

Franklin County School District

Request for Proposals for Internal Connections

2019 Lower Elementary Wireless Upgrade

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INTRODUCTION

Franklin County School District (FCSD) serves approximately 1,300 students at one elementary school, one middle school, one high school and a career and technical center. The school district has approximately 200 employees located at two campuses.

1.0 Objective

FCSD is seeking proposals from qualified vendors to replace and/or upgrade the existing wireless network and related network infrastructure for the Franklin County Lower Elementary as described in this Request for Proposal ("RFP"). Addresses and locations are specified in Appendix "A". The new wireless network shall operate in a mode whereby a single AP distributes the network configuration to other APs in the WLAN., enterprise class wired/wireless network compatible with existing network. The purpose of this RFP is to obtain quotes/bids to replace 22 Access Points, add 1 additional access point with corresponding network drop, 2 switches, and related ancillary parts and equipment all of which are supported through and dependent on Internal Connections funding provided by E-Rate.

2.0 Background

The network infrastructure of Franklin Lower Elementary is approximately three years old. The current network is not capable of supporting the anticipated demands for high-densities of Wi-Fi enabled devices. There are two existing switches that need to be upgraded.

The FCLE network infrastructure consists primarily of HP hardware, but network hardware and software from other manufacturers may be considered, provided they match or exceed the capabilities of AND are 100% COMPATABLE with the existing switches. The district consists of buildings built with a variety of construction materials and methods.

2.1 Scope of Service

1) Vendor must complete an onsite review/survey. New access points will replace APs currently in place. There will be one additional access point and drop added in Room 9 of the lower elementary. **Work must be done between the dates of June 1, 2019 and July 20,**

2019. Once work on the project begins, the vendor shall have ten (10) contiguous work days (excluding weekends) to complete the project. The entire project must be completed and in service by 3:00 p.m. on July 20, 2019.

- 2) All currently wired locations must continue to be provided wired service.
- 3) The wireless network shall support at least 30 high-speed wireless devices in each classroom.
- 4) Vendor is responsible for configuring all devices needed to implement the wireless network. FCSD technical staff shall be consulted prior to making any and all changes to any FCSD networking equipment.
- 6) The wireless network shall be configured to have multiple SSID's on dedicated VLAN's as defined by FCSD technology staff during installation and setup. FCSD Staff will be responsible for installing any services needed on FCSD servers, and will be consulted prior to Vendor configuring those services.
- 7) The vendor shall provide all physical installation.
- 8) Vendor shall work with FCSD staff to configure a Guest VLAN and SSID that provides limited network access.
- 9) A complete post-installation site survey shall be completed to show that all classrooms and office spaces having an access point shall have a minimum RSSI of -65 dBm (in both the 2.4 GHz and 5 GHz bands) in all locations of those areas. This survey shall be provided to the district once complete.
- 10) All work not found in conformance with the intent of the proposal shall be repaired promptly at no additional charge to FCSD.
- 11) Any additional and/or replacement wiring, patch panels, terminators and/or patch cables not specified in this RFP, shall be supplied by the vendor at no cost to FCSD.
- 12) Vendor is responsible for all project management; this is to be a turn-key solution with involvement of FCSD staff limited to specification of network security parameters, VLAN definition, and installation of any needed services on FCSD-owned servers.

Specifications Overview

2.2 Specifications and Quantity

Twenty-three (23) Access Points. Aruba IAP 315 Wave 2 or equivalent.

One (1) Cat 6e Drop (Room 9)

- 1) Equipment must meet or exceed the 802.11 ac wave 2 standard.
- 2) The system must be Wi-Fi Certified for 802.11 ac or greater.
- 3) Each access point must be an array of at least 2 radios that support 802.11 ac.
- 4) Each access point must have at least 1-gigabit Ethernet port.
- 5) Each access point must support VLAN tagging on individual SSID's.
- 6) Each access point must include spectrum analyzing capabilities.
- 7) Each access point must have the ability to switch users from the 2.4 GHz spectrum to the 5 GHz spectrum automatically as needed for client load balancing purposes.
- 8) Each individual radio in an access point must be manageable i.e. increase/decrease RX/TX, capable of setting different security protocols per radio, etc.
- 9) Access points must have adaptive antenna technology and not transmit 100% of the time in an omnidirectional pattern.
- 10) Each switch proposed must be compatible with and have equal or greater capabilities to the existing equipment. Each switch must be layer 3.
- 11) Each switch will have sufficient power over Ethernet (POE) ports to meet the two to one requirement for switch ports.
- 12) Any area that does not have a drop ceiling will require a wall mount bracket or other mounting option and suitable wiring raceways and moldings to achieve a finished installation appearance.
- 14) The existing cabling connecting the access points to be replaced may be used for the new access points.

