

within the now-superseded categories of “Paging” and “Cellular and Other Wireless Telecommunications.”¹⁶ Under the present and prior categories, the SBA has deemed a wireless business to be small if it has 1,500 or fewer employees.¹⁷ Because Census Bureau data are not yet available for the new category, we will estimate small business prevalence using the prior categories and associated data. For the category of Paging, data for 2002 show that there were 807 firms that operated for the entire year.¹⁸ Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more.¹⁹ For the category of Cellular and Other Wireless Telecommunications, data for 2002 show that there were 1,397 firms that operated for the entire year.²⁰ Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.²¹ Thus, we estimate that the majority of wireless firms are small.

Fixed Microwave Services. Fixed microwave services include common carrier,²² private operational-fixed,²³ and broadcast auxiliary radio services.²⁴ At present, there are approximately 22,015 common carrier fixed licensees and 61,670 private operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services. The Commission has not created a size standard for a small business specifically with respect to fixed microwave services. For purposes of this analysis, the Commission uses the SBA small business size standard for the category Wireless Telecommunications Carriers (except Satellite), which is 1,500 or fewer employees.²⁵ The Commission does not have data specifying the number of these licensees that have no more than 1,500 employees, and thus are unable at this time to estimate with greater precision the number of fixed microwave service licensees that would qualify as small business concerns under the SBA’s small business size standard. Consequently, the Commission

¹⁶ U.S. Census Bureau, 2002 NAICS Definitions, “517211 Paging”; <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>; U.S. Census Bureau, 2002 NAICS Definitions, “517212 Cellular and Other Wireless Telecommunications”; <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>.

¹⁷ See 13 C.F.R. § 121.201, NAICS code 517210 (2007 NAICS). The now-superseded, pre-2007 C.F.R. citations were 13 C.F.R. § 121.201, NAICS codes 517211 and 517212 (referring to the 2002 NAICS).

¹⁸ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, “Establishment and Firm Size (Including Legal Form of Organization,” Table 5, NAICS code 517211 (issued Nov. 2005).

¹⁹ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with “1000 employees or more.”

²⁰ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, “Establishment and Firm Size (Including Legal Form of Organization,” Table 5, NAICS code 517212 (issued Nov. 2005).

²¹ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with “1000 employees or more.”

²² See 47 C.F.R. §§ 101 *et seq.* for common carrier fixed microwave services (except Multipoint Distribution Service).

²³ Persons eligible under parts 80 and 90 of the Commission’s Rules can use Private Operational-Fixed Microwave services. See 47 C.F.R. Parts 80 and 90. Stations in this service are called operational-fixed to distinguish them from common carrier and public fixed stations. Only the licensee may use the operational-fixed station, and only for communications related to the licensee’s commercial, industrial, or safety operations.

²⁴ Auxiliary Microwave Service is governed by Part 74 of Title 47 of the Commission’s Rules. See 47 C.F.R. Part 74. This service is available to licensees of broadcast stations and to broadcast and cable network entities. Broadcast auxiliary microwave stations are used for relaying broadcast television signals from the studio to the transmitter, or between two points such as a main studio and an auxiliary studio. The service also includes mobile television pickups, which relay signals from a remote location back to the studio.

²⁵ See 13 C.F.R. § 121.201, NAICS code 517210.

estimates that there are 22,015 or fewer common carrier fixed licensees and 61,670 or fewer private operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services that may be small and may be affected by the rules and policies proposed herein. We note, however, that the common carrier microwave fixed licensee category includes some large entities.

Unlicensed Personal Communications Services. As its name indicates, UPCS is not a licensed service. UPCS consists of intentional radiators operating in the frequency bands 1920-1930 MHz and 2390-2400 MHz that provide a wide array of mobile and ancillary fixed communication services to individuals and businesses. The NPRM potentially affects UPCS operations in the 1920-1930 MHz band; operations in those frequencies are given flexibility to deploy both voice and data-based services. There is no accurate source for the number of operators in the UPCS. Since 2007, the Census Bureau has placed wireless firms within the new, broad, economic census category Wireless Telecommunications Carriers (except Satellite).²⁶ Prior to that time, such firms were within the now-superseded category of "Paging" and "Cellular and Other Wireless Telecommunications."²⁷ Under the present and prior categories, the SBA has deemed a wireless business to be small if it has 1,500 or fewer employees.²⁸ Because Census Bureau data are not yet available for the new category, we will estimate small business prevalence using the prior categories and associated data. For the category of Paging, data for 2002 show that there were 807 firms that operated for the entire year.²⁹ Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more.³⁰ For the category of Cellular and Other Wireless Telecommunications, data for 2002 show that there were 1,397 firms that operated for the entire year.³¹ Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.³² Thus, we estimate that the majority of wireless firms are small.

