

ORIGINAL

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FILE

Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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JUN 19 1992

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Request For Award Of A Pioneer's)
Preference For A License For)
Hybrid Data Network With)
Acknowledgement Paging In The)
930-931 MHz Band)
)

ET Docket No. 92-100
File No. PP-81

To: The Commission

**SUPPLEMENT TO PETITION OF
METRIPLEX, INC.
FOR PIONEER'S PREFERENCE**

Metriplex, Inc. ("Metriplex"), by its attorneys and pursuant to Section 1.402 of the Commission's Rules, hereby supplements its Petition For Pioneer's Preference filed with the Commission on June 1, 1992. Metriplex petitioned for a Pioneer's Preference in the allocation of spectrum for a Hybrid Data Network w/Acknowledgement Paging ("HDNAP"), which when used in conjunction with existing Metriplex developed software, data telemetry, and information services, will provide a new advanced nationwide data communications service.

Metriplex's Petition included a demonstration of the technical feasibility of the new HDNAP service and advised the Commission of the company's efforts to develop and file an

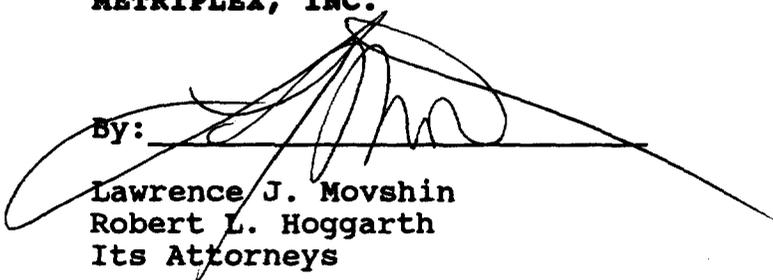
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List A B C D E

experimental license application in order to field test its innovative new technology.

Metriplex completed and filed an experimental license application with the Commission on June 18, 1992. A copy of that filing is submitted herewith as a supplement to Metriplex's original pioneer preference request. Metriplex respectfully requests that the Commission consider this supplement in conjunction with its pioneer preference request.

Respectfully submitted,

METRIPLEX, INC.

By: 

Lawrence J. Movshin
Robert L. Hoggarth
Its Attorneys

Thelen, Marrin, Johnson & Bridges
805 15th Street, NW
9th Floor
Washington, DC 20005
(202) 962-3000

June 19, 1992

FILE COPY

FCC/MELLON
JUN 18 1992

THELEN, MARRIN, JOHNSON & BRIDGES

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June 18, 1992

via MELLON BANK

H. Franklin Wright, Chief
Frequency Liaison Branch
Office of Engineering and Technology
Federal Communications Commission
2025 M Street, NW, Room 7322
Washington, DC 20554

Re: Metriplex, Inc.
FCC Form 442 Application for
Experimental Authorization

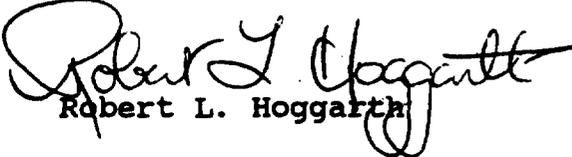
Dear Mr. Wright:

Transmitted herewith on behalf of Metriplex, Inc. is an FCC Form 442 application for experimental radio service under Part 5 of the Commission's rules requesting experimental authority within a 50-mile radius of Washington, DC; Boston, Massachusetts; and New York, New York, respectively.

Also attached to the application is an FCC Form 155 and a check in the amount of \$35.00 made payable to the FCC to cover the filing fee for the application.

Should any questions arise with respect to this matter, please contact this office directly.

