

DIAL PAGE, INC.
Comments on 900 MHz Narrowband PCS

Interest: Paging carrier and pioneer preference applicant.

Band plan:

- The Commission should adopt a flexible channelization plan to accommodate multiple services with different bandwidths (5-6).
- The Commission should allocate the 901-902 MHz band to low power transmission services to protect such services from interference (7).

Amount of spectrum per licensed system:

- The Commission should allocate no more than 50 kHz per licensee (6).
- Asymmetrical channel pairings based upon need (as opposed to standard symmetrical channel pairings) would be a more efficient use of spectrum (6).

Service areas:

- 900 MHz narrowband services should be licensed on a regional basis because the paging industry has become regional in nature. Supports Telocator's five proposed regional markets (7-8).

Licensing policies:

- The Commission should hold lotteries that are band, rather than frequency, specific (7).
- The winners would then have a 60-day window to coordinate with one another to determine whether there exists a commonality of service that could be offered on a regional basis. Should there be such commonality, the parties would specify a frequency preference to the Commission (7).
- The Commission should adopt stringent anti-speculation safeguards to prevent lottery abuse, such as a firm financial commitment, high application fees, and a prohibition on pre-lottery settlements (8-9).

Other issues:

- The Commission should establish separate procedural tracks for 900 MHz narrowband PCS and 2 GHz PCS. Issues are far less complicated for 900 MHz PCS (4-5).

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- Urges the Commission to reconsider the tentative denial of its pioneer preference request (9-10).

ERICSSON CORPORATION
Comments on 900 MHz Narrowband PCS

Interest: Manufacturer of telecommunications equipment.

Band plan:

- FCC should establish specific uplink and downlink bands for paired narrowband allocation. (p. 26).
- There is no need for channel bandwidths greater than 50 kHz, though lesser channel bandwidths should be allowed. (p. 26).

Service areas:

- FCC should allocate channels for narrowband PCS on both a regional (40 percent) and nationwide (60 percent) basis. (p. 26).

FLORIDA CELLULAR RSA LIMITED PARTNERSHIP
Comments on 900 MHz Narrowband PCS

Interest: Cellular carrier

Cellular carrier participation:

- There should be no limitation on the ability of existing cellular licensees to participate in PCS (9-10).

Local exchange carrier participation:

- LECs should not be precluded from participating in PCS -- all participants should be on an even footing (10-12).
- However, separate subsidiary requirements should be imposed (12).

Licensing policies:

- Supports a simplified lottery process to expedite licensing (12-13).
- Filing fees should reasonably approximate the costs of processing the application (13).

Regulatory status:

- PCS should be classified as private carriage, regardless of whether there is resale of interconnected telephone service for profit or not (13-14).
- To ensure a level playing field, Part 22 cellular carriers should be reclassified as private carriers (14).
- Without prejudice to cellular eligibility, supports further liberalization of flexible cellular option (10).
- PCS licensees should have a federally protected right to interconnection with the PSTN (12).

Technical standards:

- The Commission should address the problem of fraudulent use of wireless devices (16).

Other issues:

- The Commission should approach the allocation of spectrum carefully. The findings related to need and competition in the Notice are without factual support (3-4).

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- The Commission should separate 900 MHz narrowband PCS and 2 GHz broadband PCS into two procedural tracks (6).
- Opposes grant of pioneer's preference to MTel because MTel has not shown "significant communications innovations" (17-19).
- Because of potential for abuse, award of pioneer's preferences should be carefully monitored (19).

FREEMAN ENGINEERING ASSOCIATES, INC.
Comments on 900 MHz Narrowband PCS

Interest: Applicant for 900 MHz pioneer's preference.

Band plan:

- The 901-902 MHz band should be reserved for low power (7 watts) talkable only. (p. 11)

Amount of spectrum per licensed system:

- The Commission should adopt a flexible allocation scheme. A frequency plan with asymmetrical channels and flexible pairing of channels would yield the maximum flexibility. (pp. 4-5)
- The Commission should allocate at least four 150 kHz channels for services that require a larger amount of frequency. Two of these should be allocated for regional use and two for nationwide use. (p. 5)

Service areas:

- The Commission should establish a combination of regional as proposed by Telocator and nationwide systems, with the majority of spectrum allocated to regional use. (pp. 8-9)
- Should the Commission also allocate local channels, supports MSA/RSA service areas. (p. 9)

Cellular carrier participation:

- Existing cellular and RCC operators should not be prohibited from applying for PCS frequencies. (p. 11)

Local exchange carrier participation:

