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

In the Matter of	)	
	)	
Amendment of Part 90 of the Commission's Rules To Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service	)	PR Docket No. 89-552
	)	
Implementation of Sections 3(n) and 332 of the Communications Act -- Regulatory Treatment of Mobile Services	)	GN Docket No. 93-252
	)	
Implementation of Section 309(j) of the Communications Act -- Competitive Bidding. 220-222 MHz	)	PP Docket No. 93-253

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To: The Commission

COMMENTS OF SEA INC.

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SUMMARY

SEA, Inc. ("SEA") commends the Commission for proposing a cogent and comprehensive regulatory structure in light of the legislative changes that followed the early stages of the 220 MHz proceeding.

SEA is concerned, however, that because the Phase II band plan proposal is not congruent with licensed Phase I channel blocks, adoption of the Commission's channel block assignment proposal would require Phase II licensees to negotiate with several different Phase I local trunked licensees to resolve interference problems, service area issues and general spectrum use issues.

In addition, SEA objects strongly to the proposal to permit aggregation of contiguous 5-kHz channels and to permit abandonment of the emissions mask within such aggregated channels. Adoption of this proposal would abandon the Commission's longstanding and frequently emphasized objective that reallocation and licensing of the 220-222 MHz band for the land mobile service was intended to promote the development and marketplace acceptance of narrowband technologies.

SEA has expended extraordinary resources and exerted great efforts in research and development of narrowband technologies in reliance upon the Commission's reassurances over the past six years. This proceeding remains critical to the development of narrowband technology, which will ultimately benefit licensees and the public utilizing channels throughout the land mobile spectrum bands.

Other technologies such as CDMA and TDMA can be combined with narrowband data technology and can also be implemented in the many bands where the

channelization plans are designed for broader bandwidths. Widespread deployment of broadband technologies in the 220-222 MHz band would undermine the development of narrowband technologies and complicate negotiations among licensees, leading back to the original problem that gave birth to this proceeding, namely, the need for a band dedicated to development of narrowband technologies.

If the Commission makes the unfortunate, mistaken and unsupported decision nonetheless to permit the aggregation of contiguous channels, SEA agrees that: (1) conforming to the mask at the block edge is required for appropriate protection of adjacent channel neighbors; and (2) efficiency standards, such as one voice channel per 5 kHz for voice communications, and a 4800 bps data rate per 5 kHz for data communications, are needed to encourage efficient spectrum use.

Finally, SEA opposes permissible paging throughout the 220 MHz band, primarily because the 220 MHz service, as a paired-frequency service, is not appropriate for one-way paging, and also because there is no shortage of paging spectrum.

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To: The Commission

COMMENTS OF SEA INC.

SEA Inc. ("SEA"), by its undersigned counsel and pursuant to Section 1.415 of the Commission's Rules and Regulations, hereby files its comments in the above-captioned proceedings in response to the Commission's Third Notice of Proposed Rulemaking, FCC 95-312, released August 28, 1995 (Third Notice), wherein the Commission proposed a Phase II licensing plan, application filing and selection procedures, and defined initial applications, amendments to applications, and license modifications for the 220 MHz service.

I. Introduction and Statement of Interest

Since 1981, SEA has actively participated in the development of 5 kHz narrowband technology for land mobile radio systems. SEA manufactures and markets narrowband linear modulation wireless equipment that is used in voice and data operations in 5 kHz wide channels on frequencies allocated in the 220 MHz service. SEA has a full line of type-accepted narrowband mobile, base and portable radio products for the 220-222 MHz frequency band. No other manufacturer has a track record of narrowband product development and system implementation which comes close to matching that of SEA.

II. The Proposed Phase II Band Plan Will Devalue 220 MHz Spectrum

In this proceeding, the Commission seeks to assign 60 channels in the many defined Economic Areas (EAs) and 65 channels in five defined "220 MHz Regions" in blocks of contiguous channels. This plan would create EA grants consisting of four blocks of 5 channels and four blocks of 10 channels, and Regional grants of three blocks of 10 channels and one block each of 15 and 20 channels. SEA is concerned that adoption of the Commission's channel block assignment proposal would require Phase II licensees to negotiate with several different Phase I local trunked licensees to resolve interference problems, service area issues and general spectrum use issues.

