

ORIGINAL

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

In the Matter of)
)
Petition for Rulemaking of the Cellular)
Telecommunications Industry)
Association Concerning)
Implementation of WRC-2000)
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)
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FEDERAL COMMUNICATIONS COMMISSION
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COMMENTS OF NUCENTRIX BROADBAND NETWORKS, INC.

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SUMMARY

Nucentrix Broadband Networks, Inc. ("Nucentrix") hereby submits its comments on the Cellular Telecommunications Industry Association's ("CTIA's") Petition for Rulemaking proposing the study of spectrum allocations to support the development of third generation wireless services ("3G services"). As the third-largest operator of Multipoint Distribution Service ("MDS") and Instructional Fixed Television Service ("ITFS") licenses in the country, which occupy the 2500-2690 MHz band, Nucentrix has a critical interest in this proceeding. Nucentrix is a leader in transitioning MDS/ITFS to a high-speed, two-way digital service, and filed over 400 applications to provide two-way service in 70 markets during the FCC's August, 2000 filing window.

Nucentrix supports initiating a rulemaking proceeding regarding the development of 3G services with a Notice of Inquiry ("NOI"). At this early stage, the Commission should focus on gathering information on the most basic issues surrounding 3G development. Among these are how much spectrum is needed for development of 3G, whether existing allocations are sufficient, and, if not, which bands are likely candidates for additional allocations. The inquiry should be open-ended, and should not assume answers to these fundamental questions.

Throughout this information gathering process, the Commission should recognize the importance of the interests of incumbent spectrum users, including MDS and ITFS licensees on the 2500-2690 MHz band. The two-way data

service being rolled out by MDS/ITFS licensees will bring broadband service at an economical cost to small communities with dispersed populations, helping to bridge the “digital divide.” Moreover, MDS/ITFS will bring high-speed Internet access for the first time to many schools.

In light of these considerations, the Commission should issue an NOI to ascertain the best way to promote 3G development while safeguarding the interests of incumbent licensees who are providing important public interest benefits.

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COMMENTS OF NUCENTRIX BROADBAND NETWORKS, INC.

Nucentrix Broadband Networks, Inc. ("Nucentrix") hereby submits its comments on the above-captioned petition of the Cellular Telephone Industry of America ("CTIA"). Nucentrix is cognizant of the potential demand for third generation wireless services (so called "3G services"). Yet there are currently many unanswered questions about how the 3G service will evolve, including what additional spectrum, if any, is required to permit the service to develop. Accordingly, Nucentrix supports the initiation of a rulemaking proceeding. However, given the lack of solid information presently before the Commission regarding these fundamental questions, Nucentrix submits that the rulemaking process should begin with fact gathering through the issuance of a notice of inquiry ("NOI").¹

¹ As the FCC's website explains: "An NOI is designed primarily for fact gathering, a way to seek information about a broad subject or generate ideas on a specific issue . . . This document will generally ask questions and provide few conclusions." <<http://www.fcc.gov/mmb/prd/howto.html>>.

I. NUCENTRIX IS AN INCUMBENT SERVICE PROVIDER ON THE 2500-2690 MHZ BAND, AND THUS IS CRITICALLY CONCERNED WITH THE OUTCOME OF THIS PROCEEDING

Nucentrix is the third largest holder of Multipoint Distribution Service ("MDS")² and Instructional Television Fixed Service ("ITFS") spectrum in the United States, owning and leasing spectrum in 94 markets. In its petition, CTIA identifies the band allocated for MDS/ITFS, which is between 2500-2690 MHz, as a potential candidate for reallocation of spectrum to 3G services.³

Nucentrix serves primarily medium and small markets across Texas and the midwestern United States, many of which are rural. Nucentrix has been a leader in the effort to transition MDS spectrum to two-way services. Pursuant to a grant of developmental authority, the company already provides broadband wireless Internet access service over MDS spectrum in Austin and Sherman-Denison, Texas, mainly to medium-sized and small businesses, small offices/home offices and telecommuters. Moreover, the company recently filed to conduct further tests of equipment for two-way fixed wireless Internet access service in the Amarillo, Texas market.

² For the purposes of these comments, Nucentrix refers to Multipoint Distribution Service ("MDS") and Multichannel Multipoint Distribution Service ("MMDS") collectively as "MDS."

³ See In the Matter of Petition for Rule Making of the Cellular Telecommunications Industry Association Concerning Implementation of WRC-2000, July 12, 2000 ("CTIA Petition") at 10.

