

B.4 Statement of Work (SOW)

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SITE VISIT: 07/24/2018 @ 1030

Meeting Location: Front Lobby by Valet Parking

Site Visit: Scheduled for July 24, 2018 @ 1030.

POC: Billie McLaughlin Jr

254-743-2638

1901 Veterans Memorial Drive

Temple, TX 76504

Contractors are to submit offers to Robert Kelley @ robert.kelleyii@va.gov by closing date.

Veteran Affairs Temple Texas (VACTX) wishes to purchase a **Guest Wireless (Wi-Fi) solution** with a vendor for the installation and service (customer, support, and maintenance) at the Olin E. Teague, 1901 Veterans Memorial Drive, Temple, TX 76504.

The Contractor shall provide hardware, software, and services necessary to deploy an air gapped, separate, fully operational Guest Internet Access (wireless) Network to include wireless access points, switches, controllers, cable plant, security, content and application filtering. VA CTX is estimating usage at approximately **4000 concurrent users covering all patient, guest and common access areas of the facility**. The guest wireless shall operate independently from the VA CTX OI&T wireless network and be fully maintained on site.

General Conditions

General Operation

1. On-Site assembly and installation of items, and performance of services identified in this document will take place during normal business hours which are defined as: 0730 to 1600 Central Standard Time), Monday through Friday, and excluding Federal Holidays. Some Areas will require evening or weekend work due to patient care.
2. The vendor will protect all finished spaces and surfaces at no additional cost to VA CTX. The vendor will be responsible for paying for and repairing any damage or noted deficiencies to finished spaces and surfaces that occur as a result of the vendor's (or associated sub-contractors) installation.
3. Prior to starting work, the vendor and associated personnel (including subcontractors) will be required to attend a general contractor's site safety training program, and adhere to its Personal Protective Equipment (PPE) requirements. The length of the training is

approximately **1 hours**. A minimum 10 hours OSHA Safety Training is required prior to taking the on-site safety training.

4. Vendor shall provide at least two copies of User and service manual for network hardware. Electronic versions are acceptable.
5. Vendor shall be in compliance with all VA regulation and requirements for Guest Wifi.
6. The Vendor shall provide a warranty on all labor of 1 year and all parts that equal the manufactures warranty of the system.

Drawing Documents and Specifications

1. VA CTX will have the right to use, for all its purposes, all final design CAD drawings (including shop drawings, REVIT/CAD, or pdf drawings, etc.), specifications, and any other documentation submitted by the winning vendor at no additional cost to VA CTX. CAD drawings should include locations of all access points and major network hardware components

Procurement Specific Requirements

Technical Requirements

Patient Guest Wi-Fi Overall System Requirements and Intent

1. The guest wireless solution will be operational throughout patient focused areas spanning throughout buildings 204 and 163 that are interconnected from the basement thru the 2 floor. The VA CTX expects to have up to 4000 concurrent users across designated patient care areas at the facilities' busiest period accessing the Guest wireless network. The contractor shall use this usage estimate for planning considerations, hardware sizing, etc. to ensure an acceptable level of coverage, performance and reliability is achieved.
2. The scope of this requirement will include all necessary hardware, software, installation, training, and warranty required and/or as specified within this document. The coverage areas are as per attachment A (SEE PDF document combined)
3. The VA requires this system to provide Guest Wireless Network access services within all patient treatment locations as shown in the attached coverage area drawings. It is the intent of this installation to only cover patient and guest centric areas as shown on the coverage drawings.
4. It is the responsibility of the contractor to determine a proper network topology and an appropriate amount of managed switches, wireless access points to provide a fully functional system that meets the requirements of this section.
5. The Contractor shall provide any and all required managed wireless access points, controllers, switches, firewalls and routers supporting industry standard wireless and network protocols needed to provide a functional system.
6. The Contractor shall provide any and all hardware, cabling and hangers necessary for a complete and functional system that meets industry standard installation guidelines.
7. The system is to be based on the connection of managed wireless access points to contractor provided aggregation and edge Power over Ethernet (PoE) Ethernet switches which are interconnected via a core switch in BG04 of 204.

