

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)
)
Federal Communications Commission Seeks) ET Docket No. 06-89
Public Comment on Creation of a Spectrum)
Sharing Innovation Test-Bed)

To: The Commission

COMMENTS OF CTIA – THE WIRELESS ASSOCIATION[®]

CTIA – The Wireless Association[®] (“CTIA”)¹ respectfully submits these comments in response to the Commission’s public notice regarding a Spectrum Sharing Innovation Test-Bed (“Test Bed”), to be administered jointly with the National Telecommunications and Information Administration (“NTIA”) in accordance with the President’s Spectrum Policy Initiative.² CTIA welcomes the opportunity to provide comments on this innovative Government pilot program.³ For years, mobile wireless service providers have operated at the forefront of spectrum efficiency, and CTIA applauds the Government’s initiative to explore ways “to promote more efficient and beneficial use” of spectrum, particularly with respect to federal spectrum use.

¹ CTIA – The Wireless Association[®] (formerly known as the Cellular Telecommunications & Internet Association) is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization covers Commercial Mobile Radio Service (“CMRS”) providers and manufacturers, including cellular, broadband PCS, and ESMR, as well as providers and manufacturers of wireless data services and products.

² *Public Notice*, Federal Communications Commission Seeks Public Comment on Creation of a Spectrum Sharing Innovation Test-Bed, FCC 06-77, ET Docket No. 06-89 (rel. June 8, 2006) (“*Public Notice*”).

³ CTIA is also filing comments that are substantively similar in response to the NTIA Test Bed Notice of Inquiry. *See Notice of Inquiry*, The President’s Spectrum Policy Initiative Spectrum Sharing Innovation Test-Bed, Docket No. 060602142-6142-01, 71 Fed. Reg. 33,282 (June 8, 2006).

I. INTRODUCTION

In his 2003 *Presidential Memorandum on Spectrum Policy*, President Bush identified spectrum as “a vital and limited national resource” and expressed concern that “[t]he existing legal and policy framework for spectrum management has not kept pace with the dramatic changes in technology and spectrum use.”⁴ The President established the Spectrum Policy Initiative and identified its key mission and goals:

The Initiative shall undertake a comprehensive review of spectrum management policies . . . with the objective of identifying recommendations for revising policies and procedures to promote more efficient and beneficial use of spectrum without harmful interference to incumbent users.⁵

As part of the Spectrum Policy Initiative, the Department of Commerce convened a wide array of stakeholders and issued two reports, one developed in consultation with a Federal Government Spectrum Task Force and another prepared with input from state, local and private spectrum users.⁶ The reports contain numerous recommendations, and NTIA subsequently issued a plan to implement key recommendations, including the establishment of a Test Bed to be administered jointly by the FCC and NTIA “for shared federal and non-federal use.”⁷

⁴ *Presidential Memorandum for the Heads of Executive Departments and Agencies on Spectrum Policy for the 21st Century*, 39 Weekly Comp. Pres. Doc. 726, 727 (May 29, 2003), 69 Fed. Reg. 1568 (Jan. 9, 2004).

⁵ *Id.* at § 2.

⁶ NTIA, U.S. Dep’t of Commerce, *Spectrum Policy for the 21st Century – The President’s Spectrum Policy Initiative: Report 1, Recommendations of the Federal Government Spectrum Task Force* (June 2004) (“*Report 1*”), available at http://www.ntia.doc.gov/reports/specpolini/presspecpolini_report1_06242004.htm; NTIA, U.S. Dep’t of Commerce, *Spectrum Policy for the 21st Century – The President’s Spectrum Policy Initiative: Report 2, Recommendations from State and Local Governments and Private Sector Responders* (June 2004) (“*Report 2*”), available at http://www.ntia.doc.gov/reports/specpolini/presspecpolini_report2_06242004.htm.