Aviation and Marine Radio Services. There are approximately 26,162 aviation, 34,555 marine (ship), and 3,296 marine (coast) licensees.³³ The Commission has not developed a small business size standard specifically applicable to all licensees. For purposes of this analysis, we will use the SBA small business size standard for the category Wireless Telecommunications Carriers (except Satellite), which is 1,500 or

²⁶ U.S. Census Bureau, 2007 NAICS Definitions, "517210 Wireless Telecommunications Categories (Except Satellite)"; <http://www.census.gov/naics/2007/def/ND517210.HTM#N517210>.

²⁷ U.S. Census Bureau, 2002 NAICS Definitions, "517211 Paging"; <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>; U.S. Census Bureau, 2002 NAICS Definitions, "517212 Cellular and Other Wireless Telecommunications"; <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>.

²⁸ See 13 C.F.R. § 121.201, NAICS code 517210 (2007 NAICS). The now-superseded, pre-2007 C.F.R. citations were 13 C.F.R. § 121.201, NAICS codes 517211 and 517212 (referring to the 2002 NAICS).

²⁹ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 5, NAICS code 517211 (issued Nov. 2005).

³⁰ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with "1000 employees or more."

³¹ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 5, NAICS code 517212 (issued Nov. 2005).

³² *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with "1000 employees or more."

³³ Vessels that are not required by law to carry a radio and do not make international voyages or communications are not required to obtain an individual license. See Amendment of Parts 80 and 87 of the Commission's Rules to Permit Operation of Certain Domestic Ship and Aircraft Radio Stations Without Individual Licenses, *Report and Order*, WT Docket No. 96-82, 11 FCC Rcd 14849 (1996).

fewer employees.³⁴ We are unable to determine how many of those licensed fall under this standard. For purposes of our evaluations in this analysis, we estimate that there are up to approximately 62,969 licensees that are small businesses under the SBA standard.³⁵ In 1998, the Commission held an auction of 42 VHF Public Coast licenses in the 157.1875-157.4500 MHz (ship transmit) and 161.775-162.0125 MHz (coast transmit) bands. For this auction, the Commission defined a “small” business as an entity that, together with controlling interests and affiliates, has average gross revenues for the preceding three years not to exceed \$15 million dollars. In addition, a “very small” business is one that, together with controlling interests and affiliates, has average gross revenues for the preceding three years not to exceed \$3 million dollars.³⁶ Further, the Commission made available Automated Maritime Telecommunications System (“AMTS”) licenses in Auctions 57 and 61.³⁷ Winning bidders could claim status as a very small business or a very small business. A very small business for this service is defined as an entity with attributed average annual gross revenues that do not exceed \$3 million for the preceding three years, and a small business is defined as an entity with attributed average annual gross revenues of more than \$3 million but less than \$15 million for the preceding three years.³⁸ Three of the winning bidders in Auction 57 qualified as small or very small businesses, while three winning entities in Auction 61 qualified as very small businesses.

Public Safety Radio Services. Public Safety radio services include police, fire, local government, forestry conservation, highway maintenance, and emergency medical services.³⁹ There are a total of approximately 127,540 licensees in these services. Governmental entities⁴⁰ as well as private businesses

³⁴ See 13 C.F.R. § 121.201, NAICS code 517210.

³⁵ A licensee may have a license in more than one category.

³⁶ *Amendment of the Commission's Rules Concerning Maritime Communications*, PR Docket No. 92-257, Third Report and Order and Memorandum Opinion and Order, 13 FCC Rcd 19853 (1998).