- If reasonable, cost-based interconnection requirements are not adopted, LECs should be barred from providing PCS in their own landline areas. (p. 8)

Licensing policies:

- The Commission should maximize the grants of pioneer preferences to select PCS licensees. (p. 9)
- Remaining licenses should be awarded by lottery. Each applicant would specify amount of spectrum it requires. If that much spectrum is not available, applicant would have the option to take what is left. (p. 10)

- The Commission should permit the free transferability of spectrum to facilitate the best use of spectrum and most rapid construction of systems. (p. 6)
- The Commission should place specific time limits on construction. (p. 7)

Regulatory Status:

- The Commission should require reasonable and cost-based interconnection. (pp. 7-8)

Technical standards:

- Supports Commission's proposed technical standards with the caveat that a liberal waiver standard should be applied to allow flexibility in service offerings. (p. 11)
- The regulations adopted should allow individual licensees to select the modulation techniques employed by their systems and allow industry working groups to develop the signalling protocols to be used. (p. 11)

Other issues:

- Freeman's pioneer preference request was erroneously denied. (p. 9)
- The Commission should separate 900 MHz narrowband and 2 GHz broadband PCS into two procedural tracks. (p. 12)
- In a separate pleading, Freeman:
 - (1) submits an engineering statement demonstrating that Freeman's proposal is new, innovative and technically feasible; and
 - (2) requests that the tentative denial be set aside and that the preference request be granted. (p. 5)

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GLOBAL ENHANCED MESSAGING VENTURE
Comments on 900 MHz Narrowband PCS

Interest: Applicant for 900 MHz pioneer's preference.

Other issues:

- Believes that the technical demonstration submitted in support of its proposed enhanced narrowband data and paging service warranted grant of a pioneer's preference for either a regional or nationwide system. (p. 1)
- Asserts that the FCC failed to weigh properly the substantial technological and service innovations contained in the GEM proposal as well as to correctly apply the pioneer preference requirements to the proposal. (pp. 2-4)
- Requests reversal of the tentative denial and grant of a pioneer's preference for its GEM proposal. (pp. 2, 5)

IN-FLIGHT PHONE CORPORATION
Comments on 900 MHz Narrowband PCS
Petition for Rule Waiver To File Pioneer's Preference Request
Pioneer's Preference Request

Interest: Seeking Pioneer's Preference for 900 MHz service

Band plan:

- In-flight's proposed service would require allocation of 901.75-902.00 MHz and 940.75-941.00 MHz. (p. 1)
- Because In-flight would need only 81.3 kHz at any geographic location, however, flexible channelization rules are needed to promote spectrum efficiency. (pp. 6-8)

Service areas:

- Service areas should be national, since the FCC has recognized that aviation services are nationwide in scope. (p. 8-9)

Licensing policies:

- Recommends high filing fees on the order of what the FCC has proposed. (p. 3)
- Recommends build-out requirements that would mandate service in all areas of the licensee's territory within 24 months of license grant. (pp. 3-4)
- Recommends preferential licensing for "risk-takers," defined as those who filed 900 MHz experimental applications prior to April 30, 1992, and who actually provide the service on an experimental basis on the date the service is created. All "risk-takers" would be granted spectrum first, and the remaining spectrum would be lotteried to non-"risk-takers." (pp. 4-6)

Regulatory status:

- In-flight's service cannot be offered as a common carrier service. (pp. 9-10)

Other issues:

- In-flight claims to have pioneered a live audio news, information and entertainment service to customers in transit on airplanes. (Preference Request at 1-3)
- In-flight's service will use 500 kHz in the 901-902/940-941 MHz bands, but only 81.3 kHz at any geographic point. (Preference Request at 3)

- In-flight bases its preference application on developing the service, contracting with Harris to develop circuitry to mitigate multipath effects, and developing errorless rate buffered switch circuitry. (Preference Request at 3-5, 11-13)
- In-flight believes the Commission should accept its request because In-flight was not on notice that its application was cut-off when the FCC issued a cut-off notice for "900 MHz narrowband mobile data and paging applications." (Waiver Request at 6)
- At the least, the FCC should waive the cut-off and accept In-flight's preference request. (Waiver Request at 7)

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KLEINER PERKINS CAUFIELD & BYERS
Comments on 900 MHz Narrowband PCS

Interest: Venture capital partnership dedicated to investing in new technologies.

Band plan:

- The Commission's rules should accommodate a range of solutions for meeting mobile data needs (2).

Other issues:

- Supports award of preference to MTel (2).

