statement.

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Office of Engineering and Technology contact: Hugh Van Tuyl at (202) 418-7506.  
ET Docket 00-47

**December 7, 2000**

**Separate Statement of Commissioner Susan Ness**

**Re: In the Matter of the Authorization and Use of Software Defined Radios, ET Docket 00-47**

As I stated at the time we adopted our Notice of Inquiry, I am bullish about the prospect of “software defined radio” (“SDR”). SDR is a new generation of technology that would allow communications equipment to adapt to multiple standards and add service features without changes to the equipment’s hardware.

SDR holds the potential to enhance our participation in the global economy, to access new services, and to use the spectrum more efficiently. For example, SDR could facilitate the development of secondary markets for spectrum, because equipment could more easily operate under different parameters in different places. SDR could facilitate interoperability for users -- including public safety -- by making it easier to modify devices to communicate with each other. And SDR could facilitate global deployment of equipment, by making it easier for devices to operate in different bands and different modes, consistent with country allocations and rules.

To realize these benefits, however, we will have to alter our traditional equipment authorization process. Let me be clear: our need to protect the public from harmful interference from non-compliant equipment is not diminished. But as we have found elsewhere with our regulatory framework, our legacy regulations for equipment approval may impede rather than facilitate innovation. Thus, we must focus on developing more flexible ways to assure the Commission and the public that equipment complies with our technical rules, and that health and safety of the public is not compromised.

Today, we propose several modest steps to facilitate the use of SDR. I encourage parties to think creatively on ways to ensure that equipment complies with our rules without impeding the development of new and useful technologies like Software Defined Radio. Any rules that would enable new and innovative products to reach the marketplace more quickly without compromising safety and interference protection for existing services would most certainly serve the public interest.