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

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)	GEN Docket No. 90-314
)	ET Docket 92-100
Amendment of the Commission's)	RM-7140, RM-7175, RM-7617,
Rules to Establish New Personal)	RM-7618, RM-7760, RM-7782
Communications Services)	RM-7860, RM-7977, RM-7978
)	RM-7979 & RM-7980

**COMMENTS OF TELOCATOR ON 900 MHz
PERSONAL COMMUNICATIONS SERVICES**

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COMMENTS OF TELOCATOR ON 900 MHz

PERSONAL COMMUNICATIONS SERVICES

Telocator, the Personal Communications Industry Association, herewith submits its comments in response to the Commission's proposals to establish narrowband, 900 MHz Personal Communications Services ("PCS").¹ As detailed below, this proceeding offers an exciting and time-critical opportunity for deployment of the next generation of messaging services. Telocator strongly urges the Commission to allocate and license spectrum as promptly as possible in order to allow continued progress in the development of messaging services that marry advanced wireless capabilities with advanced computer technologies.

¹ Amendment of the Commission's Rules to Establish New Personal Communications Services, FCC 92-33 (August 14, 1992) ["Notice"]. The Notice also proposes to establish broadband Personal Communications Services in the 1850 to 1990 MHz band. Because they raise markedly different issues from those associated with narrowband services, Telocator is contemporaneously filing separate comments on broadband PCS proposals and herein addresses only 900 MHz narrowband services. As discussed below, Telocator strongly urges the Commission to adopt separate procedural tracks for 900 Mhz narrowband PCS and 1850-1990 MHz broadband PCS.

I. SUMMARY

Telocator, the Personal Communications Industry Association, represents the full range of participants in new and existing wireless services. Its member include both Radio Common Carrier ("RCC") and private carrier paging companies, cellular carriers, conventional mobile telephone companies and entities involved in emerging Personal Communications Services. Currently, the association has over 490 members representing 1200 companies.

In 1982, the Commission reserved 930-931 MHz for future use by advanced paging systems. In the ensuing years, the nation's paging industry has experienced phenomenal growth, participated in unprecedented technological progress, and achieved remarkable spectrum efficiencies. As a result, many of the advanced technology paging services envisioned in 1982 for the 930-931 MHz band have already been deployed in the limited, existing spectrum allocated for traditional paging services.

At the same time, increasingly sophisticated digital telecommunications technologies have opened the door to a new generation of wireless services. These new services can not be accommodated within existing paging allocations due to the general unavailability of frequencies and technical incompatibility with conventional paging services. Yet, the proliferation of portable computer products has created an enormous consumer demand for such capabilities.

This prompted Telocator, in January, 1991, to petition the Commission to allow the use of the 930-931 MHz "advanced technology

paging" reserve for Advanced Messaging Services ("AMS")² that combine computer capabilities with portable subscriber devices. Telocator's petition received broad support from the industry as a whole, and stimulated nine additional petitions for rulemaking to implement specific AMS applications³. Telocator's petition and these individual company proposals have been consolidated in this proceeding under the 900 MHz narrowband PCS framework.

Telocator and its members have conducted an extensive and comprehensive review of the Notice's proposed rules for narrowband PCS. With the participation of the vast preponderance of narrowband PCS proponents, a broad industry consensus has been reached in the following respects:

- The Commission should establish separate procedural tracks for 900 MHz narrowband PCS and 1850-1990 MHz broadband PCS.
- The advanced paging reserve (930-931 MHz) and the additional frequencies allocated in the Notice for narrowband PCS (901-902 MHz and 940-941 MHz) should be dealt with as a whole, and designated for Advanced Messaging-type services.
- In establishing specific channelization plans for this spectrum, the Commission should seek to maximize entry opportunities for numerous and different narrowband PCS providers.

² RM-7617. See Public Notice Rpt No. 1836 (Feb. 7, 1991).

