

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the Matter of )  
 )  
Principles for Promoting the Efficient Use of Spectrum )  
by Encouraging the Development of Secondary Markets )  
 )

**POLICY STATEMENT**

**Adopted:** November 9, 2000

**Released:** December 1, 2000

By the Commission: Commissioners Ness and Furchtgott-Roth issuing separate statements; Commissioner Tristani approving in part, dissenting in part and issuing a statement.

**I. INTRODUCTION**

1. This Policy Statement sets forth the Commission’s plans for facilitating secondary markets for radio spectrum that will allow and encourage licensees to make all or portions of their assigned frequencies and/or service areas available to other entities and uses. The Commission envisions that secondary markets can flourish by facilitating arrangements such as leasing<sup>1</sup>, franchising, and joint operating agreements, and improving the conditions for transferability of spectrum usage rights through, for example, partitioning or disaggregation. Our Policy Statement outlines in general terms a series of initiatives that the Commission intends to undertake to promote secondary markets for spectrum usage rights. The Commission’s current policies concerning transfer, assignment, disaggregation and partitioning of licenses allow certain licensees to market portions of their spectrum usage rights to others. In this new effort, we seek to significantly expand and enhance the existing secondary markets for spectrum usage rights to permit spectrum to flow more freely among users and uses in response to economic demand, to the extent consistent with our other statutory mandates and public interest objectives.

2. We believe that an expanded system of private sector markets will serve the public interest by creating new opportunities for increasing the communications capacity and efficiency of spectrum use by licensees. Such secondary market transactions will thereby complement the primary assignment function performed by the Commission through its spectrum auctions and licensing processes. While secondary markets are not a substitute for finding additional spectrum when needed and should not supplant our spectrum allocation process, a robust and effective secondary market for spectrum usage rights could help alleviate spectrum shortages by making unused or underutilized spectrum held by existing licensees more readily available to other users and uses and help to promote the development of new, spectrum efficient technologies.

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<sup>1</sup> For purposes of discussion here, we use the term “leasing” to refer to all arrangements by which a licensee makes spectrum or capacity available to another entity while retaining its license. Thus, leasing in this context could also include franchising and sharing/pooling arrangements for both spectrum and capacity on infrastructure.

## II. BACKGROUND

3. In recent years, the need for spectrum has increased dramatically as a result of the explosive growth in wireless communications technologies and consumer demand for services. This increased demand is being propelled by a host of developments including the growing shift of our economy towards the service sector, the increasing mobility of our workforce, and the convenience and increased efficiency produced by mobile/portable communications combined with improved performance and the falling costs of wireless devices. Increasing spectrum requirements for public safety and for national defense systems, satellite services, private users, amateur radio, and the dramatically growing interest in accessing the Internet are compounding the shortages of spectrum.

4. In mobile telephony services alone, the number of subscribers in the United States has grown from just over 90,000 in January 1985 to more than 86 million, or approximately 32 percent of the country's population, at the end of 1999.<sup>2</sup> Growth in wireless subscribership has been accompanied by an increase in wireless usage. For example, the Cellular Telecommunications Industry Association estimates that average monthly minutes-of-use (MOUs) by mobile telephone subscribers rose to 180 in the period between July and December 1999, an increase of 38 percent from the 130 MOUs during the same period in 1998 and some analysts estimate that current average MOUs at about 220 per subscriber.<sup>3</sup>

5. To date, demand for mobile voice service has been the principal driver of the growth of mobile telephony services. As of early 2000, analysts estimated that data accounted for just 2 percent of mobile traffic.<sup>4</sup> Many analysts believe, however, that the growth of mobile data services is likely to accelerate in the near future. According to one analyst's forecast, for example, the number of subscribers using some form of mobile data service will grow to 100 million by 2007, while another analyst estimates that wireless data subscribers will outnumber wireline data subscribers by 2002.<sup>5</sup> The rapid growth of Internet usage and data traffic on wireline networks in the United States is taken as evidence that the potential size of the mobile Internet and data market is likewise very large.

6. While current subscriber numbers for fixed wireless services remain small by comparison with mobile wireless services, analysts expect the market for fixed wireless high-speed services to grow significantly over the next three to five years.<sup>6</sup> In particular, analyst projections for residential use of fixed wireless high-speed services range from 2 to 2.6 million subscribers in 2003 and

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<sup>2</sup> Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, FCC 00-289, at 9, 22-23 and B-2 (rel. August 18, 2000) ("*Fifth Report and Order*").

<sup>3</sup> *Id.* at 22-23.

<sup>4</sup> *Id.* at 33-35.

<sup>5</sup> *Id.*

<sup>6</sup> Existing fixed wireless technologies already have the capability to provide high-speed Internet access as well as basic telephone service. A fixed wireless access system thus allows a wireless provider to compete with both traditional incumbent local exchange carriers (ILECs) and broadband service providers relying on digital subscriber line (DSL) or cable modem technology to deliver high-speed Internet access. There are several different bands of spectrum over which fixed wireless providers offer their services, with the largest commercial deployment of fixed wireless systems focused on the "upper bands" of the spectrum, in the 24 GHz, 28 GHz and 39 GHz ranges. *Id.* at E-11.

from 3 to 4.4 million subscribers in 2004, while projections for business use of such services range from 364,000 to 450,000 subscribers in 2003.<sup>7</sup>

7. Notwithstanding the introduction of more efficient digital technologies that increase the potential capacity of spectrum to provide communications services, continuing expectations regarding increased demand raise the concern that spectrum may be a limiting factor for new technology and services. In the United States, virtually all spectrum, particularly in the most sought after bands below 3 GHz, has been allocated for various services. Consequently, with the exception of several small bandwidth segments of only a few megahertz each that are not sufficient to support high volume operations, there is very little unencumbered spectrum available for new uses or users. In order to provide spectrum for new services, we now have to find ways for such services to share spectrum with existing services or to reallocate spectrum from existing services to new services and technologies. In the latter case, we have sometimes implemented plans that relocate incumbent operations to other, generally higher frequency bands, and other times simply reduced the amount of bandwidth available for a service.<sup>8</sup>

8. The Commission has previously taken a number of steps towards the development and implementation of comprehensive plans for effectively managing the spectrum based on the increasing demands of new services and its recognition that, in general, the best way to realize the maximum benefits from the spectrum is to permit and promote the operation of market forces in determining how spectrum is used. A principal tenet of this market-based approach is that in order for competition to bring consumers the highest valued services in the most efficient manner, competing users of spectrum need flexibility to respond to market forces and demands. In recent years the Commission has undertaken several efforts to address the growing complexities of spectrum management and how best to build upon general market-based principles. For example, in March 1996 and April 1999, the Commission held *En Banc* Hearings on Spectrum Management.<sup>9</sup> In November 1999, the Commission issued a *Policy Statement* on “Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium” (*Spectrum Policy Statement*).<sup>10</sup> In addition, the Commission has adopted specific rules to enhance flexibility in cellular and other

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<sup>7</sup> Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, *Second Report*, CC Docket No. 98-146, FCC 00-290, at 79 (rel. Aug. 21, 2000). Projections for business use of fixed wireless high-speed service beyond 2003 vary widely.

<sup>8</sup> For example, in the 1992 Emerging Technologies proceeding the Commission reallocated spectrum in the 2 GHz region from existing non-Government Fixed uses to new services, see *First Report and Order and Third Notice of Proposed Rule Making* in ET Docket No. 92-9, 7 FCC Rcd 6886 (1992); in the 1997 proceeding on Reallocation of TV Channels 60-69 the Commission reallocated the 764-806 MHz band from the Broadcast Television Service to Fixed and Mobile Services, see *Report and Order* in ET Docket No. 97-157, 12 FCC Rcd 22953 (1998); and in the 1997 proceeding on Allocation of Spectrum at 2 GHz for Mobile-Satellite Service the Commission reallocated spectrum from the Broadcast Auxiliary Service and Fixed Service to the Mobile-Satellite Service, see *Second Report and Order and Second Memorandum Opinion and Order* in ET Docket No. 95-18, 15 FCC Rcd 12315 (2000).

<sup>9</sup> See <http://www.fcc.gov/realaudio/enbancs.html> for *En Banc* Hearing Transcripts.