Very truly yours,


Robert L. Hoggarth

RLH/att
DC5EH556.DOC

5(a). Proposed location of transmitter and transmitting antenna (Check only one box)			
<input type="checkbox"/> FIXED/BASE		<input type="checkbox"/> MOBILE	
<input checked="" type="checkbox"/> BASE & MOBILE			
(b) If permanently located at a fixed location, give below N/A			(d) If mobile, describe the exact area of operation
State	County	City or Town	
Number and street (or other indication of location)			(1) 50-mile radius of Washington, DC; (2) 50-mile radius of Boston, Massachusetts (3) 50-mile radius of New York, New York
(c) Geographical coordinates exact to the nearest second See Exhibit 1			(e) Geographical coordinates of the approximate center of proposed area of operation (mobile applications) See Exhibit 1
North Latitude	West Longitude	North Latitude	West Longitude
6. Is a directional antenna (other than radar) used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
If "YES", give the following information:			
(a) Width of beam in degrees at the half-power point _____		Base 6 db gain, omni horizontal	
(b) Orientation in horizontal plane _____		Portable, various experimental	
(c) Orientation in vertical plane _____			
7. Is this authorization to be used for fulfilling the requirement of a government contract with an agency of the United States Government? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If "Yes", attach as EXHIBIT No. _____ a narrative statement describing the government project, agency, and contact number.			
8. Is this authorization to be used for the exclusive purpose of developing radio equipment for export to be employed by stations under the jurisdiction of a foreign government? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If "Yes", attach as EXHIBIT No. _____ the following information:			
(a) The contract number and the name of the foreign government concerned.			
9. Is this authorization to be used for providing communications essential to a research project? (The radio communication is not the objective of the research project). <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If "Yes", attach as EXHIBIT No. _____ a narrative statement providing the following information:			
(a) A description of the nature of the research project being conducted.			
(b) A showing that the communications facilities requested are necessary for the research project involved.			
(c) A showing that existing communications facilities are inadequate.			
10. If all the answers to items 7, 8, and 9, are "No", attach as EXHIBIT No. <u>1</u> , a narrative statement describing in detail the following:			
(a) The complete program of research and experimentation proposed including description of equipment and theory of operation.			
(b) The specific objectives sought to be accomplished.			
(c) How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion, or utilization of the radio art, or is along line not already investigated.			
11. (a) Give an estimate of the length of time that will be required to complete the program of experimentation proposed in this application.			
(b) If less than 2 years, give the length of time in months that the authorization requested in this application will be required. <u>2 years</u>			
12. Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If you answer yes, submit an Environmental Assessment required by Section 1.1311.			

13. List below transmitting equipment to be installed (if experimental, so state):

MANUFACTURER

TYPE

NO. OF UNITS

METRIPLEX, INC.

EXPERIMENTAL

14. Is the equipment listed in Item 13 capable of station identification pursuant to Section 5.152?

Request exemption to station identification requirements of Rule 5.152.

Yes No

15. Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building?

Yes No

If "Yes", give the following (See Instruction 9):

(a) Overall height above ground to tip of antenna is _____ meters.

(b) Elevation of ground at antenna site above mean sea level is _____ meters.

(c) Distance to nearest aircraft landing area is _____ kilometers.

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft and thereby minimize the aeronautical hazard of the antenna.

*Applicant plans to use existing buildings to locate its mobile transmitters. The transmitters will not be permanently mounted but will be placed at strategic locations on building tops. To the extent the Commission deems necessary, Applicant will advise FCC by letter or facsimile of transmitter sites before operations.

(e) Submit as EXHIBIT No. _____ a vertical profile sketch of total structure including supporting building, if any, giving heights in meters above ground for all significant features. Clearly indicate existing portion, noting particulars of aviation obstruction lighting already available.

16. Applicant is (check only one box)

Individual Association Partnership Corporation
 Other (describe below)

17. Is applicant a foreign government or a representative of a foreign government?

Yes No

18. Has applicant or any party to this application had any FCC station license or permit revoked or had any application for permit, license or renewal denied by this Commission?

Yes No

If "Yes", attach as EXHIBIT No. _____ a statement giving call sign of license or permit revoked and relate circumstances.

19. Will applicant be owner and operator of station?

Yes No

20. Give name, title, and telephone number (include area code) of person who can best handle inquiries pertaining to this application.

P.S. Stutman, President, Metriplex Inc. (617-494-9393)

21. List below all exhibits in numerical sequence and the item number of form requiring the exhibit identified.

EXHIBITS AND ITEM NO. OF FORM

Exhibit Number	Item No. of Form	Exhibit Number	Item No. of Form	Exhibit Number	Item No. of Form
1	5, 7, 8, 9				

22. CERTIFICATION

ATTENTION: Read this certification carefully before signing this application.

