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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554

Federal Communications Commission  
Office of the Secretary

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

PP-35 ORIGINAL  
FILE

SUPPLEMENT TO PIONEER'S PREFERENCE REQUEST

Dial Page, Inc. ("Dial Page"), by its attorneys, submits this supplement to its Request for a Pioneer's Preference filed October 11, 1991. Dial Page filed simultaneously a Petition for Rulemaking ("Petition") for the allocation of a portion of the reserve spectrum in the 930-931 MHz band for a common carrier Acknowledgement Paging ("AP") service.<sup>1/</sup> In addition to its Request for a Pioneer's Preference and its Petition, on October 18, 1991, Dial Page filed an application for an experimental license for AP service. This supplement will provide the Commission with additional information to support a grant of a preference for Dial Page's proposed AP service.

1. In considering an award of a pioneer's preference, the Commission analyzes whether the applicant "proposes to provide either a service not currently provided or a substantial enhancement to an existing service." See Establishment of Procedure to Provide a Preference to Applicants Proposing an Allocation for New Services, Report & Order, 6 FCC Rcd 3488, 3494

<sup>1/</sup> Dial Page believes that its proposal is consistent with Telocator's Advanced Messaging Service proceeding.

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(1991) [hereinafter referred to as "Pioneer's Preference Order"]. This standard can be met by developing new technology that is useful or necessary to the provision of a new radio-based service or that incorporates a significant enhancement or capability within an existing service. Id. As Dial Page will show below, in addition to developing a service not currently provided and a service that is an enhancement to existing service, Dial Page has recently developed new technology unique to AP. This new technology is supportive of Dial Page's innovative proposal.

2. Dial Page has recently conducted market studies to determine customer demand and equipment acceptance for its proposed AP service. Based on its results, Dial Page found the demand for AP service is projected to exceed four million users. In addition, to satisfy consumer expectations, Dial Page has determined that the AP unit must be designed to be comparable in size and weight to existing alphanumeric pagers. Moreover, Dial Page has determined that most consumers prefer a unit with disposable batteries. Thus, Dial Page has determined the type of equipment it must produce for AP to gain customer approval.

3. Since Dial Page has analyzed the results of its studies, it has engaged in the technical design of the AP system. To meet consumer expectations and, at the same time, provide high system capacity through "reuse", Dial Page proposes to integrate a low power (one-watt or less) transmitter into existing paging receivers. The low power signal transmitted by the acknowledgment pager is delivered to a network of receivers for

temporary storage until polled by the Acknowledgement Controller. The AP system design is set forth in the attached chart.

4. Because the AP unit must use low power transmitters, the technology deployed by the receiver network becomes critical. Receivers must be capable of receiving weak signals and demodulating them in the presence of narrow band and wide band interferences. Additionally, the number of receivers used in a system must be kept to a minimum to reduce capital and operating costs.

5. Dial Page has extensively investigated the commercial market for receivers to meet the needs of the AP design. After its research of existing products, and based on its experience in the paging industry, Dial Page has designed a proprietary Digital Signal Processing Receiver ("DSPR") that is uniquely suited for an AP system.

6. From a technical design standpoint, this proprietary receiver utilizes the following:

- a. High speed automatic gain control utilizing Flash A/D technology, as opposed to the traditional analog gain controls found in conventional receivers;
- b. Auto-recursive frequency agile FIR convolution discriminator utilizing a DSP microcomputer and proprietary software, unlike the proprietary discriminator utilized in the Dial Page receiver, traditional receivers rely on analog discriminators;
- c. Hardware and software to implement an auto-correlation using digital, rather than analog techniques.

Following laboratory experiments comparing the Dial Page DSPR receiver with commercially available receivers, Dial Page's proposed receiver provides an improvement of four orders of magnitude in S/N ratio compared to conventional techniques. Dial Page's newly designed technology undoubtedly supports the viability and cost effectiveness of the AP system.

7. In addition to its obvious benefit to the AP system design, Dial Page believes this technology has additional commercial applications. Specifically, this technology can be used to improve the operating performance of any long range RF data communications. Examples of these applications include alarm, automatic meter reading, telemetry and control, and credit card verification systems.

8. Dial Page believes it has developed the advanced technology necessary to implement AP service. Through its ongoing tests and market focus studies, Dial Page believes that its proposed AP service not only brings out new capabilities in paging, it brings paging to a more advanced effective state, thus meeting the requirements for grant of a preference. Moreover, as soon as the Commission grants its experimental application, Dial Page believes its experiments will prove the technical viability of its proposal.

9. In conclusion, Dial Page has designed technology that will make AP viable and cost effective. Dial Page's proposal is clearly innovative and feasible as demonstrated above and in Dial Page's previously submitted Request and Petition for Rulemaking.

In view of the foregoing, Dial Page respectfully requests that the Commission grant it a Pioneer's preference simultaneously with its rulemaking proceeding to allocate spectrum and adopt rules for Acknowledgement Paging.