<sup>10</sup> *Policy Statement on Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium*, 14 FCC Rcd 19868 (1999) (*Spectrum Policy Statement*), available at <http://www.fcc.gov/oet/headlines.html>.

commercial mobile radio services.<sup>11</sup> The Commission has also convened a Technological Advisory Committee (TAC) to provide expert advice to the Commission on how to respond to rapid advances in technology, with a particular focus on spectrum management.<sup>12</sup>

9. Information presented at the two *En Banc* hearings provided insight from industry and academia on their views of how the Commission's spectrum management responsibilities should evolve. Two key focus areas emerged: 1) promote greater efficiency in spectrum use and 2) make more spectrum available. Flexibility was again emphasized for both allocations and service rules. Other key suggested initiatives include: negotiated interference, new spectrum efficient technologies; innovative and streamlined assignment mechanisms; and a more active secondary market.<sup>13</sup> Additional steps necessary to respond to the explosive growth in wireless communications and the resulting increased pressure for spectrum are identified in the *Spectrum Policy Statement*. In the *Spectrum Policy Statement*, we stated that an active secondary market will facilitate full utilization of spectrum by the highest value end users. We also indicated our intent to pursue a number of approaches for expanding secondary spectrum markets by bringing together prospective buyers and sellers.

10. Throughout these efforts, we have attempted to address the problem posed by spectrum scarcity through various initiatives aimed at increasing spectral efficiencies in the use of radio spectrum.<sup>14</sup> To meet the spectrum needs of new and existing services and users in this growing market, we need to continue to look for innovative approaches that will ensure the most efficient and effective use of spectrum so as to maximize opportunities for new technologies, services, and users. In this regard, we believe that it is important to continue to develop and take affirmative new steps to ensure that spectrum scarcity does not hinder the growth of wireless services and use. In developing such plans, we recognize that some services such as public safety, educational services, private wireless, amateur radio, and other important services, may have spectrum needs that are not addressed under a market approach. For most spectrum, however, we continue to believe that the most effective way to achieve these goals is to allow market forces to direct the distribution of spectrum resources among specific users and uses, subject of course to appropriate technical standards to control interference. Consistent with this approach, we have successfully moved to a more market-oriented approach for assignment of spectrum. The assignment of spectrum through competitive bidding has facilitated more efficient and rapid licensing of spectrum to those who value it the most.<sup>15</sup> We have also adopted more market-based principles with regard to technical standards by permitting licensees to negotiate interference agreements,

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<sup>11</sup> See Geographic Partitioning and Spectrum Disaggregation by Commercial Mobile Radio Services Licensees, *Second Report and Order* in WT Docket No. 96-148, (rel. May 19, 2000).

<sup>12</sup> For additional information on the TAC, see <http://www.fcc.gov/oet/tac/>.

<sup>13</sup> *Spectrum Policy Statement* at pp. 3-5.

<sup>14</sup> See, e.g., Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, *Report and Order* in PR Docket No. 92-235, 10 FCC Rcd 10,076 (1995) (“*Refarming Proceeding*”).

<sup>15</sup> We have conducted over 30 auctions since the program's inception in 1994. For example, we have licensed spectrum in the Personal Communications Service (PCS), Wireless Communications Service (WCS), and 700 MHz Guard Band Service, and broadcast stations through our competitive bidding procedures.

where possible.<sup>16</sup> Also, in adopting rules for new services we have attempted to provide flexibility for licensees in both the services that may be provided and the technologies that are used for operations.<sup>17</sup> In general, we expect that this flexibility and the economic need to make the most effective use of investments will lead wireless licensees to maximize the use of their spectrum consistent with their particular business and operating plans.<sup>18</sup>

### III. THE NEED FOR EFFECTIVE SECONDARY SPECTRUM MARKETS

11. The information presented to the FCC at our *Public Forum* and in other contexts suggests that existing licensees may not be fully using all of the spectrum that has been assigned to them.<sup>19</sup> This could occur for a number of reasons. For example, a licensee's business plan, even considering future growth, may not encompass some portion of its assigned frequencies or geographic service area. It is also possible that in establishing a new service, a licensee may not need to use all of its spectrum for a period of years, as it grows its customer and operating base. In addition, a licensee may face problems in equipment availability that affects its ability to rapidly buildout services as manufacturers look for a clear indication of communications businesses that will support equipment orders. Holding spectrum unused in such circumstances may serve legitimate business needs and would not be inefficient unless it excluded higher valued uses. The preclusion of higher valued uses might occur if service flexibility is restricted by rule or the cost of trading is high. When considered across our many services, these factors may leave a substantial amount of spectrum unnecessarily lying fallow, especially in rural areas. At the same time, substantial unmet demand for spectrum for various applications exists in many areas, including such potentially high-valued uses as broadband fixed and mobile services. For example, there is continuing growth in demand for spectrum for new data networks and advanced services such as third generation mobile services that offer much faster mobile data speed.

12. We continue to believe that an effective way to make unused spectrum held by existing licensees available to others may be through secondary markets. An effectively functioning system of secondary markets would encourage licensees to be more spectrum efficient by freely trading their rights to unused spectrum capacity, either leasing it temporarily, or on a longer-term basis, or selling their rights to unused frequencies. Increased efficiency would contribute significantly to our ongoing efforts to make additional spectrum available. We also believe that secondary market transactions could contribute to increasing the amount of spectrum available to prospective users, uses, and new wireless technologies by making more effective use of spectrum that is currently assigned to existing licensees. This would provide opportunities for the development and operation of new services and competition. In

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<sup>16</sup> See e.g., 1998 Biennial Regulatory Review – Streamlining of Radio Technical Rules in Parts 73 and 74 of the Commissions Rules, *First Report and Order* in MM Docket 98-93, 14 FCC Rcd 5272 (1999).

<sup>17</sup> *Spectrum Policy Statement* at ¶ 9.

<sup>18</sup> We recognize that licenses issued for broadcast services under Parts 73 and 74 have unique and substantial public interest considerations that must be weighed carefully to ensure their objectives are not undermined in advancing our secondary markets policy. In developing this policy statement, we have not attempted to strike that balance. Moving forward, however, we will be careful to give such considerations adequate weight in pursuing our secondary markets policy.

<sup>19</sup> For example, at the Commission's May 31, 2000, *Public Forum* on secondary markets a number of panelists described situations where existing licensees are not fully utilizing their assigned spectrum. Materials related to the May 31, 2000, *Public Forum* are available at <http://www.fcc.gov/oet/>.

addition, as licensees move to more efficient digital technologies they are likely to have more capacity that can be made available in secondary markets. It is also possible that by facilitating leasing, the Commission will create an economic incentive to develop and deploy efficient technologies because licensees will be able to realize a profit from their available spectrum. If a licensee knows that it has an economic opportunity by conserving and leasing rights to excess spectrum, it may make strong business sense to be more spectrum efficient.

13. The Commission has already begun the process of exploring how we can facilitate the development of more active and effective secondary markets in spectrum. The Office of Engineering and Technology convened a *Public Forum* on May 31, 2000, asking specific questions on the need for secondary spectrum markets, comparisons to other commodity markets, and FCC actions that could facilitate secondary spectrum markets. Panelists at the forum included representatives from academia, equipment manufacturers, service providers, and the legal community.<sup>20</sup> The overwhelming consensus at the *Public Forum* was that a more active secondary market in spectrum is desirable and the Commission should foster opportunities in this area. Among the specific areas noted by the panelists as barriers to successful operation of secondary spectrum markets are: 1) FCC transfer of control policies that inhibit spectrum leasing and other similar arrangements; 2) high transaction costs; 3) interference; 4) equipment availability; 5) buildout requirements; and 6) limitations on service flexibility. One possible example of how a secondary market transaction could make more effective use of the spectrum would be in cases where spectrum was leased on a short-term basis. For example, a licensee holding commercial or private mobile radio spectrum or fixed wireless access spectrum in anticipation of its own growth could lease spectrum to another entity to allow the latter to meet a temporary need. This spike in demand might be produced by the presence of a major public event in the area such as a national political convention or a major sporting event. Arrangements such as these would produce a "win-win" result for everyone involved. The lessor would realize income while maintaining control of spectrum that it might need to meet long term strategic objectives, while the lessee would be able to make a profit by providing service to otherwise under-served customers. Users would benefit from the availability of the service and manufacturers would potentially benefit from the sale of products. The public interest would benefit from greater and more efficient use of the spectrum. These same types of benefits could accrue in situations where mid-term or longer-term leasing is implemented as well.

