

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

FILED

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)	
)	
Amendment of the Commission's Rules)	DOCKET FILE COPY ORIGINAL
to Provide for Unlicensed NII/SUPERNet)	ET Docket No. 96-102
Operations in the 5 GHz Frequency Range)	RM-8648
)	RM-8653

**REPLY COMMENTS OF THE
CONSUMER ELECTRONICS MANUFACTURERS ASSOCIATION**

The Consumer Electronics Manufacturers Association ("CEMA"), a sector of the Electronic Industries Association, hereby replies to the comments that were filed in response to the Commission's Notice of Proposed Rulemaking ("*Notice*") in the above-captioned proceeding on July 15, 1996.¹

The comments demonstrate substantial support for the Commission's proposal to make available 350 MHz of spectrum in the 5 GHz band for broadband communications devices. Like CEMA, these parties also support the *unlicensed* use of this spectrum subject to minimal technical standards, and with the benefit of a "safe harbor" from complaints of causing interference. The parties agree that, by making spectrum available for NII/SUPERNet devices, the Commission will create significant opportunities for the public to access advanced telecommunications capabilities.

The commenting parties, however, reflect a diversity of views on the few technical parameters that the Commission has proposed; most notably, on whether to permit

¹ See *Amendment of the Commission's Rules to Provide for Unlicensed NII/SUPERNet Operations in the 5 GHz Range*, Notice of Proposed Rulemaking, ET Docket No. 96-102, FCC 96-193 (released May 6, 1996) [hereinafter "*Notice*"].

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"high-powered" or "long-range" operations in this spectrum and whether to adopt the Commission's proposed, or any other, spectrum etiquette. CEMA submits that, in resolving these issues, the Commission should take three critical steps to ensure NII/SUPERNet devices become convenient "on-ramps" to the Nation's information superhighway:

- First, it is essential that the Commission allow manufacturers to develop long-range technologies so that NII/SUPERNet devices can be made available to consumers, schools, libraries and the like in all areas of the Nation, particularly rural and remote areas.
- Second, the Commission should rely on a spectrum etiquette or multiple etiquettes to minimize the interference potential among users of this spectrum, but the Commission should allow industry to develop these etiquettes.
- Third, the Commission should keep abreast of the development of NII/SUPERNet devices, focusing in particular on whether proprietary technologies inhibit the creation of a robust market in NII/SUPERNet consumer premises equipment. The Commission should allow for wide commercial availability of consumer NII/SUPERNet devices in order to further its goals in this proceeding.

As set forth more fully below, the Commission should take these additional steps to maximize the opportunities presented by NII/SUPERNet technology.

I. NII/SUPERNET SPECTRUM MUST BE MADE AVAILABLE FOR LONG-RANGE DEVICES IF ALL AMERICANS ARE TO ENJOY THE BENEFITS OF THIS TECHNOLOGY

The comments reflect agreement with and, indeed, enthusiasm for the Commission's proposal to make spectrum available for NII/SUPERNet devices.² Elaborating

² See, e.g., Comments of Apple Computer, Inc. *passim* [hereinafter "Apple Comments"]; Comments of Hewlett-Packard Company at 2 [hereinafter "HP Comments"]; Comments of Microsoft Corporation at 1-3 [hereinafter "Microsoft Comments"]; Comments of Motorola, Inc. at 1 [hereinafter "Motorola Comments"]; Comments of Rockwell International Corporation at 1-3 [hereinafter "Rockwell Comments"]. The Commission

on the list of benefits identified by the Commission, the commenting parties note that consumers will derive additional benefits because: NII/SUPERNet devices can be used in areas of the country where access to high speed connections is limited due to high infrastructure costs;³ the devices can be used to provide such access where access is completely unavailable;⁴ and within the home they can support platforms for connecting computers, televisions and appliance automation products.⁵ In short, these devices will make it possible to provide "people everywhere with an array of new high-capacity wireless products and services."⁶ Given the ingenuity of designers, programmers and manufacturers, NII/SUPERNet spectrum will soon become fertile ground for diverse and dynamic devices that satisfy a variety of consumer needs. There is thus little doubt that the Commission should proceed with its proposal to make spectrum available for these devices.⁷

the NII/SUPERNet concept and, in particular, the need for long-range, community links.