With the exception of one 10-channel and the 15-channel Regional blocks, all of the proposed Phase II licensing blocks are created from spectrum originally assigned to trunked narrowband operation. These channels are assigned to Phase I licensees in

5-channel groups, with a channel separation of 150 kHz. (Twenty of these five-channel groups were available for assignment to Phase I applicants.) SEA believes that incongruence of the two channels plans will negatively impact progress of Phase II systems, impede the expansion of Phase I networks and drastically reduce the value of the spectrum for the purpose of competitive bidding.

EA and Regional Phase II licensees already will need to deal with potential multiple licensees using 220-222 MHz spectrum in their area or region, and the incongruence of the block overlays will add an extra layer of complexity to negotiations among Phase I and Phase II licensees. Phase I local trunked licensees will have similar problems, because each of their channels potentially will have been auctioned to a different entity. Phase I licensees may wish to expand their operations through negotiations with Phase II auction winners. The presence of several different licensees will not facilitate these negotiations. These added complexities, and the costs of the legal and technical support that will inevitably be needed to deal with them certainly will be considered by Phase II bidders and will be factored in as part of their valuation analyses and bidding strategies. This will result in significant discounting of the perceived value of the Phase II licenses and a consequent reduction in auction revenues.

The Commission can cure this problem by adopting a band plan that overlays on the existing band plan in a more congruent fashion. It is possible to configure licenses in 5, 10, and 20 channel assignments, but in a manner that is consistent with the original band plan. Such an approach will facilitate the orderly melding of Phase I and Phase II

interests, permit the buildout of currently envisioned networks, and preserve the greater inherent value of the Phase II licenses for purposes of a successful auction.

Specifically, SEA recommends the following Phase II assignments:

EA license #	Groups[1/]	No. of Channels	Configuration
1	9, 10	10	five blocks of 10 kHz
2	11, 12	10	five blocks of 10 kHz
3	13, 14	10	five blocks of 10 kHz
4	15, 16	10	five blocks of 10 kHz
5	17	5	five blocks of 5 kHz
6	18	5	five blocks of 5 kHz
7	19	5	five blocks of 5 kHz
8	20	5	five blocks of 5 kHz

Regional license #	Groups	No. of Channels	Configuration
1	1, 2	10	five blocks of 10 kHz
2	3, 4	10	five blocks of 10 kHz
3	5,6,7,8	20	five blocks of 20 kHz

Because channels 171-180 and channels 186-200 are assigned to Phase I licensees on an individual basis rather than in groups, the assignment of these channels as proposed in the Third Notice creates no special problems. These channels therefore are shown in the following table as Regional Blocks, as proposed by the Commission.

Regional license #	Groups	No of Channels	Configuration
4	171-180	10	one block of 50 kHz
5	186-200	15	one block of 75 kHz

1/ "Groups" refer to the trunked channel groups defined in § 90.721. Group 1, for example, consists of channels 1, 31, 61, 91 and 121.

The assignment approach described above apportions the same amount of spectrum per licensee as the approach proposed by the Commission.

III. Permitting Aggregation of Contiguous Channels, Resulting in Abandonment of the Channel Emissions Mask at the Edge of Each Channel, Would Abrogate a Longstanding Primary Objective of this Proceeding

SEA commends the Commission for proposing a cogent and comprehensive regulatory structure in light of the legislative changes that followed the early stages of the 220 MHz proceeding. SEA objects strongly, however, to the unnecessary and counterproductive proposal to abruptly change course by abandoning the goal of facilitating an opportunity to develop and gain marketplace acceptance of narrowband technologies -- a goal consistently emphasized by the Commission as a primary objective of this proceeding since the initial 1988 Allocation Order[2/] -- by allowing aggregation of licensed frequencies to create larger channels of contiguous authorized spectrum.[3/]

2/ See Report and Order, Gen. Docket No. 87-14, 3 FCC Rcd 5287 ¶¶ 14, 17 (1988) (Allocation Order), recon. denied, 4 FCC Rcd 6407 (1989), aff'd American Radio Relay League, Inc. v. FCC and United States of America, No. 89-1602 (D.C. Cir. Dec. 3, 1990), appealed on other grounds, United States of America v. FCC, No. 89-1635, voluntarily dismissed (D.C. Cir. December 28, 1989).

3/ See Third Notice, ¶ 81. Throughout these Comments, unless otherwise specified, references to channel aggregation mean aggregation of contiguous channels to accommodate non-narrowband technologies. SEA objects to such channel block creation, but has no objection to aggregation of licenses to result in, for example, a group of 20 trunked 5 kHz channels.