Respectfully submitted,

**DIAL PAGE, L.P.**

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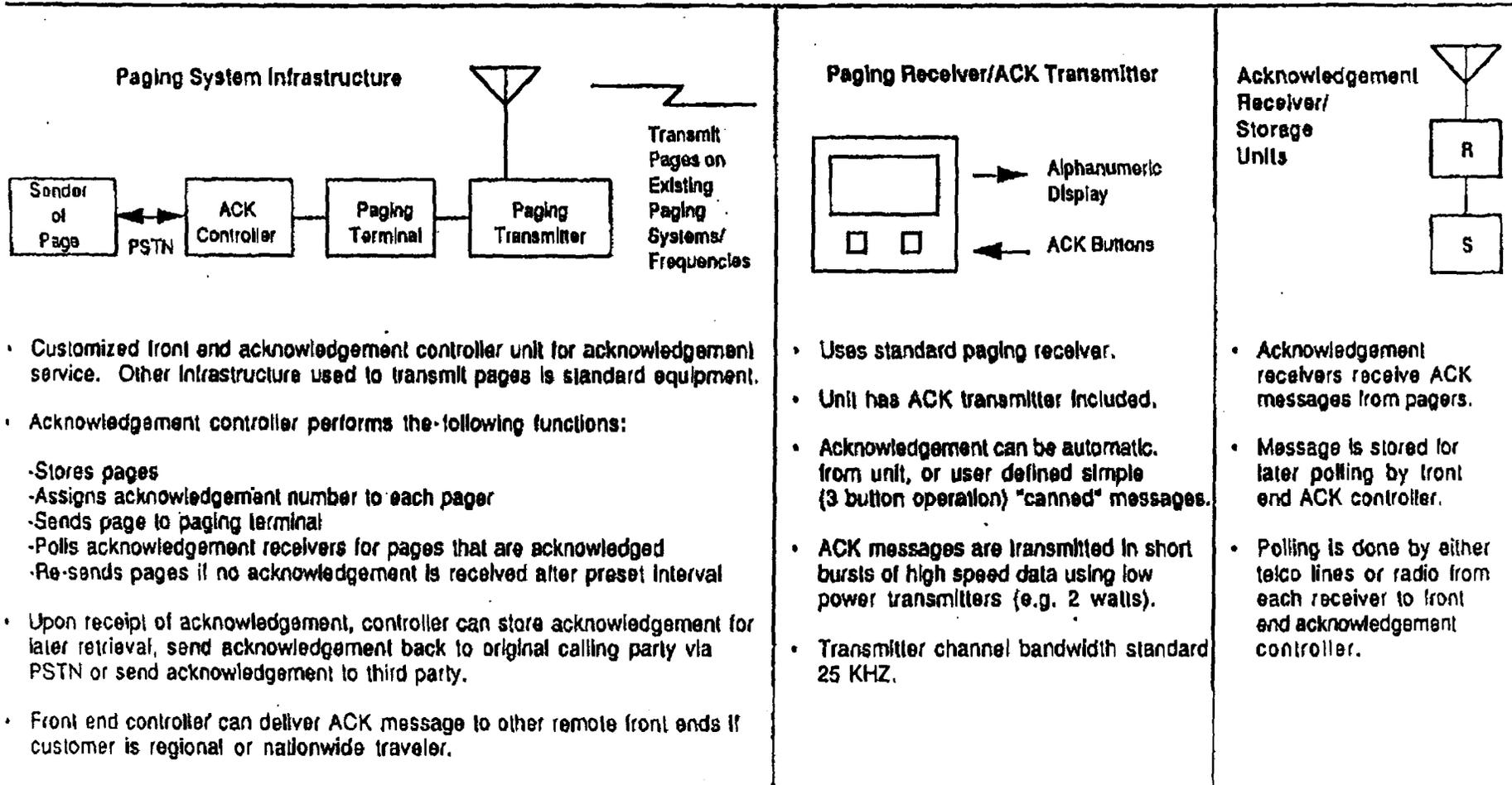
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## ACKNOWLEDGEMENT PAGING SYSTEM



EXHIBIT

- Customized front end acknowledgement controller unit for acknowledgement service. Other infrastructure used to transmit pages is standard equipment.
- Acknowledgement controller performs the following functions:
  - Stores pages
  - Assigns acknowledgement number to each pager
  - Sends page to paging terminal
  - Polls acknowledgement receivers for pages that are acknowledged
  - Re-sends pages if no acknowledgement is received after preset interval
- Upon receipt of acknowledgement, controller can store acknowledgement for later retrieval, send acknowledgement back to original calling party via PSTN or send acknowledgement to third party.
- Front end controller can deliver ACK message to other remote front ends if customer is regional or nationwide traveler.

- Uses standard paging receiver.
- Unit has ACK transmitter included.
- Acknowledgement can be automatic from unit, or user defined simple (3 button operation) "canned" messages.
- ACK messages are transmitted in short bursts of high speed data using low power transmitters (e.g. 2 watts).
- Transmitter channel bandwidth standard 25 KHZ.

- Acknowledgement receivers receive ACK messages from pagers.
- Message is stored for later polling by front end ACK controller.
- Polling is done by either telco lines or radio from each receiver to front end acknowledgement controller.