

# Request for Proposal for a Hybrid Telephony Communications System

## Pioneer Union Elementary School District Information

### Introduction

Pioneer Union Elementary School District is requesting proposals for a new communications system based on Hybrid telephony technology to support and satisfy current and future operational requirements necessary to the daily workings of its organization. The new system is expected to enable Pioneer Elementary School employees and guests to more effectively communicate and leverage available information technology resources.

The current Pioneer Elementary communications system is at the end of its productive life cycle and will be replaced in its entirety, except for select analog communications devices, e.g., 2500-type analog telephone instruments, by a new system. The new system is expected to have a useful productive life of at least 10 years, and must be designed and configured to support the future growth and expansion requirements of the organization in terms of both size and functional parameters. The new system must also be able to accommodate future technology enhancements that have the potential to increase operational effectiveness and ease implementation of new features, functions, and applications. It is the purpose of this Request for Proposal (RFP) to solicit responses from qualified vendors to fulfill these expectations and requirements.

Pioneer Union Elementary School District requires the proposed system to be based on a Hybrid telephony architecture design. For purposes of this RFP a Hybrid telephony communications system utilizes an Ethernet-based LAN and an IP-based WAN for transmission of control and voice communications signaling necessary to support some or all basic and advanced features and functions integral to the overall system solution. It also supports traditional digital and/or analog telephone end points. The proposed system must be based on a mix of circuit and packet switching technology to support a diverse range of station user and system endpoint requirements (analog, digital, and IP station equipment and trunk interfaces), in the most effective and cost efficient manner possible.

***The proposed system must communicate directly with the VoIP system installed in the district office.***

The proposed Hybrid telephony system design may be based on a mix of proprietary and industry standard communications protocols and interfaces, but must be able to support evolving Session Internet Protocol (SIP) standards as required by Pioneer Union Elementary School District at some future unspecified date. Pioneer Union Elementary School District understands that use of proprietary technology is often necessary to optimize system performance capabilities until industry standards are proven to be as reliable and efficient as traditional voice communications system solutions.

### Currently Installed System(s)

Pioneer Elementary School's currently installed communications system is an Avaya Merlin system. The district has recently installed an Avaya VoIP system. There are 2 primary reasons Pioneer Union ESD is replacing the system(s), including: aging technology and; inability to communicate directly with the new VoIP system that is installed in the district office.

### Basic System Configuration

The current telephone system installed at Pioneer Elementary School includes 50 voice mail boxes and 100 phones.

### Guidelines for RFP Evaluation and Proposal Selection

There will be three general principles that will govern the RFP review, evaluation and selection process:

- Clear, complete and truthful responses to RFP clauses and requirements
- Satisfactory responses to vendor issues and system performance requirements
- Competitive cost solution

The proposed system must be based on the manufacturer's most current hardware and software releases, and may not include any used and/or refurbished equipment.

## New System Objectives and Expectations

Pioneer Union ESD has defined several objectives and expectations for its new communications system. The most important are:

- Reduce communications expenses for MAC activity
- Reduce administration and maintenance complexity
- Reduce telecommunications staff requirements
- Simplify system upgrades
- Enhance system performance
- Survivability and reliability
- Easily accommodate expansion to new locations
- Easily integrate with our current VoIP system
- Easily accommodate growth
- Improve user productivity via new applications
- Extend core features and functionality to branch locations
- Improve user productivity via mobility

## Customer References

Each vendor must provide a list of three (3) customer references with installed systems that are similar (manufacturer product model, hardware/software release, basic system design, Telephones) and comparably sized (within 10% port capacity) to the proposed communications system. Include for each customer the date of installation, system release currently in operation for each customer, corporate contact information (telephone number or email address).

Complete the following table in response to customer reference requirements. Identify any proposed system equipment and/or software that have not yet been installed at the commercial customer site for any of the references.

### Reference Companies:

Customer Name	Date of Installation	Current System Components and Release

## Vendor Information

### Vendor Qualifications

It is important that the manufacturer and vendor of the proposed system solution have sufficient experience and resources required to support Pioneer Union ESD’s current and future communications needs. The following section includes a number of questions intended to help identify and judge the qualifications of each vendor responding to this RFP.

Please provide short, but complete, answers to each of the following inquiries about the manufacturer and vendor of the proposed system solution.