THE APPLICANT CERTIFIES THAT:

- (a) Copies of the FCC Rules Parts 2 and 5 are on hand; and
- (b) Adequate financial appropriations have been made to carry on the program of experimentation which will be conducted by qualified personnel; and
- (c) All operations will be on an experimental basis in accordance with Part 5 and other applicable rules, and will be conducted in such a manner and at such a time as to preclude harmful interference to any authorized station; and
- (d) Grant of the authorization requested herein will not be construed as a finding on the part of the Commission
 - (1) that the frequencies and other technical parameters specified in the authorization are the best suited for the proposed program of experimentation, and
 - (2) that the applicant will be authorized to operate on any basis other than experimental, and
 - (3) that the Commission is obligated by the results of the experimental program to make provision in its rules including its table of frequency allocations for applicant's type of operation on a regularly licensed basis.

APPLICANT CERTIFIES FURTHER THAT:

- (e) All the statements in the application and attached exhibits are true, complete and correct to the best of the applicant's knowledge, and
- (f) The applicant is willing to finance and conduct the experimental program with full knowledge and understanding of the above limitations; and
- (g) The applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the USA.

Signed and dated this fifteenth day of June, 19 92

Name of Applicant Metriplex Inc.
(correspond with name given on page 1)

By P. S. Stutman
(print)

P. S. Stutman
(signature)

Title President

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND IMPRISONMENT. U.S. CODE, TITLE 18, SECTION 1001.

Check Appropriate Classification:

- Individual Applicant
- Member of Applicant Partnership
- Office of Applicant Corporation or Association
- Authorized Employee

NOTIFICATION TO INDIVIDUALS UNDER PRIVACY ACT OF 1974 AND THE PAPERWORK REDUCTION ACT OF 1980

Information requested through this form is authorized by the Communications Act of 1934, as amended, and specifically by Section 308 therein. The information will be used by Federal Communications Commission staff to determine eligibility for issuing authorizations in the use of the frequency spectrum and to effect the provisions of regulatory responsibilities rendered the Commission by the Act. Information requested by this form will be available to the public unless otherwise requested pursuant to Section 0.459 of FCC Rules and Regulations. Your response is required to obtain this authorization.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), and the Paperwork Reduction Act of 1980, P.L. 96-511, December 11, 1980, 44 U.S.C. 3507.

Exhibit 1

By the associated FCC Form 442 application, Metriplex, Inc. ("Metriplex") requests Commission authority to conduct experiments in the 930-931 MHz band for its Hybrid Data Network with Acknowledgment Paging (hereinafter "HDNAP") within a 50-mile radius of Washington, DC, Boston, Massachusetts and New York, New York. Set forth below is a description of Metriplex's research and developmental efforts regarding HDNAP, a description of the service and equipment Metriplex intends to utilize and an explanation of the proposed experiments designed to further Metriplex's development of HDNAP.

A. INTRODUCTION

Metriplex has pioneered the concepts of information services and data delivery via alphanumeric paging, also known as "wireless computing", and has integrated this with pioneering concepts in so-called acknowledgment paging.

Metriplex is a Delaware corporation with principal offices in Cambridge, Massachusetts. Metriplex is a privately held telecommunications company that designs, develops and implements mobile/wireless communication systems that enable customers to receive time-critical information while on the move.

Metriplex has pioneered several information services and messaging applications integrating personal computers with alphanumeric pagers.

1. Pioneering Applications

1. Spring, 1986: Metriplex first offered its Metriplex/STOCKWATCH™ transmission software for

sale in March of 1986. This software was the first to enable fully automated transmission of information from personal computers to alphanumeric pagers via common carrier paging networks.

2. Fall, 1986: PcPAGE®, the industry alpha messaging software for MS-DOS is introduced.
3. Summer, 1988: Metriplex has operated the GLOBAL24® information network 24 hours/day, continuously since September 1988. This network utilizes paging channels for the transmission of data, exception reports, and personal messages via alphanumeric pagers.
4. Winter, 1988: McPAGE™, the industry's first embedded controller designed to seamlessly integrate mobile personal computers with one and two-way radio communications.

