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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)	
)	
Amendment of the Commission's)	Gen. Docket No. 90-314
Rules to Establish New Personal)	ET Docket No. 92-100
Communications Services)	
)	
Paging Network, Inc.)	PP-84
)	
Mobile Telecommunications)	PP-37
Technologies Corporation)	
)	
)	
Requests for a Pioneer's)	
Preference for Pioneering the)	
Ability for Spectrally Efficient,)	
Cost Effective One-Way Mobile)	
Voice Communications in the)	
930-931 MHz Band)	

To: The Commission

REPLY COMMENTS OF PAGING NETWORK, INC.

PAGING NETWORK, INC.

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SUMMARY

PageNet submits that the record in this proceeding unequivocally demonstrates that the timely provision of nationwide, advanced narrowband paging services is in the public interest, and that the Commission's rules governing the licensing of these systems should be sufficiently flexible to facilitate the diversity of innovative services the record references.

Significant demand for nationwide services exists now. Without the grant of nationwide licenses, it is highly improbable that carriers would be able to satisfy this demand quickly and efficiently, if at all, because of the difficulties inherent in aggregating the necessary spectrum. Further, a nationwide scope is critical in order to achieve economies of scale and to interest equipment suppliers in building the necessary infrastructure and terminal equipment for the provision of advanced paging services.

The record makes clear that the Commission must adopt a flexible channelization scheme which accommodates multiple bandwidths of up to 250 kHz. The "large" blocks of spectrum required to provide some advanced paging services and opposed by some parties are nominal -- the greatest bandwidth proposed for advanced paging services is only 1/120 the amount of spectrum allocated to a cellular licensee. Moreover, while some of the AMS systems proposed require more bandwidth, they are far more spectrally efficient in the total volume of subscribers and messages supported relative

to their spectrum needs. PageNet submits that the Commission must accommodate diverse advanced paging services by offering a variety of bandwidths and frequency pairings, and allow the marketplace to sort out and refine the services that are to be delivered and accepted by the public.

PageNet supports a licensing mechanism that approximates auctions. By using this type of system the Commission can hope to avoid the speculative applications which characterize its traditional lottery process. This system would incorporate stringent financial qualifications and construction deadlines that trigger the reversion of a license back to the pool where such deadlines are not timely met. The Commission must also allow the marketplace to work and not impose conditions on transferability.

In sum, PageNet believes that the Commission should not decide which services consumers will prefer, but should implement a regulatory scheme that will allow the narrowband AMS services to be tested in the marketplace. Should the Commission heed the advice of those commenters who would "straight-jacket" these services by disallowing nationwide licenses and awarding only 25 or 50 kHz channels per licensee, the Commission would be engaging in industrial policy. Its actions would preclude the provision of certain innovative services and substantially delay the provision of others, to the material detriment of both competition and consumers.

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REPLY COMMENTS OF PAGING NETWORK, INC.

Paging Network, Inc. ("PageNet"), by its attorneys and pursuant to Section 1.415 of the Commission's rules, 47 C.F.R. § 1.415, hereby submits its Reply to the Comments filed in the above-captioned proceeding.¹

As set forth below, the record unequivocally demonstrates that the timely provision of nationwide,

¹ Amendment of the Commission's Rules to Establish New Personal Communications Services, 7 FCC Rcd 5676 (released August 14, 1992) ("NPRM and Tentative Decision").

advanced narrowband paging services is in the public interest, and that the Commission's rules governing the licensing of these systems should be sufficiently flexible to facilitate the diversity of innovative services the record references. Specifically, the comments confirm that the Commission must adopt nationwide and large regional licensing for narrowband advanced paging systems, a flexible channelization scheme which accommodates multiple bandwidths, and a licensing mechanism that approximates auctions. The Commission should not decide which services consumers will prefer, but should implement a regulatory scheme that will allow all of the narrowband AMS services to be tested in the marketplace. Such a regulatory scheme is critical if the Commission is to guarantee that advanced paging services are provided expeditiously to the consumer, that spectral efficiency is improved, and that infrastructure costs are lowered. Conversely, should the Commission heed the advice of those commenters who would "straight-jacket" advanced paging services by disallowing nationwide licenses and awarding only 25 or 50 kHz channels per licensee, the Commission would be engaging in industrial policy. Its actions would preclude the provision of certain innovative services and substantially delay the provision of certain others, to the material detriment of both competition and consumers. The advice of these commenters would also serve to raise costs, and eliminate the possibility that truly advanced paging services are offered in this century.

