

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

In the Matter of)
)
Additional Spectrum for Unlicensed Devices) **ET Docket No. 02-380**
Below 900 MHz and in the 3 GHz Band)

COMMENTS OF THE WI-FI ALLIANCE

The Wi-Fi Alliance hereby submits its comments on the above-captioned Notice of Inquiry (“Notice”) concerning the potential use of the television broadcast bands, the 3650-3700 MHz spectrum band, and other bands by unlicensed devices. Consistent with its prior comments on the Spectrum Policy Task Force Report,¹ the Wi-Fi Alliance commends the FCC on its proactive approach and designation of additional bands for unlicensed spectrum. The Wi-Fi Alliance believes that making available unlicensed capacity in varying bands with different physical propagation characteristics will further the public interest. The FCC should fully exploit the fact that, as technology has advanced, unlicensed devices have become more able to share spectrum with existing higher power licensed users through avoidance techniques. The

¹ Comments of the Wi-Fi Alliance, ET Docket No. 01-135 (file Jan. 27, 2003); *see also* Spectrum Policy Task Force Report, ET Docket No. 02-135 (dated Nov. 2002) (“SPTF Report”), available at http://www.fcc.gov/Daily_Releases/Daily_Business/2002/db1115/DOC-228542A1.pdf (last visited Mar. 24, 2003).

FCC should, therefore, move forward with a Notice of Proposed Rule Making to permit unlicensed device use of the designated spectrum bands.

The Wi-Fi Alliance, formerly the Wireless Ethernet Compatibility Alliance (“WECA”), is an international trade association formed in 1999 to promote the adoption and commercialization of products built according to the IEEE 802.11 specifications, including Wireless Local Area Networks (“WLANs”) in the 2 GHz and 5 GHz frequency bands. Membership in the Wi-Fi Alliance is open to all companies that support the WLAN standards, and current members include virtually all of the major radio manufacturers producing wireless network equipment and marketing such products in the United States.² The membership continues to expand and currently consists of over 200 companies. The Wi-Fi Alliance’s members are closely involved with the development, manufacturing and marketing of WLAN devices, and the Wi-Fi Alliance therefore has particular interest in the recommendations posed in the Notice.

As the Notice recognizes, advances in the development of unlicensed wireless devices—such as WLANs—have significantly increased the diversity of service offerings, qualitatively improved existing services, and are yielding significant technological and economic benefits in the form of low-power short-distance communications.³ Indeed, a recent Allied Business Intelligence report predicts that the “[t]otal WLAN nodes shipped will grow from 23.38 million in 2003 to 63.97 million in 2008.”⁴ This increase in consumer demand is also unlikely to slow

² A complete membership list is available at <http://www.wi-fi.org/OpenSection/members.asp?TID=2> (last visited Mar. 24, 2003).

³ See Notice at ¶¶6-7.

⁴ See Allied Business Intelligence, “Wireless LAN’s Future Is Established As Big Tech and Telecom Companies Enter The Market, According to New ABI Study,” <http://www.alliedworld.com/abiprdisplay.jsp?filename=wlan03pr.pdf> (last visited April 3, 2003).

because technological advances in affordable unlicensed wireless communication products continues to spur market growth.⁵

The Wi-Fi Alliance believes that making a broader range of spectrum bands available also creates tangible benefits in terms of the types of unlicensed offerings that can be made available due to the varying physical propagation characteristics of the spectrum. For example, the 2.4 GHz and 5 GHz bands are well-suited for WLAN applications using central access points because the shorter propagation of those radio waves lends itself to frequency re-use in higher density applications. On the other hand, spectrum in the television broadcast bands would be ideal for unlicensed point-to-point systems because the spectrum could be used to provide data communications over great distances, tying together, and providing backhaul for, islands of local coverage. Thus, in conjunction with higher frequency WLAN systems, a remote community could be interconnected with Internet services on a cost-effective, unlicensed basis.

The Wi-Fi Alliance also notes that the ability of unlicensed systems to share spectrum with incumbent users has improved greatly. Devices in the 5 GHz band, for example, will incorporate dynamic frequency selection (“DFS”) and channel monitoring to protect incumbent radar systems. While further investigation would be required to determine if DFS is a workable scheme for protecting incumbents in the television broadcast band, other avoidance schemes are also available that allow devices to determine the environment in which they operate and to adapt to ensure non-interference with existing users. For example, because many of these systems—or at least the hub for the system—are interconnected with the Internet and either employ location technologies or could be programmed as location dependent, the possibility exists of deploying devices that can dynamically determine operating characteristics in real time

⁵ The growth of Wi-Fi certified products has exploded in the past year. Since testing began in March of 2002, 509 Wi-Fi product certifications have been awarded to 98 Wi-Fi Alliance member companies.

as dictated by Internet servers tracking incumbent uses. Such techniques may be particularly appropriate for sharing with fixed systems that operate in a relatively static environment, such as broadcast television.

Given the enhanced ability of unlicensed systems to interact with the radio environment, either autonomously or through the Internet, a greater degree of spectrum sharing has now become feasible than ever before. The Wi-Fi Alliance believes, therefore, that the FCC's Notice is particularly appropriate and urges the FCC to move forward to initiate a rulemaking to allow use of the designated bands—as well as other spectrum—for unlicensed systems. By making available additional capacity and capabilities through the creation of a broad menu of unlicensed bands, the public interest will be served and a wide array of consumer services brought to market.

Respectfully submitted,

THE WI-FI ALLIANCE

By: /s/ Sarosh Vesuna
Sarosh Vesuna, Chair of the
Technical Committee
WI-FI ALLIANCE
2570 West El Camino Real
Suite 304
Mountain View, CA 94040-1313
Tel: 650.949.6725

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