³ Petitions filed by Montauk Telecommunications on June 6, 1991 (RM-7760); Echo Group, L. P. on July 30, 1991 (RM-7782); PacTel Paging on August 2, 1991, and October 15, 1991 (RM-7979 and RM-7860); Dial Page, L.P. on October 11, 1991 (RM--7977); Mobile Telecommunications Technologies Corporation on November 12, 1991 (RM-7978); PageMart, Inc. on February 28, 1992 (RM-7980); Skycell Corporation on May 29, 1992; and Paging Network, Inc. on June 1, 1992.

- All qualified applicants should be allowed to file for PCS spectrum.
- National and regional licenses for narrowband PCS are needed.
- Stringent anti-speculation safeguards are essential to prevent lottery abuses.
- A flexible regulatory approach should be adopted for 900 MHz narrowband services and carriers should be allowed to self-designate their service as either private or common carrier.

The foregoing principles reflect the collective efforts of the narrowband PCS industry to achieve a broad based agreement on important regulatory issues. In their formulation, an overriding goal has been to foster development of a diversity of services by a diversity of providers. In so doing, Telocator and its members hope to hasten the arrival of a new era in mobile communications.

II. THE COMMISSION SHOULD ESTABLISH SEPARATE PROCEDURAL TRACKS FOR 900 MHZ NARROWBAND PCS AND 1850-1990 MHZ BROADBAND PCS.

Telocator urges the Commission to establish separate procedural tracks for 900 MHz narrowband PCS and 1850-1990 Mhz broadband PCS. While Advanced Messaging Services are encompassed within the broad family of services which constitute Personal Communications Services, the issues associated with 900 MHz narrowband services are far different and less complex than those inherent in the 1850-1990 MHz broadband proposals. Thus, as the

Notice itself recognizes⁴, there is a risk that 900 MHz narrowband decisions might be unnecessarily delayed because of controversies surrounding the broadband services.

There are several critical differences between narrowband and broadband PCS policy issues. First, unlike the 1850-1990 MHz broadband spectrum, there are no incumbent users or relocation issues to be addressed at 900 MHz. Second, the three MHz of spectrum designated for narrowband PCS can support a multitude of Advanced Messaging-type services⁵, in contrast to the three licensed service providers tentatively proposed at 1850-1990 MHz. These differences in entry opportunity result in different policy perspectives concerning such issues as number of licensees, service area, eligibility and technical rules. Third, broadband PCS contemplates full, two way voice services, while 900 MHz narrowband services focus upon more specialized messaging applications.

In view of these differences, Telocator submits that the consolidation of the broadband and narrowband PCS proceedings serves no useful purpose, and creates a perpetual risk that narrowband services will be needlessly bogged down in procedural delays.

⁴ Notice at paragraph 11. The Commission has, appropriately, committed itself to separating ET Docket No. 92-100 from the present, combined proceeding should it appear that the introduction of 900 MHz narrowband PCS will be delayed by their incorporation into the broader PCS proceeding.

⁵ Indeed, the total, combined spectrum at 900 MHz requested in pioneers preference requests would not exhaust the spectrum allocated by the Commission for narrowband PCS.

Indeed 900 MHz narrowband PCS issues are well defined and capable of rapid resolution. Consequently, the Commission should immediately establish a separate procedural track for ET Docket No. 92-100 to ensure that these services are expeditiously licensed and made available to the public without delay.

III. THE ADVANCED PAGING RESERVE (930-931 MHZ) AND THE ADDITIONAL FREQUENCIES ALLOCATED IN THE NOTICE FOR NARROWBAND PCS (901-902 MHZ AND 940-941 MHZ) SHOULD BE DEALT WITH AS A WHOLE, AND DESIGNATED FOR ADVANCED MESSAGING-TYPE SERVICES.

The record concerning Advanced Messaging Services clearly demonstrates the need for a spectrum allocation for the next generation of messaging services. AMS, as envisioned by Telocator, are quite appropriately characterized as "narrowband PCS." They encompass a wide range of highly creative applications which go beyond paging services' current ability to alert and inform. Characteristic of such services are: digital coding and transmission techniques; higher transmission speeds; customer controlled access and interaction with transmitted information, including, in some cases, two-way messaging communications; and the capability to deliver enhanced character sets, high/low resolution graphics, E-mail, facsimile, digitized voice messages, and a full range of data products to miniaturized personal receivers.