I. THE RECORD IN THIS PROCEEDING CONVINCINGLY DEMONSTRATES THAT THE COMMISSION SHOULD ALLOCATE AND GRANT AMS LICENSES IN A MANNER THAT WILL ENSURE THAT SPECTRAL EFFICIENCY IS IMPROVED, INFRASTRUCTURE COSTS ARE LOWERED, AND ADVANCED PAGING SERVICES ARE OFFERED EXPEDITIOUSLY TO CONSUMERS

A. Without an Appropriate Licensing Scheme, the Provision of Advanced Paging Services will be Seriously Delayed or Precluded

1. The Commission Must Provide for Nationwide Licenses

The commenters in this proceeding overwhelmingly concur with PageNet, and the Commission's own tentative decision, that at least some, if not all, narrowband PCS licenses should be granted on a nationwide basis.² The record makes clear that paging services are evolving to be national in scope, and that this evolution to nationwide service has been key to offering reasonably priced, affordable services to the end user.³

² See NPRM and Tentative Decision at 5736 (declaring that grant of nationwide preference to Mobile Telecommunications Technologies Corporation ("MTel") is consistent with Commission's underlying goals); Comments of PageNet at 9.

³ See, e.g., Comments of Metrocall of Delaware, Inc. ("Metrocall") at 25 ("national and regional licenses for Narrow Band PCS are needed"); Comments of MTel at 14; Comments of Motorola, Inc. ("Motorola") at 21; Comments of PageMart, Inc. ("PageMart") at 10 ("national allocations are critical to achieving the Commission's goal of developing PCS quickly and efficiently"); Comments of Telocator, The Personal Communications Industry Association ("Telocator") at 10-11 ("the traditional paging market is increasingly regional, national and even international in scope"); Comments of American Paging, Inc. at 5; Comments of Freeman

Continued on following page

This phenomenon is even more important in the context of advanced paging services. The diversity of paging services proposed by the pioneer's preference applicants results in each utilizing different network infrastructures and different base station and terminal equipment. Unless these services can be offered on a nationwide basis, thus assuring manufacturers sufficient product sales to justify their investment, manufacturers may not be interested in supporting the diversity of services for which various commenters have demonstrated consumer demand. Alternatively, the prices for some equipment may be sufficiently high so as to hamper the public demand for the service. PageMart correctly states that "manufacturers of network and subscriber equipment will need commitments to produce large amounts before advanced paging services will be a cost effective venture. Without the substantial production volumes associated with national and large regional markets, manufacturers might not be willing to build narrowband AMS equipment at all. At the very least, the cost of equipment in each region will be higher."⁴ Either result can be avoided through the adoption of nationwide licenses.

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Engineering Associates ("Freeman") at 8-9 ("Technological advancements, including extensive business and vacation travel, and the increasing usage of satellite technology, have sparked demand for nationwide communications services"); Comments of Ericsson Corporation at 26.

⁴ Comments of PageMart at 10.

This need will not be satisfied by regional and local licensing, even if licensees are permitted to attempt, in jigsaw puzzle fashion, to put regions together because there is no assurance, and indeed no likelihood, that they will be able to obtain the same frequencies throughout their system. The adoption of PacTel's proposal for regional systems of 50 kHz each, in this context, would make it highly unlikely that PageNet, or other providers, could acquire, even in the aftermarket, the same frequencies for their systems on a nationwide basis. Having different frequencies in each region will necessarily drive up, perhaps prohibitively, the costs of terminal equipment. For some services, varying frequencies would mean that the terminal equipment would have to be frequency agile, searching all frequencies rather than just one.⁵