14. In many respects, our existing rules already provide flexibility to allow some licensees to make all or unused portions of their spectrum available to others through transfer arrangements. For example, our rules for Commercial Mobile Radio Services, *e.g.*, cellular telephone service, PCS, and advanced paging systems, allow licensees to partially transfer, subject to regulatory approval:<sup>21</sup> 1) portions of their right to use frequency bands across their service area (disaggregation); 2) their rights to use frequency bands in portions of their service area (partitioning); or 3) portions of their right to use frequency bands in a portion of their service area (a combination of both disaggregation and partitioning). These provisions allow licensees to tailor their operations in accordance with the spectrum needs and service areas in their business plans as well as promote the availability of unused spectrum for use by others. In other instances, our rules expressly allow leasing or resale arrangements in which a third party can use licensed spectrum without the licensee transferring its rights outright. For example, our rules allow the lease of spectrum between Multichannel-Multipoint Distribution Service (MMDS)

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<sup>20</sup> See Public Notice "FCC Announces Agenda For Public Forum On Secondary Markets In Radio Spectrum", DA 00-1139, 15 FCC Rcd 18667 (2000).

<sup>21</sup> See 47 CFR § 1.2111, implementing Section 310 of the Communications Act, as amended 47 U.S.C. 310.

and Instructional TV Fixed Service (ITFS) licensees, resale of satellite transponder capacity<sup>22</sup>, and Private Land Mobile Radio Services (PLMRS) licensees may share the use of their facilities by permitting persons not licensed for the station to operate the station for their own purposes pursuant to the licensee's authorization.<sup>23</sup>

15. Notwithstanding the existing potential for secondary market activities and the economic incentives that primary licensees would be expected to have to either make their spectrum usage rights available to others, the secondary market remains underdeveloped. On the one side, there appears to be reluctance on the part of existing licensees to trade in rights to the unused portions of their assigned frequencies and service areas under current Commission rules. As with any scarce resource there are incentives for licensees to hold on to their right to use spectrum, especially when there may be no established mechanism to offer spectrum usage rights for a limited time period. These incentives could derive from: 1) concerns they will need spectrum for future capacity; 2) speculation that future increases in values make it worthwhile to hold on for higher prices later; 3) a perception that disaggregation or partitioning would reduce the value of their spectrum usage rights; or 4) a desire to forestall competition. Licensees may also believe that administrative requirements create transaction and opportunity costs that exceed potential benefits that may accrue from making all or part of their spectrum license available to others. Licensees have also indicated that they fear that any available excess capacity they might identify would be reclaimed by the Commission. Licensees may be further unwilling to engage in lease agreements because they believe that such agreements are prohibited under Section 310(d) of the Communications Act of 1934 as amended or Commission policy. Some panelists at the *Public Forum* indicated that the reluctance of attorneys to issue a legal opinion that proposed leasing arrangements comply with applicable regulatory standards creates regulatory uncertainty and thus creates a disincentive to secondary market participation. These barriers to secondary market trading may be affected by several factors, including, for example, whether spectrum is licensed on a site-by-site or geographic area basis or whether the license was acquired through payment, *i.e.* auctions or purchase vs. no cost other than a license application fee. On the other side, demand for leasing appears to be affected by the price of spectrum usage rights when they are available, uncertainty regarding lease term and regulatory requirements, high transactions costs due to other legal uncertainties, equipment availability, and the lack of mechanisms for identifying available spectrum.

16. The policies and initiatives outlined in this Policy Statement are aimed at encouraging both the supply and demand for spectrum usage rights and to generally facilitate the development of an efficient secondary market in such rights. In particular, we seek to identify ways to encourage licensees, *i.e.*, the supply side, to overcome their resistance to sell or lease unused spectrum usage rights. For example, we believe that leasing of spectrum usage rights (as opposed to transfer) could address licensee concerns regarding future capacity requirements and speculation on value. We hope that the planned initiatives discussed below will lead to greater regulatory certainty that will mitigate general resistance to resale or leasing. We intend to examine a number of possible means to encourage greater licensee participation in the secondary market.

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<sup>22</sup> See 47 CFR 21.934 and 21.935 (MMDS), 47 CFR 74.990-74.992 (ITFS). See also Streamlining the Commission's Rules and Regulations for Satellite Application and Licensing Procedures, *Report and Order* in IB Docket 95-117, 11 FC Rcd 21581 (1996).

<sup>23</sup> Shared use of the frequencies may be on a non-profit, cost-shared, or for-profit private carrier basis. The licensee is responsible for ensuring that the authorized facility is used for purposes consistent with the requirements of our rules. See 47 CFR § 90.179.

17. We believe that a secondary market for spectrum resources can develop as it has for wireline bandwidth, which is now being actively traded like traditional commodities such as oil, gas, and grains.<sup>24</sup> We believe that the limited secondary market activity in spectrum usage rights is the result of a combination of factors that include: 1) regulatory constraints, 2) the availability of equipment for operation, and 3) the lack of adequate systems and information for the conduct of effective trading and market operations. We believe that it is possible to achieve improvements in each of these areas, and thereby to move towards a more freely functioning system of secondary markets for spectrum usage rights. In developing specific initiatives for improving secondary markets, we believe it is appropriate to rely on the general economic theory of markets. Certain essential elements that need to be present for a market system to operate most effectively include: 1) clearly defined economic rights; 2) full information on prices and products available to all participants; 3) mechanisms for bringing buyers and sellers together to make transactions with a minimum of administrative cost and delay; 4) easy entry and exit to the market by both buyers and sellers; and 5) effective competition, with many buyers and sellers.<sup>25</sup>

#### IV. SECONDARY MARKETS INITIATIVE

##### A. Goals and Principles

18. Spectrum management is one of the Commission's core functions.<sup>26</sup> In the *Spectrum Policy Statement*, we recognized that "[w]ith the increased demand for a finite supply of spectrum, the Commission's spectrum management activities must focus on allowing spectrum markets to become more efficient and increasing the amount of spectrum available for use."<sup>27</sup> In exercising our spectrum management role, consistent with our licensing authority and the public interest obligations in the Communications Act, we plan to substantially enhance the system of secondary markets for spectrum usage rights. Our goal in this effort is to promote the operation of competitive markets for the sale and lease of spectrum usage rights by licensees, and thereby facilitate both the transfer of the right to use spectrum for existing services to new, higher valued uses and the availability of unused and underutilized spectrum to those who would use it for providing service. We also seek to foster market structures and incentives that will encourage more sellers to make spectrum available. This will bring unused spectrum to the market, allow sellers to apply the resource value of that spectrum to other aspects of their businesses, and provide buyers with more opportunities for choice in frequencies and service areas and lower prices.

19. To achieve these goals, we intend to pursue a broad range of policies that will develop and support efficient market systems. A major focus of our secondary markets efforts will be to

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<sup>24</sup> See testimony of Sharon Crowe, Vice President, Bandwidth Markets, Williams Communications at *Public Forum*, available at <http://www.fcc.gov/realaudio/presentations/2000/053100/welcome.html>.

<sup>25</sup> Of course, real world markets rarely satisfy fully all the conditions of perfect competition. They nonetheless often perform effectively. In particular, less-than-perfectly competitive markets can constitute mechanisms for generating public benefits superior to non-price mechanisms such as reliance on regulatory or administrative processes.

<sup>26</sup> The Commission's authority and responsibilities with regard to spectrum management and licensing for domestic radio communications services are generally set forth in 47 U.S.C. 301-337. See also *Spectrum Policy Statement* at ¶ 6.

<sup>27</sup> *Spectrum Policy Statement* at ¶ 12.



remove, relax or modify our rules and procedures to eliminate unnecessary inhibitions on the operation of secondary market processes and to promote flexibility and fungibility (exchangeable or substitutable) in the use of spectrum. In order to remove barriers to entry and to promote seller participation for spectrum usage rights, we also intend to encourage advances in equipment that will facilitate use of available spectrum for a broad range of services. An additional element of this effort will be to encourage mechanisms, including information sources, spectrum exchanges, and brokers, that bring together buyers and sellers and effect transfers of the right to use spectrum in a timely and cost effective manner. In developing policies under each of these elements, we will seek solutions that will bring to spectrum markets the essential characteristics that need to be present for effective and efficient market operation. This effort is a substantial undertaking that will examine the potential for improving secondary market operations in as many of our spectrum-based services as possible.

