Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Revision of Part 15 of the Commission's Rules	)	
Regarding Ultra-Wideband Transmission	)	ET Docket No. 98-153
Systems	)	
	)	

COMMENTS IN SUPPORT OF PETITION FOR RECONSIDERATION

The Wireless Communications Association International, Inc. ("WCA") hereby supports the petition filed by Sprint Corporation on behalf of Sprint Spectrum L.P., d/b/a Sprint PCS ("Sprint PCS") seeking reconsideration of the *First Report and Order* in the above-captioned proceeding.[1] For the reasons set forth below, WCA submits that the relief requested by Sprint PCS should be extended not only to broadband Personal Communications Service ("PCS") licensees, but also to other licensed services that are vulnerable to interference from ultrawide band ("UWB") operations.

WCA is the trade association of the wireless broadband industry and is the primary industry advocate for users of the Multipoint Distribution Service ("MDS") and Instructional Television Fixed Service ("ITFS") spectrum at 2150-2162 MHz and 2500-2690 MHz. Like broadband PCS licensees, MDS/ITFS system operators will be adversely impact by UWB deployment in two respects. First, although the Commission has correctly required that most UWB applications must operate either below 960 MHz or above 3.1 GHz (*i.e.* outside the

[1] Petition of Sprint Corp. for Reconsideration, ET Docket No. 98-153 (filed June 17, 2002) (the "Sprint PCS Petition").

MDS/ITFS frequencies),[2] it has permitted material levels of spurious emissions in the MDS and ITFS bands that have the potential to interfere with commercial and educational services offered over the 2150-2162 MHz and 2500-2690 MHz bands. And, second, the Commission has decided to permit through-wall imaging and surveillance UWB systems to operate *in* the MDS and ITFS frequency bands.[3] Accordingly, WCA has a direct and immediate interest in the Commission's resolution of UWB interference issues.

In the interest of brevity, WCA will not here repeat in detail the arguments advanced by Sprint PCS. Suffice it to say that WCA largely agrees with Sprint PCS that the *First Report and Order* has gone too far in trampling the rights of licensed services to introduce a new and largely untested technology that may cause substantial harm. It must be stressed that, like Sprint, WCA generally does not oppose the Commission's overriding policy of promoting UWB technology. Indeed, it is WCA's hope that UWB technology will lead to innovative and useful applications both in the commercial and public safety areas. WCA is concerned, however, that the Commission's *First Report and Order* in this docket does not sufficiently account for UWB's potential to cause harmful interference to licensed services.

Most importantly, WCA agrees with Sprint PCS that the emission limits established by the *First Report and Order* are arbitrary and capricious (particularly as they distinguish between UWB devices operating indoors and outdoors).[4] As Sprint PCS correctly noted:

---

[2] *Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems*, ET Docket No. 98-153, FCC 02-48, at ¶ 5 (rel. Apr. 22, 2002) (the "*First Report and Order*").

[3] *Id.* As Sprint PCS points out, the Commission's decision to treat surveillance systems in the same manner as through-wall imaging systems is ill-explained and thus arbitrary and capricious. *See* Sprint PCS Petition, at 30-35.

[4] *See id.*, at 14-19.

> The Commission has recognized that the adoption of emission masks for UWB "requires a firm understanding of the characteristics of UWB signals, *their impact on victim receivers, and the minimum separation distance between UWB devices and victim receivers*."[5]

Yet, just as Sprint PCS has established that the UWB spectral mask fails to meet the Commission's own standard as it relates to broadband PCS, so too is the mask flawed relative to MDS/ITFS.

The fundamental defect in the Commission's analysis of potential interference to MDS/ITFS is that it is based on an outmoded view of MDS/ITFS technology. The result is that the Commission failed to fully analyze the impact UWB can have on MDS/ITFS victim receivers. Specifically, the Commission's analysis of potential interference from UWB is predicated on the assumption that

> it is extremely unlikely that the UWB emission could be pointed at the main beam of a high-gain MMDS antenna because such antennas generally are mounted outside on roof tops or on the sides of buildings. Because of this antenna placement, it is highly unlikely that a UWB transmitter would be close to an MMDS station or have its emissions directed within the main beam of the MMDS receive antenna. As with the SARSAT and FSS stations, MMDS antennas will not be directed at buildings or other structures that would block reception of the MMDS transmissions.[6]

Simply put, the Commission has incorrectly presumed that MDS/ITFS reception antennas will be high-gain, directional antennas mounted high above ground level without any blockage between the transmit and receive antennas. Other MDS/ITFS configurations – configurations similar to the broadband PCS systems addressed in the Sprint PCS petition – are being deployed across the country and must be considered in establishing rules and policies to govern UWB.