8. The system must be capable of blocking unwanted traffic with CIPA-compliant content filtering and must be capable of tracking devices that violate configured policies and ban them from the network. This feature must be capable of being disabled if desired.
9. The system must be capable of connecting to the Internet via multiple asymmetrical or symmetrical connections using fiber or RJ-45 Ethernet connections and be able to aggregate them together to provide increased bandwidth.
10. The system must provide all needed core networking services. The VA will not allow connection of this system to any VA network.
11. If the vendor solution requires an Active Directory or other LDAP directory services for client authentication (RADIUS 802.1x), then the vendor must provide all hardware and software necessary for said methods.
12. The system must support guest isolation to prevent devices from seeing each other. This feature must be capable of being disabled if desired.
13. The system shall be capable of network filtering of applications, devices or content. This feature shall be able to be turned on or off by the government.
14. The system shall be compliant with IEEE 802.11 standards and offer access to a wide-range of patient and visitor owned devices to include Windows, Apple, Linux, as well as smart phones and tablet computers.
15. The system shall provide the ability for content filtering for internet access to include but not limited to gambling, pornography, and soliciting, vending, debt collection. All content filtering must be CISP compliant. Contractor is to submit for approval to the VA a list of content filtering settings to be applied.
16. Due to the potential for interference of the Guest Wireless with other medical center wireless installations all power levels and non-overlapping channel choices shall remain static. This system must always take the lowest precedence in choices of power and channel settings when the VA OI&T Wi-Fi, medical Telemetry, and other wireless systems that come online.
17. The Contractor shall provide a site survey to include the effective range boundary and the minimum signal to noise ratio needed to support the wireless system. The VA will review the site survey with the ability to approve or reject prior to commencement of the project.
18. The contractor will provide coverage maps of the system design and the installation design of the solution.
19. The Contractor shall adhere to the standards outlined by the National Fire Protection Association (NFPA-101 Life Safety Code). See 3.4 for further detail.
20. The system must support a full accounting of all traffic and number of devices on the system and maintain a record of this for 12 months.

Coverage Areas

1. The intent of the design is to provide wireless Internet access to patients and guests only in designated areas that are focused on patient care and guest services.
2. Staff, maintenance and hospital service area coverage is not directly intended to be covered except as shown on the drawings. Elevators and staircases are not covered.

Management Interface

1. The system must provide a central accessible dashboard for monitoring system health, usage, configuration, logging and alerts. A cloud hosted solution is not acceptable.

Network Switches

1. Switches must be capable of at least 1 gigabit to each edge device.
2. Switches greater than 8 ports must support 10GB uplinks to an aggregation switch. The contractor must determine the needed uplink bandwidth and appropriate physical media necessary for connection to the aggregation switch in the Prime TR to ensure adequate throughput.
3. Switches must be capable of multiple layer network operation, for devices that require internet to be install on a separate VLAN.
4. Each Switch connection to the Prime TR Aggregation Switch can be either over a contractor installed a CAT6A 10GBASE-X SFP+ GBIC riser or using a contractor installed fiber or fiber jumpers. The contractor is allowed to choose between 1GB, 10GB over CAT6A Copper 10GBASE-X or fiber for uplinks between switches and the aggregation switch.
5. Each switch shall provide continuous power to each WAP.
6. Devices have no special environmental concerns and are expected to operate within normal commercial environmental conditions.

Access Points

1. Each access point must be directly powered via Power over Ethernet (PoE) over CAT6 cable from a provided PoE switch. Power injectors are not allowed.
2. Each access point must be capable broadcast at both 5GHz and 2.4GHz frequencies simultaneously using concurrent 802.11ac and 802.11abgn 3x3:3 MU-MIMO radios.
3. The system must be set to recognize other VA wireless systems (VA OI&T Wifi, medical Telemetry as an example) as known and not attempt to isolate it.
4. Each access point must support at least 1,300 Mbps in the 5 GHz band and 600 Mbps in the 2.4 GHz band.
5. Access points shall be compatible with all industry standard wireless protocols including but not limited to IEEE 802.11a/b/g/n/ac
6. The Contractor shall perform heat mapping analysis to identify optimum installation locations for access points.