Category 6 cabling is required. Each node must be properly terminated, tested and verified with appropriate documentation. Vendor will be responsible for any additional or replacement cabling.

**The following is a list of items/equipment/services to be included in the quote
Specifications can be found in Appendix A**

Server room

2 – 2 Port Stacking module for 2 HP 2920-48G J9728A or Equivalent switches.

1 – Stacking cable for HP 2920-48G J9728A or Equivalent switches

1 - 3M Multi Mode LC-LC Fiber Patch Cable 50 Micron

1 – 1M Multi Mode LC-LC Fiber Patch Cable 50 Micron

2 - 3M Multi Mode ST-LC Fiber Patch Cables 50 Micron

Room 9

1 – Network Drop and 1 of the 23 access points

Room 00

1 - HP/Aruba 2920-48G Switch or Equivalent

1 – 1Gb SFP LC SX Transceiver

1 - 1M Multi Mode ST-LC Fiber Patch Cable 50 Micron

Room 42

1 - HP/Aruba 2920-48G J9728A Switch or Equivalent

1 – 1Gb SFP LC SX Transceiver

1 - 1M Multi Mode ST-LC Fiber Patch Cable 50 Micron

23 - Aruba Instant Wave 2 IAP 315 Access Points or Equivalent

1 - Central Device Management Subscription 3 yr

1- Physical Installation of Equipment (remove current APs and install new)

2- Configuration of all installed switches and APs

2.3 Warranties

All warranties by Vendor and manufacturer on both products and labor must be specified in the proposal. The Vendor's warranties shall commence with acceptance of/or payment for the work in full. Minimum acceptable warranty on hardware, parts, and labor is 3 years.

2.4 Service

The Vendor must provide terms of service should repair become necessary and the work and materials needed that are not covered under warranty.

2.5 Vendor Site **Visit**

Vendors must arrange to attend a site visit, preferably during the week of January 7 -11, 2019. However, site visits may be arranged by contacting Jack Hollingsworth by email or by telephone. jhollingsworth@fcsd.k12.ms.us

Telephone: 601-384-2340

3.0 Evaluation Methodology

Each proposal will be evaluated based on criteria and priorities as defined by FCSD, who will choose the submission that, taken as a whole, and in FCSD's sole opinion, is in the best interest of the school district. Proposals should address the evaluation criteria itemized below.

The evaluation criteria include, but are not necessarily limited to, the following:

- . Price for all parts, labor, design, project management, programming, and shipping and handling.
- . The proposal's alignment with the desired solution as described in section 2, above.
- . The Vendor's overall performance record, including responsiveness and reputation based upon feedback from available references.

. The perceived quality of the Vendor's response, including completeness, accuracy and appropriateness.

. Stability/risk of Vendor, including assessment of risk that they may not be able to fulfill responsibilities.

. Vendor location for base of operations and support personnel.

3.1 Evaluation Criteria

. Price — 40%

. Service and Support location and experience 30% .

Experience in Serving Education — 15% .

Quality of References — 15%

TERMS AND CONDITIONS OF REQUEST FOR PROPOSAL (RFP)

4.0 Response Submission

Responses to this RFP must be submitted and delivered to FCSD as "sealed bids" no later than 3:00 p.m. on Monday, January 14, 2019 ("Final Submission Date"). Proposals must include a digital copy on flash drive. Acceptable digital formats include Word, RTF or PDF. It is the sole responsibility of the respondents to ensure that their responses arrive in a timely manner. FCSD will reject all late arrivals. Envelopes containing responses to this RFP shall be so marked as to be easily identified as containing RFP proposals. The outside of the envelope shall be identified as follows:

"Wireless Network Proposal"

Internal Connections Bid 2019
(2019-2020 E-Rate Funding
year)

Franklin County School District
Attn: Jack Hollingsworth

41 First Street
P.O. Box 605
Meadville, MS 39653

Oral, telephone, electronic mail or fax bids shall not be considered, nor will modifications of proposals by such communication be considered. The completed proposal shall be without erasures or alterations. Delivery of the proposals will be considered authorized by the service provider to make a contract, if awarded.