⁷ NTIA, U.S. Dep’t of Commerce, *Spectrum Management for the 21st Century – Plan to Implement Recommendations of The President’s Spectrum Policy Initiative*, at 18, available at <http://www.ntia.doc.gov/osmhome/reports/ImplementationPlan2006.htm>.

With this *Public Notice*, the Commission requests “comments and information on a Test-Bed program to study the feasibility of increasing the efficient use of spectrum that is shared between federal and non-federal users.”⁸ CTIA supports the Spectrum Policy Initiative and in particular the Government’s interest in improved spectrum efficiency in federal spectrum and in non-federal spectrum as well.

II. THE GOVERNMENT’S GOALS SHOULD FOCUS ON MORE EFFICIENT USE OF SPECTRUM

The Commission’s *Public Notice* rightfully begins by stating, “Demand for spectrum by federal and non-federal users has been increasing and this trend is expected to continue as new and enhanced services and applications and new requirements are identified and developed.”⁹ In light of this dramatic growth, the *Public Notice* states the Commission and NTIA “seek to evaluate innovative methods for spectrum sharing among disparate users to enable more intensive use of the finite radio spectrum.”¹⁰ CTIA supports efforts to improve the efficient use of the radio frequency spectrum; indeed, time and again CTIA has emphasized that efficient use of spectrum must be a core component of any spectrum management plan.¹¹ As explained further below, while some spectrum users already have incentives to maximize spectral efficiencies – and have made significant capital investments to evolve their technologies in new and more spectrally efficient ways – other spectrum users do not. In circumstances where market incentives do not operate, policy initiatives like the Test Bed may serve an especially important function.

⁸ *Public Notice* at 2.

⁹ *Public Notice* at 1.

¹⁰ *Id.*

¹¹ See e.g., Comments of the Cellular Telecommunications & Internet Association, ET Docket No. 02-135 (Jan. 27, 2003) (promoting efficiency and concurring with the Spectrum Policy Task Force recommendation to build a cost-benefit analysis into future allocations).

In the U.S. mobile wireless market, providers are subject to intense competition and economic pressures and have market incentives to deploy state-of-the-art technologies that maximize the efficiency of their available spectrum, before devoting additional capital to acquire new spectrum. Indeed, since CTIA began collecting data in 1985, the mobile wireless industry has invested nearly \$200 billion in capital expenditures, including more than \$25 billion spent in 2005.¹² With these investments, U.S. mobile wireless providers have achieved dramatic increases in spectrum efficiencies necessary to keep pace with the tremendous growth in wireless subscribership and minutes of use. As of year-end 2005, there were nearly 208 million subscribers in the United States – more than one million subscribers per megahertz of spectrum licensed for CMRS.¹³ Wireless customers accessed 1.5 trillion minutes of use in 2005, up 36 percent from 2004.¹⁴ The mobile industry has been able to adapt, to innovate, and to introduce greater spectrum efficiencies in large part because of Commission policies which created strong incentives to invest in modern technologies – policies characterized by flexible use and defined rights, including but not limited to interference protection rights. With these principles in mind, the President’s Spectrum Policy Initiative and the Test Bed pilot program offer an opportunity to explore new technologies and models of service for Government and industry alike.

CTIA firmly believes that the Government should create opportunities to examine ways to enhance efficient use of spectrum. In particular, there is significant utility in considering ways to encourage more efficient use of federal spectrum – as well as non-federal use that is not

¹² See CTIA Wireless Quick Facts (April 2006), available at http://files.ctia.org/pdf/Wireless_Quick_Facts_April_06.pdf.

¹³ See *id.* The United States currently has licensed approximately 180 MHz of spectrum designated for CMRS operations, namely 120 MHz of broadband PCS spectrum, 50 MHz of cellular spectrum, and 10 MHz of attributable ESMR spectrum. See *2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services*, Notice of Proposed Rulemaking, 16 FCC Rcd 2763 (2001).