20. We also recognize that for secondary markets to operate effectively, licensees and users must have certain rights and responsibilities that define and ensure their economic interests. In developing our secondary market policies, we intend to apply the following principles concerning licensee rights and responsibilities where consistent with our licensing authority and the public interest obligations of the Communications Act:

- Licensees should generally have clearly defined usage rights to their spectrum, including frequency bands, service areas, and license terms of sufficient length, with reasonable renewal expectancy, to encourage investment.<sup>28</sup>
- Licenses and spectrum usage rights should be easily transferable for lease or sale, divisible, or aggregatable.
- Licensees/users should have flexibility in determining the services to be provided and the technology used for operation consistent with the other policies and rules governing the service.
- Licensees/users have a fundamental obligation to protect against and the right to be protected from interference to the extent provided in the Commission's rules.

21. We note that a policy promoting secondary markets for radio spectrum licenses, and rights thereunder, through leasing or other arrangements, inevitably raises larger issues surrounding spectrum licensees' rights and obligations. At our public forum, some of the panelists recommended that the Commission implement a more property-right based system as part of its secondary market initiatives.<sup>29</sup> Specifically, panelists noted that markets function best when property rights and liability

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<sup>28</sup> In this context, any transferees and lessees will have the same rights to protection against interference and incursions by other operators as the licensee from which they acquire the spectrum. For example, a transferee or lessee would have the same rights to protection against interference from operations under the experimental radio service (Part 5 of the rules, *see* 47 CFR 5) or from operation of unlicensed radio devices (Part 15 of the rules, *see* 47 CFR 15) as the primary licensee. We also take this opportunity to advise that the Experimental Radio Service is not intended for meeting short-term commercial needs. While entities may be authorized to operate temporarily on licensed frequencies under our Part 5 Experimental Radio Service rules, the purpose of this service is to allow experimentation in radio art or essential communications for research for radio projects.

<sup>29</sup> *See* Testimony of FCC Commissioner Furchtgott-Roth; Tom Hazlett, Resident Scholar, American Enterprise Institute; and Peter Cramton, Chairman, Spectrum Exchange, and Professor of Economics, University of Maryland at our public forum.

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rules are clearly defined.<sup>30</sup> Section 301 of the Act states that the purpose of the Act is “to maintain the control of the United States over all the channels of radio transmission” and “to provide for the use, but not the ownership thereof.”<sup>31</sup> The Act also recognizes that use of spectrum is temporary, limited, and subject to withdrawal in a wide variety of circumstances.<sup>32</sup> Further, Section 304 of the Act requires that any applicant seeking to use spectrum, must waive any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States.<sup>33</sup> These provisions make it clear that spectrum ultimately belongs to the public and not to individual licensees. Sections 302 and 303 of the Act authorize the Commission, consistent with the public interest, convenience, and necessity, to make reasonable regulations to protect against interference and to classify radio stations, assign frequencies, and establish service rules.

22. While individuals cannot “own” spectrum pursuant to statute, a license to use spectrum confers certain rights to use the spectrum, which we have referred to as “spectrum usage rights.” The spectrum usage right is defined within the terms, conditions, and period of the license at the time of issuance.<sup>34</sup> In light of the statutory limitations, we seek to develop policies that define the contours of the “usage rights” granted within the license terms and conditions. We believe that clarifying a licensee’s spectrum usage rights will facilitate markets and open an important dialog about our spectrum management policies.

23. In our efforts to remove impediments to the efficient use of spectrum, we may also want to consider ways in which a licensee may be able to maximize its own efficient use of spectrum. One approach would be to consider ways licensees could leverage the value of their retained spectrum usage rights to increase access to capital. Access to capital, especially for smaller businesses, affects the licensee’s ability to use its spectrum resources under its license. Specifically, we plan to evaluate our policies prohibiting security and reversionary interests in licenses.<sup>35</sup> We will also explore other financial mechanisms that licensees could use in order to facilitate the provision of service to the public. For example, we intend to consider whether newer market-based mechanisms applicable to other interests such as asset-backed securitization may further assist licensees’ capital formation efforts.

24. While we are committed to promoting viable and effective secondary markets for the  
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<sup>30</sup> Id.

<sup>31</sup> 47 U.S.C. § 301

<sup>32</sup> Id.

<sup>33</sup> 47 U.S.C. § 304.

<sup>34</sup> Indeed, Section 301 states that no radio license “shall be construed to create any right, beyond the terms, conditions, and periods of the license. 47 USC § 301.

<sup>35</sup> The Commission has recognized that licensees can give a security interests in the proceeds of the sale of licenses. See *Walter O Cheskey*, 9 FCC Rcd. 986 (1994); *Beach Television Partners v. George F. Mills, Jr.*, 38 F.3d 535 (11th Cir. 1994); and Letter from William E. Kennard, General Counsel, FCC, and Michele C. Farquhar, Chief, Wireless Telecommunications Bureau, FCC, to Leonard J. Kennedy, Esq. and Richard S. Denning, Esq., DA 96-2123, (Dec. 17, 1996). Nevertheless, the FCC does not allow licensee to give a security interest in the license itself. The Commission has not taken a position on whether this policy is statutorily mandated or solely dictated by regulatory policy.

right to use spectrum based on policies that provide for licensees' discretion to use and trade their right to use assigned frequencies and service areas, we emphasize here our statutory authority and ultimate administrative control over spectrum. Section 303 of the Act, for example, requires the Commission "from time to time, as public convenience, interest, or necessity requires, " to set service rules, band assignments, interference protection, and station operator qualifications, among other things.<sup>36</sup> Because spectrum is a vitally important and scarce public resource, we must maintain authority and administrative control to safeguard the interests of the public and other licensees. In order to protect these interests while promoting the efficient and effective use of the spectrum, we must carefully balance our exercise of authority with the ability of licensees to freely trade their spectrum usage rights. Here we affirm the exercise of our authority in, for example, the allocation of spectrum in instances where the economic benefits available in the marketplace do not directly support the provision of necessary services such as public safety services. We must also promulgate technical rules to protect against interference and take action to allow sharing with existing services where new uses can operate without harmful interference to existing services. Moreover, in fulfilling our responsibilities under the Communications Act, we have implemented a number of economic based rules and policies, e.g. limits on aggregation, interconnection with other providers, resale, roaming, as well as regulations to promote other public interests such as E911 rules for mobile telephony providers. In implementing our secondary markets initiatives, we must also seek to ensure competition in services and address the impact of relocating existing services to new frequencies on consumers of those existing services and on their choice in the range of services available.

## **B. Focus Areas and Initiatives**

25. In this Policy Statement, we indicate, in general terms, possible initiatives that could facilitate secondary markets. While most of these initiatives would be undertaken by the Commission, some would more appropriately be implemented by others such as private sector organizations. Specific proposals for implementing initiatives undertaken by the Commission will be addressed in separate rule making proceedings. Interested parties will be provided opportunity to comment on our proposals and related issues in the context of those proceedings. Our efforts will focus on initiatives in the following three areas:

### 1) Eliminate unnecessary regulations and administrative requirements

26. Secondary markets can be expected to function best when licensees are free to transfer spectrum usage rights to different uses and users with a minimum of administrative review. Restrictions on the kinds of services that may be provided on licensees' right to use spectrum reduce the scope and potential of secondary trading and, at a minimum, impose additional cost and delay as licensees must seek waivers or rule changes. To the extent service flexibility can be increased consistent with statutory authority and regulatory goals, the efficient operation of secondary markets will be enhanced. Given greater opportunities to profit from their spectrum usage right, licensees' incentives to participate in secondary market trading and to employ efficient technologies will be similarly strengthened. In this regard, examples of the types of activities we plan to consider include:

- Harmonization of operating rules for similar services to promote spectrum fungibility.
- Modifications to our service definitions, where appropriate, to increase flexibility and maximize spectrum efficiency. Flexibility will allow multiple services to operate in the same

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<sup>36</sup> 47 U.S.C. § 303.

spectrum. This may help mitigate the inclination to avoid participating in secondary markets for anti-competitive reasons.

- Identification of circumstances where we will favorably consider waivers or forbearance from service and technical rules that increase flexibility and maximize spectrum efficiency.