During the Commission's August 2000 initial filing window for two-way service, Nucentrix filed applications for authorization to provide service in 70 markets.⁴ With respect to 20 of these markets, the Company plans to deploy broadband service by the end of 2001. Nucentrix fully expects to launch permanent commercial service by the end of this year. As discussed more fully herein, Nucentrix is not alone in having devoted considerable time and resources to developing the 2500-2690 MHz band for fixed wireless services. The interests of the incumbents on this band should be at the forefront of the Commission's considerations as it evaluates questions regarding 3G, particularly any allocations to support the development of 3G services.

II. NUCENTRIX SUPPORTS THE INITIATION OF A NOTICE OF INQUIRY REGARDING 3G DEVELOPMENT

The resolutions adopted at the 2000 World Radio Conference ("WRC" or "WRC-2000") were not designed to be final, binding recommendations, and were certainly not intended to be adopted without study. While the CTIA petition treats these recommendations as established standards that will be adopted by a "'critical mass' of administrations from around the world,"⁵ the Conference itself

⁴ See Nucentrix Files for FCC Approval to Launch Broadband Fixed-Wireless Services, Press Release, (August 21, 2000), *available at* <http://www.nucentrix.com/cgi-bin/t3.cgi/search/news.taf?_function=detail&PRESS_RELEASE_uid1=63&_UserReference=B2A3C8C0F782497639A68C3C> ("Nucentrix Two-Way Press Release").

⁵ CTIA Petition at 6.

acknowledged that its resolutions do not “establish priority in the Radio Regulations,” and “do not prevent administrations from having the choice to implement other technologies in the [relevant frequency bands], depending on national requirements.”⁶ The FCC must carefully study spectrum allocation questions in the United States before moving ahead with any spectrum reallocation decision or rules. Moreover, any study of the need for spectrum to support 3G development should consider all the possible bands available for 3G—including the three bands proposed by WRC-2000 as well as the bands that the FCC identified in its 1999 Policy Statement.⁷ The Commission should commence the inquiry from a position of neutrality, and not prejudge whether any reallocation is necessary and, if so, which band would be better suited to providing 3G service.

A. The FCC Must Consider All the Implications of Reallocating Spectrum, Rather than Simply Accepting the Allocations Proposed for Further Study at WRC-2000

Before proceeding to the question of particular spectrum reallocations, the FCC must determine: (1) how much spectrum beyond existing allocations, if any, will be needed for 3G services, and; (2) should additional allocations prove

⁶ Resolution COM5/24, World Radio Telecommunications Conference 2000, available at <<http://www.itu.int/newsarchive/wrc2000/IMT-2000/Res-COM5-24.html>> (2000) (“Resolution COM5/24”)

⁷ See In the Matter of Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium, Policy Statement, FCC 99-354 (rel. November 22, 1999) (“Policy Statement”).

necessary, which spectrum bands would be the most appropriate for an allocation. At this point, given the nascent stage of 3G service development, these issues have not been fully addressed. By accepting the WRC-2000 recommendations as a starting point, CTIA's petition makes three critical assumptions that the FCC should examine before initiating a rulemaking: First, that more spectrum is needed for 3G services to develop;⁸ second, that uniform allocations and global harmonization are the best way to encourage 3G development,⁹ and, finally, that the bands recommended by WRC-2000 are necessary for this purpose.¹⁰ Instead of accepting these assumptions, the FCC should start at the beginning and ascertain whether the conditions in the United States actually suggest that the WRC recommendations are the correct path to follow.

The CTIA Petition asserts that it is vital to allocate more spectrum for the development of 3G services.¹¹ However, at this early stage in development, it is difficult to know exactly what 3G services will look like, let alone what spectrum requirements these services might have. Few wireless operators would reject the chance to have access to substantial new spectrum for development purposes. But as the Commission is aware, the scarcity of spectrum as a public

⁸ See CTIA Petition at 2.

⁹ See CTIA Petition at 4

¹⁰ See CTIA Petition at 6.

¹¹ See CTIA Petition at 2.

resource means that the FCC cannot simply reallocate large amounts to new services. In order to strike an efficient balance, the FCC must ascertain how much spectrum 3G services really need to develop, instead of simply presuming, as the CTIA does, that the current resources are inadequate.

The Commission must also study the perceived need for uniform international allocations to support international roaming. Currently, many U.S. mobile wireless providers offer equipment with multi-mode, multi-band capability, which provides the ability to roam across networks operating not only on different frequencies, but utilizing different transmission techniques. This technology may entirely obviate the need for a single, uniform international allocation. At the very least, it presents an alternative that should be evaluated, especially in situations where spectrum reallocation would have a dramatic impact on the rights and investment of incumbent licensees.