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MATSUSHITA COMMUNICATIONS INDUSTRIAL CORPORATION OF AMERICA
Comments on 900 MHz Narrowband PCS

Interest: Supplier of cellular mobile telephones and business telephone equipment; possible provider of wireless PBX systems.

Channelization:

- Proposed 50 kHz assignments should be modified to allow, upon a proper showing, the aggregation and combined use of more than one 50 kHz channel. (p. 6).

METRIPLEX, INC.
Comments on 900 MHz Narrowband PCS

Interest: Telecommunications company and 900 MHz pioneer preference applicant.

Service areas:

- See below.

Licensing policies:

- Proposes that all parties who have requested pioneer preferences in the initial proceeding be granted a single, nationwide license for at least a 50 kHz block in either the 931 or 941 MHz bands (with a corresponding block in the 901-902 MHz band for low-power uses.) (p. 12)
- At the end of a 36 month period, the licensee would be required to submit a report to the FCC detailing what services had been provided, over what area, and any construction under contract. The agency could then continue the license grants, limit them to specific markets or regions served, or revoke them. (p. 13)

Other issues:

- Believes the FCC erred in denying Metriplex's pioneer preference request for its proposed HDNAP service. (pp. 1, 5-13)
- Asserts that the FCC's reasoning and tentative conclusions are contrary to the clear intent of the pioneer preference regulations. (pp. 5-6)
 - Metriplex believes that grant of its pioneer preference request was warranted because the agency's spectrum allocation and licensing processes make it difficult for small, privately funded "innovators" to bring a new service to the market. In this regard, Metriplex characterizes Mtel as a "large, well-funded company" and takes issue with the grant of its pioneer preference request. (pp. 5-6)
 - Metriplex admits that, at the time the pioneer's preference request was filed, it had not applied for, or received, an experimental license to demonstrate the feasibility of HDNAP. (p. 8)

METROCALL OF DELAWARE, INC.
Comments on 900 MHz Narrowband PCS

Interest: Provider of cellular, paging and SMR services.

Service areas:

- Metrocall argues that national PCS service areas and LATA-based service areas are not in the public interest. (pp. 12-14) Rather, five regional licenses for narrowband PCS would be appropriate. (p. 25)

Cellular carrier participation:

- Opposes the eligibility of cellular carriers for PCS licenses in markets in which they have cellular operations. (pp. 11, 26)

Local exchange carrier participation:

- Opposes permitting telephone companies to hold PCS licenses in markets in which they have common wireline operations. (p. 26)

Licensing policies:

- Carriers should be disallowed from holding multiple licenses. (p. 5)
- Ten year license terms for PCS are warranted. (p. 14)
- Supports adoption of stringent lottery reforms to deter speculation for PCS licenses. (pp. 14-17)

Regulatory status:

- Requests the FCC to ensure a level playing field for all PCS providers. (p. 18)
- Urges adoption of the Telocator Flexible Service concept. (pp. 18-19)
- Agrees that PCS carriers should have equal rights to interconnection with the PSTN. (p. 19)
- Suggests that PCS applicants select carrier status as permitted by the FCC in the MMDS services. (pp. 19-21)

Technical standards:

- Believes that technical standards for PCS should be left to industry standards groups. (pp. 21-23)

- Believes that power and height requirements should be based upon a blanket limitation, which meets RF health hazard requirements, but allows for maximum flexibility of service requirements in the 900 MHz band. (p. 23)
- Digipeaters should be permitted anywhere within the service contour of the associated base station(s) and should not exceed the base station signal strength at the boundary of the service contour. (p. 23)

Other issues:

- The FCC should establish separate procedural tracks for 900 MHz narrowband PCS and 2 GHz broadband PCS. (pp. 6-8)
- The FCC should broadly define services that may be provided under narrowband PCS. (pp. 8-10)

MOBILE TELECOMMUNICATION TECHNOLOGIES CORPORATION
Comments on 900 MHz Narrowband PCS

Interest: Paging company and recipient of a tentative pioneer's preference for its Nationwide Wireless Network ("NWN") service.

Band plan:

- Believes that the optimum channelization plan would be to divide the 930-931 MHz band into 50 kHz channels for advanced messaging services and to accommodate all other 25 to 50 kHz narrowband proposals in the 901-902 MHz and 940-941 MHz bands. (p. 8)

Cellular carrier participation:

- Believes that eligibility rules should not restrict qualified entrants, including cellular providers or local exchange carriers, from participating in narrowband PCS. (p. 10)

Local exchange carrier participation:

- Same as above.