A. The Commission Should Establish Flexible Regulatory Policies for Narrowband PCS.

In this proceeding, the Commission wisely and appropriately proposes flexible service definitions and operational rules⁶. The Notice contemplates a broad regulatory framework for narrowband PCS designed to control interference and ensure the use of new spectrum for high speed, digital transmission systems. At the same time, the proposals provide narrowband entrepreneurs the means and incentives to introduce a wide variety of communications services which are responsive to consumer needs. This approach is consistent with a number of recent Commission actions which favor flexibility, as opposed to rigid definitions or restrictions on the kinds of services carriers are permitted to offer, in order to allow advanced technologies and services to develop robustly.

The consumer benefits flowing from such a regime are well established. For example, an impressive list of imaginative services and technologies have emerged since cellular carriers were granted similar technical and operational freedoms. When coupled with the robust competition among narrowband PCS licensees and those of existing PCS offerings (such as traditional one-way paging), these policies will better promote consumer welfare than narrowly focussed technical and service regulations.

⁶ "In licensing mobile services, the Commission has squarely placed its faith in competitive markets and service flexibility as the best path to provide greater choice and lower prices for consumers." Notice at paragraph 2.

There are two, general service types, however, which are clearly inappropriate for inclusion in the narrowband PCS allocation: two-way, real time voice communications (such as advanced cordless telephone operations) and low earth orbit ("LEO") satellite applications.

The 900 MHz frequencies are ideally suited to and sorely needed for terrestrial advanced paging applications⁷. In contrast, the three single MHz allocations for narrowband PCS are not attractive or technically practical homes for either advanced cordless or satellite utilization. These services can be better accommodated through the 1850-1990 MHz broadband allocation (in the case of advanced cordless telephones) or other, as yet unallocated portions of the emerging technologies band.

B. In Establishing Specific Channelization Plans For This Spectrum, the Commission Should Seek to Maximize Entry Opportunities for Numerous and Different Narrowband Service Providers.

The rules adopted for this spectrum must accommodate a diverse range of narrowband services, which may require different bandwidths⁸. The rules must provide sufficient base-to-mobile spectrum to allow for the greatest variety of narrowband services.

⁷ See: Comments in RM-7617. In particular, See: Telocator Reply Comments, (March 26, 1991), pages 13 - 15.

⁸ The Commission has tentatively concluded that no additional spectrum needs to be allocated for broadband PCS support systems (e.g.; the "backhaul links" interconnecting the cell sites typical in broadband PCS configurations). See: Notice at paragraph 55. If the Commission should conclude that such an allocation is, in fact, necessary, the 900 MHz narrowband PCS allocation should not be considered for this purpose.

In this regard, Telocator notes that most narrowband PCS can be offered economically in 50 KHz or 25 KHz channels; some services may require additional bandwidth.

In many service applications the traffic carried will not be evenly balanced in nature or capacity between base-to-mobile and mobile-to-base communications. However, the proposals put forward in the Notice for pairing channels to enable two-way communications⁹ consider only symmetrical channel pairings (i.e.; for all systems proposing two way service, a 901-902 return channel of equal bandwidth is automatically assigned to every 930-931 MHz forward channel.) Telocator believes that asymmetrical channel bandwidths would enable a more efficient utilization of spectrum in these instances. Asymmetrical channel pairings could also free additional spectrum for other services not requiring paired frequencies.

The rules must provide sufficient mobile-to-base spectrum to permit inexpensive subscriber equipment to be developed. As a general rule, the narrower the channel allocated for this link, the more expensive the subscriber equipment will be.

C. All Qualified Applicants Should Be Allowed to File for PCS Spectrum.

The Commission should adopt a policy of neither preferring nor excluding any qualified applicant for 900 MHz PCS licenses. We affirmatively oppose limitations on cellular and telephone company

⁹ Notice at paragraph 50.

eligibility for narrowband PCS licenses. Moreover, the limitations on holding multiple licenses considered in the context of 1850-1990 MHz PCS¹⁰ are not necessary or appropriate for 900 MHz narrowband services. Taken as a whole, the proposals in this section create an appropriately market-driven policy environment, in which open entry will further the Commission's goals of speed of deployment, diversity of service, and competitive delivery of PCS¹¹.