27. As a threshold matter, we must address statutory limitations on the kinds of arrangements into which licensees may enter with third parties without Commission approval. In particular, licensees may not enter into arrangements that would violate Section 310(d) of the Act.<sup>37</sup> Before a licensee can transfer control of its license (or parts of the license, where permitted<sup>38</sup>) to a third party, Section 310(d) requires that the licensee and the third party gain Commission approval to transfer or assign the license (or parts thereof).<sup>39</sup> One of the most problematic areas affecting secondary market activity identified at the *Public Forum* concerns the Commission's interpretation of Section 310(d). Section 310(d) addresses both reassignment of licensed spectrum from one party to another and transfer of control without conveyance of license. Our rules and policies pursuant to Section 310(d) require that assignment or transfers of control of licenses be approved by the Commission and that licensees maintain control over and responsibility for their assigned spectrum, equipment, and operations. In overseeing license transfers, we seek to ensure that the transferee is eligible to hold the license and that radio facilities are operated in compliance with applicable technical and service rules.

28. The primary focus of concern at the *Public Forum* was a Commission test for unauthorized *de facto* transfer of control of commercial wireless licensees. This test was established in a 1963 decision involving a point-to-point microwave service operator, *Intermountain Microwave (Intermountain)*. The *Intermountain* test sets forth six factors for determining whether there has been an unauthorized *de facto* transfer of control of a license.<sup>40</sup> This test is widely applied in cases involving wireless services and in some instances involving satellite services.<sup>41</sup> Industry representatives have

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<sup>37</sup> Section 310(d) of the Act provides: "No construction permit or station license, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner, voluntarily or involuntarily, directly or indirectly, or by transfer of control of any corporation holding such permit or license, to any person except upon application to the Commission and upon finding by the Commission that the public interest, convenience, and necessity will be served thereby." 47 U.S.C. § 310(d).

<sup>38</sup> This would include the partitioning, disaggregation, or partial assignment of licenses.

<sup>39</sup> See *Lorain Journal Co. v. FCC*, 351 F. 2d 824, 828-29 (D.C. Cir. 1965), *cert. denied*, 383 U.S. 967, 86 S. Ct. 1272, 16 L.Ed. 2d 308 (1966) ("control" under Section 310(d) refers to both *de jure* and *de facto* control); *Telephone and Data Systems, Inc. v. FCC*, 19 F. 3d 42 (D.C. Cir. 1994).

<sup>40</sup> See *Intermountain Microwave*, 12 FCC 2d 559 (1963). The six factors set forth in *Intermountain* for determining whether there has been an unauthorized transfer of control in violation of Section 310(d) are as follows: 1) does the licensee have unfettered use of all facilities and equipment; 2) who controls the daily operations; 3) who determines and carries out policy decisions, including preparing and filing applications with the Commission; 4) who is in charge of employment, supervision, and dismissal of personnel; 5) who is in charge of payment of financing obligations; 6) who receives monies and profits from the operations of the facilities? These factors are only guidelines, and determinations are made on a case-by-case basis.

<sup>41</sup> The Commission uses a different test, *e.g. the Motorola test*, with regard to private radio licenses. This test provides that no transfer of *de facto* control occurs where the licensee owns the most significant equipment and a third party performs management functions pursuant to the supervision and instructions of the licensee, who can terminate the governing agreement. See *Applications of Motorola, Inc. for 800 MHz Specialized Mobile Radio* (continued....)

indicated that, in the context of spectrum leases and management and affiliation agreements, *Intermountain* can pose constraints, especially where the prospective lessee or manager seeks to control daily operations, personnel and profits.<sup>42</sup> These parties asked that we reduce these barriers by modifying the *Intermountain* factors to facilitate spectrum leasing and/or simplifying the process for obtaining waivers and Commission approval of license transfers. They stated that additional flexibility is desirable to facilitate secondary market leasing of unused portions of licensed spectrum.

29. In this regard, we intend to consider a range of possible options for allowing third parties to operate and control leased facilities. For example, we recently adopted rules permitting leasing of spectrum through band manager licensees in allocating the “guard bands” frequencies of the 746-806 MHz commercial bands. We defined a Guard Band Manager as a commercial licensee that has the ability to lease access to its licensed spectrum to other eligible users. Subject to technical, operational, and other rules that govern the band, spectrum use by the end users is by private contract between the Guard Band Manager and the end user.<sup>43</sup> We believe we can build upon our Guard Band decision by exploring broader steps that we can take in other bands to provide additional flexibility in our transfer of control rules and policies to further secondary market activity.

30. A second area of our rules that was raised at the *Public Forum* as a constraint on transfer and leasing of spectrum usage rights is the Commission’s buildout requirements. Buildout requirements specify that a licensee must build and operate to serve a specified portion of its service area or the population in its service area on a fixed schedule. These requirements are intended to ensure that licensees make productive use of their spectrum usage right in a timely manner and to further our general universal service and competition goals. Licensees have indicated that they are concerned that if they were to lease portions of their spectrum usage right, they would not be able to meet their construction requirements unless they were able to count the lessee’s service towards fulfilling those requirements. They note that the rules currently are unclear on whether a lessee’s service would count towards a licensee’s buildout requirements.

31. We recognize that additional flexibility on buildout requirements may be desirable in certain circumstances. For example, in some services, we have shifted from incremental buildout milestones to an assessment of whether substantial service exists at license renewal time in order to

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*Trunked Systems in California, New York, New Jersey, Maryland and Virginia and Application of Motorola, Inc. for Assignment of Authorization of Specialized Mobile Radio Station WRG-B16 at Mount Tamalpa, California, File Nos. 507505 et al., Order* (issued July 30, 1985). The Commission also uses another test, e.g. *Choctaw Broadcasting Corp.*, 12 FCC Rcd 8534 (1997), for determining transfer of control involving licenses for mass media services. The *Choctaw* decision is a three-factor test that examines: 1) who controls the station’s programming; 2) who hires and supervises its personnel; and 3) who controls its finances.

<sup>42</sup> See Public Notice, “Wireless Telecommunications Bureau Seeks Comment On Request For Clarification Of De Facto Control Policy And Proposed Spectrum Lease Agreement” DA 00-1953, 15 FCC Rcd 15885 (2000); see also testimony of Carrie Bennet, Counsel for the Rural Telecommunications Group; Morgan O’Brien, Vice Chairman, Nextel Communications; Michelle Farquhar, Partner, Hogan and Hartson; and Robert Shiver, Chairman and Chief Executive Officer, Securicor Communications at the Public Forum.

<sup>43</sup> See *In re Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, Second Report and Order* in WT Docket No. 99-168, 15 FCC Rcd. 5299, ¶¶ 25-51 (1999) (700 MHz Proceeding). The Band Manager's contracts with end users must include provisions that apply to existing licenses, such as the end users' agreement to comply with the Commission’s rules, accept our oversight and enforcement, and cooperate with any investigation or inquiry that the Band Manager or the Commission may conduct.

increase a licensee's ability to respond to marketplace demands.<sup>44</sup> The efficient use of spectrum through leasing may be furthered if we took steps to allow licensees to meet their buildout obligations through service provided by lessees in appropriate circumstances. In examining issues relating to spectrum transfer and leasing, we plan to review our buildout requirements for alternatives that will promote leasing and resale consistent with our other regulatory concerns.

32. Licensees and their representatives have also indicated that minimizing administrative delays by eliminating inefficiencies in our rules and application processes would reduce transaction costs and facilitate the development of secondary markets. Taking into account these comments, a fundamental goal in developing our secondary market initiative is to streamline the existing rules in order to facilitate an incumbent's ability to lease or transfer portions of its capacity. In this regard, we plan to:

- Assess how changes to Commission rules and processes could further facilitate transferability of spectrum usage rights and re-packaging. Our plan to evaluate our test for *de facto* transfer of control is one possible such change.
- Consider whether modification or waiver of eligibility restrictions and licensing rules could be appropriate in certain circumstances, to facilitate trading.
- Evaluate ways to minimize administrative overhead and processing time. As part of this effort we will identify and implement more efficient processing techniques and procedures.
- Revise our technical rules to define the rights and obligations of lessees with regard to interference and other technical issues. Consider areas where waiver of technical requirements may be appropriate.

33. Another issue that was raised at the *Public Forum* concerns the rights of spectrum lessees with regard to occupancy, including the length of the contract term. This impacts their ability to raise capital and willingness to invest in infrastructure. We recognize these concerns—lessees indeed must have reasonable expectations that they will have the right to continue to occupy spectrum. These concerns have been addressed in part by our actions to provide an expectation of renewal for licensees. Thus, while a licensee cannot grant a lease for longer than its license terms, it is able to negotiate conditional options for renewal. We intend to look for additional ways that we can enhance licensees' ability to negotiate with lessees to ensure continuity of service.