Nationwide licensing is also critical to a carriers' ability to achieve the economies of scale necessary to provide advanced paging services. Although they differ somewhat as to whether large regional (3-5 systems) or national markets are appropriate, major providers of state-of-the-art paging services in the United States have consistently emphasized the importance of economies of scale to the successful deployment of narrowband PCS services

⁵ Obviously, in the absence of the provision of service on the same frequencies nationwide, roaming becomes highly problematic.

throughout this proceeding.⁶ For example, PacTel strongly advocates according "licensees a sufficient geographic area to enable each carrier to enjoy the economies of scale that are necessary to survive in what is essentially a low average revenue-per-unit business."⁷ PacTel points out that revenues-per-unit in the paging business have declined as operating expenses as a percentage of revenue have increased.⁸ As margins have decreased, volume must increase to sustain operations.⁹

As the majority of commenters recognize, without the grant of both national and large regional licenses, carriers will not be able to achieve the economies of scale necessary to deploy their services.¹⁰ National and large regional service areas significantly enhance economies of scale.¹¹ As PacTel states, "volume discounts in the purchase of carrier and subscriber equipment, and operating efficiencies resulting from the centralization of administrative functions

⁶ See, e.g., Comments of PageNet at 10-11; Comments of PageMart at 10; Comments of PacTel at 17.

⁷ Comments of PacTel at 17.

⁸ Id.

⁹ Id.

¹⁰ See, e.g., Comments of Dial Page at 8; Comments of Metrocall at 25 ("Larger service areas are necessary to achieve large economies of scale necessary for development of low-cost personal receivers"); Comments of PageMart at 10.

¹¹ See, e.g., Comments of Metrocall at 25; Comments of PacTel at 18-19.

contribute to this fact."¹² The grant of nationwide and regional licenses will create the economies of scale necessary to provide reasonably priced advanced paging services.

Two parties, PacTel and Arch Communications Group, Inc. ("Arch"), recognize the importance of economies of scale and of service that is national in scope, yet, these same commenters support large geographic licenses (i.e., 3-5 regions) rather than nationwide licenses.¹³ Based on their emphasis of the importance of economies of scale, this position seems more an outgrowth of their perception that regional licensing will, by its very nature, make a greater number of licenses available, thus increasing their chances of success in a lottery or some other non-auction licensing scheme, than on a belief that the grant of nationwide licenses will truly disserve the public interest.

PacTel, for example, implicitly recognizes the need for nationwide licenses, itself proposing to permit "applicants to apply for all of the regions. . . ."¹⁴ PacTel also implicitly recognizes the need for nationwide services, encouraging licensees to interconnect their systems through

¹² Comments of PacTel at 18-19.

¹³ Comments of Arch at 8; Comments of PacTel at 29.

¹⁴ Comments of PacTel at 29.

intercarrier agreements.¹⁵ PacTel's suggestion, however, that either of these palliatives would be sufficient to replicate the advantage of a nationwide licensing scheme is simply not credible. In the first instance, it is highly unlikely in the lottery that PacTel advocates that an applicant would win all regions, thus being able to construct a nationwide system in the absence of aftermarket transactions.¹⁶ Second, intercarrier agreements have no relevance in the context of disparate services. For example, PageNet's VoiceNow and MTel's Nationwide Wireless Network ("NWN") are different services with different infrastructures and different terminals. Neither carrier is likely to be able to offer the services of the other in a manner which will permit them to take advantage of intercarrier agreements, even if such agreements were an optimum solution. Intercarrier agreements have worked in cellular, to the extent they have, only because each participating carrier is

15 Comments of PacTel at 29 and n.46 ("There is no doubt that some demand exists for purely nationwide service.")

16 The greater the number of service areas there are, the more costly and time-consuming it will be for carriers to assemble the necessary spectrum to provide their services, if, indeed, assembling the necessary spectrum is at all feasible. As several commenters have illustrated in the context of local licensing, see infra at 12-13, the transaction costs associated with the aggregation of smaller areas to provide wide area service are formidable. The same reasoning applies to the aggregation of regional licenses to provide nationwide service. Given the improbability that a carrier would win all regions, the only way to build a nationwide system would be to buy the operating rights from those operating in adjoining areas, thus creating substantial delays and transaction costs.

offering the same service using the same base station and terminal technology.