In general, Metriplex is a recognized developer of technology used in alphanumeric paging as well as provider of service to the public. Metriplex has experience gained from thousands of customers for alphanumeric messaging software such as PcPAGE® and subscribers to the GLOBAL24® information network. As a provider of information and messaging services via alphanumeric paging, Metriplex is well situated to understand the needs of the public for advanced paging services.

Since 1986, Metriplex has demonstrated both commitment to advanced paging applications as well as performance in the delivery of such applications. Extensive market research within our customer base as well as direct requests from customers in the process control, medical and transportation sectors evidence a strong need for data delivery and messaging services with acknowledgment.

Metriplex has prototyped the receiver/acknowledgement ("ack") transmitter unit and is currently working with manufacturers of palmtop personal computers to develop wireless computing applications which incorporate acknowledgment paging. The company seeks experimental authority to further explore its HDNAP technology and evaluate the prototype "ack" unit it has developed.

On June 1, 1992 Metriplex proposed to the Commission that a Hybrid Data Network ("HDN") be implemented in the 930-931 MHz band. Metriplex requested a Pioneer's Preference in view of its extensive innovating efforts in the band and advanced the Commission that this experimental application would be filed expeditiously. Under Metriplex's proposal the HDNAP will combine the necessary features of a high-speed one-way data and paging channel operating at a minimum speed of 2400 bps with the functions of an Acknowledgment Paging System ("APS") operating on a second (back) channel. The HDNAP will allow the user of the system to utilize as many features as are necessary and economically justifiable. Metriplex feels that the relative cost

of system use should be considered just as practically as any technical or regulatory facet might be.

Metriplex has extensive experience with the transmission of data over very large regional systems which in turn are networked and controlled from a central computer. Different user populations exhibit variable needs for closed-loop acknowledgment signaling. It is Metriplex's experience that all user populations are cost-sensitive. It thus becomes extremely important to provide the user population with the ability to easily use only that communications capability which is necessary (i.e., to pay only for what is needed). Determining what those price points are and how they can be utilized is one goal of Metriplex's experimental authorization.

Metriplex proposes HDNAP as a national communications service which will allow the sender of a message to verify reception by means of an acknowledgment signal returned from a data receiver/acknowledgment transmitter which is essentially similar to a conventional alphanumeric pager with the addition of a low-power (approx. 4W ERP) transmitter.

The new service will eliminate the necessity for a telephone in most pager messaging transactions as well as allow provision of high integrity supervised telemetry of data such as industrial process control parameters and medical laboratory information.

B. DESCRIPTION OF PROPOSED EXPERIMENTS

1. Description Of Acknowledgment Paging Applications

Conventional paging applications can be classified in one of three categories; tone only, numeric and alphanumeric.

A frequent question from any paging customer is "how do I know that the message was received"? While it is generally agreed that virtually all pages in a well designed and operated paging system are received, it is difficult to give positive assurance to sectors involved in mission critical applications such as process control, nuclear powerplants, hospitals, financial trading, and emergency response. With conventional paging, the only positive acknowledgment is a return telephone call, often a clumsy and time-consuming process, given the contemporary availabilities of public telephones.

Customers from various industries have told Metriplex that an acknowledgment or "ack" returned from the recipient's pager to the sender would have benefits ranging from peace of mind, to less time wasted, to fulfilling absolute necessities in alphanumeric paging and wireless computing applications where return telephone calls are not typically made.

In response to this consumer demand, Metriplex has proposed that a new form of paging service be authorized by the FCC. Acknowledgment Paging Service ("APS") is a limited two-way signaling modality. The sender, whether an individual or an automated system, transmits a message or data to the recipients receiver in a conventional fashion. Integrally housed with the

recipient's receiver is a small, low-power (2-4W ERP), transmitter which can transmit an acknowledgment signal, either automatically upon receipt of message, or in response to a manual operation by the recipient. In the latter case the acknowledgment can contain one of three responses:

1. "Yes", in response to a properly phrased message.
2. "No", in response to a properly phrased message.
3. "Send More", indicating that the recipient cannot evaluate the message without further information.