## Company History and Experience

When did the manufacturer supplier of the proposed solution first enter the voice communications systems market, i.e., shipment and installation of first medium/large line size PBX system? Provide the same information for the proposing vendor if it is not the system manufacturer. Briefly discuss the extent of manufacturer/vendor experience to configure, install, and support the proposed Hybrid telephony system solution.

## Financials

Please provide as an attachment a copy of the manufacturer's most recent annual report and a Form 10Q with detailed financial data, if available as a public document. The proposing vendor must provide the same information if not the system manufacturer.

## Product Portfolio

Briefly list the manufacturer's voice communications system offerings, including products for both the small/medium enterprise (SME) and large enterprise customer markets. Include in the summary a listing of core communications systems, messaging and voice processing systems, contact center systems, and other optional application server system relevant to the proposed communications system. The proposing vendor must provide similar information about its product portfolio offerings if not the system manufacturer

## Operational Services

### Remote Support Services

Briefly describe manufacturer and/or vendor remote operations center facilities in support of end user customer system administration, monitoring, maintenance and repair operations. Include in the discussion hardware and software solutions housed at the facilities, and the approximate number of support personnel and their job skill qualifications..

### Local Support Services

Briefly describe local technical, maintenance and repair support facilities, including dispatch methods and technician support tools.

### Consultative Services

Briefly describe the manufacturer's and vendor's consultative support services capabilities for system and network design and auditing, systems integration, and applications implementation.

## Market Share

For the manufacturer of the proposed system solution identify current domestic market share estimates for both annual PBX line (station) shipments and installed base (stations).

## Proposed System Architecture

### System Architecture Design

Pioneer Union ESD requires an communications system based on an architecture that is secure, reliable, scalable, and supports proven, feature rich communications applications.

Briefly identify and describe the communications system model(s) being proposed in response to this RFP, including the basic system design configuration (centralized or distributed, circuit/packet switched or "pure" packet switched client/server), port capacities for all station and trunk types and hardware/software release. Provide a simple illustrated diagram of the systems solution, including and identifying the following applicable major elements: common control, port carriers, and media gateways.

### Flexible Dialing Plan

It is required that the proposed system solution can support a flexible multi-digit (3, 4, or 5) dialing plan between stations across all locations. Also, the proposed system must be able to dial directly into the existing Avaya VoIP system through 3, 4, or 5 extensions.

## Transparent Features

Station features required to operate transparently across the system locations must at minimum include:

- Call Transfer
- Call Forwarding – All Calls
- Call Forwarding – Don't Answer
- Call Forwarding – Busy
- Automatic Callback
- Calling Number & Name on Telephone Display
- Trunk ID on Telephone Display
- Call Diversion Information on Telephone Display
- Add-on Conference
- Call Waiting
- Barge-in (Busy Override)
- Emergency Access to Attendant
- Paging System Access
- Station User Roaming (Logical Station Assignment)
- Message Waiting Activation

System features required to operate transparently across the system locations must at minimum include:

- Automatic Camp-on
- Automatic Recall
- Automatic Alternate Routing
- Meet-Me-Conferencing
- Trunk Callback Queuing
- Hunting
- Uniform Call Distribution
- Call Detail Recording
- Uniform Dial Plan

It is required that attendant features and services operate transparently across all system locations. Transparent attendant feature operation across all locations must include at minimum:

- Trunk Group Busy Warning Indicators
- Trunk Group Access and Control
- Serial Call
- Call Distribution to Attendants
- Night Service
- Message Waiting
- Paging System Access
- Through Dialing
- Intrusion
- Override of Diversion Features

## Centralized Management

It is required that all management/maintenance operations must be supported by a single management system with a unified customer database for all station users across all locations. Specific systems management features and functions are identified in a later section of this RFP.

All station moves/adds/change operations must be able to be implemented transparently across all locations. System monitoring, diagnostic, and maintenance operations for all locations must be supported using a single centrally located applications server at the HQ location with distributed client workstations across the network.

## Shared Messaging

It is required that a single, centrally located Voice Messaging System installed at the designated primary location must support the messaging requirements for station users across all network locations.