PacTel attempts to rationalize its position by arguing that nationwide licensing will decrease the number of licensing opportunities and potentially reduce competition.¹⁷ Significantly, however, PacTel does not believe that a scheme involving only five geographic regions would "serve to create unreasonable barriers to entry to new carriers."¹⁸ To the contrary, as PacTel itself points out, "competition is encouraged by the adoption of geographic service areas which are sufficiently large to permit new entrants to the messaging market to establish the services necessary to compete with the systems that already have developed in the marketplace. . . ."¹⁹ It follows that new licensees attempting to satisfy the demand for nationwide service given existing nationwide systems would be placed at a competitive disadvantage should they have to engineer and build their systems while continually seeking additional licenses, assuming any are indeed available, from the Commission.²⁰

¹⁷ Comments of PacTel at 29.

¹⁸ Id. at 14 n.23.

¹⁹ Id. at 30.

²⁰ PacTel ignores, both in the context of nationwide licenses and channelization, the unwarranted head start that the Commission would be granting those licensees whose service proposal calls for 25 to 50 kHz on a regional or local basis. Carriers whose service requires greater spectrum would be caught in the aftermarket abyss, while carriers like PacTel, whose

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Moreover, the argument raised by PacTel that nationwide licensing will disserve the public interest because fewer licenses will enable fewer providers to enter the market²¹ is simply without merit. Nationwide licensing does not create any unreasonable barrier to entry. Even with the nationwide channelization plan proposed by PageNet and PageMart, all of the services currently proposed, and others, could be accommodated.²²

Of course, in every allocation of spectrum there is a finite number of licensees. As Motorola indicates, however, a significant number of channels will be allocated to advanced paging services, therefore, smaller licensing areas will not significantly encourage a diversity of services.²³

PageNet submits that to facilitate the provision of a diversity of services within a flexible allocation scheme is in the public interest, but to guarantee entry to every entity which might conceivably want a lottery ticket is not.

In sum, national allocations are critical to achieving the Commission's goal of developing advanced paging services quickly and efficiently. PageNet, PageMart, Metrocall and MTel, among others, have demonstrated that a significant

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services would provide at least intermodal if not intramodal competition to those of PageNet and PageMart, would be able to begin offering service expeditiously.

21 See, e.g., id. at 29.

22 See, e.g., Comments of PageMart at 9.

23 Comments of Motorola at 21.

demand for nationwide service exists now. Without the grant of nationwide licenses, it is highly improbable that carriers would be able to satisfy this demand quickly and efficiently, if at all, because of the difficulties inherent in aggregating the necessary spectrum. Given the disparate services that will comprise AMS, intercarrier agreements do not provide a viable solution. Finally, a nationwide scope is critically important in order to achieve economies of scale and to interest equipment suppliers in building the necessary infrastructure and terminal equipment for the provision of advanced paging services.

2. The Commission Should Make No Provision for Exclusively Local Services

Virtually all parties recognize that the evolution of the paging business has been dictated by market forces, with the Commission's current, predominantly local, licensing scheme serving as an impediment which has had to be overcome at substantial costs to licensees and, ultimately, the public. In fact, as PacTel states, the "manner in which most paging channels are licensed on a reliable service area contour basis tends to frustrate rather than foster the development of regional and multistate systems. Nevertheless, the marketplace has demanded the aggregation of territories into comprehensive regional systems."²⁴

²⁴ Comments of PacTel at 12.