CTIA's petition suggests that frequency band harmonization is the major barrier to the development and deployment of 3G services. CTIA states that "the sooner the Commission designates spectrum...the sooner manufacturers can begin development of equipment and the sooner carriers can begin providing additional 3G services,"¹² and suggests that band harmonization is the *sine qua non* of 3G development. However, the wireless industry has not yet settled on a single standard for broadcasting and receiving 3G services, irrespective of the band assigned, which has led to at least two competing standards, W-CDMA and

¹² CTIA Petition at 6.

CDMA2000.¹³ As a result, “the ITU has realized that IMT-2000 will probably not be a single system; instead it’s likely to be a combination of systems.”¹⁴ Any such combination of systems would require multi-mode phones, no matter which band the Commission decides to allocate for 3G services.¹⁵

In addition, since the rollout of 3G will not be immediate or universal, backwards-compatibility with existing networks will be a critical component of 3G handsets during the rollout period for 3G services, so that customers can continue to use their phones in areas where 3G has not yet been deployed.¹⁶ As a result, all 3G handsets will need to be multi-mode and multi-band for the immediate future to ensure public acceptance, again without regard to what the Commission decides.

Finally, the FCC should question whether the bands recommended by WRC-2000 are necessary for 3G development, or whether the allocations proposed in its 1999 Policy Statement would provide adequate spectrum. In the 1999 Policy Statement, the Commission identified 187 MHz in 13 frequency bands as “well suited” for new mobile services, in addition to 15 MHz that the

¹³ See Held, Gilbert, *The Wide World of Wireless*, Network Magazine, Vol. 14 Issue 12 (December 1, 1999) (“Held Article”).

¹⁴ Bantukul, Dan, *Islands in the Bit Stream*, Wireless Review (August 31, 2000) (“Bantukul Article”).

¹⁵ See Held Article.

¹⁶ See Bantukul Article.

NTIA noted could be used for this purpose.¹⁷ This spectrum is well in excess of the 160 MHz that the WRC identified as being adequate to serve 3G wireless needs in the highest traffic areas through 2010.¹⁸

B. The Bands Designated for Government Use and Designated for Commercial Use Should Receive Equal Scrutiny

The Commission should proceed from a position of neutrality with respect to the frequency bands which may be subject to any potential reallocation. The WRC did not express a preference as between any of three bands it designated for 3G development, including the bands below 1 GHz, the 1710-1885 MHz band, which is used by the government in the United States, and the 2500-2690 MHz band, which is occupied by MDS and ITFS licensees. Indeed, the ITU stated that “the identification of several bands for IMT-2000 allows administrations to choose the best band or parts of bands for their circumstances.”¹⁹ Accordingly, any inquiry that the Commission conducts into making spectrum available for 3G, if additional spectrum is needed, should consider all possible reallocations. The Commission should not assume, in the absence of any evidence, that certain bands are better suited to supporting 3G services in the United States merely because that may be the case elsewhere.

¹⁷ See Policy Statement at ¶ 17.

¹⁸ See Resolution COM5/24.

¹⁹ *Id.*

The WRC recognized that administrations are free to either adopt or not adopt the WRC recommendations “based on national requirements.”²⁰ Instead of assuming that bands which work well in some countries will work well in the United States, the FCC should balance the potential costs and benefits associated with the use of all available bands before making a decision.

III. LIKE THE RESOLUTIONS ADOPTED AT WRC-2000, THE COMMISSION SHOULD ACKNOWLEDGE THAT EXISTING SERVICES MAY PREVENT IMPLEMENTATION OF THE IMT-2000 ALLOCATIONS, ESPECIALLY IN THE 2500-2690 MHZ BAND

The resolutions adopted at WRC-2000 acknowledge that some countries may not be able to implement IMT-2000 in the recommended bands “due to the usage by and investment in existing services.”²¹ The conference specifically recognized that services “including multipoint distribution/communication systems” are in operation in the 2500-2690 MHz band in some areas, which may make the band inappropriate for use for IMT-2000.²² In the United States, significant investment in this band raises serious questions about its potential for reallocation. This band is heavily encumbered by MDS and ITFS, and cannot easily be carved up for reallocation. Most importantly, the Commission has encouraged substantial investment in this band, including by opening the initial

²⁰ Resolution COM5/24.

