

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

In the Matter of)
)
Amendment of Section 2.106) RM No. 7618
of the Commission's Rules to)
Establish A New Radio Service for)
Local Area High Speed Data)
Communications Among Personal)
Computing Devices)

To: The Commission

Comments of IEEE 802

This comment on RM-7618 ("Apple Petition"), is offered by the IEEE 802 LAN Standards Committee (IEEE 802). IEEE 802 supports the allocation of separate spectrum for the purpose of high speed local area digital communication as called for in the Apple Petition.

The Institute of Electrical and Electronics Engineers, Inc. (IEEE) is a USA based international professional organization with more than 300,000 members representing a broad segment of the computer and communications industries. IEEE 802 is chartered by the IEEE to produce standards for Local, Metropolitan and Integrated Voice/Digital communications networks. These standards provide for data transfer between computers and/or computer terminals at data rates of 1 to 20 Mbit/s on wire, optical and radio media.

To date, IEEE 802 has developed several widely recognized standards. Many of these have been forwarded to the International Organization for Standardization (ISO) and have been accepted subsequently as International Standards.

IEEE 802 now has work underway to prepare a Local Area Network standard for data communication over a radio medium. To date our efforts have focused on the ISM bands because they are the only currently available spectrum. As the work of IEEE 802 progressed, it has become evident that there will be substantial benefit to American industry from the allocation of separate spectrum for wireless local area data networks.

Time is of the essence:

The emergence of powerful, new applications requiring untethered computing have produced an urgent demand for high speed wireless communication. IEEE 802 is acutely aware of the economic and social benefits of the synergy of information access by the workforce and wireless local digital networking.

It is the position of IEEE 802 that there is an urgent need for an immediate allocation of spectrum to wireless local digital networks. IEEE 802 is previously on record as supporting spectrum allocations (see IEEE 802 reply comments to GEN Docket No. 90-314, RM-7140, RM-7175) greater than that requested within the Apple petition.

The requirement for immediate allocation is driven by the need of our members to make investments today, in the creation of wireless local digital networks with signaling rates between 1 and 20 Mbit/s.

There is a clear, strong interest in wireless local digital networking. The interest is evidenced by the size and scope of the IEEE 802 working group on wireless LANs. The membership of this IEEE 802 working group, currently with 59 members with voting rights and a total mailing list exceeding 250 individuals, is composed of individuals from companies with a wide range of business interests.

Current PCS proposals are focused on the optimization of voice service over data services. IEEE 802 does not perceive that these PCS proposals will adequately address the need for high signaling rates between computing devices.

Since the need for wireless local digital networks is immediate, it is not appropriate to condition the allocation of spectrum for data communication upon the allocation of spectrum for PCS.

Accordingly, IEEE 802 requests that the FCC initiate immediate NPRM proceedings to allocate spectrum for wireless local digital networks.

World Administrative Radio Conference 1992:

Wireless local digital networking is an application of short reach radio where international compatibility has enormous benefits.

When an NPRM for wireless local digital networks is docketed, the U.S. administration will be strengthened at the 1992 WARC, where international frequency allocations for PCS will be considered.

The U.S. position needs to show value and constructive spectrum use which has business and industrial benefits. Otherwise spectrum may be designated exclusively to PCS.

IEEE 802 believes that time is of the essence in defining wireless local digital network spectrum through appropriate channels to WARC (such as CCIR TG 8/1).

Economic benefits:

The availability of spectrum and open standards will allow development and deployment of wireless local digital network products in the United States.

The longer that data spectrum allocation is delayed, the more likely it is that vendors will market partial solutions in an effort to meet unsatisfied market needs. The members of IEEE 802 have strong economic motivations to market and use standardized wireless local digital networks.

The multi-vendor equipment environment which results from the adoption and use of open standards has provided great economic benefit in many areas of the computer industry. The allocation of spectrum to wireless local digital networks will further motivate creation and adoption of open standards.

Adequate coverage and low power consumption are important objectives of the IEEE 802 wireless LAN effort. These characteristics are essential to the new generation of low cost, high volume personal data devices. The frequencies identified in the Apple petition are consistent with these objectives.

Wireless LAN availability is crucial to American industry if it is to remain competitive. Major contributors to the gross national product need this capability for factory automation as evidenced by their participation in IEEE 802. Office workers and service industries will also benefit.

Distinction between wireless LANs and PCS:

IEEE 802 believes that the importance of wireless local digital networks fully justifies consideration separately from other short reach radio systems asking for FCC consideration.

Just as there is a significant difference between wired data networks and telephone service, a similar difference exists between wireless local digital networks and PCS.

Wired digital networks are optimized to provide high speed data communication while telephony services are optimized to provide voice. Wireless local digital networks will be optimized to provide high speed data communications while PCS is optimized for voice.

IEEE 802 agrees with the position stated by Apple that wireless local digital networks are significantly different than PCS.

Technical need for separate spectrum allocation:

Wireless local digital network services require low error rates and must coexist geographically with other services including PCS. Wireless local digital networks are very difficult to construct with sufficient data accuracy if they must share spectrum with significant interferers.

Point-to-point fixed location radio systems can coexist spectrally if the two services are separated geographically. Geographical separation can not be guaranteed between fixed services and portable services. Therefore, fixed location services and portable services should not share spectrum allocations. Neither can two portable services easily share spectrum allocations.

Attempting to make wireless local digital networks share spectrum allocation with services like PCS will result in high probability of mutual interference.

Needs of the American workforce:

There is a large and growing workforce in the United States that uses portable computers. In fact, portable computers are the fastest growing segment of the computer industry. Just as the wired LAN provides the desk-bound office worker with personal computer access to corporate data, wireless local digital networks are required to provide the portable computer user with equivalent high speed access.

Conclusion:

Having considered the Apple Petition, RM-7618, IEEE 802 respectfully requests that the Commission initiate prompt NPRM proceedings to allocate separate spectrum for wireless local digital communications.

Respectfully submitted,

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Dated

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