The record amply demonstrates that the grant of licenses by local service areas would seriously delay the availability of 900 MHz services. Specifically, small service areas would asymmetrically increase the transaction and acquisition costs associated with aggregation of spectrum. Many of the comments aptly illustrate that the more service areas there are, the more costly and time-consuming it is for carriers to assemble the necessary spectrum to provide their services, if, indeed, assembling the necessary spectrum is at all feasible. PacTel states that "in the absence of a licensing scheme that enables a carrier to be licensed as an initial matter for a sufficient geographic area, carriers are subjected to unnecessary expenses and delays in implementing wide-area systems to meet customer demands, if indeed such systems can ever be effected through aggregation of smaller areas."²⁵ PacTel points out

²⁵ "Lessons Learned from the Paging Business," Ex Parte Presentation dated October 28, 1992 of PacTel Paging. Given PacTel's concern that aggregating regional systems will be difficult if not impossible, it is hard to give credibility to its suggestion that carriers seeking to provide nationwide service can easily achieve that status through aggregation or intercarrier agreements. In fact, in its Reply Comments filed In the Matter of Amendment of Section 90.494 of the Commission's Rules and regulations Concerning Shared Use of the 900 MHz Paging Frequencies, RM-7986 (June 25, 1992), PacTel supported nationwide PCP channels, and acknowledged that "it is always easier to disaggregate channels from a nationwide use to regional uses, than to aggregate a patchwork of allocations into a nationwide system." Id. at 5. In that proceeding, PacTel stated that the Commission should have no concern over the licensing of 8 to 10 channels for nationwide service. It is difficult to discern any legitimate reason why PacTel

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that, given a patchwork of small license areas, the "only way to build wide-area systems on these channels is to buy the operating rights from those operating in adjoining areas, thus incurring substantial transaction costs."²⁶ Using PageMart's illustration, "even with just 47 Major Trading Areas, aggregating just two channels in each would require 94 separate transactions, in addition to 94 separate federal and/or state regulatory proceedings. At 194 or 487 areas, these numbers become even more daunting."²⁷ From PageNet's perspective, given local area licensing and 25 kHz channels, PageNet would have to complete, at a minimum, 500 acquisitions (50 markets x 10 channels) to provide VoiceNow, just during the first year of operation. It would also have to complete at least 500 transfers of control at the federal level, and perhaps hundreds more at the state level.

Other commenters concur that small licensing areas would disserve the public interest. Metrocall points out that the "economic viability of many smaller markets is questionable, which indicates that unless they are covered as part of a larger regional market, there may be unserved areas of the nation."²⁸ Both Motorola and PacTel express concern

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would not apply the same logic to advanced paging services.

26 Comments of PacTel at 13 n.20.

27 Comments of PageMart at 10.

28 Comments of Metrocall at 25.

that local licensing areas create significant problems with co-channel interference.²⁹

B. The Commission Should Adopt a Flexible Channelization Scheme

The record confirms that any channelization plan for narrowband PCS must be sufficiently flexible to allow grants of up to 250 kHz. Services like those proposed by PageNet and PageMart, because of their reliance on frequency reuse, require bandwidth in the 250 kHz range. The public desires that all such services be accommodated, and this can happen only if the Commission permits bandwidths of varying kHz to be licensed. As PageMart states:

if the Commission allocates spectrum in uniformly-sized blocks, these blocks will be too small for some advanced paging providers and too large for others. Providers would be forced to curtail their innovations and change their AMS plans to conform to the spectrum allocation, or to delay implementation until they can obtain their needed spectrum in the aftermarket. With a fixed spectrum plan, the Commission risks standardizing the AMS market before any of the services are even implemented. If the Commission attempts to avoid the negative impact of uniform allocations merely by permitting aggregation or disaggregation, a delay in³⁰ implementation will necessarily result.

29 Comments of PacTel at 15 n.26; Comments of Motorola at 22.

30 Comments of PageMart at 4.

As the record amply demonstrates, AMS is not one service -- this spectrum will be home to a diversity of services, each with unique characteristics and needs. The proposals include digitized voice, acknowledgment paging, paging coupled with radiolocation techniques, and a variety of advanced platforms which promise to deliver much more lengthy and complex text, graphic, video, facsimile and DOS files. The particular bandwidths required, and the optimal manner for channels to be paired, may differ depending upon the particular service and system configuration that is adopted. PageNet firmly believes that the public interest will best be served if the Commission provides spectrum for a diversity of needed and desired services. To that end, PageNet concurs with those commenters who recommend that the Commission accommodate diverse advanced paging services by offering a variety of bandwidths and frequency pairings so that a diversity of AMS services can be offered within a reasonable time frame, and thereafter allow the marketplace to sort out and refine the services that are to be delivered and accepted by the public.³¹