²¹ *Id.*

²² *Id.*

filing window for applications to provide two-way service in this band on August 14, 2000—just two weeks ago. The current and planned uses of this spectrum advance some of the Commission’s most important objectives, such as bringing advanced services to rural areas and to schools and libraries.

A. There Has Been Significant Investment in the 2500-2690 MHz Band

1. The 2500-2690 MHz Band is Heavily Encumbered by MDS and ITFS and Cannot Easily be Divided for Reallocation

In the United States, the 2500-2690 MHz band is occupied by numerous MDS and ITFS licenses, and cannot easily be split for reallocation. As a historical matter, in order to acquire enough channels to compete with multichannel video offerings from cable and satellite service providers, licensees have had to aggregate spectrum in this band. Thus, in most cases, all of the MDS and ITFS spectrum in a given market is used seamlessly by a single commercial operator in order to provide a competitive offering. This seamless use will continue as licensees begin offering two-way broadband data services in addition to, or instead of, their one-way video services.

Further contributing to the seamless nature of the spectrum are widespread practices such as channel loading, channel shifting and channel swapping. These practices allow licensees the flexibility in developing two-way band plans necessary to provide service offerings comparable to landline-based DSL and cable systems, and thereby to compete with these systems. The

Commission has recognized that channel loading, shifting and swapping are necessary in order to most efficiently use the ITFS and MDS spectrum allocation while still meeting its important public interest goals.²³ Going forward, these techniques will be even more critical, as providers seek to convert one or more channels from one-way video to two-way data transmission. Separating out large segments of spectrum would seriously jeopardize the structure that has evolved to provide video and data services in the MDS and ITFS bands.

Finally, the remaining, vacant spectrum in the MDS and ITFS bands has already been auctioned off. Through the FCC's spectrum auction process, Basic Trading Area ("BTA") license holders have paid for the right to use vacant and unlicensed spectrum in the 2500-2690 MHz band on a market-by-market basis. Any reallocation would have to take into account the rights of these licensees and protect their future use of this spectrum.

2. The Commission has Encouraged Investment in and Development of the 2500-2690 MHz Band

Through a variety of measures, the FCC has sought to encourage investment in the 2500-2690 MHz band. The Commission has awarded MDS and BTA licenses at auction. As a result, the licensees have invested a large amount of capital to acquire the right to provide services under these licenses.

²³ See In the Matter of Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Fixed Television Service Licensees to Engage in Fixed Two Way Transmissions, 13 FCC Rcd 19112, 19162-19170 (1998) ("Two-Way Order").

To further promote development, the Commission has encouraged the partnering of commercial operators through ITFS lease agreements. These relationships give ITFS institutions access to broadband data capability and, in addition, may provide a stable revenue stream. Any spectrum allocation decision of the FCC in this proceeding must protect these incumbent interests.

Moreover, the FCC has encouraged the development of two-way service in the MDS and ITFS bands. Currently, two-way service in the MDS and ITFS spectrum is offered, pursuant to developmental licenses, in several cities throughout the United States. Nucentrix has deployed systems in Austin and Sherman-Dennison, Texas, and recently filed a developmental application to conduct two-way testing in Amarillo, Texas. Sprint is operating in Tucson and Phoenix, Arizona, and WorldCom has begun service in Jackson, Mississippi, Baton Rouge, Louisiana, and Memphis, Tennessee. Several other smaller operators also have systems in operation under developmental permits around the country.

These systems have deployed with the expectation that operation will begin on a permanent basis after the FCC's two-way filing window. During the window, opened just this month, MDS and ITFS licensees filed thousands of applications for authorizations to provide two-way services on a permanent basis. As a result, the number of two-way offerings in the MDS/ITFS band will increase dramatically in the near future. Nucentrix alone has filed approximately 400 applications for authorization to provide two-way service in 70 markets

throughout the United States.²⁴ WorldCom plans to deploy its service in 60 markets, and Sprint will serve 45.²⁵ This expansion of wireless broadband availability will lead to the deployment of high-speed Internet access, voice and other services on a wide-scale basis.

Since the establishment of two-way service represents a fundamental technical change, the expense associated with acquiring the spectrum and building out the entirely new infrastructure required to provide this service has been considerable. The providers of two-way service have undertaken these substantial investments based on the encouragement offered by the FCC in its recent rulemaking,²⁶ which culminated in the August filing window. The Commission should not abandon the promise of two-way service in the MDS and ITFS bands just as the agency's efforts are beginning to bear fruit. Reallocation of the 2500-2690 MHz band for 3G development at this juncture would cause all of the investment made in pursuit of this service to be wasted. As CTIA acknowledges, "it will take years to complete studies, develop rules for use of spectrum, issue licenses and migrate existing users before [3G services] can be

²⁴ See Nucentrix Two-Way Press Release.

