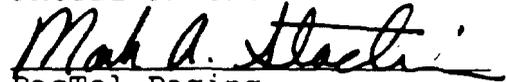


30, 1991.

8. As described in PacTel's Petition, AAP is inherently a regional service with the United States divided into three regions (Pacific Region, Central Region, and Atlantic Region). PacTel has proposed that numerous authorizations be available for qualified applicants. PacTel seeks a Pioneer's Preference only with respect to one authorization in the Pacific Region. Because multiple licenses are contemplated in the Petition, the award of a Pioneer's Preference to PacTel for the Pacific Region would not create a regional monopoly nor otherwise unduly restrict competition. In fact, an award of a Pioneer's Preference to PacTel would appropriately reward PacTel for its efforts in conceiving, experimenting, and proposing this innovative new service, while at the same time preserving fair and robust competition. Under these circumstances, PacTel, as the first qualified party filing a Petition for Rulemaking with respect to AAP, should be entitled to such a regional preference.

PacTel respectfully submits that it has met all the relevant criteria for a Pioneer's Preference and PacTel, assuming the Commission adopts rules establishing AAP which are a reasonable outgrowth of the PacTel proposal, is entitled to a Pioneer's Preference.

Respectfully submitted,
PACTEL PAGING



PacTel Paging
Three Forest Plaza
12221 Merit Drive
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Dallas, Texas 75251
(214) 458-5200

Dated: August 2, 1991

MARK A. STACHIW
Attorney for PacTel
Paging

EXHIBIT 2

July 29, 1991

H. Franklin Wright, Chief
Frequency Liaison Branch
Office of Engineering and Technology
Federal Communications Commission
2025 M Street, N.W.
Washington, D.C. 20554

RECEIVED
JUL 29 1991
FEDERAL COMMUNICATIONS
COMMISSION
OFFICE OF THE
SECRETARY

RE: Notice of Details of the Experimental Program

Dear Mr. Wright:

Pacific Telesis Group ("Telesis") hereby notifies the Commission of the details of one of the experimental system tests being conducted under the company's recently granted experimental radio service authorizations.

On February 20, 1991, the Commission granted Telesis authority under Part 5 of the Commission's rules in the Experimental Radio Service (Other Than Broadcast) to conduct tests and to gather information to assist the Commission and the telecommunications industry in the development of Personal Communications Services (PCS). The authorizations enable Telesis, and its participating subsidiaries, to conduct propagation and system tests in a variety of frequency bands in five metropolitan areas: San Francisco, Chicago, Dallas/Fort Worth, New York City, and Los Angeles. Authority was granted under the File Numbers 1658 through 1662-EX-PL-90. In the course of conducting experiments under the authorization, the company has sought to transfer the experimental authorizations to its subsidiary, Telesis Technology Laboratory, Inc. See FCC File No. 1934-EX-TC-91.

The existing experimental authorizations permit Telesis to conduct tests in the 930-931 MHz band, among others. As the Commission is aware, this band is part of the reserve spectrum which has been designated for use by Advanced Paging Services. Telesis, acting through its subsidiary PacTel Paging, now intends to begin testing in this band a service it calls "Advanced Architecture Paging", a technology platform that can support a variety of Advanced Paging Services.

H. FRANKLIN WRIGHT

July 29, 1991

Page Two

The specific propagation and system testing that will be conducted respecting the Advanced Architecture Paging Service falls within the technical and geographic confines of the existing experimental authorizations. Because the purpose of these experiments is to gather information related to a proceeding other than the PCS proceeding, Telesis felt it appropriate, after discussions with representatives of the Commission, to file this notice with the Commission in order to keep the agency fully appraised of the nature and scope of the experimentation. PacTel Paging, one of Telesis' subsidiaries listed in the experimental license, will be actively involved in this aspect of the experimental program. The attached summary sets forth in detail the essential aspects of the Advanced Architecture Paging Service that will be tested.

Kindly refer any questions in connection with this notice to PacTel Paging's counsel:

Mark Stachiw, Esquire
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(214) 458-5212

Thank you for your consideration in this matter.