Licensing policies:

- Concurs that ten year license terms with renewal expectancies are necessary to provide the relative stability required to encourage the significant investment in infrastructure. (pp. 9-10)
- Opposes the use of lotteries to award licenses. Instead, proposes an expedited procedure for comparative hearings and specific criteria for evaluation as well as proposed rules designed to discourage the filing of speculative applications. (pp. 10-11)
- Suggests that three national narrowband PCS systems would be appropriate for NWN services in the 930-931 MHz band. (p. 14 and appendix)

Regulatory Status:

- Advocates a self-designation policy for narrowband PCS providers to allow them to elect their regulatory status at the initial application stage. (pp. 5-6)

Technical standards:

- Supports the proposed height and power limits for regional and local base stations. Also agrees that the

power and height limits adopted for nationwide paging systems should be used for nationwide 900 MHz narrowband PCS. (p. 7)

- Supports the tentative adoption of a 7 watt ERP limitation on mobiles and portables but submits that adaptive power control is not needed. (pp. 7-8)
- Concurs that the proposed emissions mask will sufficiently limit out-of-band power while permitting licensees significant flexibility. (p. 7)

Other issues:

- Believes that the 900 MHz narrowband PCS proceeding should be separated from the broadband 2 GHz PCS proceeding to ensure timely introduction of narrowband services. (pp. 2-5)
- Discusses its ongoing development work for the NWN system. (pp. 12-13)

MOTOROLA, INC.
Comments on 900 MHz Narrowband PCS

Interest: Equipment manufacturer.

Band plan:

- Proposes 31 50 kHz channels in the 930-931 MHz and 940-941 MHz base to mobile bands paired with 31 12.5 kHz channels in the 901-902 MHz mobile-to-base band. (p. 20)
- Proposes 3 blocks of 150 kHz in the 940-941 MHz base to mobile band to be paired with 3 150 kHz blocks in the 901-902 MHz mobile to base band to allow for symmetrical traffic systems. (p. 20)

Service areas:

- Agrees that a mix of regional and national systems should be authorized for 900 MHz narrowband systems -- no provision is needed for exclusively local services. (p. 21)
- Believes that 5 regions would keep co-channel interference caused by proximity to a minimum. (p. 22)

Licensing policies:

- Using Motorola's proposed band plan, the FCC could make 13 12.5 kHz channels available by lottery to existing operators to upgrade their systems. (p. 20)

Technical standards:

- Licensees should be granted the flexibility to combine or split channels as long as within their authorized spectrum. (p. 22)
- Both regional and nationwide licensees should be allowed to use the same power density as existing 900 MHz nationwide paging operators. (p. 22)
- Supports the continued use of the IEEE/ANSI standard by the FCC for determining potential RF hazards. (p. 29)
- Recommends that the FCC abandon the use of emission designators or set new designators for all possible modulation types.

- Recommends more flexible emission limitations to better accommodate new modulation schemes. Would allow licensees to occupy their entire bandwidth while reducing energy beyond this bandwidth to limits consistent with existing rules. (Appendix A)
- Wider bandwidth systems should be allowed to utilize proportionately higher powers.
- Submits specific rules changes. (Appendix A)

NATIONAL ASSOCIATION OF BUSINESS AND EDUCATIONAL RADIO, INC.
Comments on 900 MHz Narrowband PCS

Interest: Trade association and frequency coordinator
representing private radio interests

Band plan:

- 901-902 MHz should be reserved for low power transmissions and the 930-931 MHz and 940-941 MHz band for high power transmissions. (p. 8)
- Spectrum in this band should not be allocated for CT-2 applications but rather for digital data or voice, such as paging or messaging. (pp. 7-8)

Licensing policies:

- Recommends "first-come, first-served" licensing with lotteries to resolve mutually exclusive applications. (p. 9)
- Recommends "strict licensing procedures," construction rules, higher filing fees, firm financial commitments (posting performance bond), and firm benchmarks to deter speculation. (p. 9)

Regulatory status:

- PCS should be regulated as private carriage or PCS providers should be permitted to elect their regulatory status. (pp. 3-5)

Technical standards:

- Supports federally protected right to interconnection on terms no less favorable than that accorded to any other customer or carrier. (pp. 5-6)

Other issues:

- Continued association of ET Docket 92-100 and GEN Docket 90-314 will delay narrowband PCS services. (p. 7)

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NYNEX CORPORATION
Comments on 900 MHz Narrowband PCS

Interest: Local exchange and cellular provider.

