

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
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Spectrum Policy Task Force)	ET Docket No. 02-135
Request for Comments)	
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**COMMENTS OF THE
INFORMATION TECHNOLOGY INDUSTRY COUNCIL**

The Information Technology Industry Council (“ITI”) respectfully submits these comments in response to the request from the Spectrum Policy Task Force for public comments in the above-captioned docket. ITI represents the nation’s leading information technology companies, including computer hardware and software, Internet services, and wireline and wireless networking companies. ITI member companies employ more than one million people in the United States and exceeded \$668 billion in worldwide revenues in 2000.

I. INTRODUCTION

As the leading information technology trade association, ITI supports the development of a regulatory framework that will promote the rapid development of affordable, high-speed Internet access. The goal is to ensure that the maximum number of consumers can experience the full potential of the Internet and the information technology revolution. Wireless technologies, including Third Generation ("3G") mobile Internet, fixed wireless broadband,

802.11, Bluetooth, Ultra Wide Band ("UWB") and others, have enormous potential to advance that goal. These technologies have many benefits, such as increasing business productivity and enabling access to informative and sometimes life saving technologies. The availability of sufficient spectrum, and the proper regulation of that spectrum, is the key to realizing the potential of these technologies.

II. SPECTRUM MANAGEMENT

The number and variety of wireless IT products and applications, as well as the number of users, is exploding. Not surprisingly, this has led to an increasing demand for spectrum. It is important for industry, consumers, and the economy that enough spectrum be available for commercial use to permit the growth and innovation that characterize the wireless sector to continue.

There are several basic principles that should guide the Commission's spectrum management efforts. First, increasing the level of coordination and cooperation between National Telecommunication and Information Administration ("NTIA"), the FCC, and other government agencies is a necessary element to achieving an efficient and consistent spectrum policy.¹ While we recognize the practical difficulties caused by the split responsibility for spectrum issues within the government, a coordinated voice on spectrum issues would provide needed certainty and national vision in this vitally important area.

Second, greater cooperation between the government and non-government entities should be a priority. Improving lines of communication and involving industry experts in discussions will help provide the government with important engineering and business expertise. It will also

¹ One model for such cooperation is outlined by the Computer Systems Policy Project ("CSPP") in its report, "Building the Foundation of the Networked World," December 2001 [www.cspp.org]

help foster a better understanding of the concerns of both sides of an issue. ITI pledges its resources towards helping achieve that goal.

Third, there is no “silver bullet” for spectrum management. There is no single set of rules, or a single approach, that is appropriate for all bands and all services. The way spectrum is used, and will continue to be used, is simply too varied for any one management tool to serve the public interest. Some bands will require individual licensing, others will not. Some bands will require few technical rules so that innovation is encouraged, others will require more so that spectrum efficiency is maximized. The important point is that diversity should be embraced, not feared.

Fourth, within any spectrum band, the Commission must work to find the proper balance between flexibility and certainty. It is important that the Commission be sufficiently flexible to permit new technologies and services to thrive. On the other hand, coherent investment decisions require some degree of certainty about the regulatory environment. If the rules are too impermanent, there will be little investment and fewer new technologies and services.

Finally, the Commission should employ market-based spectrum mechanisms where feasible. As Chairman Powell has noted, “It is important that the Commission move from its traditional spectrum management paradigm of ‘command and control’ to a paradigm of market-oriented allocation policy to provide more flexible allocations that allow multiple uses so that spectrum can be put to its highest and best use...”² Today, only a small percentage of the spectrum is fully available to the market. The Commission should consider significant opportunities to make more spectrum subject to market forces to encourage efficient use and best

² Speech by Michael Powell, FCC Chairman, October 23, 2001
[www.fcc.gov/Speeches/Powell/2001/spmkp109.html]

meet the needs of users. Such opportunities may include, for example, spectrum auctions for new licensed services and increased allocation of spectrum for unlicensed uses which provide low barriers to competitive market entry for new technologies and services.

III. 3G SPECTRUM

Third generation mobile wireless Internet services will provide another important Internet access alternative, promoting innovation in applications and service offerings, generating competition to reduce consumer prices, and in some cases making higher-speed Internet access available to remote areas. Given the benefits such access provides to the economy and productivity, it is sound spectrum policy to ensure that sufficient, globally harmonized spectrum is available for the growth of the mobile wireless industry.