¹⁴ See CTIA Wireless Quick Facts.

subject to the market incentives that drive spectrum efficiency, such as spectrum auctions. The Spectrum Policy Initiative's *Report I* provided recommendations derived from the Federal Government Spectrum Task Force and specifically addressed the issue of spectrum efficiency and federal spectrum use:

Although NTIA's spectrum management processes stress efficient and effective use of the spectrum . . . [i]t trusts each agency to ensure that their systems are the most spectrum efficient practicable. NTIA conducts general reviews of new systems and reviews agency performance in the normal frequency assignment coordination process. However, NTIA has generally left to agencies decisions regarding whether a system uses spectrum appropriately or whether needs can be satisfied using a commercial service or a non-spectrum technology."¹⁵

A 2004 General Accounting Office report, referenced in *Report I*, also observed, "The lack of economic consequence associated with the manner in which spectrum is used has also provided little incentive to agencies to pursue opportunities proactively to develop and use technologies that would improve spectrum efficiency governmentwide."¹⁶

Clearly, significant opportunity exists to examine new technologies and service models that can improve spectrum efficiency in federal spectrum. NTIA is engaged in several initiatives to gauge federal spectrum use and improve the efficiency and effectiveness of federal spectrum use. Reform of federal spectrum policy will not come easily, but the Test Bed initiative can play a key role in providing opportunities for federal spectrum users to experience new technologies or new models of service that can lead to more efficient and effective use of spectrum.

CTIA also believes that the Test Bed should not focus exclusively on federal spectrum use. For example, some non-federal users do not experience market incentives that compel

¹⁵ *Report I* at 23.

¹⁶ See General Accounting Office, *Spectrum Management: Better Knowledge Needed to Take Advantage of Technologies That May Improve Spectrum Efficiency*, GAO-04-666, at 3 (May 2004), available at <http://www.gao.gov/new.items/d04666.pdf>.

efficient use of spectrum. As such, there would be utility in using the Test Bed to develop opportunities for more efficient use of the spectrum dedicated to these users as well.

With respect to candidate spectrum bands, CTIA strongly urges the Government to specify that the mobile wireless bands are not appropriate candidates given the intensive and efficient spectrum use in those bands as discussed above, as well as the ongoing evolution of products and service offerings. This holds true for the PCS, cellular and ESMR spectrum bands as well as the future wireless communications service spectrum bands including the 1.7/2.1 GHz Advanced Wireless Service (“AWS”)-1 spectrum subject to Auction 66, the AWS-2 spectrum located in the 1.9-2.1 GHz bands, and the 700 MHz analog television spectrum to be returned as part of the DTV transition, given that these bands will also be intensively used. Further, the Government should refrain from incorporating into the Test Bed other commercial bands such as BRS/EBS and WCS spectrum where future planned usage is already underway.

III. The Government Should Maintain Oversight of Test Bed Operations and Evaluate the Results of the Program

The Test Bed pilot program offers an opportunity to extend the success of the Commission’s Part 5 experimental licensing program from non-federal to federal spectrum use and among a wider community of spectrum users. At the same time, given the Test Bed’s relevance to the spectrum policy debate, it is important that the Government exercise oversight of operations within the Test Bed spectrum.

To that end, the Government should require parties interested in Test Bed operations to supply detailed submissions prior to gaining access to the spectrum in order to ensure that each proposed use is well considered. These submissions should include pre-experiment or pre-service assumptions, analysis, and predictions, as well as an analysis demonstrating that the experiment or service will not cause harmful interference to incumbent operations. Further, at the conclusion of any Test Bed usage, operators should be required to submit a report detailing

the goals, assumptions, methodology, and results so that the Government can evaluate the performance of the experiment or service model.

IV. CONCLUSION

In light of the above, CTIA urges the Government to use the Test Bed pilot program as an opportunity to examine new technologies or service models that improve efficient use in underutilized spectrum bands.

Respectfully submitted,

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