IV. LARGE REGIONAL AND NATIONWIDE SERVICES AREAS SHOULD BE LICENSED FOR 900 MHZ NARROWBAND PCS.

The Notice is correct in its tentative finding that national and regional licenses for narrowband PCS are needed¹². The traditional paging market is increasingly regional, national and even international in service coverage. There is, indeed, already established precedence for nationwide licensing in the paging allocation at 931-932 MHz¹³.

¹⁰ Notice at paragraph 81.

¹¹ Notice, at paragraph 6.

¹² Notice at paragraph 62. Telocator further notes that, as a fundamental principle, the licensing of frequencies for mobile services on a market or service area basis, as proposed for narrowband PCS, is a more sound and publicly beneficial policy than the current practice for traditional paging frequencies of licensing on a facilities basis (e.g.; licensing individual transmitters).

¹³ 931.8875 Mhz, 931.9125 Mhz and 931.9375 MHz.

Economic efficiencies in wireless messaging service dictate nationwide and regional service areas¹⁴. Wide service areas enable carriers to utilize a common infrastructure for meeting customer demand for both local and broader coverage areas. Larger service areas are needed in order to achieve economies of scale necessary for development of low cost personal receivers. In planning for future services, many paging providers have concluded that the economic viability of smaller markets areas is doubtful.

The Notice correctly observes¹⁵ that licensing larger service areas will minimize unproductive regulatory and transaction costs and associated delay. Facilitating and expediting the licensing process will speed delivery of service to the public. Larger service areas also permit licensees to tailor their systems to the natural geographic as well as demographic dimensions of the marketplace.

¹⁴ It should be stressed that the nature and size of the market and the cost of deploying a large regional or nationwide narrowband PCS system are substantially different than in the case of broadband PCS. Paging and advanced messaging services such as those proposed for narrowband PCS spectrum are inherently wide area markets. They are implemented using transmitters with large coverage areas, as opposed to the micro-cell technology characteristic of 1850-1990 MHz broadband PCS. Moreover, there will be significantly more entry opportunities in narrowband PCS than for broadband services. For these reasons, the drawbacks which make national licenses inappropriate in the 1850-1990 MHz broadband PCS context are not valid in the context of 900 MHz narrowband PCS.

¹⁵ Notice at paragraph 58.

Specifically, Telocator proposes the establishment of nationwide licenses and licenses covering five (5) regional markets, defined as follows:

Northeastern Region: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, eastern Pennsylvania (excluding the counties west of the Allegheny Mountains¹⁶), Delaware, Maryland, Virginia, the District of Columbia, eastern West Virginia (excluding the counties west of the Allegheny Mountains¹⁷), the Virgin Islands and Puerto Rico;

Southeastern Region: Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia and Florida;

Southwestern Region: New Mexico, Oklahoma, Arkansas, Texas and Louisiana;

Midwestern Region: North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Indiana, Kentucky, Michigan, Ohio, western Pennsylvania¹⁸ and western West Virginia¹⁹; and

¹⁶ The counties west of the Allegheny Mountains form more of a community of interest and common market with Ohio than with eastern Pennsylvania. Accordingly, they are included in the midwestern region. These counties are: Allegheny, Armstrong, Beaver, Butler, Cameron, Clarion, Crawford, Erie, Elk, Fayette, Forest, Greene, Indiana, Jefferson, Lawrence, McKean, Mercer, Potter, Venango, Warren, Washington, and Westmoreland counties in Pennsylvania.

¹⁷ The counties west of the Allegheny Mountains form more of a community of interest and common market with Ohio and Kentucky, than with eastern West Virginia. Accordingly, they are included in the midwestern region. These counties are: Barbour, Boone, Braxton, Brooke, Calhoun, Clay, Dodridge, Gilmer, Harrison, Hancock, Jackson, Kanawha, Lewis, Lincoln, Logan, Marion, Marshall, Mason, Mingo, Monongalia, Ohio, Pleasents, Preston, Putnam, Ritchie, Roane, Taylor, Tyler, Upshur, Wayne, Wetzel, Wirt, and Wood counties in West Virginia.