34. We also seek to minimize the transaction costs and time associated with completing agreements for transfer or lease of spectrum usage rights. Some of these costs may be associated with the lack of currently available information on available spectrum. The majority of these costs, however, stem from contract negotiation and regulatory review. For example, questions regarding regulatory rights and status, interference, technical parameters, indemnification, and contract terms may complicate a transaction. High transaction costs create disincentives for trading or leasing of spectrum usage rights by

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<sup>44</sup> *Id.* 700 MHz Proceeding, and *See* 4.9 GHz Band Transferred from Federal Government Use, *Second Notice of Proposed Rule Making*, in WT Docket No. 00-32; and Amendment of the Commission's Rules with Regard to the 3650-3700 MHz Government Transfer Band, *First Report and Order* in ET Docket No. 98-237, FCC 00-363 (rel. October 24, 2000).

serving as a barrier to entry. To further help reduce transaction costs, we also plan to consider ways we could facilitate the establishment of brokerage agents and institutions such as spectrum exchanges and standardized contracts between licensees and transferees/lessees.

35. In addition, we plan to augment our existing enforcement infrastructure to support the growth of secondary spectrum markets. Having a mechanism in place to effectively deal with accidental or intentional interference with the ability of users to effectively utilize the spectrum is an important function. We plan to enhance the technical capabilities and resources of our enforcement staff so it can deal with accidental or deliberate interference in a timely and effective way.

2) Promote the availability of frequency and technically agile equipment

36. One of the most difficult problems that users face in providing services in new spectrum is the availability of equipment that will provide the desired service on the specified frequency with an appropriate transmission technology. Different frequencies and services have unique propagation and operating characteristics that require specific equipment performance attributes. Radio equipment is generally not frequency and technically agile, *i.e.*, it is generally designed to operate on a specific band or bands, use a specific modulation method and perform a specific function, and cannot be readily adjusted or modified to work differently. For example, an AM broadcast receiver operates differently and performs different functions than a cellular telephone. Even where devices perform similar functions, current technology does not make it feasible for devices to operate on a frequency band different than those for which they were designed. For example, a VHF maritime radio that uses frequencies in the 150-160 MHz region cannot be readily modified to operate with PCS service at 2 GHz. These limitations on equipment flexibility are generally based on considerations of cost, performance, power and size. With traditional technology, it makes little economic sense to build expensive capabilities into a device that likely will never be used or that will increase its size and weight.

37. However, advanced integrated circuitry, digital designs and processors, and stored program capabilities are increasingly making it more economically feasible to incorporate additional technical flexibility into radio equipment. New equipment concepts known as “software defined” radios are now being developed that will incorporate these new technologies to make radio receivers, transmitters, and transceivers more fungible across different applications and services. We believe these new equipment concepts offer significant potential for providing equipment solutions that would allow a service provider to rapidly begin operations in a newly acquired band of frequencies or to operate economically on a term basis on leased spectrum. We intend to facilitate the deployment of more flexible technologies for equipment, such as software-defined radios and multi-band transmitters and receivers wherever possible.<sup>45</sup>

3) Promote more effective functioning of market processes

38. In order for any market-based system to function there must be a means for bringing buyers and sellers together, presenting products for trade, establishing a mutually acceptable price, and completing their transaction. In the simple example of a traditional bricks and mortar retail store, buyers and sellers come together at the seller’s place of business, merchandise is presented on shelves or floor displays, price is established by marking goods or through negotiation, and transactions are completed by exchanging payment for the goods. The opportunity to shop at other stores provides for competition.

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<sup>45</sup> We have already initiated a proceeding to consider authorization of software defined radios. *See Notice of Inquiry* in ET Docket No. 00-47, 15 FCC Rcd 5930 (2000).

This market approach is simple, timely and relatively inexpensive. Other types of standard market organizations, such as the brokerage trading approach used in commodity markets, also provide effective, efficient means of exchange. There is, however, no such standard market model for sale or lease of spectrum usage rights. Buyers and sellers must search each other out through brokers, advertising, private contacts or other *ad hoc* means. Negotiations for bandwidth and service area can be limited by the Commission's technical and service rules. Also, completing the transaction requires approval by the Commission that can, to varying degrees, involve complex submissions and be time consuming and expensive.

39. We seek to encourage improvements in the functioning of the market processes for exchange of spectrum usage rights. Basic to this process is the means for bringing buyers and sellers together. Several of the panelists at our public forum noted the need for a mechanism to identify available spectrum.<sup>46</sup> A relatively simple, cost-effective means for identifying licensees who desire to trade in spectrum usage rights or might have unused spectrum rights available that could be sold or leased to potential buyers could greatly facilitate the development of secondary markets. This function could be provided through several different types of information sources or services that would vary in the extent to which they would address a potential buyer's specific needs. In general, we believe that if our rules permit the operation of robust spectrum market, sufficient economic incentives will exist for mechanisms to develop in those markets to gather and disseminate the relevant information. To help further these developments, we intend to pursue options that look to:

- Maintain an on-line listing of licenses by service, frequencies, and service area. This is the simplest means for identifying spectrum usage rights to potential buyers/lessees. This would not, however, identify specific spectrum the rights to which licensees might be willing to sell or lease.<sup>47</sup>
- Support development of services that list spectrum resources that licensees are actively offering for sale or lease. This is a more useful approach than a simple comprehensive listing of licenses by service.
- Support the establishment of private spectrum exchanges and brokers who would match parties interested in acquiring spectrum usage rights with suitable resources held by existing licensees. Spectrum brokers could bring specific expertise and knowledge of the unique properties of different spectrum bands to assist prospective buyers in identifying the best spectrum for their needs.

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<sup>46</sup> See testimony of Carrie Bennet, Counsel for the Rural Telecommunications Group; Robert Shiver, Chairman and Chief Executive Officer, Securicor Communications and Tom Hazlett, Resident Scholar, American Enterprise Institute at the Public Forum.

<sup>47</sup> The Commission makes wireless licensing data available on-line, including maps showing licensing areas and service providers as part of its Universal Licensing System. See generally WT Docket Nos. 98-20 and 96-188. In addition, listings of available spectrum are already provided to some extent by the private sector for some specific services. For example, Comsearch has developed a commercial spectrum database identifying services and principle users by frequency band. See <http://www.comsearch.com>.



## V. CONCLUSION

40. The goals set forth in this Policy Statement are intended to establish a framework for the Commission's efforts to facilitate the development of active secondary markets in spectrum usage rights. This endeavor is part of our ongoing efforts to evolve our spectrum management and licensing activities to respond to the changing communications environment. Given the dynamic nature of the market for telecommunications services and the importance of communications to our economic growth, we cannot let spectrum scarcity limit the development of new services. Consistent with our statutory obligations, we are optimistic that an improved system of secondary markets in spectrum usage rights will further the efficient and intensive use of the electromagnetic spectrum and the development and rapid deployment of new technologies, products, and services for the benefit of the public.

FEDERAL COMMUNICATIONS COMMISSION

Magalie Roman Salas  
Secretary

**SEPARATE STATEMENT OF COMMISSIONER SUSAN NESS**

*RE: PRINCIPLES FOR ENCOURAGING THE DEVELOPMENT OF SECONDARY MARKETS FOR SPECTRUM*

The United States has long been the vanguard for developing new approaches to spectrum policy and management. Today, we launch another vehicle to increase the efficiency with which spectrum – a scarce national resource – is deployed in this country. Previously, we have led the way globally to encourage the adoption of flexible wireless allocations and competitive bidding for license assignment. We have promoted the development of new technologies, such as software defined radio, that will facilitate more efficient, less costly, and less regulated access to spectrum. I am pleased that we are initiating a policy to foster secondary markets for spectrum – another effort to increase the opportunity for the public to have access to new services made possible by more efficient use of the spectrum.

The viability of a secondary market for spectrum will depend upon three crucial elements: (1) whether the Commission in future proceedings can establish the appropriate legal framework; (2) whether industry can produce equipment that takes advantage of this flexibility without causing undue interference; and (3) whether the market can develop a mechanism for identifying and distributing available spectrum.

I look forward to working with all parties to accomplish these goals.