Responses to this RFP shall be itemized to include quantity, description, item numbers, model numbers, and cost of all products and services bid along with a grand total.

Any questions should be made in writing via e-mail to Jack Hollingsworth, jhollingsworth@fcsd.k12.ms.us, Director of Technology.

FCSD will not be liable for any cost incurred by the respondents in preparing responses to this RFP or negotiations associated with award of a contract.

4.2 Bid Opening Procedure

All bids will be opened at 10:00 a.m. on Tuesday, January 15, 2019. All bidders and other interested persons are invited to be present. Bid opening will take place at the Franklin County School District Central Office at 41 First Street, Meadville, Mississippi.

Vendors are welcomed to attend, but attendance is not mandatory. Lack of attendance will NOT be construed to indicate lack of interest nor will it reflect negatively on Vendor during review of proposals.

4.3 Omissions

Omissions in the proposal of any provision herein described shall not be construed as to relieve The Vendor of any responsibility or obligation to the complete and satisfactory delivery, operation, and support of any and all equipment or services. FCSD may at its discretion and at no fee to FCSD, invite any Vendor to be available for questioning during the Response evaluation for the purpose of clarifying statements in the response.

4.4 Right to Reject

FCSD reserves the right to accept or reject all proposals or sections thereof and when the rejection is in the best interest of FCSD and reserves the right to award without further discussion.

FCSD reserves the right to waive minor irregularities of any proposal and to negotiate the terms of any proposal.

4.5 Basis of Award

FCSD will award a contract based on the following terms:

- 1) E-rate approval by USAC.
- 2) Must have current USAC SPIN.
- 3) References of at least three (3) installations of similar application size and complexity. (All references should include: a contact person, dates of work, mailing address and telephone numbers.)
- 4) Proof of certifications and qualifications for all engineers and installers associated with this project.
- 5) Issuance of a Purchase Order will be contingent upon USAC acceptance and funding of the project.

4.6 Insurance Requirements

Within ten (10) days after notification of award, The Vendor shall furnish to the Franklin County School District a Certificate of Insurance showing compliance within the following limitations:

1) The Vendor agrees to comply with the provisions of Worker's Compensation Laws of the State of Mississippi.

2) It shall be stated on every policy or Certificate of Insurance, as the case may be, that "The insurance company agrees that the policy shall not be canceled, changed, or allowed to lapse until ten (10) days after the Franklin County School District has received written notice as evidenced by the return receipt of registered mail, and it is agreed further that as to lapsing, such notice will not be valid if mailed more than fifteen (15) days prior to the expiration date shown on the policy. "

3) The Vendor shall maintain other insurance (with the limits shown below) that shall protect The Vendor and the Franklin County School District from any claim for property damage or personal injury, including death, which may arise out of operations under this contract, and the Vendor shall furnish the Franklin County School District with certificates and policies of such insurance as follows.

Below is a list of the insurance coverage that must be procured by The Vendor at his own expense. The Vendor agrees to follow instructions indicated in each case:

The Franklin County School District Protective Liability Insurance:

.. Personal injury, including death, limits of \$1,000,000.00 for each person and \$1,000,000.00 for each accident.

Vendor's Public Liability Insurance:

.. Personal injury, including death, limits of \$1,000,000.00 for each person and \$1,000,000.00 for each accident.

.. Property Damage limits of \$100,000.00 for each accident and

\$500,000.00 for the aggregate.

Governing Law

. **All RFPs** and related documents submitted to the Franklin County School District by the Vendor are governed under the laws of the State of Mississippi.