## Automatic Alternative Routing

It is required that the proposed system solution supports automatic alternative routing for all calls across locations (dependent on available network trunk circuit resources). It is also required that voice calls can be implemented over PSTN circuit switched facilities when the Pioneer Union ESD WAN is incapable of carrying bearer connections between media gateways.

## Ethernet Interface Call Control Signaling Links

Identify (when applicable) for each primary (active) and secondary (back-up) common controller element the number of available and configured Ethernet LAN uplink interfaces for call control signaling to LAN-connected port

carriers/media gateways and standalone IP endpoints. Briefly describe how the physical Ethernet connection is provided: dedicated circuit board; daughterboard; fully integrated RJ-45 connector, et al.

## **Proposed Hybrid telephony System – Hardware Information**

### **Telephone Equipment**

Pioneer Union ESD requires a mix of Telephone equipment for use with its new communications system, possibly including analog, digital and IP desktop telephone instruments, IP softphones, IP wireless communications devices, and cellular telephone handsets.

### **Federal Regulations**

All digital and IP telephone instruments included in the design must be manufactured in accordance with Federal Communication Commission hearing aid compatibility technical standards contained in Section 68.316. and the Telecommunication Act of 1996.

### **508 Compliance**

All telephones and peripheral equipment shall be manufactured in accordance with Federal Communication Commission hearing aid compatibility technical standards contained in Section 68.316 and the Telecommunication Act of 1996 and Section 508 of the Rehabilitation Act of 1973, as amended.

- Vendor is required to submit documentation of manufacturer compliance to 508 specifications
- Vendor shall deliver to the GPO/DR the completed and certified Section 508 compliance documentation and shall successfully complete the Agency's Section 508 testing during the lab validation period.
- The manufacturer of the common equipment specific to the proposed system shall manufacture the telephone sets or demonstrate Section 508 compliance and compatibility with third party telephone sets.

### **Analog Communications Devices**

Pioneer Union ESD plans to reuse its existing analog telephones, facsimile terminals and modem equipment with its new communications system.

### **Digital Telephone Instruments**

Pioneer Union ESD may require digital telephone instruments to be included as part of its new communications system. All digital telephone instruments must support plug-and-play installation (ready to use) and automatic station relocation is wall mountable, and self-diagnostic. Each digital telephone model should also be designed with a message waiting indicator and several fixed keys to access/implement popular features such as Conference, Transfer, Hold (Color Highlighted), and Last Number Redial.

### **Entry Level Digital Telephone Instrument Model**

Pioneer Union ESD may require an entry level digital telephone instrument model to be included as part of its new communications system. The entry level model must support two call appearances, be available with an optional alphanumeric display field, and also include all of the design attributes highlighted in Section 4.3 above.

### **Standard Digital Telephone Instrument Model**

Pioneer Union ESD may require standard level digital telephone instrument models to be included as part of its new communications system. The standard models must support a minimum of eight (8) programmable call/feature keys (but also be capable of supporting up to 24 if required); have several user self labeled customer programmable softkeys; an integrated alphanumeric display field; an integrated two-way speakerphone with fixed speakerphone, mute, and volume buttons; expansion key modules; and also include all of the design attributes highlighted in Section 4.3 above.

### **Executive Digital Telephone Instrument Model**

Pioneer Union ESD may require executive level digital telephone instrument models to be included as part of its new communications system. The executive models must support a minimum of 12 self labeling programmable call/feature keys (but also be capable of supporting up to 24 if required); have several self labeled user programmable softkeys; an integrated multi-line (5 line, minimum) alphanumeric display field; an integrated two-way speakerphone with fixed

speakerphone, mute, and volume buttons; expansion key modules; and also include all of the design attributes highlighted in Section 4.3 above.

## **IP Telephone Instruments**

Pioneer Union ESD requires a diverse range of IP telephone instruments. All IP telephone instrument models are required to support the IEEE 802.3af PoE standard; G.711 and G.729A/B Voice Codecs; QoS Options of UDP Port selection, Diffserv, 802.1p/q; support Simple Network management Protocol (SNMP) version 2; be a DHCP client and also support Statically (Manual) Configurable IP Addressing; support voice media encryption using Advanced Encryption Standard (AES); be wall mountable; and include an integrated message waiting indicator. IP telephone instruments must also be capable of supporting downloadable software upgrades

### **Entry Level IP Telephone Instruments**

Pioneer Union ESD may require an entry level IP telephone instrument model to be included as part of its new communications system. The entry level model design must: support a minimum of two call appearances; be equipped with several fixed feature keys of popular features/functions such as Transfer, Conference, Drop, Redial, Message, Hold (Color Highlighted), and Volume Control; and be available with an optional alphanumeric display field and integrated Ethernet switch. The instrument must also include all of the design attributes highlighted in Section 4.4 above.