³⁷ See “*Automated Maritime Telecommunications System Spectrum Auction Scheduled for September 15, 2004, Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments and Other Auction Procedures*,” Public Notice, 19 FCC Rcd 9518 (WTB 2004); “*Auction of Automated Maritime Telecommunications System Licenses Scheduled for August 3, 2005, Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments and Other Auction Procedures for Auction No. 61*,” Public Notice, 20 FCC Rcd 7811 (WTB 2005).

³⁸ See 47 C.F.R. § 80.1252.

³⁹ With the exception of the special emergency service, these services are governed by Subpart B of part 90 of the Commission’s Rules, 47 C.F.R. §§ 90.15-90.27. The police service includes approximately 27,000 licensees that serve state, county, and municipal enforcement through telephony (voice), telegraphy (code) and teletype and facsimile (printed material). The fire radio service includes approximately 23,000 licensees comprised of private volunteer or professional fire companies as well as units under governmental control. The local government service that is presently comprised of approximately 41,000 licensees that are state, county, or municipal entities that use the radio for official purposes not covered by other public safety services. There are approximately 7,000 licensees within the forestry service which is comprised of licensees from state departments of conservation and private forest organizations who set up communications networks among fire lookout towers and ground crews. The approximately 9,000 state and local governments are licensed to highway maintenance service provide emergency and routine communications to aid other public safety services to keep main roads safe for vehicular traffic. The approximately 1,000 licensees in the Emergency Medical Radio Service (“EMRS”) use the 39 channels allocated to this service for emergency medical service communications related to the delivery of emergency medical treatment. 47 C.F.R. §§ 90.15-90.27. The approximately 20,000 licensees in the special emergency service include medical services, rescue organizations, veterinarians, handicapped persons, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities, and emergency repair of public communications facilities. 47 C.F.R. §§ 90.33-90.55.

⁴⁰ See 47 C.F.R. § 1.1162.

comprise the licensees for these services. All governmental entities with populations of less than 50,000 fall within the definition of a small entity.⁴¹ The small private businesses fall within the “wireless” category described *supra*.

D. Description of Projected Reporting, Recordkeeping and Other Compliance Requirement for Small Entities.

The Notice of Proposed Rulemaking proposes to create a new type of experimental radio license, the program experimental radio license, which will permit qualified institutions to conduct an ongoing program of research and experimentation that would otherwise require the issuance of multiple individual experimental radio license authorizations under our existing rules. We have proposed new license application rules for these licenses, and program experimental radio licensees would have new requirements to file notification of planned experiments to be conducted under the license, resolve interference concerns that are raised by other licensees, and file post-experiment reports with the Commission. The Notice of Proposed Rulemaking also proposes to consolidate, clarify and streamline existing rules to facilitate experimentation in the radio spectrum. These proposed rules will, for example, permit entities to engage in additional marketing activities, but will more clearly specify when and how such marketing may take place, and what authorization is needed to operate radiofrequency equipment in conjunction with marketing activities. We project that by creating a new license type and by revising our existing rules, the proposed rules will serve to reduce the reporting, recordkeeping and other compliance requirements associated with the issuance of an experimental radio license.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered.

The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.⁴²

We encourage comment regarding the possible alternatives to the approaches proposed, including any cost estimates. For instance, we note that we have considered and tentatively declined HP’s recommendation to implement a quarterly tracking system.⁴³ Comments with proposed alternatives will assist in reaching the best outcomes.

F. Federal Rules that Might Duplicate, Overlap, or Conflict with the Proposed Rules.

None.

⁴¹ See 5 U.S.C. § 601(5).

⁴² See 5 U.S.C. § 603(c).

⁴³ See Notice of Proposed Rulemaking at para. 71.

**STATEMENT OF
CHAIRMAN JULIUS GENACHOWSKI**

Re: *Promoting More Efficient Use of Spectrum Through Dynamic Spectrum Use Technologies*, ET Docket No. 10-237, Notice of Inquiry; *Promoting Expanded Opportunities for Radio Experimentation and Market Studies under Part 5 of the Commission's Rules and Streamlining Other Related Rules*, ET Docket No. 10-236, *2006 Biennial Review of Telecommunications Regulations—Part 2 Administered by the Office of Engineering and Technology (OET)*, ET Docket No. 06-105, Notice of Proposed Rulemaking.