**SEPARATE STATEMENT OF COMMISSIONER HAROLD W. FURCHTGOTT-ROTH**

*Re: Principles for Encouraging the Development of Secondary Markets for Spectrum, Policy Statement; Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets.*

Markets and government regulation are not complete strangers. Mutual contempt has bred an all too asymmetric familiarity. Regulations change, and markets, by necessity, adapt instantaneously. The converse, however, is not true.

It is difficult to find a market in which all applicable regulations have not been reflected; their effects on the market—for good or ill—are implicitly counted. By contrast, it is rare to find a regulation that directly and reasonably accounts for its effects in one market, much less all markets. Thus, even a casual observer should pause when a government agency writes a regulation with the word “market” in its title. What is at work here? A regulation based on familiarity with markets, or—all too familiarly—a regulation based on contempt for markets?

I am happy to report that the items today reflect more the former than the latter, and for this, the Office of Engineering Technology and Dale Hatfield along with Tom Sugrue and his Wireless Telecommunications Bureau deserve enormous credit. Indeed, these items are conceived from the all too obvious—and all too often ignored—observation that markets for spectrum rights are not working well. Buyers complain. Sellers complain. And the common refrain is that FCC rules are costly, cumbersome, and do more harm than good for spectrum markets. Even with the progress made by these items, much more needs to be done. These are but the first infant steps when giant steps are ultimately needed, particularly to remove the shadow of regulatory uncertainty from spectrum markets.

#### Clarifying lease arrangements

The items today do much to clarify Commission rules and policy regarding leasing arrangements for spectrum rights, and this newfound clarity and certainty will reduce one significant area of regulatory uncertainty. There remain some issues surrounding rental or leasing arrangements that are unresolved by today’s items, but surely the additional clarity in Commission policy is a positive step.

Some may observe that secondary markets for spectrum are alive and thriving. Indeed, every year the FCC processes thousands of license transfers, the consummation of secondary markets for spectrum rights. In many if not most instances, these licenses are transferred from one party to another in exchange for some form of consideration as a result of a contract. Yet, the mere existence of a secondary market for spectrum rights does not imply that the market functions particularly well. Complaints about the license transfer process at the FCC are legion. As I have often noted, the license transfer process at the FCC is seriously flawed with delays, discriminatory treatment of applicants, unwritten rules, and other problems.<sup>48</sup> The unpredictable, dysfunctional, and possibly unlawful license transfer process at the FCC burdens secondary markets for spectrum rights. The process discourages some potential market participants, and leaves many participants disenchanted.

Even if the FCC were to move to timely, nondiscriminatory, transparent, carefully crafted, fully lawful rules for license transfers, secondary markets for spectrum rights would still not be as vibrant as they could be. This is

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<sup>48</sup> See, e.g., Statement of Commissioner Furchtgott-Roth, Concurring in Part & Dissenting in Part, *Applications of Ameritech Corp., Transferor, and SBC Communications, Inc., Transferee, For Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Sections 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63, 90, 95, and 101 of the Commission's Rules*, CC Docket 98-141 (rel. Oct. 6, 1999).

because Commission policies in many areas militate against transactions for spectrum.

Despite all of the good that comes from today's items, they do not, in my view, go nearly far enough. Markets for spectrum rights labor under a multitude of regulations, only a few of which are meaningfully reviewed or addressed, in these items. In the remainder of this statement, I describe broad areas where markets for spectrum rights are hampered.

#### What makes a market

Markets are simply means by which buyers and sellers exchange for mutual benefit goods, services, or bundles of rights. Markets facilitate exchanges in all societies, both primitive and modern. In primitive societies, many transactions may be based on barter exchange at one point in time. In modern times, transactions can be quite subtle and complex involving complicated contractual arrangements that occur over long periods of time. All market transactions, both simple and complex, have many rules—either explicit or implicit, and these can be summarized in three broad categories:

1. *Property or exclusivity rights.* The parties to a transaction should agree on what is being exchanged. In a simple transaction involving simple property, this might mean a good or service without much description or qualification of the rights associated with the good or service. But for many goods and services, the precision with which associated rights are defined determines the value of the good or service. One example of the importance of associated rights is spectrum. The extent to which excludability or property rights are defined and associated with a spectrum license determines the value of the license.

Much like land or many other forms of property, the right to exclude others from the use of spectrum is important to the value of spectrum. The use of spectrum with most current technologies is congestible. Different, uncoordinated uses of spectrum in the same band and location are likely to conflict and interfere with one another. The value of access to spectrum is directly related to the exclusivity rights of that spectrum, both for current and future use. On the other hand, limitations on the uses to which property may be used diminish the value of the property, including spectrum. Under FCC rules, there are limitations on the uses of practically all spectrum licenses.

2. *Contract or transaction rights.* When a good or service is bought or sold, the rights of the buyer to transfer the good or service to a third party may be restricted. To the extent there are restrictions, however, those are usually agreed upon at the time of the transaction. For FCC licensees, except for those limited leasing arrangements described in today's items, these transactions must be approved by the Commission.

3. *Enforcement and liability rules.* In most sophisticated contracts, the means to enforce the contract and the liability rules for failure to perform under the contract are explicitly stated. For FCC license transfers, enforcement and liability rules between private parties are difficult to write and to implement because the FCC is an intermediary in all transactions.

#### Uncertainty and markets

Demand and supply conditions in a market determine prices, and perturbations in demand and supply conditions lead to corresponding changes in prices. Even market participants with complete information on their current and future excludability rights, contract rights, enforcement rights, liability rules, and the other bundles of rights associated with goods or services in a market understand that prices are not constant forever. Buyers and sellers make transactions with expectations that prices will change, although perhaps not with shared expectations of price movements. At least in competitive markets, neither buyers nor sellers believe that any market participant has the power individually to influence market conditions. Future market volatility as the result of changing demand and supply conditions is assumed to be an unpredictable exogenous event. This volatility in a competitive market where

buyers and sellers have complete information on their current and future bundle of rights reflects the common usage of “market uncertainty.”

For this common usage of “market uncertainty,” firms will be more or less inclined to participate in a market depending on the firm’s degree of risk aversion specifically to market uncertainty. Some firms like more risk; others like less. Some firms can insure against risks in one market with offsetting risks in another market while others cannot. Market uncertainty affects transactions and the distribution of assets in a market, but those outcomes are rationally assumed to be competitively neutral, not favoring one class of firms over another, except perhaps those that can—or those that believe they can—better insure against market risks than others. In any event, government agencies can do nothing to remove this form of market uncertainty.

There is a different form of uncertainty in markets that is independent of the market uncertainty of changing demand and supply conditions. This uncertainty is regulatory uncertainty, or incomplete information about future regulatory outcomes. There are many possible categories of regulatory uncertainty, but the three categories for transactional rules -- property, contract, and liability -- are convenient. Where market participants are unsure about current and future property rules, contract rules, and liability rules, not only will asset values fall but participants will be discouraged from transactions.

If the future outcomes of property rules, contract rules, and liability rules are believed to be random events, uninfluenced by any market participants, it is conceivable that regulatory uncertainty can be consistent with a competitive market. In practice, however, regulatory rules are the product of regulators who participate in spectrum markets often as sellers of spectrum, and always as intermediaries for all license transfers. Where sellers and intermediaries have the power to change regulatory rules, the competitive paradigm for regulatory uncertainty vanishes. Moreover, many other market participants actively lobby regulators, obviously in the belief that regulators can be persuaded one way or another. Again, where regulatory rules are influenced by market participants, regulatory uncertainty is inconsistent with the competitive paradigm.

As with market uncertainty, regulatory uncertainty affects the distribution of assets in a market. Many firms may simply avoid markets with substantial regulatory uncertainty. Unlike market uncertainty, it is difficult to insure against regulatory risk in one market with offsetting risk in another market. While some firms may believe they have the power to influence regulators, and therefore they may broaden their portfolio of assets subject to regulatory risks, other firms may view a portfolio of such assets as non-diversifiable risk.

#### FCC actions increase regulatory risk

The FCC has taken many actions that increase regulatory risk particularly by changing the property, contract, and liability rules that apply to licensees. These include consideration of and adoption of rules that limit the rights of licensees to exclude others from using or interfering with licensed spectrum. Examples include consideration of sharing of spectrum for DBS licensees, changing interference protection for FM radio broadcasters, absence of protection for WCS licensees, and forced relocation for certain licensees.