### **Standard IP Telephone Instrument**

Pioneer Union ESD may require standard level IP telephone instrument models be included as part of its new communications system. The standard level model design must include: a minimum of 12 self labeling programmable call/feature keys (but also be capable of supporting up to 24 if required); several fixed feature keys, including such popular features/functions as Speaker, Headset, Conference, Transfer, Redial, Mute, Drop, Hold (Color Highlighted), and Volume Up & Down; an integrated full duplex speakerphone; an integrated large graphical backlit gray-scale display screen capable of supporting desktop productivity applications; customer programmable self labeled softkeys; embedded Web browser functionality; application keys, such as Call Log, Speed Dial and Web Browser; and hearing aid compatibility. The instrument must also include all of the design attributes highlighted in Section 4.4 above.

### **Executive Color Display IP Telephone Instrument**

Pioneer Union ESD may require an executive level IP telephone instrument model to be included as part of its new communications system. The executive level IP telephone model must have all of the design and function attributes of the standard level IP telephone instrument, but have a 1/4 VGA Color display color instead of a gray-scale display. The color display must also be able to support JPEG and WBMP images, in addition to advanced personal productivity applications provided through external application gateway servers.

## **Attendant Console**

Pioneer Union ESD will require one or more attendant consoles in support of internal communications operations. It is important that Pioneer Union ESD have a choice of attendant console options, including a traditional desktop console instrument and a PC client softconsole option.

### **Attendant Console Display**

The attendant console display must support, at minimum, the following system information: # calls in queue; # calls waiting; call appearance status; call duration; call coverage status; calling and called party name/ID; trunk name/ID; busy lamp field; dialed digits; time and date. The display should also be able to access and display text messages, system directory listings, and station user status/presence.

### **Attendant Console Headset**

The attendant console solution must support an integrated headset interface.

### **DSS/BLF**

Proposed attendant console instruments must be able to support an expansion Direct Station Selection/Busy Lamp Field (DSS/BLF).

### **Remote Attendant**

Pioneer Union ESD requires that our console operators be able to work remotely, using a PC Softconsole application that provides toll quality voice even when QoS on the network cannot be guaranteed.

## 802.11 Mobile Communications

Pioneer Union ESD may require an 802.11 WLAN communications device to be supported by the proposed communications system solution with access to all or most of the generic software features available to desktop telephone instruments .

### 802.11 WLAN Telephone Handset

Pioneer Union ESD may require an 802.11 WLAN telephone handset to be included as part of the proposed communications system solution. Wireless handsets must be able to support multiple call appearances (with line/status indicators) and one button feature access, and be equipped with a message waiting indicator and an alphanumeric display field.

## Proposed Hybrid telephony System Software Information

### Generic Software Features

Pioneer Union ESD requires a communications system that has a robust set of operational software features to support its diverse user population requirements. To simplify the evaluation process Pioneer Union ESD software feature requirements are segmented into the following three primary categories: Station User; Attendant; and System Level Operations.

All features listed in this section of the RFP should be included in the generic software program that is integral to the proposed communications system's common control complex. Any software feature not implemented through the primary call processing system or requires optional call processing server equipment must be identified as such.

### Station User Features

The following is a list of required station user features. Confirm that your proposed communications system generic software supports each of the listed features and specified parameter requirements, and identify any feature or specified parameter requirement not currently supported.

If additional servers, applications, or software licenses are necessary to support the features listed below, please include them in your pricing for this project.