³ See Microsoft Comments at 2.

⁴ See Apple Comments at 6.

⁵ See Motorola Comments at ii.

⁶ HP Comments at 2.

⁷ As in any spectrum allocation proceeding, incumbent users of the proposed NII/SUPERNet spectrum resist the entry of new users. See, e.g., Comments of American Radio Relay League at 3-5; Comments of Resound Corporation *passim*. CEMA concurs with the Commission that, with appropriate technical constraints, NII/SUPERNet devices can successfully coexist with incumbent users. See Notice at ¶ 15. CEMA is not, however, insensitive to the concerns of incumbents and, in particular, the concerns expressed by Resound regarding potential interference to hearing aids. As discussed more fully below, CEMA urges the Commission to rely on industry to develop interference avoidance solutions, and CEMA volunteers to coordinate and facilitate those efforts. CEMA would seek the participation of incumbent users since their input would be important to the consensus building process.

The comments also demonstrate that these devices should be authorized on an *unlicensed* basis if the NII/SUPERNet concept is to become a reality.⁸ A handful of commenters, however, would have the Commission limit the reach of NII/SUPERNet devices and their many benefits by excluding long-range, or "community," links from the band. At bottom, these comments manifest some disagreement among manufacturers as to whether NII/SUPERNet devices can feasibly share spectrum with spread spectrum devices located in the 5.725-5.875 GHz range;⁹ and disagreement among manufacturers and telephone companies as to whether unlicensed NII/SUPERNet devices should serve functions which, in a very broad sense, are comparable to those traditionally performed by licensed microwave facilities.¹⁰ The record, however, demonstrates that long-range NII/SUPERNet devices can be designed to coexist with spread spectrum devices and that this new technology will not supplant licensed microwave facilities. As Motorola notes, long-range links should be seen "as a complement to, rather than a replacement for, licensed communications services."¹¹ CEMA agrees.

As to interference concerns, CEMA also agrees that "industry can develop technical guidelines and methodologies that will allow community network systems and [other]

⁸ See, e.g., Apple Comments at 17-24 (noting that licensing would defeat the purpose of making the spectrum available for a variety of uses and suggesting that, if some form of user coordination is necessary, it should be performed through simple nongovernmental procedures).

⁹ See, e.g., Comments of Cylink Corporation at 3-4; Comments of Larus Corporation at 1.

¹⁰ See, e.g., Comments of Fixed Point-to-Point Communications Section, Network Equipment Division of the Telecommunications Industry Association at 4-8; Comments of Pacific Telesis Group at 4-5 [hereinafter "PacTel Comments"].

¹¹ Motorola Comments at ii.

systems to share the unlicensed band."¹² In this regard, industry should be permitted to define those technical guidelines and methodologies that will accommodate long-range links. CEMA stands ready, willing and able to share its standards-setting experience and resources with industry to develop operating parameters for long-range NII/SUPERNet devices.

The Commission should not deny consumers the added value of NII/SUPERNet units which can transmit over longer distances. Although short-range devices will enable consumers to communicate at a distance of a city block and thereby bring neighbors' homes within range of each other, higher power levels will enable consumers to extend their internetworking capabilities to locations that are 10 to 15 kilometers away. In rural and semi-rural areas, such long-range NII/SUPERNet devices will be essential. The Commission should thus also ensure that consumers, businesses and institutions in rural and semi-rural areas enjoy the advanced communications capabilities of NII/SUPERNet devices.