¹⁸ Western Pennsylvania consists of the counties listed in footnote 16.

¹⁹ Western West Virginia includes the counties listed in footnote 17.

Western Region: Washington, Idaho, Montana, Oregon, Wyoming, California, Nevada, Utah, Colorado, Arizona, Alaska and Hawaii.

Attachment A presents a graphic representation of these service areas.

This division of the country into five large, regional markets was developed in discussions among current paging providers and narrowband PCS aspirants²⁰. These regions are derived from current, wide area paging market service areas and those proposed by 900 MHz pioneer preference petitioners. They are broadly based on airline passenger traffic patterns between major, airline hub cities²¹. As such, they are intended to roughly approximate the area within which each region's population most regularly travel.

²⁰ To the greatest extent possible, state boundaries have been adhered to, in order to avoid the inevitable entanglements and debates which would ensue with the creation of any wholly new lines of demarcation. The sole exception to this practice is the inclusion of the western counties of Pennsylvania and West Virginia in the midwestern region. The natural boundary created by the Allegheny Mountains causes these counties to form more of a community of interest with the midwestern states than with the eastern region. (For example, residents of the Pittsburgh area are more likely to do business or interact regularly with the eastern Ohio communities surrounding Akron and Youngstown than with Altoona or other Pennsylvania communities east of the Alleghenies.)

²¹ Areas outside the continental United States (Alaska, Hawaii, Puerto Rico and the Virgin Islands) are assigned to the regions which include the states with which they are associated within the Departments of Labor and Commerce standard statistical reporting regions.

V. THE COMMISSION SHOULD ADOPT STRINGENT LOTTERY REFORMS TO DETER SPECULATION FOR 900 MHZ PCS LICENSES

The Commission is correct in focusing on how to strengthen and improve lotteries through stringent anti-speculation safeguards²². Such reforms are the best means to ensure that there are no delays in the licensing process and will speed deployment of service to the public. In particular, the prospect of perhaps being granted auction authority (which the Commission now lacks) at some time in the future should not cause the Commission to delay licensing 900 MHz narrowband PCS.

The Commission should strengthen its lottery procedures by employing strong, front end qualifiers to deter insincere applicants for narrowband PCS authorizations. Specifically, Telocator recommends the following:

Financial Qualification Criteria: Given the relatively high cost of developing a wide area PCS infrastructure, requiring firm financial commitments at the initial application stage or the posting of a construction bond immediately upon winning the lottery, is critical to assuring that applicants are in a position to achieve the actual deployment of proposed systems.

High Application Fees: In order to reduce potential speculative gain, Telocator believes the Commission should adopt the highest non-refundable legally defensible filing fees²³.

²² Notice at paragraphs 87 through 90.

²³ Applicant fees based on the number of call signs or facilities as proposed, however, are problematic in one respect. Without any obligation to construct facilities, no applicant would propose (or pay for) more than one call sign or base station in an initial application, regardless of the ultimate market or system size authorized. A fee schedule like the Commission is proposing must be tied to stringent construction and service requirements.

Prohibition on Pre-lottery Settlements: No publicly beneficial or legitimate business purpose is served by allowing pre-lottery settlements in narrowband PCS licensing lotteries²⁴.

The Commission, however, should not impose post-licensing restrictions on the sale or transfer of authorizations. Such "back end" restrictions have been ineffective in the past. Moreover, should 900 MHz authorizations find their way into the hands of persons who, for whatever reason, are unable to construct and operate an authorized system and provide service to the public, Commission rules should not create barriers to seeing that these authorizations are transferred to qualified service providers as promptly as possible.