With these two items, we build on our efforts to use spectrum more efficiently and in ways that deliver the highest value for the American people, and to encourage groundbreaking innovation.

Earlier this year we took steps to unleash spectrum capacity for flexible use, including mobile broadband. We freed up 25 MHz of WCS spectrum, and are tackling 90 MHz in the mobile satellite service band. For the first time in 25 years, we freed up spectrum below 5 GHz for unlicensed use, launching a new platform for innovation that we hope will lead to new services and products as significant as Wi-Fi.

Super Wi-Fi – one of the applications we expect to see from the newly released white spaces spectrum – has been helped and accelerated by FCC experimental licenses. So have new potentially life-saving anti-collision systems in cars. You may have seen the TV ads – this technology requires spectrum, and it was developed using an FCC experimental license. Experimental licensing has also led to important life-saving medical devices.

I'm pleased that today we take steps to improve and expand our experimental licensing program. We are proposing, for example, to ease testing restrictions on universities, research organizations, and other institutions that are developing new services and devices that utilize spectrum. We also propose Innovation Zone licenses, and a new program to speed development of new health related devices that use spectrum – an increasingly exciting area for investment and innovation and for improving health care and reducing costs.

The goal is to accelerate innovation – to reduce the time for an idea to get from the lab to the market. A more extensive experimental licensing program would also help the FCC make smarter, faster decisions, by giving us on-the-ground intelligence on interference issues, and insight into the development of new cutting edge technologies.

Encouraging research and development is vital to our objective of making the U.S. the spawning ground for the great technological advances of tomorrow. Past advances in technology, such as cellular networks and improvements in digital transmission techniques have led to vastly improved efficiency in spectrum use.

Consistent with our focus on maximizing the efficient use of spectrum, we are also beginning today an inquiry on how we can spur new technologies that share spectrum dynamically. Today, spectrum that is allocated can sit idle during time periods when the primary licensee is not using the airwaves. Same for geographic locations. This doesn't make sense given the growing demands on spectrum.

My goal is for these proceedings to be a vehicle for identifying steps we can take to unleash and accelerate new spectrally-efficiency policies and technologies. I'm interested in ideas, for example, to jumpstart secondary markets for dynamic spectrum access. I'm interested in how we can encourage

better information on spectrum use, building on our innovative spectrum dashboard, and concretely facilitating opportunistic or auxiliary spectrum uses.

Historically, the U.S. has led the world in spectrum policy innovation. Auctions of licensed spectrum and release of unlicensed spectrum are two key examples of groundbreaking spectrum policy innovation. I believe incentive auctions are a third.

I'd like to set a goal for these proceedings: that it leads to yet another historically significant spectrum policy innovation. I'd like to call for broad participation to meet that goal.

I don't assume that the spectrum management models and policies used today are those that will make the most sense tomorrow, especially given rapidly evolving technologies – both involving dynamic information-based markets and evolving spectrum sensing devices.

I think the opportunity here is not only for the development of new spectrum efficient policies – as important as that is – but also for the development of new spectrally-efficient technologies and products, which we would like to see developed and perfected here in the United States.

The spectrum proceedings today are all vital parts of ensuring that the U.S. leads the world in mobile in the 21st century – promoting economic growth, job creation, and our global competitiveness.

I'd like to thank the staff of the Office of Engineering and Technology, the Wireless Bureau, the Media Bureau, and the Office of General Counsel for their hard work on this item. I'd also like to thank our tireless CTO Doug Sicker for thinking outside the box and working both within the agency and with outside stakeholders to develop two outstanding items.

**STATEMENT OF
COMMISSIONER MICHAEL J. COPPS**

Re: *Promoting More Efficient Use of Spectrum Through Dynamic Spectrum Use Technologies*, ET Docket No. 10-237, Notice of Inquiry; *Promoting Expanded Opportunities for Radio Experimentation and Market Studies under Part 5 of the Commission's Rules and Streamlining Other Related Rules*, ET Docket No. 10-236, *2006 Biennial Review of Telecommunications Regulations—Part 2 Administered by the Office of Engineering and Technology (OET)*, ET Docket No. 06-105, Notice of Proposed Rulemaking.