³¹ See, e.g., Comments of PageMart at 7; Comments of Motorola at 20; Comments of Freeman at 4-5; Comments of Pactel at 21; Comments of Telocator at 8-9. Unduly limiting the bandwidth allocated under the AMS licensing scheme raises other potential problems for the Commission. For instance, PageNet, which requires 250 kHz to provide its VoiceNow service, might need to aggregate ten 25 kHz channels. By not allocating sufficient bandwidth in the first instance, the Commission would, in essence, require carriers to file multiple applications. Because of its need for ten

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Some commenters argue that block allocations of 25 or 50 kHz are preferable to a flexible allocation scheme which includes channel bandwidths of up to 250 kHz.³² They argue that greater bandwidths would be spectrally inefficient, and reduce the number of licensees and thus competition among services.³³ Neither argument has merit.

As a preliminary matter, the size of what opponents have inaptly termed "large" blocks of spectrum required to provide some advanced paging services is nominal, particularly when taken in context -- the greatest amount of bandwidth proposed is 250 kHz, or 0.25 MHz. This bandwidth is minuscule when compared to the 30 MHz allocated to each cellular licensee; in other words, cellular licensees are awarded 120 times the spectrum at issue here. Moreover, the bandwidth necessary to provide particular advanced paging services is indeed nominal in the context of the spectral efficiencies created by the services provided therein; the

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frequencies, PageNet would subsequently file as many applications as there were frequencies, as would every other carrier with a need to aggregate spectrum in order to provide its service. This overabundance of applications would unduly strain the Commission's limited resources. The Commission could avoid this pitfall by adopting a flexible allocation scheme which accommodates up to 250 kHz of bandwidth.

32 Comments of Arch at 6; Comments of Dial Page at 6; Comments of Ericsson at 26; Comments of Southwestern Bell at 5.

33 Id.

increased capacity will enable PageNet to serve 330,000 subscribers on each simulcast channel.

The record demonstrates that some of the advanced paging services proposed require the assignment of more spectrum to a single carrier in order to achieve the benefits of the operating efficiencies that come from trunking large numbers of channels together and deploying them in an optimal configuration. Systems utilizing frequency reuse, such as PageNet's VoiceNow, facially need more spectrum than simulcast systems, but they are far more spectrally efficient in the total volume of subscribers and messages supported relative to their spectrum needs. As Motorola recognizes, these services also offer substantially increased benefits facilitated by subscriber devices that contain low-power transmitter, as well as high quality paging-type receivers.³⁴ Such subscriber devices allow location and selection of only the base station necessary to complete the message rather than simulcasting the entire message from every base transmitter throughout the coverage area.³⁵ Accordingly, the increased system capacity results in service to more users and/or the provision of more information to each user.³⁶

³⁴ Comments of Motorola at 15-16.

³⁵ Id.

³⁶ With 250 kHz of bandwidth, PageNet will be able to serve 330,000 subscribers, a 22 fold increase over primitive voice systems operated in a simulcast mode. See Preference Request at 16.

Further, a flexible allocation scheme will enhance competition rather than thwarting it. For example, as PageMart points out, under this scheme, "frequency reuse systems will compete not only with other frequency reuse systems but also with simulcast and acknowledgment paging systems."³⁷ Conversely, a uniform, inflexible channelization plan would inhibit competition by preventing some advanced paging service options from reaching the market at all and would stifle the evolution of needed services.

Admittedly, the more kHz per licensee, the fewer the number of licensees. However, no one makes a colorable argument that competition in advanced paging services, per se, will be reduced or curtailed because of the broader bandwidth required to provide certain of the proposed services. Implicitly, the real opposition to blocks of up to 250 kHz is the reduction in the number of chances that participants will have to acquire spectrum for their own use.