We believe that greater than 120 MHz is necessary to meet increasing demand for mobile services, especially as new data and multimedia services are introduced. ITI strongly supports ongoing efforts to engage business and government in a productive effort to identify and, if necessary, transition spectrum for 3G services. We actively support current proposed plans to provide 120 MHz of globally harmonized spectrum in the 1710-1770 and 2110-2170 MHz bands.³

As we proceed in this process, it is important to keep in mind the timeliness of this effort—spectrum must be allocated in time to meet market needs. Furthermore, spectrum allocated for 3G and Internet access must be unencumbered quickly so deployment can be rapid and without interference. If the wireless data applications are to flourish in the U.S. as they have

³ See ITI 10 Point Plan to Bring Broadband to More Americans[www.itic.org/policy/brdbnd_020502.pdf]

begun to in Europe and Japan, it is essential that sufficient spectrum be allocated for these services in a timely manner.

The 1700 MHz band has the advantage of being harmonized for global use, a key to maximizing the value of available spectrum. However, the government currently uses the 1700 MHz band for its communications needs, including some used by the Department of Defense and essential to our national security. We fully recognize the national security concerns and believe a solution can be reached. In order to clear the 1700 MHz band for 3G use, these federal government systems will need to be relocated from this band. Any government agency that relocates should be given a guarantee that relocation of existing systems and modernization of those systems will be fully reimbursed without the threat of any reduction in their other expected appropriations. The most effective way to pay relocation costs is by using the funds obtained from auctions. Such revenues would be earmarked towards relocation and modernization of the incumbent communications systems rather than being designated as funds for the general treasury.

In order to facilitate this process, a trust fund should be established to hold the auction funds and from which the Department of Defense could draw funds to cover costs. ITI is working to pass legislation to establish a spectrum relocation trust fund for this purpose.⁴ This structure will enable licensees to obtain the spectrum with a greater knowledge of the cost of acquisition, further fueling investment and innovation. ITI stands ready to work with Congress and the FCC should legislative changes be necessary to effectuate this guarantee.

⁴ *Id.*

IV. UNLICENSED SPECTRUM

Wireless devices operating in “unlicensed”⁵ spectrum bands (using technologies such as 802.11, Ultra-Wide Band, and Bluetooth) are an important and rapidly growing segment of the information technology industry. These technologies offer the advantage of mobility while providing the speed benefits of broadband. Wireless local area networks (“WLANs”) are fast becoming common in the business environment. It is expected that 32% of workers will have Wireless LAN access within the next 12 months and 44% within 2 years.⁶ Public “hot spots” using 802.11 are being launched everywhere from airport lounges to university libraries. Some of these wireless technologies are also providing broadband connections for customers who would otherwise not have access to high speed Internet service.⁷

Moreover, these unlicensed wireless networks are beginning to have an important impact on the economy. Research has found a significant increase in productivity for companies who have invested in the deployment of technologies utilizing unlicensed spectrum such as Wireless LANs. One study has indicated that WLAN access results in an average of 1.75 additional hours worked per day for a 22% overall productivity improvement.⁸ The same study also confirmed an increase in accuracy of work performed with 39% of end-users reporting that Wireless LAN technology improves the accuracy of everyday tasks and 47% of healthcare organizations finding significant improvements in accuracy. Common, ubiquitous broadband Ethernet access allows these mobile users the same access to the same sets of critical applications and content as their wire-constrained counterparts.

⁵ These bands are more properly described as bands where individual licensing is not required. For convenience, however, we will continue to refer to them as “unlicensed” bands.

⁶ *Wireless LAN Benefits Study*, NOP World
[http://newsroom.cisco.com/dlls/tln/wlan/wlan_benefits.html]

⁷ *M-33 Access Deploys High-Speed Broadband Wireless in Rural Areas*, Broadband Wireless Exchange Magazine,
[www.bbwxchange.com/stories/2002/m33access022002.htm]

⁸ *Wireless LAN Benefits Study*

In order to meet this rapidly growing demand for unlicensed wireless networks, the Commission will need to identify additional spectrum. The FCC has received a petition from the Wireless Ethernet Compatibility Alliance (“WECA”) to allow unlicensed usage of the 5470-5725 MHz band for Wireless LANs.⁹ This spectrum is in use in Europe today, and would provide another 11 channels at 54 Mbs. ITI supports this petition. Assuming that the 5470-5725 MHz band is approved, Wireless LANs would have an aggregate of 26 non-overlapping channels available for use. At current growth rates, even this bandwidth will quickly be consumed in more congested metropolitan areas. It’s important that we find additional spectrum now to prepare for this anticipated growth.