---

[5] *Id.* at 14 (emphasis added).

[6] *First Report and Order,* at ¶ 167.

The MDS/ITFS regulatory regime, which was put in place long before the *First Report and Order*, provides licensees with tremendous flexibility in the design of systems. Certainly, in the late 1990s and early 2000s, many system operators chose to utilize network infrastructures similar to that described in the *First Report and Order* – deploying relatively large cells (some with radii of up to 35 miles) which require provisioning subscribers with relatively high power CPE and the mounting of CPE antennas relatively high above ground level. Yet, this first generation of MDS/ITFS broadband wireless equipment has already begun to give way to a second generation of technology that is, in most relevant respects, technically indistinguishable from broadband PCS technology as it relates to UWB.[7]

Most significantly, this second generation of MDS/ITFS technology replaces the large outdoor antenna system of first generation systems with markedly smaller and lower

---

[7] Mansell, "IP Wireless Gaining Customers," *Kagan Broadband Fixed Wireless*, at 6 (May 6, 2002) ("… WorldCom and Sprint … along with [MDS/ITFS operator] Nucentrix, are now trialing a new generation of suppliers led by the likes of Navini, IPWireless, Vyyo, Iospan, BeamReach and NextNet."); "Sprint to Terminate ION Efforts; Announces Additional Actions to Improve Competitive Positioning and Reduce Operating Costs in FON Group," at http://www3.sprint.com/PR/CDA/PR_CDA_Press_Releases_Detail/_1,3245,3921,00.html (Oct. 17, 2001) (announcing Sprint's discontinuance of new first generation deployments pending review of second generation technology). Very recently, Sprint commenced trials of second generation equipment in Houston and Montreal. "Sprint Conducts Trials with Next Generation Broadband Wireless Technology," Sprint Corporation Press Release (May 7, 2001); Charny, "Can Your Net Access Travel Through Walls?" *CNET News.com* (May 7, 2002); Blackwell, "What the Licensed Competition is Doing," at http://isp-planet.com/fixed_wireless/business/2002/spring_020528.html (May 28, 2002). *See also* "NextNet Announces Industry's First Commercial Deployment of Next Generation NLOS Broadband Wireless Access," at http://www.nextnetwireless.com/press_releases_23_bottom.html (Jan. 10, 2002) (announcing launch of commercial MDS/ITFS broadband service with second generation equipment in Pocahontas, Iowa); Mansell, *supra* (discussing roll-out by Montana Wireless TV of Missoula of second generation equipment); Sing, "Next-Generation Wireless Comes to Maui," *Pacific Business News* (Apr. 19, 2002), at http://pacific. bizjournals.com/pacific/stories/2002/04/22/story1.html (discussing launch of third generation or "3G" mobile broadband service over MDS/ITFS spectrum in Maui, Hawaii); "LMDS, MMDS Making Slow Progress in the United States," at http://www.broadband.globalsources.com/MAGAZINE/BB/0205/LMDS01.HTM ("Experts agree that there may be a half-dozen firms readying [second generation] MMDS offerings. 'A lot of vendors are working on [non line-of-sight] MMDS systems, and hope to have them up and running this year,' [Peter] Jarich of the Strategis Group said.").

power CPE (currently the size of a cable modem or PDA and soon to be the size of a PCMCIA card) that integrates the antenna and modem in a single unit designed to operate indoors. As the Commission acknowledged in its February 2002 *Third Report* to Congress on the deployment of broadband services:

> NextNet Wireless, Inc. has developed an end-to-end MDS system with a desktop customer-premises unit that requires no rooftop antenna and no inside wiring connections. IPWireless, Inc. has developed a technology that will allow its customers to utilize modems inside buildings under non-line-of-sight conditions.[8]

NextNet, Inc. describes its Experience™ system as featuring "unique customer premise equipment [that] integrates the modem, transceiver and antenna into a single compact, indoor, portable unit that is completely customer-installable."[9] Similarly, Navini Networks, Inc. describes its Ripwave™ system as follows:

