

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

In the Matter of)
)
Amendment of the Commission's Rules) GEN Docket No. 90-314
to Establish New Personal) RM-7140
Communications Services) RM-7175

NOTICE OF INQUIRY
RESPONSE OF IEEE 802 LOCAL AREA NETWORK STANDARDS COMMITTEE

This response to the Notice of Inquiry in this matter is offered by the IEEE 802 LAN Standards Committee (IEEE 802). This body recommends that the needs for wireless data communication within the premises area of many kinds of enterprises be considered equally with proposed voice/telephone personal communication services. The originators of this recommendation and the purposes served are further described below.

The Institute of Electrical and Electronic Engineers (IEEE) is a USA-based international professional organization with more than 240,000 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/Data communication networks. These standards provide for data transfer between computers 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 subsequently accepted as International Standards.

IEEE 802 understands the Commission's interest in releasing the Notice of Inquiry in General Docket No. 90-314 relative to the establishment of new personal communications services. However, in addition to voice communication services, a significant market also exists for high speed wireless data communication networks (LANs). IEEE 802 believes that local data communication services should be included within the new services covered by the Inquiry in General Docket 90-314. Within business, commercial and industrial user groups, the volume of usage and dollar value of the products produced for this market could very well exceed that for voice/telephone equipment. This volume could have a proportional impact on industrial efficiency.

IEEE 802 now has work underway to prepare a LAN standard for data communication over a radio medium. This work is currently exploring the frequency bands for ISM using the Commission's spread spectrum rules. Data communication in the ISM bands is unprotected from higher power transmitters, and

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Section 15.247 of the Commission's rules requires expensive features aimed at avoidance of interference to higher status users. In addition, many other services are evolving under section 15.247 and the ISM bands will over time have limited usefulness for data communication.

A protected band for data communication, possibly shared with like power-density voice/telephone users and certainly shared with the assigned primary users, is badly needed. IEEE 802 requests that provision for radio LAN with signaling rates of at least 1 Mb/s and up to 10 Mb/s be provided. The 1700-2300 MHz frequency region mentioned in the Commission's Notice is highly desirable for this service though higher frequencies are usable. If use is authorized for any PCS in this band, then simultaneously a provision should be made for non-voice services using radio equipment with like power-density levels. IEEE 802 believes that one of the bands 1850-1990 MHz, 1990-2110 MHz or 2110-2200 MHz should be allocated for LAN data communications use on a shared basis with the current allocations.

High signalling rate local area communication equipment is an efficient use of radio spectrum. This is true not only because of the short distance aspect, but also because of IEEE 802 LAN protocols which use LAN packet technology. Pursuant to that technology, transmitter on-time is likely to be only a few milliseconds per message resulting in a high time-shared capacity for each communication channel. The number of separate frequencies for overlapping coverages within a reuse plan can be significantly reduced by modulation, time and control techniques defined in a standards committee. In addition, known very-short-range radio technology is appropriate for this service, further minimizing interference to other users sharing the same spectrum.

Accordingly, IEEE 802 urges the Commission to expand the scope of it's Inquiry so that the competing needs for spectrum for LAN data communication services may be concurrently considered. Should additional information be required about radio LAN technology, IEEE 802 is interested in and willing to provide such information. Thank you for your consideration of these matters.

Respectfully submitted,

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Dated

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