Cellular carrier participation:

- Cellular carriers should be eligible to obtain spectrum in the 900 MHz band within their cellular geographic service areas. (pp. 19-21).

PACTEL PAGING
Comments on 900 MHz Narrowband PCS

Interest: Subsidiary of Pacific Telesis group; provider of paging services; applicant for 900 MHz pioneer's preference.

Band plan:

- Applicants must propose advanced messaging services for the 900 MHz PCS band.
- Recommends that the FCC accommodate diverse narrowband PCS services by offering a variety of bandwidths and frequency pairings. (p. 21)
- Submits a channel plan that includes a mixture of 25, 50, and 100 kHz base transmit channels that are paired on both a symmetrical and asymmetrical basis with return link channels. (Attachment 2).
- Argues that bandwidths over 100 kHz are spectrally inefficient. (pp. 21-24)

Service areas:

- Proposes that the country be subdivided into five geographic regions based on the 49 Major Trading Areas. (pp. 14-15)
- Believes a need for nationwide service may be met by either allowing applicants to apply for all regions, or by licensees interconnecting their systems through intercarrier operating agreements. (p. 29)

Cellular carrier participation:

- The FCC should not establish eligibility restrictions since the competitive issues raised in the Notice only apply, if at all, to wideband PCS. (p. 28)

Local exchange carrier participation:

- Same as above.

Licensing policies:

- Proposes that applicants be allowed to file one application for each bandwidth in each region. (p. 56)
- Favors a licensing scheme that will require applicants to make detailed legal, technical, financial and other

showings sufficient to demonstrate their licensee qualifications. (pp. 35-38)

- Recommends adoption of a tiered fee structure with two components: a filing fee that includes a lottery fee component, and an application processing fee paid only by the lottery winner.
 - Suggests two approaches for determining the fee: (1) based upon the actual number of transmitters specified in the application; or (2) based upon the theoretical number of transmitters it would take to provide coverage over the entire geographic region being licensed. (pp. 46-47)
- Urges the adoption of a forfeiture bond requirement. (p. 48)
- Concerned that the use of auctions for narrowband PCS will substantially delay the licensing process. (p. 52)
- Opposes restrictions on the transferability of authorizations. (p. 53)
- Opposes the adoption of short filing windows as a mechanism to weed out insincere applicants. (p. 54)
- Believes the narrowband PCS rules should contain strictly enforced construction deadlines. (p. 55)

Regulatory status:

- Favors common carrier regulation but also recommends that rules be crafted to mitigate distinctions between common and private carriers. (p. 57)

Technical standards:

- Supports the FCC's proposal to adopt height and power limits derived from Part 22 of the existing rules. (p. 28)

Other issues:

- The narrowband PCS portion of the proceeding should be expedited if it becomes delayed by wideband PCS issues. (p. 26)

PAGEMART, INC.
Comments on 900 MHz Narrowband PCS

Interest: Paging company and applicant for 900 MHz pioneer's preference.

Band plan:

- Recommends that the FCC divide the narrowband spectrum into five 200 kHz, ten 50 kHz, and twenty 25 kHz sections, with a remaining 1 MHz a "quiet" band reserved for returned links. (p. 7)
- Such a spectrum scheme would support acknowledgement paging, simulcast, frequency reuse, and asymmetrical applications. (p. 7)

Amount of spectrum per licensed system:

- With 1 MHz of spectrum for a return band, five frequency reuse systems would receive 200 kHz, ten simulcast providers would receive 50 kHz, and twenty acknowledgement paging systems would receive 25 kHz. (p. 9)

Service areas:

- Believes that spectrum for narrowband PCS should be distributed on a nationwide basis only. (p. 10)

Licensing policies:

- Should the FCC adopt PageMart's diverse spectrum allocation plan, a lottery within each service category would be an effective means to award spectrum -- the FCC need only create eligibility requirements for each service category. (p. 11)

Other issues:

- In a separate pleading, PageMart comments on the FCC's tentative decisions on 900 MHz narrowband pioneer's preference applications.
 - States that the FCC should look to service innovation instead of technical achievement and award multiple narrowband PCS preferences to facilitate a market test of service options. (pp. 3-7)
 - Suggests that the FCC's tentative preference decision is based upon a misconception of the record and a misapplication of the relevant legal

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standard, and that the tentative denial of PageMart's pioneer preference should be reversed. (pp. 7-18)

- Asserts that PageMart has demonstrated all of the elements meriting grant of a pioneer's preference under the criteria applied to Mtel. (pp. 18-21)