The groundwork for the 220 MHz proceeding was laid in the 1983 Report on "Future Private Land Mobile Telecommunications Requirements,"[4/] wherein the Private Radio Bureau recommended possible sources of land mobile spectrum, including the 216-225 MHz band, discussed efficient use of this band segment, and observed that if "equipment at 5 kHz channeling were employed in 2 MHz of the 216-225 MHz band, 200 duplex channels could be created . . . ."[5/] In addition, an FCC/NTIA planning group recommended designation of a portion of the 216-225 MHz band for narrowband land mobile operations.[6/] The Commission thereupon proposed in 1987 to reallocate the 220-222 MHz band from the amateur service to the land mobile service in order to "provide an opportunity for the further development of narrowband technologies."[7/] Subsequently, on September 6, 1988, the Commission issued a Report and Order reallocating the 220-222 MHz band to the private land mobile service.[8/] The Commission "felt the public interest would be served by providing dedicated spectrum for the

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4/ Future Private Land Mobile Telecommunications Requirements, Final Report (Planning Staff, Priv. Rad. Bur., FCC, August 1983).

5/ Report, supra, at 7, 17, and Chapter 8 (emphasis supplied).

6/ See Notice of Proposed Rule Making, Gen. Docket No. 87-14, 2 FCC Rcd 796, 796 ¶ 3 & n.6 (1987).

7/ Id., 2 FCC Rcd at 797 ¶ 6.

8/ Allocation Order, supra, ¶ 17.

development of narrowband spectrum efficient technologies."[9] The Commission stated further,

> Of course narrowband technology is not the only spectrum efficient technology that might be applied to land mobile needs. However, we note that it has the potential of greatly improving spectrum efficiency. We are convinced that in order for narrowband land mobile technology to flourish, it must be afforded a reasonable opportunity to gain full acceptance in the marketplace.[10]

In its 1989 reconsideration of the Allocation Order, the Commission reiterated that it was aware that "narrowband technology is not the only spectrum efficient technology that might be applied to land mobile services." and noted that the Commission was "providing for other spectrum efficient technology such as trunking and digital as suggested by the [American Radio Relay League, Inc.]."[11] The Commission noted particular private and cellular radio proceedings in which it was addressing expansion of the permissible use of trunking and digital technologies.[12] A dedicated band of spectrum was necessary for narrowband technology development, the Commission stated, because "current provisions for narrowband land mobile systems have proven to

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9/ Id., 3 FCC Rcd at 5288 ¶ 8.

10/ Id., ¶ 17 (emphasis supplied).

11/ Memorandum Opinion and Order, Gen. Docket No. 87-14, 4 FCC Rcd 6407, 6408 ¶ 10 (1989).

12/ Id., 4 FCC Rcd at 6413 n. 9.

be an impediment to the development of this spectrum efficient technology."[13/] The agency affirmed that it "still believes that existing land mobile bands would not allow narrowband technologies to fully develop due to current use and channeling plans."[14/]

The Commission again observed in its Notice of Proposed Rule Making for this service that:

> we reallocated the 220-222 MHz band to the private land mobile service not only to help meet the immediate need of land mobile operators for additional spectrum but also with the intention of affording spectrally efficient narrowband technology an opportunity to develop and gain acceptance in the marketplace.[15/]

The Commission stated, "it is imperative that we incorporate provisions that will accomplish both goals."[16/] Until the adoption of the Third Notice, the Commission had continued to reiterate its intent to encourage development of narrowband technologies.[17/]

13/ Id., ¶ 12; see also, e.g., Allocation Report and Order, 3 FCC Rcd at 5289 ¶ 14 (citing comments that "narrowband operations are growing on a limited scale in the 150 MHz land mobile band, but that [interference protection restrictions and] the unavailability of frequencies due to heavy existing use of this band have limited the growth and acceptance of narrowband systems").

14/ Id., ¶ 15.

15/ Notice of Proposed Rule Making, PR Docket No. 89-552, 4 FCC Rcd 8593 ¶ 10 & n.30 (1989) (emphasis supplied).

16/ Id.

17/ See, e.g., Report and Order, PR Docket No. 89-552, 6 FCC Rcd 2356 (1991). In adopting the initial channelization plan and service rules for the 220-222 MHz band, the Commission stated, "This proceeding is intended to encourage development of narrowband technology in underused spectrum to promote spectrum efficiency. This Report and Order adopts rules to implement a private land mobile radio service based upon narrowband technology in the 220-222 MHz frequency band."