APPENDIX A

Addresses for locations:

Franklin County Lower Elementary:
481 Highway 98 East Meadville, MS 36553

ACCESS POINT SPECIFICATIONS

Aruba IAP 315 OR EQUIVALENT

- AP-315 IAP-315 (Instant): - 5GHz 802.11ac 4x4 MIMO (1,733 Mbps max rate) and 2.4 GHz 802.11n 2x2 MIMO (300 Mbps max rate) radios, with a total of four integrated omni-directional downtilt dual-band antennas

OPERATING MODE

A single AP must be able to automatically distribute the network configuration to other Instant APs in the WLAN. Remote AP (RAP) for branch deployments

- Air monitor (AM) for wireless IDS, rogue detection and containment
- Spectrum analyzer, dedicated or hybrid, for identifying sources of RF interference
- Secure enterprise mesh

WI-FI RADIO SPECIFICATIONS

- AP type: Indoor, dual radio, 5 GHz 802.11ac 4x4 MIMO and 2.4 GHz 802.11n 2x2 MIMO
- Software-configurable dual radio supports 5 GHz (Radio 0) and 2.4 GHz (Radio 1)
- 5 GHz: Four spatial stream Single User (SU) MIMO for up to 1,733 Mbps wireless data rate to individual 4x4 VHT80 or 2x2 VHT160 client devices
- 2.4 GHz: Two spatial stream Single User (SU) MIMO for up to 300 Mbps wireless data rate to individual 2x2 HT40 client devices
- 5 GHz: Four spatial stream Multi User (MU) MIMO for up to 1,733 Mbps wireless data rate to up to three MU-MIMO capable client devices simultaneously
- Support for up to 256 associated client devices per radio, and up to 16 BSSIDs per radio
- Supported frequency bands (country-specific restrictions apply): - 2.400 to 2.4835 GHz - 5.150 to 5.250 GHz - 5.250 to 5.350 GHz - 5.470 to 5.725 GHz - 5.725 to 5.850 GHz
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum.
- Supported radio technologies:
 - 802.11b: Direct-sequence spread-spectrum (DSSS) - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
- Supported modulation types:
 - 802.11b: BPSK, QPSK, CCK
 - 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (conducted) transmit power (limited by local regulatory requirements):
 - 2.4 GHz band: +18 dBm per chain , +21dBm aggregate (2x2)
 - 5 GHz band: +18 dBm per chain , +24dBm aggregate (4x4)
 - Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain
- Advanced Cellular Coexistence (ACC) minimizes interference from cellular networks.
- Maximum ratio combining (MRC) for improved receiver performance.
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance.
- Short guard interval for 20-MHz, 40-MHz, 80-MHz and 160-MHz channels.
- Space-time block coding (STBC) for increased range and improved reception.
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput.
- Transmit beam-forming (TxBF) for increased signal reliability and range.

- Supported data rates (Mbps):
 - 802.11b: 1, 2, 5.5, 11
 - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
 - 802.11 n (2.4GHz): 6.5 to 300 (MCS0 to MCS15)
 - 802.11n (5GHz): 6.5 to 600 (MCS0 to MCS31)
 - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4 for VHT20/40/80, NSS = 1 to 2 for VHT160)
- 802.11 n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80/160
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

WI-FI ANTENNAS

- Four integrated dual-band downtilt omni-directional antennas for 4x4 MIMO with peak antenna gain of 3.6dBi in 2.4 GHz and 6.0dBi in 5 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees.

OTHER INTERFACES

- One 10/100/1000BASE-T Ethernet network interfaces (RJ-45) - Auto-sensing link speed and MDI/MDX - 802.3az Energy Efficient Ethernet (EEE)
- USB 2.0 host interface (Type A connector)
- Bluetooth Low Energy (BLE) radio
- Reset button: Factory reset (during device power up)
- Serial console interface (proprietary; optional adapter cable available)
- Kensington security slot

POWER SOURCES AND CONSUMPTION

- Direct DC power and Power over Ethernet (POE)
- When both power sources are available, DC power takes priority over POE
- Direct DC source: 12Vdc nominal, +/- 5%
- Power over Ethernet (PoE): 48 Vdc (nominal) 802.3af/802.3at compliant source

MOUNTING

- mounting clips to attach to a 9/16-inch or 15/16-inch flat T-bar drop-tile ceiling.
- Optional mount kits must be available to attach the AP to a variety of surfaces.