²⁵ See "Licensing Step Moves WorldCom Closer to Market Launch," Press Release (August 14, 2000), *available at* <<http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/08-14-2000/0001289570&EDATE=>>>; *see also* "Sprint Files For Two-Way MMDS Licenses in 45 Major Markets," Press Release, (August 22, 2000), *available at* <<http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/08-22-2000/0001295984&EDATE=>>>

²⁶ See Two-Way Order at 19113.

deployed.”²⁷ But instead of years in the future, the benefits of MDS/ITFS service are beginning to accrue right now. Instead of delaying this progress with reallocation, a wiser course would be to conduct an open inquiry into the fundamental questions surrounding the development of 3G service, including examining potential bands for reallocation should reallocation be necessary, with an eye toward minimizing the impact on incumbent licensees.

B. Existing Plans for the 2500-2690 MHz Band Advance Some of the FCC’s Most Important Objectives and Serve the Public Interest

The advent of two-way service in the MDS and ITFS bands will bring affordable, broadband Internet access to small and rural communities throughout the nation. Terrestrial wireless service offers the most financially and technically feasible means to extend high-speed data links to areas with relatively low population densities. As the FCC itself has noted, “wireless networks are free of the substantial costs associated with installing and maintaining wires that run to a customer’s premises...[and t]hese savings make wireless technology especially well suited to deployment in many rural areas, where substantial distances between customers may be cost-prohibitive for wireline technologies.”²⁸ Unlike DSL or cable modems, terrestrial wireless allows broad

²⁷ CTIA Petition at 7.

²⁸ In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, CC Docket No. 98-146, Second Report, FCC 00-290 (rel. August 21, 2000) (“Advanced Telecommunications Report”) at 24.

geographic areas to be served for comparatively low cost. Satellite service remains limited in availability, and generally provides high-speed only on the downstream path.²⁹ True high-speed satellite service is not yet available,³⁰ but because of the FCC's facilitation, MDS and ITFS broadband is being deployed right now.

In addition to providing service in small communities and rural areas, where broadband is currently unavailable, MDS and ITFS operators plan to bring broadband to more developed areas, as well. In these markets, the fixed wireless broadband service will serve as a competitive alternative to the DSL and cable modem service offerings. The benefits of competition are well known, and wireless providers in the 2500-2690 MHz band are poised to bring these benefits to the broadband market on a large scale in the very near future.

Finally, because of the partnership between commercial and non-commercial operators in this spectrum band, the development of two-way services will bring high speed Internet access to ITFS entities, including schools and libraries. The FCC has recognized the necessity of "allowing every schoolchild and every community to take advantage of modern communications technology."³¹ Through e-rate and other initiatives, the Commission has underlined the importance of providing Internet access in every school, which will

²⁹ See Advanced Telecommunications Report at 28.

³⁰ *Id.*

³¹ *Id.* at 3.

“help open new worlds of knowledge, learning and education to all Americans,” and to “assure that no one is barred from benefiting from the power of the Information Age.”³² Broadband service provided via MDS/ITFS spectrum will help fulfill the Commission’s commitment to providing Internet access to all schoolchildren.

IV. CONCLUSION

Nucentrix supports initiating a rulemaking proceeding regarding the development of 3G services with a Notice of Inquiry. The proceeding should be directed to gathering information on the most basic issues surrounding 3G development: How much spectrum is needed for 3G development?; Are existing allocations sufficient?; If not, which bands are likely candidates for additional allocations? The inquiry should be open-ended, and avoid assumptions about the answers to these fundamental questions. In this information gathering

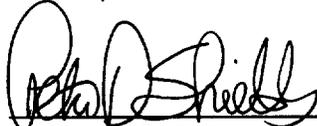
³² Federal-State Joint Board on Universal Service, Report and Order, 12 FCC Rcd 8776 (rel. May 8, 1997) at ¶426.

process, the Commission should proceed with cognizance of the interests of incumbent spectrum users, including MDS and ITFS licensees on the 2500-2690 MHz band. At all times, the interest of these incumbents must be protected.

Respectfully submitted,

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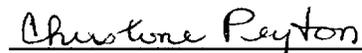
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