System Security

The contractor shall provide system security features as follow:

1. The Contractor's solution shall provide for Layer 1 physical air gapped isolation to provide isolation from any other network within each facility.
2. The Contractor shall provide an introduction page with usage agreements for acknowledgement at the time of login with information on the program, rules and restrictions and usage agreements. If no agreement acknowledgement is received from the user, access shall be denied. [Users of the guest access must acknowledge that they are aware of the risk of using a public network]
3. Content Filter Service shall include but not limited to:

- The system shall include the capability of limiting guests from accessing inappropriate websites.
- The system shall include a Process of Change for **VACTX** System Administrator to edit the content filter list.
- The system shall contain a single interface to administer content filtering.
- The system shall implement CIPA Compliant filtering
- The system shall support pre-packaged content filtering categories (e.g. Adult, Nudity, Gambling, etc.). Security violations are to be included in the Quarterly Utilization Report.
- A review of all settings regarding security, content filtering, white and black lists, access control policies, throttling will be submitted to the VA COR for review prior to implementation.

Reliability

1. The Contractor shall be responsible for maintaining the operation of the hardware and all infrastructures during the period of installation and warranty time frame.

Installation Requirements

The Installation requirements are:

1. The Contractor shall procure all equipment and installation services necessary for the complete installation of the wireless network at the **Temple Facility**.
2. The Contractor shall perform all Installation and Configuration necessary to complete the work. All installation activities shall be executed in accordance with the detailed project plan and schedule. The Contractor shall perform the installation in accordance with the technical requirements outlined in this document.
3. The Contractor shall install, verify, and validate the technical requirements identified in this document. The COR will inspect and approve the Contractor's work performance before VA acceptance is granted for the wireless guest network.
4. The Contractor shall be responsible for the design, configuration and installation of all cabling, access points, cradle points, switches and other equipment needed for the VA public access network. All cable and fibers used for this service shall become the property of the VA after inspection and acceptance.
5. The Contractor shall be responsible for assessing for all required cabling, switches and other equipment needed for installing their solution.
6. The Contractor shall submit a plan for approval by VA of all hardware and fasteners, as well as cable routing pathways. Plan will be submitted within 30 days of the contract award.

Cabling Requirements

1. The vendor must provide all necessary fiber and CAT6 cables needed for system functionality.
2. All access points will be installed using standard horizontal cabling methods. The use of patch cables will be only between switch and patch panel and between horizontal termination block and the access point.

3. All UTP patch panels, horizontal cabling and patch cables will be CAT6.
4. The Contractor shall use a consistent cabling color scheme of Pink cabling for Guest Wireless Access Point cabling throughout the Guest Wireless Network deployment.
5. The vendor shall be responsible for cable management, labeling of all network cables, cables, ports, etc. associated with the guest wireless installation.
6. Existing cable trays and/or raceways, where available, may be used for cable distribution. For locations where cable trays are not available, cabling shall be fastened with appropriate fasteners to ensure a secure and neat installation. Where cable penetrates fire and smoke walls that do not have existing cable trays, compression or metal sleeve shall be installed in accordance with NFPA-101 Life Safety Code using approved fire stop material to seal all penetrations.
7. Laying of wiring on suspended ceilings will not be permitted. Contractors shall be responsible for identifying any architectural deficiencies in advance (e.g. broken ceiling tiles, improper penetrations, etc.) prior to installation and shall be responsible for correcting any broken ceiling tiles and (e.g. Smoke and Fire wall) penetrations in accordance with approved ANSI/UL (e.g. UL1479) Fire stop requirements. Inspections will be conducted and enforced post installation.