VI. THE COMMISSION SHOULD ADOPT A REGULATORY FRAMEWORK FOR NARROWBAND PCS WHICH ENSURES A LEVEL PLAYING FIELD FOR ALL PROVIDERS

As discussed above, the Commission should adopt a regulatory framework for narrowband PCS that relies on competition rather than comprehensive regulation. The successful implementation of such a policy, however, requires that a level playing field be maintained for all competitors. Accordingly, it is a fundamental position of Telocator that like services should be subject to like regulation. Both the industry and the public would be best served by adopting

²⁴ Given the significantly lower number of licenses which are likely to be available for broadband PCS, as compared to 900 MHz narrowband services, however, Telocator believes that allowing pre-lottery settlements, with disclosure, for 1850-1990 MHz PCS licenses services would speed the licensing process and delivery of these services to the public.

a uniform set of regulations that apply equally to the full family of PCS, including both new and existing service offerings.

A. 900 MHz Narrowband Licensees Should be Permitted to Self-designate as Either Private or Common Carriers.

In furtherance of this goal, Telocator believes licensees should be allowed to self-designate as either private or common carrier services. Under self designation, 900 MHz narrowband PCS spectrum would be made available without any pre-determined regulatory status. Carriers would be bound to operate under the rules appropriate to which ever designation (private or common carrier) they elected in their application for license. An election to operate as a common carrier would place the company under Part 22; the election to operate as a private carrier would place the company under Part 90. There is precedence for such treatment: FM sub-carrier channels and Multipoint Distribution Service (MDS) are already handled in this manner.

B. Narrowband PCS Providers, Regardless of Regulatory Category, Should Have Equal Rights to Interconnection.

Telocator concurs with the Notice's proposal that PCS providers, regardless of regulatory status, should "have a federally protected right to interconnection with the PSTN."²⁵ Telocator further believes that narrowband PCS should have interconnection that is reasonable for that particular PCS system

²⁵ Notice, at paragraph 99.

and "no less favorable than that offered by the LEC to any other customer or carrier."²⁶

VII. THE PROPOSED TECHNICAL RULES GENERALLY PROVIDE A SOUND BASIS FOR NARROWBAND PCS RULES.

Telocator supports the Commission's tentative conclusion that the public is best served if PCS is subject to minimal technical regulation. Because "PCS concepts are still being developed" and "many PCS technologies are at their inception," "a technical framework that will permit significant flexibility in the design and implementation of PCS systems, devices and services"²⁷ is clearly warranted. In particular, the Commission should not adopt any particular modulation scheme or interoperability standard for narrowband PCS.

The industry's demonstrated commitment to developing open technical standards is evidenced by the broad deployment throughout the paging marketplace of the Telocator Alphanumeric Protocol (TAP) and Telocator Network Paging Protocol (TNPP) for inter-system compatibility. The Telocator Paging Technical Committee is currently well advanced in the development of the Telocator Data Protocol (TDP) suite to support more sophisticated and data-intensive transmission services, and in the development of a high speed signalling format.

²⁶ Notice at paragraph 101.

²⁷ Notice at paragraph 104.

The Commission's proposed power, height and interference rules for 900 MHz narrowband PCS²⁸ appear to provide a good starting point for industry developed technical rules for use of the 930-931 MHz and 940-941 MHz bands²⁹.

Because of the placement of the 930-931 MHz and 940-941 MHz bands next to high power services, such as one-way paging and Specialized Mobile Radio services, these bands are unsuitable to low power aspects critical to many two-way narrowband PCS applications. By contrast, the 901-902 MHz band does not present such a problem and should be restricted to low power transmissions, such as mobile-to-base communications. Limiting ERP to 7 watts or less for the 901-902 MHz band (as proposed by the Commission in proposed rule 99.407) is appropriate.

VIII. CONCLUSION

The Commission's Notice is a needed and vitally important step forward in bringing the promise of Advanced Messaging Services to the public. The Notice defines appropriate goals for PCS policies and details a realistic and appropriate regulatory framework, optimally suited to maximizing these goals.

With these comments, Telocator has outlined the additions to the proposed regulatory framework which are needed to bring the

²⁸ Notice at paragraph 125.

²⁹ Telocator stresses, however, that the same power, height and interference rules proposed for nationwide licenses should also apply to regional systems.

proceeding, as it relates to 900 MHz narrowband services, to a swift conclusion. Telocator urges the Commission to move expeditiously to ensure that the next generation of advanced, wireless messaging services can be made a reality for American consumers without delay.

