## Scalable WIFI Solution

The Scalable WIFI Solution shall meet the following specifications:

### System

**System must support the following system specifications:**
- Industry standard security that meets Radius specifications
- Support 16 or more SSIDs.
- Built in bandwidth management preferred
- High end equipment such as Aerohive AP230, Aruba AP225, etc.
- Five year support agreement
- We will provide the installation in-house

### Access Points

**System must support the following access point specifications:**
- 140 indoor and 10 outdoor access points
- Must be rated at a minimum of 100 concurrent connections and be managed centrally
- Must be compatible with HP v1920POE+ network switches

### Scalability

**System must support the following scalability specifications:**
- Multiple radios provide concurrent 802.11a/n/ac and 802.11b/g/n performance
- Dual Ethernet ports with link aggregation with dual GigE
- Plenum Rated APs for indoor, office environments
- USB interface for future services
- Low profile design blends well into an office
- System must be able to account for future growth and be centrally managed
- Low-distraction indicators appear as gently glowing rather than bright blinking lights

### Security

**System must support the following security specifications:**
- Trusted Platform Module (TPM)–Hardware-based key storage and encryption
- Wireless privacy & authentication Wi-Fi CERTIFIED WPA and WPA2, 802.11i, WEP, 802.1x, PSK
- Encryption: AES: CCMP, TKIP, and RC4 (WEP only)
- Marking and policing—WMM (802.11e) for wireless
- 802.1p and/or DiffServ
- Wi-Fi CERTIFIED WMM
- WMM power save (U-APSD)
- System must be able to support location based services.
  - Built-in Wi-Fi location service to display the position of a device on the floor
  - Rouge access points
Performance

*System must support the following performance specifications:

**Radio Specifications—802.11a**
- 5.150–5.950 GHz Operating Frequency
- Orthogonal Frequency Division Multiplexing (OFDM) Modulation
- Rates (Mbps): 54, 48, 36, 24, 18, 12, 9, 6 w/ auto fallback

**Radio Specifications—802.11b**
- 2.4–2.5GHz Operating Frequency
- Direct-Sequence Spread-Spectrum (DSSS) Modulation
- Rates (Mbps): 11, 5.5, 2, 1 w/auto fallback

**Radio Specifications—802.11g**
- 2.4–2.5 GHz Operating Frequency
- Orthogonal Frequency Division Multiplexing (OFDM) Modulation
- 20 dBm (100 mW) Transmit Power
- Rates (Mbps): 54, 48, 36, 24, 18, 9, 6 w auto fallback

**Radio Specifications—802.11n**
- 2.4–2.5 GHz & 5.150–5.950 GHz Operating Frequency
- 802.11n Modulation
- Rates (Mbps): MCS0–MCS23 (6.5Mbps - 450Mbps)
- 3x3:3 Stream Multiple-In, Multiple-Out (MIMO) Radio
- HT20 High-Throughput (HT) Support (for both 2.4 GHz and 5 GHz)
- A-MPDU and A-MSDU Frame Aggregation

**Radio Specifications—802.11ac**
- 5.150–5.950 GHz Operating Frequency
- 802.11ac Modulation (256-QAM)
- Rates (Mbps): MCS0–MC9 (6.5Mbps - 1300Mbps), NSS = 1-3
- 3x3:3 Stream Multiple-In, Multiple

Power

*System must support the following power specifications:

- PoE nominal input voltages: 48V, 0.35A, (802.3af) – 48V 0.625A (802.3at)
- RJ-45 power input pins: Wires 4,5,7,8 or 1,2,3,6
- 802.3af compatible with Cat-5 cable or higher (up to 14.5W draw with full functionality)