The "ack" signal is received by a secondary network of receivers which are not necessarily collocated with the paging system transmitters. Signal to Noise (S/N) considerations in many RF environments will necessitate much greater density of "ack" receivers than of transmitters. Urban areas will require especially high densities of "ack" receivers to ensure reliable operation.

The output and hence the effectiveness of the recipient's low-power "ack" transmitter will be largely a function of transmitting antenna pattern and gain and battery considerations such as size and weight. It is unreasonable to assume that the transmitting antenna will have a known orientation, hence the use of a high-gain (and presumably directional in at least one-axis) antenna poses problems. Similarly, customers are unwilling to be burdened by devices which are much larger than their current pagers. Thus even if relatively exotic and expensive battery technologies such as

lithium or zinc-air cells are employed, the available power and total energy from the battery will have severe constraints.^{1/}

Once the "ack" signal is received by the receiver network it is decoded and passed to the system controller. The system controller, which has previously attached to the recipient's message an "acknowledgment number" at time of transmission, checks all received "ack" signal (which contain the acknowledgment number) data with all acknowledgment numbers transmitted. When transmitted messages are subsequently not acknowledged within some preset time interval appropriate for the particular recipient or type of data, the message is retransmitted until acknowledged or until a retransmission limit is reached as set by either system users or operators. Messages which are not acknowledged after a different preset time interval (e.g. five retransmission), will in turn generate a "not acknowledged" message within the system controller. This "not acknowledged message" will in turn signal the sender by means of messages sent to such systems as electronic mail (E-mail), another pager, personal computer, a computer network or other appropriate display device. In certain emergency response cases, a recipient may need to signal "ack" rapidly, for example a

^{1/} The above-mentioned factors underline the need for extensive testing and experimentation in real-world conditions for both the pager/"ack" transmitter unit as well as the "ack" receiver network to determine optimal design and implementation if the systems are to be successful. Metriplex proposed to initiate these efforts upon approval of this experimental request.

cardiac response team in a hospital ICU, public safety personnel etc. In these cases the sender, when sending the message via the system controller, will stay connected to the system controller long enough, (perhaps 60 seconds) to determine whether or not "ack" has been received from the recipient.

Metriplex believes that several frequency pair in the 930-931 MHz band should be reserved for APS. One channel would be used to send data to the recipient's receiver, the other would be used to send acknowledgments back to the system controller. Metriplex has extensive experience with wireless computing applications and believes that it is unreasonable to assume that "ack" messages sent from a low-power transmitter with a modest antenna (from recipient to controller) will necessarily be sent at the same data rate as data from system controller (sender) to recipient. Experience has shown that it is easier to maintain necessary link S/N with relatively large (1000W ERP) base stations sending to mobile receivers, than it is to have small transmitters (less than 4W ERP) successfully sending to an arbitrarily dense "ack" receiver network. It should also be noted that the arbitrarily dense "ack" receiver network may be problematic to interconnect economically in urban areas such as New York City and Los Angeles. Metriplex intends to investigate this issue in its New York City experiments.

Since "ack" messages will in general be shorter than the data whose receipt they are acknowledging it will be possible

to send "ack" at a lower data rate which will enhance reliability of reception.

2. HDNAP Applications

There are certain applications, such as messenger and delivery services, which prove to be extremely cost sensitive. Often, cost differentials of as little as \$1.50/month/user can determine whether or not an enhanced communication service feature will be used.

There is a certain class of applications such as repair service (e.g., dispatching a repair technician), where the market is willing to bear cost differentials of perhaps \$8-10/month/user. This may be seen in the gradual shift from numeric to alphanumeric pagers in this market segment. Our market research, conducted with some of our personal computer software customers, indicates that this segment will pay perhaps \$5-8/month/user for APS.

Mission-critical applications such as medical information telemetry and messaging, telemetry and monitoring of large industrial processes such as refineries and nuclear power plants, and public safety comprise a class in which cost is perhaps secondary. It must be realized however that the end-user, the recipient, of mission-critical information may also receive messages which are less important and which may therefore not require APS. Since paging receivers are in general fix-tuned to one channel and since most users will require a cost-efficient

mix of high speed data/messaging and APS, a successful system must integrate both seamlessly.