Respectfully submitted,

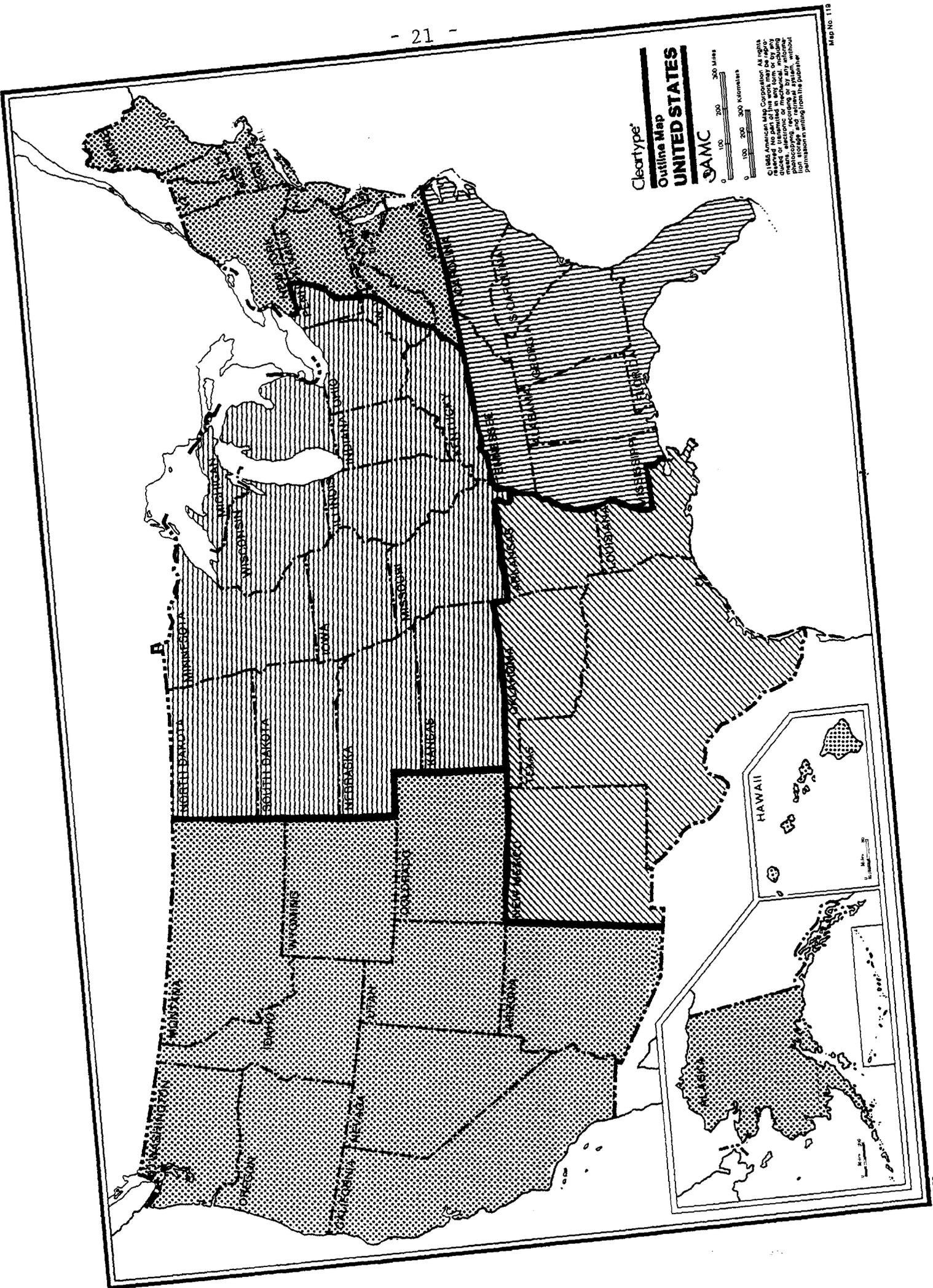
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Dated: November 6, 1992

Attachment: Proposed Regional Service Areas



ClearType
 Outline Map
 UNITED STATES

SAMC
 0 100 200 300 Miles
 0 100 200 300 Kilometers

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