In other words, at every step in its progress toward licensing and implementation of this fledgling service, the Commission has assured the public that this band will be used to further the development of narrowband technologies. The goal was not simply "spectral efficiency." The goal was to develop a suite of methods for utilizing spectrum efficiently, i.e., narrowband technologies, to their fullest potential. In light of the history and record of this proceeding, the Commission was simply incorrect and unfaithful to its prior commitments when it essentially concluded in the Third Notice that the contiguous channel aggregation restriction could be abandoned without violating the original goals of this proceeding.[18/]

The Commission has emphasized repeatedly over the years its intent to utilize this band to facilitate narrowband development. Acting in good faith reliance on the Commission's pronouncements and statements, SEA responded by pouring resources into research and development of narrowband land mobile radio products. Fueled by continuous Commission assurances that this band will be used for the development of

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6 FCC Rcd at 2358 ¶¶ 10 (emphasis supplied); see also ¶ 22. Indeed, the Commission provided that "[e]ach channel in a block must be operated as an individual 5 kHz channel, consistent with the reasoning for making this allocation available." 6 FCC Rcd at 2368 ¶ 95 (emphasis supplied).

18/ Third Notice, supra, ¶ 83.

narrowband technologies, SEA has intensively focused its funding efforts and human capital upon production of such technologies.

In its proposal to permit the aggregation of channels, the Commission now maintains that "(v)arious equipment manufacturers have developed...five kHz narrowband systems," and therefore, "it is not necessary to continue to provide that 5 kHz technology be utilized in the 220 MHz band to the exclusion of all other technologies."[19/] SEA disagrees with this assertion. Due to the long delays in actual licensing of the 220-222 MHz service, SEA and other narrowband manufacturers have had an infinitesimal amount of time in which to recoup their enormous research and development investments and, indeed, have had no opportunity as yet to achieve the sales volume that would lower the costs of equipment for licensees and end user consumers.

In light of the substantial outlays for research and development in reliance upon the Commission's commitment to narrowband use of the 220-222 MHz band, SEA urges the Commission to retain the current restriction upon aggregation of channels. As licensing recommences, SEA urges the Commission at least to provide a reasonable

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19/ Third Notice, supra, ¶ 80 (emphasis supplied).

opportunity for the existing rules to facilitate narrowband technology development in the marketplace. Such an opportunity has not yet been afforded.

The effort and capital expended thus far by manufacturers have demonstrated that the technologies developed to date work exceedingly well.[20/] Development of the technologies is not, however, the entire challenge of narrowband, nor would it be for any new and advanced technology. Subscriber unit market development has not advanced yet to the point where high volume mobile sales are occurring. Until this time arrives, the economies of scale necessary to propel these new products and technologies will not be present. A sufficient level of sustained volume production of mobile units must occur in order to drive manufacturing costs down so that product cost to the user can decrease while returning a reasonable profit to the manufacturers.

If the current rules on narrowband use of the band remain in effect, volume sales will occur and will prove that narrowband technologies are as cost effective as other land mobile technologies when produced at equivalent volumes. This demonstration is as important as proving the operational viability and efficiency of these technologies. Furthermore, manufacturers have had virtually no time to obtain licensee feedback and improve the narrowband technologies based on real world deployment.

To get a feel for the impact of the Commission's proposal, SEA suggests that the Commission reflect on the history of the U.S. cellular telephone industry. In 1985, three

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20/ SEA recently was granted type acceptance for its SEA700, the first 220 MHz narrowband handheld portable radio.

years after the rollout of initial cellular systems, what result could be expected if the Commission had adopted the AMPS technology standard, let years pass while companies conducted research and development of first generation AMPS products, and then, shortly after commencing licensing, permitted the introduction of technologies other than AMPS? The result would have been enormous losses to initial manufacturers, to licensees, and to the public. The losses would have been passed on either to licensees and consumers in the form of higher prices on future product lines, or to investors who took a risk with the entrepreneurs and innovative engineers who sought to fulfill the Commission's vision for a new wireless service

Similarly, in the 220-222 MHz band, if the recent contiguous channel aggregation proposal is adopted, the sunk costs expended thus far will have to be recovered either from shareholders or from future product lines, thus artificially driving up the costs of new equipment based on different channelizations Accordingly, adoption of the current proposals would deprive the public of lower priced equipment and greater quality of service. The Commission's proposal to abandon the 220 MHz aggregation restriction was not based upon any comments of interested parties, nor upon any legislative changes, but apparently upon the mistaken impression that the goal of the 220 MHz licensing process was to achieve some form of broadly defined "spectrum efficiency." In fact, as demonstrated above, the true goal was promotion of "spectrally efficient narrowband technologies." This goal cannot be achieved by allowing the deployment of non-narrowband technologies so soon in the life of the 220 MHz service.