To ensure that the award of valuable spectrum serves the public interest, PageNet suggests that the Commission consider need showings for those entities requiring greater bandwidths. Specifically, as a condition of their license, a carrier might be required to show that the service offered thereunder incorporates, for example, frequency reuse, digital technology, and/or high transmission speeds. Further, the Commission might condition the license with the

³⁷ Comments of PageMart at 9.

requirement that the applicant build the service proposed and meet certain construction deadlines.

PageNet firmly believes that competition and diversity can be fostered by facilitating the provision of a broad cross-section of advanced paging services. A variety of individual channel bandwidths and a variety of pairing arrangements are necessary in order to enable licensees to provide any number of possible advanced services.³⁸ The Commission should not decide, by any action which limits reasonable bandwidth requests, which services consumers will prefer, but should implement a channelization plan that will allow all of the narrowband AMS services to be tested in the marketplace.

C. The Commission Should Grant AMS Licenses through Competitive Bidding or a Mechanism that Resembles Competitive Bidding

In its opening Comments, PageNet advocated the use of competitive bidding to license advanced paging services.

³⁸ While PageNet does not sanction Motorola's channelization plan because it would preclude the provision of certain advanced paging services which have been proposed and for which carriers have demonstrated significant demand, Motorola concurs in the fundamental belief that the channelization scheme adopted by the Commission must be flexible. Motorola recognizes that advanced paging services will be both asymmetrical and symmetrical in nature. Accordingly, it has devised a channelization plan which weights bandwidth to maximize spectral efficiency. It also suggests that the Commission allow licensees the flexibility to combine or split channels as long as they stay within their authorized spectrum. Comments of Motorola at 17-20.

PageNet believes that auctions promote economic efficiency and provide the public fair compensation for the private use of the spectrum resource.³⁹

Several of the commenters in this proceeding oppose the consideration of auctions, however, believing that the Commission does not now have the authority to use the competitive bidding mechanism to license advanced paging services.⁴⁰ These same commenters implore the Commission not to delay this proceeding while awaiting Congressional authority.

Arch argues in opposition that "[a]uctions tend to favor larger, better financed entities whose size and scope of operations tend to move them further away from the needs of the customers in the marketplace."⁴¹ To the contrary, and as several commenters, including PacTel, point out, the successful providers of paging service are currently necessarily well-financed,⁴² and are intimately familiar with the needs of their customers. The size and scope of PageNet's operations has enabled PageNet to provide low-cost, high quality paging service in response to the needs of the

³⁹ See Comments of PageNet at 16.

⁴⁰ See, e.g., Comments of Arch at 10; Comments of Telocator at 14; Comments of PageMart at 10-11.

⁴¹ Comments of Arch at 10.

⁴² Comments of PacTel at 17-19. PageNet currently has a revolving line of credit of upwards of \$280 million. Other paging companies have financing relative to their size and growth projections available.

marketplace. As a result, PageNet's subscriber base is growing at an ever increasing pace -- in late November it surpassed over two million pagers in service. Thus, PageNet has sufficient reason to believe that it knows what the needs of the marketplace are or may be.

PageNet believes that if and only if the Commission does not have and has not obtained auction authority in the next Congressional session should it resort to lotteries, and only then for regional and nationwide licenses of various bandwidths ranging from 25 to 250 kHz. If and only if lotteries are properly designed can they provide the Commission with a possibly workable, although substantially inferior, mechanism to award licenses for advanced paging services.

To that end, PageNet submits that the Commission should design a lottery system for licensing advanced paging services that best mimics the auction.⁴³ PageNet firmly believes that this type of system must be implemented if the Commission is to avoid the mountains of speculative, "get rich quick" applications which characterize its traditional lottery process. Speculative filings are undesirable not only because the licensing of spurious applicants ties up

⁴³ In this regard, PageNet proposes that the Commission deem AMS applications mutually exclusive in the same manner in which it presently finds 900 MHz paging applications mutually exclusive; applicants may request, but are not guaranteed any particular frequency. Only when frequencies are exhausted will applications be deemed mutually exclusive.