Today we launch two important proceedings aimed at maximizing the power and opportunity of our public spectrum resource. The demand for spectrum, as we all know, has never been greater. Unfortunately the laws of physics prevent us from being able to create more of this finite resource. That said, even as we look to free up existing spectrum to meet the needs for wireless broadband, we can and should explore ways to make more dynamic and opportunistic use of the spectrum we have. Given the technology breakthroughs I have witnessed over nearly a decade here at the Commission, I am a strong believer in the creative power of spectrum engineers and innovators—both inside and outside the agency—to help us use our spectrum resource more intensively and efficiently. We need hear from these experts as we move forward with our Notice of Inquiry—making sure we have a complete picture of the dynamic spectrum access tools available and doing what we can do to encourage their development and use.

We also propose today much-needed improvements to our system for spectrum experimentation in a separate Notice of Proposed Rulemaking. Many of you have heard my not infrequent exhortations on the need to do more to encourage research and development in this country in order to ensure America's going-forward global competitiveness. Today we make concrete proposals that do just that. We propose to broaden experimental research authorizations for qualified academic and research institutions to afford them greater opportunities to design and implement experiments without the burdens of getting pre-approval each and every time. In a similar vein, we seek to create innovation zones for experimentation that would allow innovators greater flexibility to conduct and modify their spectrum experiments. Nowhere is the potential for RF innovation more exciting than in the area of promoting advances in health care technology—whether restoring mobility to paralyzed limbs or creating advanced body sensor networks. We therefore propose to create a new medical experimental program for hospitals and other healthcare institutions, supervised in conjunction with the U.S. Food and Drug Administration.

Over the years, our Experimental Radio Service program has been a tool that innovators have used to test new and exciting services, many of which we now take for granted. The improvements we propose today look to build upon that success.

Thank you to Julie Knapp and his truly excellent team in the Office of Engineering and Technology, as well as to Ruth Milkman and her impressive Wireless Telecommunications Bureau, for bringing these items to us. I look forward to working with them, as well as my distinguished colleagues, to bring these proceedings to sound and expeditious resolution. The country can reap solid benefits from such action and help us regain competitiveness—and that means jobs—in the global economy.

**STATEMENT OF
COMMISSIONER ROBERT M. MCDOWELL**

Re: *Promoting More Efficient Use of Spectrum Through Dynamic Spectrum Use Technologies*, ET Docket No. 10-237, Notice of Inquiry; *Promoting Expanded Opportunities for Radio Experimentation and Market Studies under Part 5 of the Commission's Rules and Streamlining Other Related Rules*, ET Docket No. 10-236, *2006 Biennial Review of Telecommunications Regulations—Part 2 Administered by the Office of Engineering and Technology (OET)*, ET Docket No. 06-105, Notice of Proposed Rulemaking.

I am delighted to support both of these actions, and I thank our talented and hard-working Office of Engineering and Technology and Wireless Telecommunications Bureau teams for your diligence and creativity. The American wireless marketplace is dynamic and explosive; it is a world leader in innovation and competition. And it certainly offers one of the brightest rays of growth and opportunity in the American economy.

Given this context, I am pleased that we are starting to do the heavy lifting today – to undertake longer term spectrum planning. As always, I look forward to working with Chairman Genachowski, and all of my colleagues here, to begin the process of putting more spectrum into the hands of consumers.

The notice of proposed rulemaking seeks comment on new ideas to promote innovation and efficiency in spectrum use in our Part 5 Experimental Radio Service (ERS) rules. Our ERS program is a wonderful example of success as evidenced by the variety of new technologies begun as experiments and subsequently deployed as valuable services relied upon by American consumers every day. These successes include: the Personal Communications Service, air-to-ground communications, and new life-changing medical devices, to name just a few.

As an overarching matter, I hope our updated rules will adhere to the Commission's more recent "flexible use" policy. Old style "command and control" (read: prescriptive) rules not only hamper creative entrepreneurs who are in the best position to understand and satisfy consumer demands, they cause spectral inefficiencies as well.