Although there are perhaps more examples of the FCC relaxing use restrictions, there are some examples where the Commission has considered and adopted more restrictive limitations on spectrum use. Examples include new public interest requirements on broadcasters.

Commission practice regarding license transfer transactions are also ever changing. (Formal rules rarely change because there are few formal written rules on license transfers.) Outside parties simply do not know how license transfers, whether simple or complex, will be treated at the agency.

Finally, liability rules for interference change. Most licensees are assigned a license that is defined by

geographic location, a spectral band, power limits, and other restrictions. While licenses sometimes delineate explicit protection from a small number of identifiable sources of interference, the FCC rarely makes explicit the interference protections to be afforded licensees from all other potential sources of interference. When legal but creeping interference increases in a band, liability rules implicitly are relaxed. When interference standards for broadcasters change or underlying noise levels for ultrawideband technology are modified, so too do associated liability rules and their enforcement.

Erosion of these property, contract, and liability rules ultimately increase regulatory risk, diminish the value of spectrum licenses, and discourage participation in spectrum markets. These adverse regulatory effects develop independent of the steps we take today to provide greater clarity for leasing of spectrum rights by licensees.

#### Frustration of parties with the FCC

Every business day, the FCC hears entreaties from many private parties concerning spectrum. Some want to acquire bundles of rights to spectrum. Some want to sell various rights associated with spectrum. Others want to facilitate (or to interfere with) the transfer of a spectrum license from one party to another. In the ordinary course of business for other commodities, buyers and sellers meet in markets, markets that may develop anywhere in America. For spectrum, all markets pass through the FCC in Washington.

Market transactions typically occur when all parties to the transaction are at least as well off as a result of the transaction. Buyers and sellers come to the FCC not because we make transactions less complex or more certain; they come here because, by law, they must. Buyers and sellers have some divergent interests, but, after their experiences at the FCC, all parties repeat common themes: (1) impatience with our process in which delays are the norm; (2) puzzlement at our complex rules and the unknown range of possible outcomes; (3) fear of the unknown likelihood of each unknown result; and (4) frustration at the absence of effective remedies for outcomes they perceive as unfavorable.

While the Commission today calls for a more active secondary spectrum market, it largely misses an opportunity to define the property, contract, and liability rights associated with a spectrum license. Absent a clear definition of the rights of its licensees, secondary markets cannot reach their full potential. Regulatory uncertainty is rampant at the FCC as evident by the types of questions regulated entities pose: What are the range of possible rights associated with a spectrum license? What is the likelihood associated with each outcome? Will the Commission change those rights unilaterally? What protections do licensees have from interference? What certainty do licensees have that the Commission will not seek to relocate them or ask them to share with other potentially interfering users? What remedies do licensees have for bad outcomes? How long will FCC proceedings last? The answer to each question seems to vary by proceeding.

Even more troubling is the Commission's reluctance to answer these questions at all. For example, there is reluctance to explain why we contemplate sharing arrangements in some bands of spectrum and not in others. Similarly, we refrain from defining interference protections because we want the "discretion" to alter those rules later on. Yet to the extent the Commission wants to continue to change, eliminate, or overrule its decisions about the scope of licensees' rights, the Commission must accept as a consequence of increased regulatory uncertainty that secondary markets will not flourish. Few want to buy something that cannot be defined. Licensees can only sell what they have – yet the FCC is reluctant to define exactly what "spectrum usage rights" these licensees have.

A Pig in a PokePig in a Poke

Much wisdom rests in an old country saying: “Don’t buy a pig in a poke.” Narrowly, the expression admonishes a potential buyer to have responsibility for diligence before purchasing a good or service. More broadly, the expression means that a person should not blindly enter into situations without having some knowledge of the possible outcomes, the likelihood of those outcomes, and any remedies that might be available for bad outcomes. Where the range of possible outcomes is unknown, the likelihood associated with any outcome is unknowable, and remedies for bad outcomes are unavailable, individuals should be wary.

One can look around America, in urban canyons and in country fairs, and still not find a market for a “pig in a poke.” It is not for the difficulty of supply; while difficult, putting a pig in a bag is not impossible. There is no market because no one wants to buy one, and it is consumer demand—not the ease of supply—that creates a market.

Few markets have products where the range of possible outcomes is unknown, the likelihood associated with any outcome is unknowable, and remedies for bad outcomes are unavailable. If there is such a pig-in-the-poke market, it is generally the market—and more particularly the secondary market—for spectrum rights and all of the regulatory uncertainty associated with it.

The Commission’s consensus goal of a vigorous secondary spectrum market will only be achieved if we are prepared to answer the difficult questions associated with clearly defining exactly what rights a spectrum license creates. The process will be difficult, but the resulting benefits make it our necessary course. Ultimately only through free market evolution will spectrum-based services ever keep pace with consumer demand and technological change. Thus defining spectrum usage rights is a challenge that we have no choice but to accept.

**STATEMENT OF COMMISSIONER GLORIA TRISTANI  
DISSENTING IN PART**

*Re: Principles for Promoting the Efficient Use of Spectrum by Encouraging the Development of Secondary Markets; Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets (adopted November 9, 2000)*

I support our action here to examine whether we can facilitate more efficient use of commercial and private wireless licensed spectrum by encouraging a secondary market in spectrum usage. I write separately, however, to dissent on the scope of our discussion in the *Policy Statement* and to highlight my keen interest in encouraging comments on certain issues raised in the Notice of Proposed Rulemaking (NPRM).

As an initial matter, the *Policy Statement* alludes to future consideration of secondary markets in spectrum dedicated to broadcast licenses, and I believe the item should have focused exclusively on spectrum used for commercial and private wireless services. Our action here stems in large part from last May's *Secondary Markets Public Forum*, which did not include any panelists from the broadcast industry or the public interest community and focused on commercial and private wireless spectrum. Any discussion of spectrum licensed for broadcast use must include the principles of localism and diversity. While the *Policy Statement* acknowledges public interest "considerations" in the broadcast context, the values of localism and diversity are at the core of broadcasters' public interest obligations and should not be subordinate to spectrum efficiency. These issues were not raised at the *Public Forum*, and the *Policy Statement* merely asserts that the Commission will accord such values "adequate weight in pursuing a secondary markets policy." I believe that we must engage with the broadcast industry and the public interest community before we hint at embarking on a secondary market campaign in the broadcast arena, and we must reflect on the importance of these values in any debate. I cannot support such discussion when we have not.

Nonetheless, I support the essence of these items as they explore how this agency can take steps to foster increased use of spectrum licensed for commercial and private wireless services, consistent with the Communications Act and sound public policy. It goes without saying that spectrum is an increasingly valuable public resource, and that spectrum management is a core function of this agency. In exercising this responsibility, exploring ways to encourage more intense use of this limited public resource serves the public interest. Secondary market transactions may be one opportunity to do just that.

A vision of secondary market transactions, however, raises several legal and policy issues. With regard to the NPRM, I intend to look closely at the comments regarding our obligation to review radio spectrum license transfers under section 310(d) of the Act. We are aware that some leasing arrangements are scuttled by regulatory uncertainty and others by the transactions cost of license transfer proceedings. Leasing arrangements without Commission approval, we are told, would tap the secondary market. To that end, what is the nature of our statutory obligation to review radio license transfers of control? How should we define control under section 310(d) for purposes of commercial and private wireless licenses? Are there considerations beyond ultimate responsibility for compliance with our rules that we must consider in the context of spectrum use and control of a license? I encourage interested parties to examine these issues thoroughly. We cannot ignore the obligations of the Act in the name of secondary markets.



The NPRM also seeks comment on the extent to which existing service rules applicable to licensees should extend to spectrum lessees. I believe the wisest course in this uncharted territory is to move deliberately, lest we find ourselves advancing secondary markets at the expense of the underlying purposes of our rules. More to the point, I am concerned that relaxation of our service rules, under the guise of furthering secondary markets, could invite opportunities to circumvent enforcement of our licensing responsibilities and public interest requirements. I am inclined to support a starting point where the lessee “stands in the shoes” of the licensee, agreeing to all interference and service rules that attach to the licensee. Certainly, there are circumstances that warrant relief from the service rules, and I encourage commenters to explore where we should grant such relief.

Ultimately, my goal is to find a balance that will foster secondary markets without undermining our obligations under the Communications Act or our policies to promote the public interest. I hope that this *Policy Statement* and the NPRM offer tangible steps, and I look forward to reviewing the record.