#### STATION USER FEATURES

Feature	Supported Y or N
ADD-ON CONFERENCE (12 party, minimum)	
ABBREVIATED DIAL	
ACCOUNT CODE ENTRY	
BRIDGED CALL APPEARANCE (Analog, Digital, and IP Telephone Instruments)	
AUTO CALL BACK	
AUTOMATIC INTERCOM	
CALL FORWARD - ALL	
CALL FORWARD – BUSY/NO ANSWER	
CALL PARK	

Feature	Supported Y or N
CALL LISTEN	
CALL INTRUDE	
CALL PICKUP	
CALL RECORD	
CALL QUEUE	
CALL STEAL	
CALL WAITING	
CONFERENCE MEET ME	
CALL TRANSFER	
CALL WAITING	
PRIORITY CALL	
RESUME CALL	
RETRIEVE CALL	
DIAL EMERGENCY	
DISTINCTIVE RINGING	
DO NOT DISTURB	
ELAPSED CALL TIMER	
FOLLOW ME	
EXTENSION LOGIN/LOGOUT	
HUNT GROUP LOGIN/LOGOUT	
DOOR RELAY	
SET ABSENT TEXT	
HOT DESK	
INCOMING CALL DISPLAY	
INDIVIDUAL ATTENDANT ACCESS	

Feature	Supported Y or N
INTERCOM DIAL	
LAST NUMBER REDIALED	
LINE LOCKOUT	
LOUDSPEAKER PAGING ACCESS	
MANUAL INTERCOM	
HEADSET TOGGLE	
GROUP PAGING	
MEET ME CONFERENCING (12-party, minimum)	
MESSAGE WAITING ACTIVATION	
MUSIC ON HOLD	
OFF-HOOK ALARM	
INTERNAL AUTO ANSWER	
PERSONAL CO LINE (PRIVATE LINE)	
PERSONAL SPEED DIALING	
PERSONALIZED RINGING	
INSPECT	
LEAVE WORD CALLING	
MANUAL EXCLUDE	
RINGER OFF	
SEND ALL CALLS	
RINGING TONE CONTROL	
SAVE AND REDIAL	
SECONDARY EXTENSION FEATURE ACTIVATION	
STORED NUMBER VIEW	
STORE/REDIAL	

Feature	Supported Y or N
CALL LOG	
LINE APPEARANCE	
TEXT MESSAGES	
TIMED QUEUE	
FLASH HOOK	
TRUNK-TO-TRUNK CONNECTIONS	
DIRECTORY	
DROP	
COVERAGE APPEARANCE	
USER	
VOICEMAIL RINGBACK	
VISUAL VOICE MAIL	
CONSULT	

Describe how users would dial a number from a call log or corporate directory without having to manually change the number.

**Vendor Response:**

Does your software allow users to forward incoming calls based on whether the call is from an internal or external caller.

**Vendor Response:**

Can the system administrator set up station monitoring for a specific group of users?

**Vendor Response:**

### Attendant Operator Position Features

The following is a list of required attendant operator position features. Confirm that your proposed communications system generic software supports each of the listed features and specified parameter requirements, and identify any feature or specified parameter requirement not currently supported.

If additional servers, applications, or software licenses are required to support the features listed below, please include them in your pricing for this project.

## ATTENDANT FEATURES

Feature	Supported Y or N
ALTERNATE CALLS	
ANNOTATE CALL	
ANSWER CALL	
CALL HOLD	
CALL WAITING	
AUTO ANSWER	
CONFERENCE (12-party, minimum)	
RECORD CALL	
RECLAIM CALL	
DIRECT STATION SELECTION w/BLF	
CALL TRANSFER	
DISPLAY	
UPDATE USER STATUS	
ADD TO CONFERENCE	
TRANSFER TO VOICEMAIL	
CALL PARK	
CAMP ON	
PAGING/CODE CALL ACCESS	
PRIORITY QUEUE	
ALARM HANDLING	
DIRECTORY	
DOOR RELEASE	
SCREEN POPS	
INTRUDE	
TRUNK-TO-TRUNK TRANSFER	

<b>Feature</b>	<b>Supported Y or N</b>
<b>CALL TAGGING</b>	
<b>MANAGE QUEUES</b>	

### System Features

The following is a list of required system operation features. Confirm that your proposed communications system generic software supports each of the listed features and specified parameter requirements, and identify any feature or specified parameter requirement not currently supported.

If additional servers, applications, or software licenses are required to support the features listed below, please include them in your pricing for this project.