With respect to our notice of inquiry regarding ways to encourage dynamic spectrum use, I have long emphasized that spectral efficiency, and seeking new ideas for dynamic uses, when it comes to undertaking longer term spectrum planning, are crucial in light of the realities that are shaping America's wireless future. In practical terms, even if we could identify 500 megahertz of quality spectrum to reallocate today, the better part of a decade would pass by before we could write proposed auction rules and band plans, analyze public comment, adopt rules, hold an auction, collect the proceeds, clear the bands, and watch carriers build out and turn on their networks for their customers. So, in the meantime, helping innovators create and deploy new technologies to enhance more efficient use of the airwaves has to be a top priority for all of us.

While we sort through the complex issues associated with freeing up more spectrum for the longer term, I look forward to learning more about technologies that will allow wireless providers to take better advantage of the immediate fixes already available in the marketplace. These include more robust deployment of enhanced antenna systems; improved development, testing and roll-out of creative technologies such as cognitive radios; and heightened consideration of the use of femto cells. Each of these technological options augments capacity and coverage, which is especially important for data and multimedia transmissions.

We are at the very beginning of what will surely be a lengthy process. I look forward to giving these and other issues the careful and thoughtful consideration that they deserve.

**STATEMENT OF
COMMISSIONER MIGNON L. CLYBURN**

Re: *Promoting More Efficient Use of Spectrum Through Dynamic Spectrum Use Technologies*, ET Docket No. 10-237, Notice of Inquiry; *Promoting Expanded Opportunities for Radio Experimentation and Market Studies under Part 5 of the Commission's Rules and Streamlining Other Related Rules*, ET Docket No. 10-236, *2006 Biennial Review of Telecommunications Regulations—Part 2 Administered by the Office of Engineering and Technology (OET)*, ET Docket No. 06-105, Notice of Proposed Rulemaking.

I commend the Chairman for his leadership in promoting the policies put forth in these companion items. If our Nation wants to more effectively compete, we must encourage greater research and development and more efficient spectrum use. Such R&D is not only necessary for the advancement of monumental communication innovations, such as the Internet and the World Wide Web, but it is also critically important to the success of individual businesses and to our overall National economy. A White House study, conducted in September 2009, found that research and development is one of the most important pillars in building a foundation for an economy that could create jobs and drive sustainable growth.

All of the initiatives in the experimental license NPRM encourage greater R&D, which will enable individual entities to do more with their experimental authorizations, facilitate collaboration among industry and academics, and streamline rules. The two initiatives I find particularly noteworthy are the research and medical program experimental radio licenses.

Universities and non-profit research institutions have proven they deserve the enhanced experimental authorizations, reduced oversight, and streamlined application process that the research program license would give. For example, using experimental licenses, research institutions have not only developed ultra-fast, 1 Gigabit per second, research and education broadband networks, but they have also demonstrated public service leadership by advocating that we help connect these networks to anchor institutions in low-income communities.

This recommendation can lead to important short-term and long-term economic benefits. Community connection projects are, by their nature, job intensive, so connecting these research and education networks to low-income communities, can lead to immediate job creation and investment opportunities. For instance, Rutgers University reports, that the Global Environment for Network Innovations (GENI) project, which involves 29 universities, has created hundreds of jobs in New Jersey alone.

The National Broadband Plan also explained how Case Western University's project to connect its ultra fast, 1 Gigabit per second network to homes, schools, libraries and museums in a low-income community in Cleveland, Ohio, is creating jobs. This project is also leading to software and service development for environmental efficiency, health, and many other applications. These are just a few examples of why we should do as much as we can, as quickly as we can, to encourage universities and research institutions to engage in more research and development of communications technologies.

Designing the medical program experimental authorization to promote more test bed facilities for new wireless medical devices could speed the development of important achievements in health care. I thank the Food and Drug Administration and the American Society for Healthcare Engineering for collaborating with us on this initiative. The item encourages researchers and physicians to work with Veterans Affairs facilities and military services, early in the development of these new devices, I am pleased to see. Our Wounded Warriors have made great sacrifices in defense of our Nation, and we owe

it to them to create an environment that can lead to faster medical breakthroughs, and help them make the best of their return to civilian life.