The Commission has repeatedly noted that other bands afford opportunities for development of other types of efficient technologies, and that the channelization plans and existing authorizations in those other bands have precluded intensive and effective development of efficient narrowband technologies. Accordingly, the primary goal of this proceeding would be directly contravened by a decision to change the rules in this regard at this time.

Any entities who desire access to wider bandwidth channels have ample opportunities already to obtain such channels elsewhere. The overwhelming majority of land mobile radio services have band plans conducive to the integration and development of wideband spectrum efficient technologies, such as TDMA. Services with rules that permit wider bandwidths and/or the aggregation of contiguous channels include the broadband Personal Communications Service (PCS), the public cellular service, the 800 MHz Specialized Mobile Radio (SMR) service and the 900 MHz SMR service. The allocations for these services total approximately 195 MHz of spectrum. In short, there is no dearth of spectrum for development and deployment of wideband CDMA and TDMA applications. There is no need to authorize additional contiguous channel blocks, especially in this band, which has been dedicated since its allocation to the development of narrowband systems.

Further, the existing rules do not preclude a 220 MHz licensee from utilizing TDMA or CDMA technologies <u>within</u> its narrowband channel or channels, thus increasing spectrum efficiency severalfold. Five kHz technology is <u>not</u> mutually exclusive of "all other technologies." For example, a licensee could provide a TDMA data service over

narrowband channels. Thus, the 220 MHz band, as it was configured originally, offers a valuable opportunity for development of narrowband TDMA and CDMA applications.

Current embodiments of narrowband technology are based on single-channel-per-carrier FDMA techniques, but also support advanced data modulation types. Although TDMA and CDMA techniques are not currently employed on 5 kHz channels for voice transmission, the techniques can in fact be employed to transmit data over 5 kHz channels. The Commission's statement that "five kHz-wide channels unnecessarily restrict the array of services that can be provided in the 220 MHz band"[21/] is not supported in the record and has no basis in fact. It is not apparent that 5 kHz technologies are unable to provide a broad array of services. The development of a wide array of services and technologies using 5 kHz channels will take place, however, only if the Commission maintains a band where such development can take place. Current narrowband systems are first or second generation technology. As a market matures, products are refined, economies are achieved, and new products are introduced that offer better performance and more features. The short regulatory and real-world history of the 220 MHz service has not yet afforded the proving ground that was originally intended for the development of efficient narrowband systems.

In summary, the Commission cannot simply claim "mission accomplished" regarding the use of the 220 MHz band for the successful development of narrowband technologies. The first true indication of success from the 220 MHz effort will be

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21/ Third Notice, supra, ¶ 81.

licensees' voluntary decisions to utilize in other frequency bands the narrowband technologies that are refined in this band.

This proceeding remains critical to the development of narrowband technology. Permitting widespread deployment of broader bandwidth technologies would lead back to the original problem addressed by this proceeding, namely, the need for a band dedicated to development of narrowband technologies.

IV. If Aggregation of Contiguous Channels is Permitted, Licensees Must Be Required to Conform to the Emission Mask at the Block Edge

The Commission proposes that, in allowing licensees to aggregate contiguous channels, 220 MHz licensees should be required to conform to the narrowband emission mask at the outer edge of their blocks.[22] Although SEA is opposed to contiguous channel aggregation, SEA agrees that, if the Commission opts to permit the aggregation of channels, it must at the very least compel licensees to conform to the mask at the block edge to ensure appropriate protection to adjacent channel neighbors.

V. If Aggregation of Contiguous Channels is Permitted, ERP/HAAT Limits for Aggregated Channels Must be Maintained

As addressed above, SEA does not support allowing the aggregation of contiguous channels. In the unfortunate event that the Commission permits such aggregation, however, SEA concurs that licensees who choose to aggregate contiguous channels should be permitted to emit a stronger signal between current channels than is currently

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22/ Id., ¶ 84.

allowed.[23] SEA agrees that as long as the ERP/HAAT and geographic separations are maintained as specified in the current rules, the increased signal strength between channels will not result in an increased likelihood of harmful interference to co-channel licensees.