Existing paging systems typically employ a variety of analog and digital signaling formats on the same channel. Channel throughput is severely compromised because of the necessity to key (up/down) between different batches of different formats as well as the need to establish synchronization at the beginning of digital batches. While often ignored, even in large regional systems, such inefficiencies may render a large regional data channel commercially unviable.

Metriplex has extensive experience in utilizing the "airtime" of common carriers for data transmission, and has also engineered and supervised the construction of RCC and PCP systems for data transmission. This experience has demonstrated to Metriplex the need for systems which are dedicated to integrated high-speed data and messaging. Economics make existing infrastructures in general unsuitable for data transmission, while technical considerations demand that new control architectures be implemented. It is unlikely that existing carriers, faced with the current erosion of profit margins found in the paging industry, will be willing or able to discard existing equipment which is not yet amortized, in favor of investment in new equipment required for new services.

3. System Construction

The proposed system can be constructed in an orderly, staged fashion. As previously discussed, receiver placement for

APS is critical. Receiving network performance will be highly dependent on signal absorption of vegetation and structures. In plain terms, big buildings in big cities will necessitate that receivers will in many cases be placed not by computer models but by fieldwork. In the real world a good network design is the best first step, but is usually augmented by "customer response" (service complaints), which in turn motivate a responsible operator to add additional sites. Metriplex is hopeful that its experiments will offer some useful data on this issue.

The most rational course for construction would then seem to be:

1. Construct high-speed (forward) data and messaging channel.
2. Construct APS back channel receiver network in some representative areas.
3. Begin operation with APS using auto-"ack".
4. Analyze "ack" reception data from operation of APS.
5. Make APS back channel more robust by adding receivers as necessary to ensure reliable operation.

By implementing the HDN in phases, the system can be built out to best serve the communication needs of the public while minimizing unnecessary expense which in turn would raise consumer costs.

4. Prototype Receiver/"Ack" Transmitter

Metriplex has spent considerable time in its laboratory facilities developing a prototype of the HDNS receiver/"ack" transmitter in order to establish the technical feasibility of this proposed new service. The prototype will be tested in the field upon grant of the experimental license. Laboratory testing has progressed sufficiently to establish that the proposed technology is feasible, and can be adequately developed at a reasonable cost to meet the demand for HDNS/APS services described herein.

The Metriplex prototype, pioneered in the Metriplex lab, consists of a conventional Motorola Advisor alphanumeric pager coupled to a 2W transmitter capable of operation in the 930 MHz region via a Metriplex "Smart Radio Buffer" acting as the controller. Power is supplied by a lithium battery although zinc-air cells are under investigation. The transmitter is coupled to a small stub antenna. At this time, antenna pattern and gain measurements are being conducted to determine the optimal design characteristics.

The prototype is approximately 4.1" x 3.5" x 1.9". The antenna protrudes approximately 2" above the otherwise rectangular package. The size and appearance of the antenna are critical to its acceptability in the paging marketplace. Average power consumption is approximately 30mw, assuming an average of eight messages per day with "ack". A significant portion of the power budget is devoted to processing tasks and will be reduced

as the firmware is refined. It is critical to emphasize that while frequency testing has not yet been completed, pending the grant of this experimental license request, the hardware, firmware and software development for this product, and for the HDNS itself are sufficiently mature in Metriplex laboratory processes to adequately establish that the proposed service is feasible and that it will be marketable at price levels that current and future paging subscribers will find extremely attractive.