Cabling Requirements

1. The contractor shall take digital photographs before and after action activities to all disruption of smoke or fire wall. Activity includes but not limited to, core drill, breakage or removal of fire stop, and broken ceiling tiles. The Government will not sign off on the final invoice until this task is completed.
2. ***The Contractor must comply with all relevant standards and building codes including but not limited to:***
 - Federal Specifications (Fed. Spec.): A-A-59544-00 Cable and Wire, Electrical (Power, Fixed Installation)
 - National Fire Protection Association (NFPA):
 - 70-05 National Electrical Code (NEC)
 - Underwriters Laboratories, Inc. (UL): 44-02. Thermoset-Insulated Wires and Cables 83-03 Thermoplastic-Insulated Wires and Cables 467-01 Electrical Grounding and Bonding Equipment
 - 486A-01 Wire Connectors and Soldering Lugs for Use with Copper Conductors
 - NFPA 70: National Electric Code
 - NFPA 101: Life Safety Code.
 - Occupational Safety and Health Act (OSHA).
 - Building Industry Consulting Services International; Telecommunications Distribution Methods Manual
 - ANSI/EIA/TIA-526-14 “Method B: Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant”.
 - ANSI/EIA/TIA-526-7 “Method 1: Optical Power Loss Measurements of Installed Single-mode Fiber Cable Plant”.
 - ANSI/TIA/EIA-606-A – “Administration Standard for the Telecommunications Infrastructure of Commercial Buildings”.
 - FCC – Part 67, for Communications Interconnection Devices

Project Management Plan

1. The Contractor shall draft a Contractor Project Management Plan (CPMP) that lays out the Contractor's approach and timeline to be used in execution of the contract. The CPMP should take the form of both a narrative and graphic format that displays the schedule, milestones, risks and resource support. The CPMP shall include the contractor's plans for managing all subcontractors. Topic areas to be addressed shall include oversight and communications with subcontractors while onsite. The CPMP shall also include how the Contractor shall coordinate and execute planned, routine, and ad hoc data collection reporting requests as identified. The initial baseline CPMP shall be concurred upon and updated monthly thereafter. The Contractor shall update and maintain the VA Contracting Officer's Representative (COR) approved CPMP throughout the period of performance.
2. The CPMP include but not limited to:
 - Project Schedule to include Milestones, Deliverables, and Critical Path
 - Verification & Validation (V&V) Plan
 - Training Plan (System Administrator and Guest Training material)
 - Risks Management Plan (e.g.: RF interference, wall penetration)
 - Operations & Maintenance Plan (See Section 4 for further Detail)
 - Project Closeout Activities/Procedures

Reporting Requirements

1. The Contractor shall remain in contact with the VA Cor and provide week reports on the installation progress and any issues that may arise.
2. The Contractor will send partial payment request to the COR for approval.

Verification and Validation Requirement (Testing)

1. The Contractor shall perform testing following installation to ensure access points and wireless service are functioning at an optimal performance.
2. The Contractor shall discuss and confirm suggested speed test criteria in Testing Requirement 1 with the VA COR.
3. The Contractor shall provide a Post-Installation Survey Heat Map, which will show where the access points are located and that they are functioning.
4. The Contractor shall test for interference with existing medical center systems.
5. The Contractor shall provide a final test plan that includes updates addressing any comments provided by the VA to the draft test plan.
6. The contractor will provide a copy of all reports to the COR either electronically or printed.

Project Estimate Time Line

1. Phase I: System Design. Expected Start Date: As soon as contract Award
2. Phase II: Installation of cables, Expect Start Date: As soon as Phase I complete
3. Phase III: Installation of Network gear and WAP. Expected Start Date per Building:
4. Phase IV: Validation, Verification CON complete date.

Training Requirement

1. The contractor shall provide full system administrator training to the VACTX Electronic Engineering staff. Training at the minimum will include first look troubleshooting, system reboot with the full understanding of the system network, administrating content filter and switch management.
2. Training for VA Guest shall be delivered through a brief writing instruction that can be reprint.

Maintenance During the Warranty

1. Maintenance and support will begin after the installation and testing, Phase IV, is completed and accepted by the VA site. Contractor shall provide a yearly price estimate for up to 5 years, after the warranty period.
2. The wireless Internet access shall be available to a user on a 24 hour per day basis except during maintenance.
3. Maintenance shall be scheduled so that there is little disruption to patient care
4. The Contractor shall provide on-site support when required by the VA within 24 hours.
5. Contractor shall provide a 3 hour response time for trouble tickets entered through the technical support call center.