MECHANICAL

- Dimensions/weight (unit, excluding mount accessories): - 182mm (W) x 180mm (D) x 48mm (H) - 650g/23oz
- Dimensions/weight (shipping): - 223mm (W) x 218mm (D) x 55mm (H) - 850g/30oz

ENVIRONMENTAL

- Operating:
 - Temperature: 0° C to +50° C (+32° F to +122° F) - Humidity: 5% to 93% non-condensing
- Storage and transportation: - Temperature: -40° C to +70° C (-40° F to +158° F)

REGULATORY

- FCC/ISED
- CE Marked
- RED Directive 2014/53/EU
- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- UL/IEC/EN 60950
- EN 60601-1-1 and EN 60601-1-2

RELIABILITY

MTBF: 916,373 hrs (105yrs) at +25C operating temperature

CERTIFICATIONS

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac
- WPA, WPA2 and WPA3 - Enterprise with CNSA option, Personal (SAE), Enhanced Open (OWE)

WARRANTY

- limited lifetime warranty

Switch Specifications

Management Proprietary Network Management; IMC — Intelligent Management Center; Command-line interface; Web browser; Configuration menu; Out-of-band management (RJ-45 Ethernet); SNMP manager; Telnet; RMON1; FTP; In-line and out-of-band; Out-of-band management (serial RS-232c or micro usb)

Aruba 2920 48G Switch (J9728A) OR EQUIVALENT Non-POE, Layer 3 Technology

I/O ports and slots 44 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)
2 module slots

Additional ports and slots 1 stacking module slot
1 dual-personality (RJ-45 or USB micro-B)
1 USB 1.1
1 RJ-45 out-of-band management port

Power supplies 1 power supply slot
1 minimum power supply required
1 165W 100-240VAC to 12VDC Modular Power Supply)

Physical characteristics **Dimensions** 17.42(w) x 13.23(d) x 1.75(h) in (44.25 x 33.6 x 4.45 cm) (1U height)

Weight 11.95 lb (5.42 kg)

Memory and processor Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash; packet buffer size: 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress)

Performance **100 Mb Latency** < 9.0 ps (FIFO 64-byte packets)
1000 Mb Latency < 3.3 .is (FIFO 64-byte packets)
10 Gbps Latency < 3.2 p.s (FIFO 64-byte packets)
Throughput up to 130.9 Mpps
Switching capacity 176 Gbps
Routing table size 2048 entries (IPv4), 256 entries (IPv6)
MAC address table size 16000 entries

Environment **Operating temperature** 32°F to 131°F (0°C to 55°C)
Operating relative humidity 15% to 95%, noncondensing
Non-operating/ Storage temperature -40°F to 158°F (-40°C to 70°C)
Non-operating/ Storage relative humidity 15% to 95%, noncondensing
Altitude up to 10,000 ft (3 km)
Acoustic Power: 57 dB, Pressure: 41.8 dB

Electrical characteristics **Frequency** 50/60 Hz
Achieved Miercom Certified Green Award

80plus.org Certification Silver

Maximum heat dissipation 239 BTU/hr (252.15 kJ/hr)

Voltage 100 - 240 VAC, rated

Maximum power rating 70 W

Technical Specifications

Idle power 27 W

NOTES

Idle power is the actual power consumption of the device with no ports connected.

Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in. and all modules populated

Safety

CE Labeled; EN 60825-1 Safety of Laser Products-Part 1; FCC Part 15, Subpart B; GOST; EU RoHS Compliant; EN 55022 Class A; EN 55024: 1998; C-Tick; ICES-003, Class A; VCCI Class A; IEC 60825-1; IEC 60950-1, Second Edition; EN62479:2010; CSA C22.2 No. 60950-1-07 2nd Edition; EN 60950-1:2006+A11:2009+A1:2010+A12:2011; IEC 60950-1 (ed.2): am1

Emissions

FCC part 15 Class A; VCCI Class A; EN 55022/CISPR 22 Class A

Immunity

EN EN 55024, CISPR 24

ESD IEC 61000-4-2

Radiated IEC 61000-4-3

EFT/Burst IEC 61000-4-4

Surge IEC 61000-4-5

Conducted IEC 61000-4-6

Power frequency magnetic field IEC 61000-4-8

Voltage dips and interruptions IEC 61000-4-11

Harmonics IEC 61000-3-2

Flicker IEC 61000-3-3

Addendum A

HP/Aruba Switch 2920 48G Switch (J9728A) has been discontinued and will be replaced with 2930M part number JL321A or equivalent.

Aruba Central Device Management Subscription 3 yr is part number JY926AAE or equivalent.