5. Proposed Field Experimentation

Field tests of both the portable prototype receiver/"ack" transmitter as well as practical performance measurements of the "ack" receiver network elements will begin after granting of the experimental license. Metriplex plans to test and experiment with its HDNAP service, prototype transmitter and the accompanying application software in three test areas on the East Coast. Metriplex proposes to offer experimental service in a 50-mile radius of Washington, DC, Boston, Massachusetts (site of Metriplex's laboratory) and New York, New York (one of the most rigorous RF environments in the country). The coordinations of the geographic centers of each experimental area are set forth below:

CITY	N. LATITUDE	W. LONGITUDE
Washington, DC	38-53-51	70-00-33
Boston, Mass.	42-21-24	71-03-24
New York, NY	40-45-06	73-59-39

As soon as prototype testing has begun, Metriplex will begin integration trials of many elements of our information network with the novel concepts embodied in HDNAP. Mobile base transmitters will be set up in temporary locations and will be engineered to communicate with Metriplex's portable prototype receiver/"ack" transmitter. Metriplex herein requests authority to operate 12 mobile base units and 1000 portable prototype units within each market test area to provide realistic data on the success of the service.

Because Metriplex believes that the potential nationwide market for HDNAP service is substantial, it seeks authorization to test its equipment and services under rigorous market and operational conditions in the Washington, DC, Boston, Massachusetts and New York, New York areas. Such testing is in the public interest as it will lead to the development and rapid nationwide deployment of Metriplex's innovative technology.

FEDERAL COMMUNICATIONS COMMISSION
FEE PROCESSING FORM

FOR
FCC
USE
ONLY

Please read instructions on back of this form before completing it. Section I MUST be completed. If you are applying for concurrent actions which require you to list more than one Fee Type Code, you must also complete Section II. This form must accompany all payments. Only one Fee Processing Form may be submitted per application or filing. Please type or print legibly. All required blocks must be completed or application/filing will be returned without action.

SECTION I

APPLICANT NAME (Last, first, middle initial)

METRIPLEX, INC.

MAILING ADDRESS (Line 1) (Maximum 35 characters - refer to Instruction (2) on reverse of form)

805 15th St NW #900

MAILING ADDRESS (Line 2) (if required) (Maximum 35 characters)

CITY

WASHINGTON

STATE OR COUNTRY (if foreign address)

DC

ZIP CODE

20005

CALL SIGN

N/A

OTHER FCC IDENTIFIER

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in FCC Fee Filing Guides. Enter in Column (B) the Fee Multiple, if applicable. Enter in Column (C) the result obtained from multiplying the value of the Fee Type Code in Column (A) by the number entered in Column (B), if any.

(A)

(B)

(C)

FEE TYPE CODE

FEE MULTIPLE
(if required)

FEE DUE FOR FEE TYPE
CODE IN COLUMN (A)

FOR FCC USE ONLY

(1)

E A E

\$ 35.00

SECTION II — To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)

(B)

(C)

FEE TYPE CODE

FEE MULTIPLE
(if required)

FEE DUE FOR FEE TYPE
CODE IN COLUMN (A)

FOR FCC USE ONLY

(2)

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ADD ALL AMOUNTS SHOWN IN COLUMN C, LINES (1) THROUGH (5), AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.

TOTAL AMOUNT REMITTED
WITH THIS APPLICATION
OR FILING

\$ 35.00

FOR FCC USE ONLY

CERTIFICATE OF SERVICE

I, Carolyn A. Fonner, a secretary in the law firm of Thelen, Marrin, Johnson & Bridges, hereby certify that on this 19th day of June, 1992, I have caused to be mailed via first-class, postage prepaid, a copy of the foregoing "Supplement to Petition of Metriplex, Inc. For Pioneer's Preference" to the following:

Richard E. Wiley, Esq.
R. Michael Senkowski, Esq.
Eric W. DeSilva, Esq.
Wiley Rein & Fielding
1776 K Street, NW
Washington, DC 20005
Counsel for Mobile Telecommunication Technologies Corp.

W. Harrell Freeman
c/o Blooston Mordkofsky Jackson & Dickens
2120 L Street, NW
Washington, DC 20037
(Freeman Engineering Associates, Inc.)

Matt Edwards, Partner
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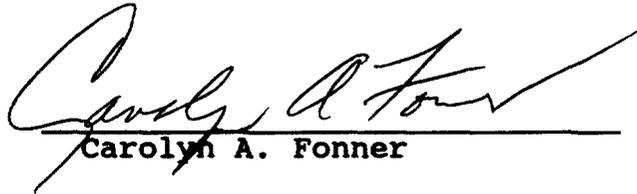
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