#### SYSTEM FEATURES

<b>Feature</b>	<b>Supported Y or N</b>
<b>ACCOUNT CODES</b>	
<b>ADMINISTERED CONNECTIONS</b>	
<b>ANSWER DETECTION</b>	
<b>AUTHORIZATION CODES</b>	
<b>AUTOMATED ATTENDANT</b>	
<b>AUTOMATIC CALL DISTRIBUTION</b>	
<b>AUTOMATIC ALTERNATE ROUTING</b>	
<b>AUTOMATIC CAMP-ON</b>	
<b>AUTOMATIC CIRCUIT ASSURANCE</b>	
<b>AUTOMATIC NUMBER ID</b>	
<b>AUTOMATIC RECALL</b>	
<b>AUTOMATIC ROUTE SELECTION - BASIC</b>	
<b>AUTOMATIC TRANSMISSION MEASUREMENT SYSTEM</b>	
<b>CALL-BY-CALL SERVICE SELECTION</b>	
<b>CALL DETAIL RECORDING OUTPUT</b>	
<b>CALL LOG</b>	
<b>CENTRALIZED ATTENDANT SERVICE</b>	

Feature	Supported Y or N
CLASSES OF RESTRICTION	
CLASSES OF SERVICE	
CODE CALLING ACCESS	
CONTROLLED PRIVATE CALLS	
DELAYED RINGING	
DIAL PLAN	
DIALED NUMBER ID SERVICE	
DIRECT DEPARTMENT CALLING	
DIRECT INWARD DIALING	
DID CALL WAITING	
DIRECT INWARD SYSTEM ACCESS	
DIRECT INWARD TERMINATION	
DIRECT OUTWARD DIALING	
E-911 SERVICE SUPPORT	
EXTENDED TRUNK ACCESS	
FACILITY RESTRICTION LEVELS	
FACILITY TEST CALLS	
FORCED ENTRY ACCOUNT CODES	
HOTELING/PERSONAL ROAMING	
HOUSE PHONE	
HUNTING	
INTEGRATED SYSTEM DIRECTORY	
LEAST COST ROUTING (Tariff-based, TOD/DOW)	
MODEM POOLING	
MULTIPLE LISTED DIRECTORY NUMBERS	

Feature	Supported Y or N
MUSIC ON HOLD	
NETWORK ADDRESS TRANSLATION (NAT)	
NIGHT SERVICE - PROGRAMMABLE	
OFF-HOOK ALARM	
OFF-PREMISES STATION (OPX)	
OPEN SYSTEM SPEED DIAL	
LDAP	
SYSTEM SHORT CODES	
SECURITY AUDIT TRAIL	
<b>RESTRICTION FEATURES</b> <ul style="list-style-type: none"> <li>• CONTROLLED</li> <li>• FULLY RESTRICTED</li> <li>• INWARD/OUTWARD</li> <li>• MISCELLANEOUS TERMINAL</li> <li>• MISCELLANEOUS TRUNK</li> <li>• TOLL/CODE</li> <li>• TRUNK</li> <li>• TELEPHONE (IN/OUT)</li> </ul>	
VOICE RECORDING ARCHIVE	
SECURITY VIOLATION NOTIFICATION	
USER RIGHTS	
SYSTEM SPEED DIAL	
SYSTEM STATUS REPORT	
TIME OF DAY ROUTING	
PHANTOM MAIL BOX	
DID ROUTING	

Feature	Supported Y or N
INTEGRATED MESSAGING	
UNIFORM CALL DISTRIBUTION	
UNIFORM DIAL PLAN	
VIRTUAL EXTENSION	
VOICE MESSAGE SYSTEM INTERFACE	

**Vendor Response:**

**Vendor Maintenance and Support**

This section asks the vendor to provide detail about their maintenance and support offerings.

**Maintenance**

**System Maintenance**

System maintenance operations must support local technician and remote service center technicians. Pioneer Union ESD requires the proposed communications solution to support advanced remote maintenance services. We require 24x7 remote technical services. When necessary for major outages, we require a two-business hour on-site response time.

**Hybrid telephony System Security**

**System Security**

Pioneer Union ESD requires that the proposed communications system solution be secure from unauthorized access and abuse. There are several major security issues that must be addressed, including: Eavesdropping; Denial-of-Service; Spoofing; Unauthorized Access; Toll Fraud.