> With the Ripwave CPE, there is no need to send technicians to climb the roof, no holes to drill, no computers to be opened up and no installation required. The unit connects to the computer via USB or Ethernet port.[10]

Indeed, just last week, IPWireless, Inc., a leading developer of second generation technology that currently offers a pocket-sized broadband wireless access CPE device, announced an agreement with a Swedish firm that will result in the development of PC Card CPE. According to the company:

> The IPWireless PCMCIA card, available in early 2003, will deliver the same reliable, mobile, wide-area broadband experience as the IPWireless pocket-sized Advanced 3G modem that customers are using worldwide today. By offering an end user device in an even simpler form, IPWireless enhances and extends the simplicity and mobility of its international standards-based, plug-

---

[8] *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, 17 FCC Rcd 2844, 2924 n. 451 (2002).

[9] *See* http://www.nextnetwireless.com/products.html

[10] *See* http://www.navini.com/pages/products/cpe.htm

> and-play mobile broadband technology. The jointly developed PCMCIA card marks the first in a series of innovative devices to be created by IPWireless and Wireless House that will seamlessly integrate universal mobile telecommunications service (UMTS) connectivity into mobile devices, furthering the IPWireless vision of broadband everywhere by ensuring uninterrupted broadband access anywhere in the world - whether in a house, an office, at an airport, or on a train.[11]

This emergence of this second generation of MDS/ITFS technology should hardly come as a surprise to the Commission. To the contrary, it was anticipated by the Commission when it adopted the current regulatory regime for MDS/ITFS in MM Docket No. 97-217. In revising the MDS/ITFS rules to reflect the growing interest in using those bands for two-way broadband services, the Commission provided licensees with virtually unbridled discretion in the design of their network infrastructure. Most significantly for present purposes, after much debate the Commission's rules regarding the installation and operation of MDS/ITFS CPE specifically distinguish between high-power CPE coupled to professionally installed outdoor antennas and what the Commission itself has called "a small desktop unit" which "can be placed on a desk or other convenient indoor location to provide high speed wireless internet access" and which "will be readily available for consumer purchase and installation."[12] Thus, the growing use of low-power, indoor MDS/ITFS CPE – CPE that was not considered in the UWB *First Report and Order* – was anticipated by the Commission long before the UWB decision.

The similarities between MDS/ITFS and broadband PCS go beyond the fact that both can utilize low-power CPE that is located indoors, near ground level and potentially in close proximity to UWB devices. In addition, the Commission has afforded MDS/ITFS licensees

---

[11] A copy of the press release can be viewed at http://www.ipwireless.com/press_072402.html

[12] *Amendment of Parts 1, 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, Report and Order on Reconsideration, 14 FCC Rcd 12764, 12776-81 (1999).

flexibility a variety of modulation techniques, including CDMA -- the very broadband PCS technology addressed in the Sprint PCS filing.[13] And, as Sprint PCS amply demonstrates throughout its petition for reconsideration, low-power CPE that operates utilizing CDMA in close proximity to UWB devices is prone to suffer interference from those UWB devices.

WCA's position is thus rather straightforward-- due to the technical similarities between broadband PCS and MDS/ITFS as they relate to UWB interference, any relief extended to broadband PCS by virtue of the petition for reconsideration filed by Sprint PCS must be extended to MDS/ITFS as well, consistent with the long-standing legal principle that like services should be accorded like regulatory treatment.[14]

In sum, the Sprint PCS petition raises substantial legal and technical issues about UWB interference that will bear directly on the future of MDS/ITFS broadband service. Accordingly, WCA urges the Commission to ensure that any decision granting the Sprint

[13] *See Amendment of Parts 1, 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, Report and Order, 13 FCC Rcd 19112, 19121 (1998).

[14] *See Melody Music Inc. v. FCC*, 345 F.2d 730 (D.C. Cir. 1965).

PCS petition in whole or in part include comparable relief for MDS/ITFS licensees and others who are similarly situated.

Respectfully submitted,

THE WIRELESS COMMUNICATIONS
ASSOCIATION INTERNATIONAL, INC.

by: /s/ Andrew Kreig

Andrew Kreig
President
1140 Connecticut Avenue, NW
Suite 801
Washington, D.C. 20036
(202) 452-7823

July 31, 2002