VI. If Aggregation of Contiguous Channels is Permitted, Spectrum Efficiency Equivalency Standards Should be Adopted

The Commission requested comment on its proposal that "...licensees choosing to aggregate channels must maintain a spectral efficiency at least equivalent to that obtained through five kHz channelization."[24] Alternatively, the Commission asked whether "competitive bidding provides sufficient incentives for licensees to use their spectrum efficiently."[25] The answer to the latter appears to be in the negative. The Commission has adopted rules which impose specific construction deadlines for narrowband PCS and is proposing construction requirements for 220 MHz Phase II licensees. It would appear that the Commission believes that competitive bidding does not provide sufficient incentives for the timely build-out of systems.[26] SEA concurs with

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23/ Id.

24/ Id. at ¶ 83.

25/ Id.

26/ See, e.g., Memorandum Opinion and Order, GEN Docket No. 90-314, 8 FCC Rcd 4957, 5018 ¶ 154 (1994) (despite new competitive bidding authority, the Commission retained construction requirements in order "to ensure that PCS service is made available to as many communities as possible and that the spectrum is used effectively" and also because performance requirements were required by the 1993 Omnibus Budget Reconciliation Act).

this sentiment.[27] Accordingly, if the Commission decides to permit channel aggregation, SEA believes that efficiency standards will be needed to encourage efficient spectrum use.

As recognized and adopted in the "Refarming" proceeding, an efficiency standard can be expressed in the number of voice traffic circuits per unit of spectrum or data transmission rate per unit of spectrum.[28] Consistent with the Commission's conclusion in the Refarming proceeding,[29] in the undesirable event that the Commission permits aggregation of contiguous channels, SEA suggests the following benchmarks to serve as spectrum efficiency equivalency standards for aggregated channels.

Application	Standard
Voice communications	One voice channel per 5 kHz
Data communications	4800 bps data rate per 5 kHz

Other services, such as paging, are difficult to compare to traditional dispatch and interconnection with regard to efficiency. SEA discusses the issue of paging below.

27/ Competitive bidding encourages profitable use of spectrum, but, given the costs of modern efficient technologies, the most profitable use of spectrum is not always the most efficient use. For example, a licensee may choose to purchase an old, inefficient, inexpensive system because it has invested substantial amounts to place the winning bid for its license.

28/ See Report and Order and Further Notice of Proposed Rule Making, PR Docket No. 92-235, FCC No. 95-255, ¶ 95 (rel. June 23, 1995).

29/ Id., ¶ 97.

VII. Permissible Use of this Band Should Not Include Paging Applications

SEA does not support the Commission's proposal to allow paging throughout the 220 MHz band. The key reasons for this position are: (1) there is no shortage of other paging spectrum; (2) the measurable efficiency of paging systems is not comparable to half-duplex mobile operation: and (3) the 220 MHz service, as a paired-frequency service, is not appropriate for one-way paging.

The first two points are self-explanatory. Regarding the third, SEA notes that the Notice did not raise the issue of permissible use of the mobile transmit frequencies (221-222 MHz) by licensees who choose to offer paging services. For two-way paging (messaging services), these frequencies would typically be used for answer-back, acknowledge or query transmissions from portable units. Without further clarification, however, licensees who choose to build one-way paging systems could use the mobile frequencies for one-way paging operation, resulting in an inefficient use of spectrum.

In the unfortunate event that the Commission decides to permit paging operations, the mobile transmit frequencies should remain subject to the same limitations specified in the current rules, i.e., ERP of less than 50 watts. Furthermore, licensees should be prohibited from constructing base station transmitters that operate on mobile frequencies at elevated sites, such as those that might be used by adjacent channel neighbors operating in a half duplex mode. SEA recommends an antenna height limit of 7 meters (23 feet) HAAT for transmitters using mobile frequencies. To permit paging on the mobile transmit frequencies would result in serious interference problems for Phase I and Phase II half-duplex systems.

VIII. Conclusion

As the Commission has observed again and again over the past twelve years, development of narrowband technology is a high priority and requires a dedicated band of frequencies. Permitting aggregation of bands broader than 5 kHz within significant portions of the 220-222 MHz band will lead, as it has in the past in other bands, to rapid congestion with broadband uses before narrowband technologies can be widely deployed and tested. For these reasons, SEA urges the Commission to retain its restrictions on aggregation of contiguous 220 MHz channels[31] and conformity to the existing channel emission masks at the edge of each authorized five kHz channel.

Respectfully submitted,

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31/ See, e.g., 47 C.F.R. § 90.209(b)(5) (permissible bandwidth is 4 kHz); see also 47 C.F.R. § 90.721 (listing trunked channel groups).

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 27th day of September, 1995, caused copies of the foregoing document to be served by first class mail, postage prepaid to the following:

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