II. THE COMMISSION SHOULD RELY ON INDUSTRY-DEVELOPED SPECTRUM ETIQUETTES

In their initial comments, CEMA and a number of other commenters supported the spectrum etiquette proposed by the *Notice*, with the caveat that industry should be permitted to develop additional etiquettes.¹³ Other parties, however, have raised legitimate questions about the utility of the Commission's proposed etiquette. Several, for example, point out that the proposed listen-before-talk etiquette will not support multimedia applications which depend

¹² *Id.*

¹³ *See, e.g.,* Rockwell Comments at 3-4.

upon isochronous transmissions.¹⁴ This would be a critical and unacceptable limitation. Today's multimedia applications are only at the beginning of what promises to be an extraordinary evolution. Before specifying a spectrum etiquette or other usage plan, the Commission should be confident that it will not frustrate the development of such multimedia applications.

RF interference among NII/SUPERNet devices should also be addressed by industry. As the Commission is well aware, industry-wide forums, spearheaded by organizations such as CEMA, are better equipped than government to define and develop consensus solutions to the interference concerns of industry. The comments confirm that such an approach is most appropriate here.

The Commission, however, should not deviate from its proposal to rely on a spectrum etiquette or compatible etiquettes. In addition to broadly supporting the NII/SUPERNet concept, the overwhelming majority of commenters recognize that some minimal operating parameters are necessary to prevent the band from being used so haphazardly as to limit its utility, *i.e.*, to avoid the "tragedy of commons."¹⁵ The Commission should therefore judiciously await the development of those etiquettes by industry before allowing users to occupy the spectrum. CEMA understands that the Commission may be, and that manufacturers undoubtedly are, anxious to see the NII/SUPERNet concept implemented. To expedite the

¹⁴ See, *e.g.*, HP Comments at 4.

¹⁵ See, *e.g.*, Comments of Carnegie Mellon University, Department of Electrical and Computer Engineering.

industry process, the Commission could establish a time limit, as it is considering elsewhere, within which industry is directed to develop first generation NII/SUPERNet etiquettes.¹⁶

III. THE COMMISSION SHOULD ENSURE THAT PROPRIETARY TECHNOLOGIES DO NOT INHIBIT THE DEVELOPMENT OF A ROBUST MARKET IN CONSUMER NII/SUPERNET DEVICES

A number of the comments suggest that some view the NII/SUPERNet spectrum as a place in which to develop closed or proprietary technologies, and to deploy closed systems which would amount to commercial radio transmission services, *e.g.*, proprietary links interconnected with the Nation's wireline network.¹⁷ CEMA urges the Commission to take steps, if they prove necessary, to ensure that proprietary technologies -- with which competitively supplied equipment could not be used -- do not usurp consumers' right to choose equipment that best suits their needs. NII/SUPERNet devices should be widely, commercially available to consumers if the basic purpose for making spectrum available for such devices is to be served. If developers of proprietary technologies and/or operators of closed systems limit consumers' ability to acquire the equipment necessary to access NII/SUPERNet systems, the Commission's goal of bringing advanced telecommunications capabilities to *all* Americans will be frustrated.¹⁸

¹⁶ See *Amendment of Parts 2, 15, and 97 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications*, First Report and Order and Second Notice of Proposed Rulemaking, ET Docket No. 94-124, FCC 95-499, at ¶ 64 (released Dec. 15, 1995).

¹⁷ Pacific Telesis Group, for example, cites this possibility as the basis for its argument that long-range NII/SUPERNet links should be licensed. See PacTel Comments at 4-5.

¹⁸ See Notice at ¶ 2.

IV. CONCLUSION

For all of the reasons set forth above and in its initial comments, CEMA urges the Commission to authorize the introduction of NII/SUPERNet devices in a way that maximizes consumer access to the National Information Infrastructure, subject to minimal, but necessary regulation.

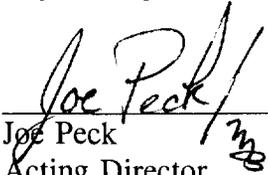
Respectfully submitted,

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