Respectfully submitted,

Pacific Telesis Group

By: 
Title: Assistant Vice President
Date 7-29-91

Attachments

**NOTICE OF DETAILS
OF EXPERIMENTAL PROGRAM**

Pacific Telesis Group ("Telesis") hereby notifies the Commission of the details of one of the experiments it is conducting under previously granted experimental licenses. The following is respectfully shown:

I. Background

Telesis has been granted radio station authorizations under Part 5 of the Commission's rules in the Experimental Radio Service (Other Than Broadcast). The authorizations, all of which were granted on February 20, 1991, enable Telesis, and its participating subsidiaries, to conduct experiments in a variety of frequency bands, including 930-931 MHz and 940-941 MHz, in the following geographical areas:

San Francisco, California	File No. 1658-EX-PL-90
Chicago, Illinois	File No. 1659-EX-PL-90
Dallas/Fort Worth, Texas	File No. 1660-EX-PL-90
New York, New York	File No. 1661-EX-PL-90
Los Angeles, California	File No. 1662-EX-PL-90

In the course of pursuing the authorized experiments, Telesis has applied to the Commission for permission to transfer the existing authorizations to its subsidiary, Telesis Technology Laboratory, Inc. See FCC File No. 1934-EX-TC-91.

The primary purpose of the previously authorized experiments is to assist the Commission and the telecommunications industry in the development of information and technology regarding Personal Communications Services ("PCS") in relation to the Notice of Inquiry, Gen. Docket No. 90-314, 5 FCC Rcd 3395 (1990). Working in conjunction with its subsidiaries, Telesis proposed a broad based experimental

program involving RF tests in diverse metropolitan areas that would (a) provide a meaningful picture of radio propagation and interference characteristics at different frequencies; and, (b) assess the suitability of various spectrum bands for different technological applications. Telesis also proposed extensive system tests in multiple geographic areas utilizing a variety of modulation schemes and frequency ranges to analyze various system capabilities, functionality, features and spectrum efficiencies. Among the frequency bands included in the experimental program are 930-931 MHz, currently held in reserve for Advanced Paging Service, and 940-941 MHz, currently held in reserve for General Purpose Mobile Radio Service.

Subsequent to the submission of the Telesis experimental PCS license application, Telocator submitted a petition for rulemaking to make 930-931 MHz available to providers of Advanced Messaging Service ("AMS"). See RM-7617. As is more fully described below, PacTel Paging, a Telesis subsidiary, is in the process of developing a transmission platform it calls Advanced Architecture Paging ("AAP"). PacTel Paging contemplates that AAP would be provided in the 930-931 MHz band, and could support AMS. The AAP service constitutes a one-way service for which the technology, propagation and system testing discussed herein correlate in all material respects to the ongoing tests Telesis is conducting with respect to PCS. Consequently, Telesis has determined, after consultations with the Commission, to pursue this AAP

experiment as part of its existing experimental program under the current authorizations.

II. Qualifications of PacTel Paging

PacTel Paging is a subsidiary of Telesis. The company is one of the largest providers of paging services in the United States. It conducts regional wide-area operations throughout the country. PacTel Paging serves in excess of 500,000 paging units with a broad cross-section of messaging services including tone paging, voice paging, numeric paging, alpha numeric paging and voice mail services.

PacTel Paging has an established record of innovation in the paging business. It is a technically sophisticated, financially secure company which runs state-of-the-art paging systems in major markets in the United States, and has a history of fostering innovation in the industry.

III. The AAP Concept

In a variety of telecommunications contexts other than paging, common carriers offer subscribers an open channel of communication and leave it to the subscriber to determine the precise use to which the channel will be put. For example, in the landline telephone business, a wireline carrier will offer an end user a T-1 dedicated facility. The subscriber will determine how it wants to break it up and utilize the offered capacity and the user will select the format and composition to be utilized in transmitting information over the facility.

Historically, paging services have been offered on a much more circumscribed basis. Constraints imposed by industry formatting standards and manufacturers' equipment design decisions have limited one-way paging to a narrow set of options regarding format and composition. Available digital paging technology generally limits recipients to receiving messages formatted either in 4-bit (numeric) or 7-bit (alpha-numeric) characters. Thus, not only the length but the content of the transmission is effectively limited. For example, a 7-bit alpha numeric format will only accommodate numbers and upper/lower case letters, not any enhanced graphic characters, such as those found on personal computers (those characters above decimal 128). Graphics, facsimile and video do not conform to existing format and composition limitations, and thus are not available for transmission by existing paging systems.

The concept with AAP is to develop an advanced messaging service free of the constraints imposed by existing technology. AAP is a digital data stream offered to end users without imposing informal formatting limitations. Therefore, not only are 4-bit and 7-bit characters available, but innumerable other word sizes and compositions are possible. Ultimately, AAP could permit all digital data types to be distributed to the subscriber, thereby providing the platform upon which both existing and enhanced messaging capabilities, including enhanced character sets, low and high resolution

graphics, video, E-Mail, facsimile, digitized voice and lengthy alpha numeric messages, will be able to be offered and to co-exist. AAP also offers the possibility of subscribers being able to encrypt their messages at the bit level, thus ensuring confidentiality.