The medical program experimental license could also accelerate innovations in telemedicine to further empower both doctors and patients. Advances in video technology and medical broadband applications are allowing physicians to collaborate with their colleagues across the globe, in real time, on difficult cases. For those suffering from long term and chronic illnesses, remote patient monitoring offers greater mobility and independence. Our agency should continue to promote technologies and policies that will give those, in greatest need of medical care, more flexibility in finding the right treatment for them.

The scholarship in today's *Notice of Inquiry* on dynamic spectrum use technologies also sends the proper message that we must encourage more efficient use of spectrum. The *Notice* recognizes that, to best advance these technologies, the Commission must have a clear understanding of how the various parts of the spectrum are being used today. The item then asks detailed technical questions to ensure that we have a comprehensive record on the latest developments in dynamic spectrum technologies. In promoting flexible use policies – such as the leasing of licensed spectrum through the secondary market – the *Notice* presents a cogent analysis of the possible techniques our policies already permit.

I thank Doug Sicker, Julie Knapp, and the other technology evangelists in the Office of Engineering and Technology, the Office of General Counsel, and the Wireless Telecommunications Bureau, for their hard work on these items.

**STATEMENT OF
COMMISSIONER MEREDITH ATTWELL BAKER**

Re: *Promoting More Efficient Use of Spectrum Through Dynamic Spectrum Use Technologies*, ET Docket No. 10-237, Notice of Inquiry; *Promoting Expanded Opportunities for Radio Experimentation and Market Studies under Part 5 of the Commission's Rules and Streamlining Other Related Rules*, ET Docket No. 10-236, *2006 Biennial Review of Telecommunications Regulations—Part 2 Administered by the Office of Engineering and Technology (OET)*, ET Docket No. 06-105, Notice of Proposed Rulemaking.

This holiday season kicks off a new cycle of fundamental change in the wireless device market. Consumers everywhere are choosing powerful new smartphones. Gartner reports that worldwide smartphone sales grew 96 percent from the third quarter last year, and SNL Kagan projects smartphones accounting for 30 percent of overall mobile phone subscriptions by the fourth quarter of 2010 in the US. Moreover, tablets that use hundreds of times more data than even the most advanced smart phones may well be the stars of this year's giving season. In fact, yesterday's *Wall Street Journal* cites a recent ChangeWave Research survey that found that 9% of holiday shoppers plan to buy an iPad in the next 90 days. I have little doubt that whether smartphone or tablet, these devices will challenge networks as much as they will delight their owners.

I am convinced that our efforts to find additional spectrum to power these devices—and all those that are going to follow—constitute only half the battle to meet the dramatically exploding needs of this country's wireless consumers. We must also promote greater innovation to help use the spectrum we have today—and the spectrum we will allocate tomorrow—as efficiently as possible. The two items we are considering today are a good place to start. In fact, the innovation they will support may well provide the tools we will need to unlock the full potential of the TV broadcast bands.

I am excited about today's item expanding opportunities for radio experimentation. I am a firm believer that we need to support research and development efforts whenever and however we can. Making it easier and more straightforward to conduct real-world research is a natural and straightforward step that we can take. Our action today offers practical support to our nation's inventors by enhancing their ability to test their theories and innovations and streamlining the procedures they must follow to do so. This should help shorten the innovation cycle, which will benefit consumers and operators across the country by reducing the time it will take to get new devices to the market. It will also help maintain our country's leadership in the development of wireless technologies, applications and services.

Dynamic spectrum access is thought by many to be a key technical advance that can substantially improve the way spectrum is used for both commercial and non-commercial services. It is an area where the Department of Defense has shown great leadership and innovation over the years. However, it has proven difficult to apply their research and development in the area of dynamic spectrum access to commercial radio systems. Technical issues have been too complex and costs have been too high.

It is my hope that in issuing the NOI on dynamic spectrum access, we can focus our collective attention on what it will take to overcome these challenges. If we are successful, dynamic spectrum access technologies could become one of the go-to tools operators rely upon to more efficiently manage their commercial spectrum resources. Coupled with an enhanced Spectrum Dashboard and potentially other ways to get information about available spectrum to prospective users, dynamic spectrum access might foster secondary markets for short term, "spot" spectrum transactions—another potentially useful way to manage congestion.

I want to thank the staff for their hard work, which I hope did not include too much time over the Thanksgiving weekend.