Finally, as new unlicensed data networks are built, the Commission should consider mechanisms to improve the interference environment. Allowing more intensive use of the spectrum without interference is functionally the same as allocating additional spectrum. Possible solutions include specifying additional technical constraints or such things as a media access etiquette to promote the efficient sharing of unlicensed spectrum. It is in no one's interest to waste the spectrum resources, and the Commission should not hesitate to take steps to encourage its efficient use.

V. RESPONSES TO SPECIFIC QUESTIONS POSED BY THE COMMISSION

ITI offers the following suggestions regarding ways the Commission can facilitate optimal spectrum use and applicability across different bands and respect the rights of different incumbents.

⁹ Petition for Rulemaking of the Wireless Ethernet Compatibility Alliance ("WECA") To Permit Unlicensed National Information Infrastructure Devices to Operate in the 5.470-5.725 GHz Band, January 15, 2002. [http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6512980202.]

Should current, restrictive service and operating rules applicable in many bands be changed to provide licensees with greater flexibility?

ITI supports providing flexibility for licenses to permit operators an increased ability to utilize their band to include other services without seeking an additional new band to provide a complimentary service. Providing flexibility will promote more an effective utilization and efficiency of the bands currently assigned to users.

Should spectrum policy be different in different portions of the spectrum or in different geographic areas?

Currently, there are areas where the use of certain services and frequency bands do not exist or are extremely limited.¹⁰ In these areas, the Commission should consider allowing some flexibility in usage or power, especially where the potential for interference to other services would be non-existent or insignificant. This policy would allow consumers in these areas to utilize additional features of the devices without causing disturbance to other services.

Are new definitions of “interference” and “harmful interference” needed?

ITI welcomes the Commission’s recent Second Report and Order for Part 15 Spread Spectrum¹¹ devices whereby the Commission directed parties experiencing harmful interference to address only those isolated occurrences without altering the regulatory landscape. ITI believes this approach offers an effective system to address and solve actual harmful interference problems. This approach also permits further development and deployment of wireless technologies, while at the same time, protecting licensed services from actual harmful interference

¹⁰ *M-33 Access Deploys High-Speed Broadband Wireless in Rural Areas*, Broadband Wireless Exchange Magazine [www.bbwxchange.com/stories/2002/m33access022002.htm]

¹¹ Amendment of Part 15 of the Commission’s Rules regarding Spread Spectrum Devices, the Commission’s Second Report and Order, ET Docket No. 99-231, adopted May 16, 2002 at paragraph 30 .

However, in order for the Commission to be able to solve actual harmful interference situations, the Commission needs to better define the distinction between interference and harmful interference. Currently harmful interference is determined by the service claiming interference, making defining harmful interference difficult since it is subject to the characteristics of spectrally inefficient equipment designs. ITI recommends the Commission determine some type of threshold for harmful interference for the various services that both balances the interests of the incumbent service and the new service coming on-line in that band.

Does defining power limits and other measures in the Commission's rules designed to protect against harmful interference affect innovation?

In some cases, the Commission's Rules concerning power limits that aim to protect against harmful interference negatively affect innovation. ITI agrees with the Commission that manufacturers should determine the power levels of products whenever possible to provide innovative solutions to consumers with different requirements.

The Commission should also allow manufacturers of receivers used in these systems to determine the design parameters. Manufacturers should be able to determine how robust a system should be in order to satisfy consumer's needs. However, some basic guidelines, such as those developed under Part 15 requiring receivers be able to accept some interference while continuing to operate satisfactorily should apply here as well. ITI suggests the Commission also consider the recent change to the receiver requirement for Part 15.247 devices where the Commission determined the marketplace was a better determination of quality for those devices.

VI. CONCLUSION

ITI appreciates the opportunity to express our views to the Commission and we look forward to actively collaborating with the FCC on these important matters.

Respectfully submitted,

**INFORMATION TECHNOLOGY
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