IV. The Experimental Program

The development and testing of AAP requires experiments involving a variety of technical aspects of the platform to be utilized to deliver the diverse transmissions that are contemplated. Specifically, PacTel Paging proposes to conduct detailed tests regarding transmission rates, bandwidth, error correction, coding schemes and system control techniques. These aspects of the experimental test are discussed in greater detail below.

A. Transmission Speeds

The restricted internal formats of existing paging services have been dictated in large part by capacity limitations. Longer messages require additional air time and thereby threaten to congest a one-way system beyond tolerance. Transmitting at increased baud rates holds a prospect for resolving this capacity concern. However, faster transmission speeds may not offer the same quality of reception. PacTel Paging will test transmissions at a variety of increased baud rates for purposes of determining efficiency and reliability.

B. Error Correction

State-of-the-art paging systems today do employ some forward error correction. The most advanced of these, however, only provides for 3-bits of error correction for a 23-bit code word. With increased baud rates and/or increased message length, enhanced forward error correction will be absolutely necessary in order to maintain a suitable level of reliability.

Research in other disciplines has resulted in dramatic steps forward in data transmission error correction. PacTel Paging will incorporate and test the effect of forward error correction in the high-speed simulcast one-way messaging environment.

C. Channel Spacing

A 25 KHz channel spacing is the standard upon which the existing paging industry has been based. In the course of establishing technical standards with respect to Advanced Messaging Services, the Commission must explore whether this is indeed the optimal bandwidth standard. Due to receiver selectivity and reception capabilities, a wider bandwidth will in fact support a higher paging transmission speed. Testing is necessary to determine the optimal relationship between bandwidth and transmission rates. For example, if a doubling of the bandwidth would support a quadrupling of the paging transmission speed, then increasing the bandwidth would be more spectrally efficient.

With this principle in mind, PacTel intends to test the technological capabilities and capacity of channel spacing from 25 KHz to 50 KHz. The purpose will be to determine the optimal bandwidth for this service in terms of spectrum efficiency and capacity. In making this determination, PacTel Paging will take into consideration the fact that fewer channels with wider bandwidths will result in the need for fewer guardbands (presently 7.5 KHz) between channels, which may result in a more efficient utilization of allocated spectrum.

D. Coding Schemes

Essentially, AAP is an unformatted paging service which will allow the subscriber to select the paging format and message type to be provided. There will, however, be some low-level formatting necessary in order to deliver certain basic data to the pager (i.e., cap code, message, error correction, etc.). PacTel Paging will experiment to determine the minimal formatting necessary to offer AAP service.

E. Control Systems

The market demands for one-way services have resulted in the development of regional systems. Generally, wide-area services of this nature are provided by simulcasting a modulated signal from many transmitter locations throughout a broad geographic area. In order for this paging technique to be successful, the signals must arrive at the subscriber unit in modulated phase. This technical constraint has limited the

baud rate at which simultaneous transmissions can be achieved, and has thereby limited the capacity of existing paging systems.

As baud rates are increased, more precise control signalling techniques will be necessary. PacTel Paging proposes to utilize the frequency band 940-941 MHz to test the simulcast control segment of the AAP system. The purpose will be to develop a control system architecture capable of supporting the advanced technology represented by AAP.

V. Technical Parameters of the Experimentation Program

In developing and testing AAP, PacTel Paging proposes to operate within the following technical and geographic specifications:

A. Frequency Bands

PacTel Paging proposes to utilize no more than 50 KHz of spectrum in the frequency band 930-931 MHz to test base station transmit capabilities of AAP.

PacTel Paging proposes to utilize no more than 50 KHz in the frequency band 940-941 MHz to test the simulcast control segment of the AAP system.

PacTel Paging will test the propagation of 930-931 MHz and 940-941 MHz FM signals using channel spacing from 25 KHz to 50 KHz and utilizing a pseudo-random bit stream in specified geographic areas as set forth in greater detail below.

B. Height/Power Limitations

PacTel Paging plans to transmit with the minimum power necessary to test the service. PacTel Paging will comply with the height/power limitations reflected in the Telesis experimental licenses. In no event shall transmitters operate with more than 10 watts ERP.

C. Interference Protection

The frequency bands in which the tests are to be conducted are in the Commission's reserve spectrum and, as such, no interference to established commercial operations will be caused. In order to ensure that it does not interfere with any other experimental licensee in these frequency bands, or cause interference to any system on adjacent frequencies, PacTel Paging will implement measures (such as monitoring a frequency prior to beginning the experiments and coordinating with others who may be authorized experimental licensees in the same markets) to ensure that interference is not caused. PacTel Paging will also carefully monitor its emissions to ensure that no spurious or harmonic emissions interfere with existing systems on adjacent frequencies.

D. Geographic Area

PacTel Paging will test the AAP service in certain geographic areas within the confines of the Telesis experimental licenses. Specifically, the markets in which the company will test AAP are: San Francisco, California, Los Angeles, California, and Dallas/Fort Worth, Texas. The first

two markets have been selected because in combination they represent a robust regional paging market with diverse geographic, climactic, RF environment and demographic characteristics. The third market is selected because it is the location of PacTel Paging's principal office where many of the key personnel who will be involved in designing, overseeing and evaluating the experiment are located.

E. Timetable

The experimental program set forth above can be completed within the two year experimental license term which commenced with a grant of the Telesis authorizations in February of 1991. The experimental reports to be filed with the Commission in connection with the previously granted authorizations will be expanded to include reports regarding the conduct of the AAP tests.

VI. Follow-On Tests

Assuming that the results of the experimental program regarding propagation and system component testing are encouraging, PacTel Paging will need to conduct certain follow-up market tests of the AAP service.

In order to confirm the technical aspects of AAP, tests at full operating power for 931 MHz paging systems will be necessary. PacTel Paging understands that prior authority from the Commission will be required to modify the experimental program in this respect.

Also, the market acceptance of AAP may be tested by placing, pursuant to further Commission authority, test subscriber units on test AAP systems in specified markets. Authority may also be sought to implement varying tariffs for AAP service to test the consumer demand for larger or smaller message sizes at varying service prices. PacTel Paging does not seek authority to conduct such market tests, or to charge for experimental services, at this time. Any such further request will be supported by appropriate showings regarding disclosures to be made to test system subscribers regarding the fact that the AAP service is experimental and that the Commission may terminate the authority to offer the service at any time.

As conceived by PacTel Paging, AAP will evolve at least as a regional service, and perhaps as a nationwide service. A further aspect of the experimental program may be to test the technical constraints on providing AAP on a regional or national basis, and, perhaps, to test the market acceptance of this service as a wide-area or countrywide service.

Conclusion

In summary, the program of experimentation being conducted under the Telesis experiment licenses includes the development of an Advanced Architecture Paging service, a form of Advanced Messaging Paging to be offered in the 930-931 MHz

band. Based upon the promise this service concept holds, PacTel Paging, by a separate filing, will be petitioning the Commission to establish a rulemaking to allocate spectrum in the 930-931 MHz band to the AAP service, and to accord PacTel Paging a Pioneer's Preference relating thereto.

4179N 08256/36485

EXHIBIT 3

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

In the Matter of:)
)
Amendment of the Table of) RM-
Frequency Allocations and)
Part 22 of the Rules Relative)
to the Allocation of Reserve)
Spectrum for a Common Carrier)
Ground-to-Air Paging Service)

PETITION FOR
RULEMAKING

July 30, 1991

PacTel Paging
Three Forest Plaza
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(214) 458-5200

TABLE OF CONTENTS

	Page
Summary	ii
I. Background.	1
II. The Public Need for Ground-to-Air Paging.	2
III. Allocation Requirements	4
A. Geographic Scope of the License.	5
B. Spectrum Needs	7
C. Number of Licenses	8
D. Height/Power	9
IV. Licensing Standards	9
A. Regulatory Status.	10
B. Qualifying Criteria To Be A GAP Licensee	11
C. Selection Method	13
D. Additional Provisions.	14
Conclusion.	14

SUMMARY

PacTel Paging is petitioning for a rulemaking to allocate spectrum to a new ground-to-air paging ("GAP") service.

GAP is a high speed digital paging service utilizing satellites to simulcast signals capable of alerting paging receivers aboard aircraft throughout the nation. The new service will enable ground-based calling parties to contact individuals in aircraft, who will then complete the communication link by placing an air-to-ground radio telephone call from the airborne units that will be found with increasing regularity on commercial and private aircraft by virtue of the 4 MHz allocation of spectrum in General Docket No. 88-96.

GAP overcomes the fact that existing air-to-ground radio telephone services are generally mobile-originated services only.

PacTel Paging is proposing an allocation of three 25 KHz channels from either the 930-931 MHz or 940-941 MHz reserves to accommodate competitive systems for this new service. An appropriate licensing scheme also is proposed.

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