

Terms of Reference: Wireless Site Survey and Wi-Fi Coverage Optimisation

1. Purpose

The purpose of these Terms of Reference is to appoint a suitably qualified service provider to conduct a comprehensive Wireless Site Survey at the Quality Council for Trades and Occupations (QCTO) offices in Hatfield, Pretoria.

The objective of the survey is to assess the current wireless environment, identify coverage gaps and dead zones, and provide recommendations to optimise wireless coverage and performance. The current access points are predominantly installed in corridors and no longer provide adequate coverage for all offices due to the increase in staff numbers and wireless device usage.

2. Objectives

The objectives of this project are to:

- Assess the current wireless network environment.
- Identify Wi-Fi coverage gaps, weak signal areas, and dead zones.
- Evaluate the effectiveness of the current placement of wireless access points.
- Identify sources of wireless interference affecting network performance.
- Determine whether the existing wireless infrastructure adequately supports the current user population.
- Provide recommendations for access point repositioning and/or additional access points.
- Improve wireless coverage, performance, and user experience across all office areas.
- Support future growth and increased wireless usage requirements.

3. Background and Current Infrastructure

3.1 Existing Network Infrastructure

The current network infrastructure at QCTO is supported by the following key devices:

- **Cisco Catalyst 9400 and 3x Cisco Catalyst 9300 Series Switches**
These serve as the core/distribution and access switches, respectively, providing high-performance connectivity and scalability. They form the backbone for data transmission and support the growing number of connected devices.

- **Cisco Catalyst 9800 Series Wireless Controller**
Manages the wireless network to ensure seamless connectivity and optimal performance for Wi-Fi-enabled devices. It supports 22 Cisco Access Points and manages 3 SSIDs.
- **22x Cisco Access Points (Model: C9120AXI-E)**
Deployed across QCTO buildings to provide wireless coverage for internal users and external stakeholders. The wireless controller centrally manages these.
- **1 DHCP Server**
Dynamically assigns IP addresses to devices connecting to the network. The current IP pool is limited to 333 addresses.
- **4x HPE DL380 Gen10 Servers**
Provide computing resources for various applications and services.
- **1x 30TB MSA 2060 Storage Array**
Centralised storage for organisational data and backups.

4. Scope of Work

The appointed service provider shall conduct a comprehensive wireless site survey across all QCTO office areas of approximately **5,478 m²** to assess the current wireless environment and identify coverage gaps, dead zones, and sources of interference affecting wireless performance.

The scope shall include:

- Assessment of the existing wireless infrastructure, including access point placement and configuration.
- Physical and RF site survey of all offices, boardrooms, corridors, and common areas.
- Analysis of signal strength, coverage, capacity, roaming performance, and interference.
- Development of wireless heat maps illustrating current coverage levels and dead zones.
- Evaluation of whether the current access point placement adequately supports the existing number of users and devices.
- Recommendations for repositioning existing access points and identifying additional access points required to achieve optimal coverage.
- Provision of a detailed survey report, heat maps, and a wireless optimisation roadmap for future growth.

5. Deliverables

- Wireless Site Survey Report.
- Wireless Coverage Heat Maps.
- Identification of Dead Zones and Coverage Gaps.
- Access Point Optimisation Recommendations.
- Proposed Locations and Quantity of Additional Access Points (if required).

- Presentation of Findings to the QCTO ICT Team.

6. Evaluation Criteria

6.1.

Evaluation Criterion	Description / Requirements	Points
1. Project Methodology and Survey Approach	Detailed project plan outlining the survey methodology, tools to be used, reporting approach, and project timelines.	15 Points 15 Points: Comprehensive, Project Methodology and Survey Approach. 8 Points: Moderate methodology with some gaps. 0 Points: Incomplete or unclear plan.
2. References from similar projects	Reference letters for comparable projects or similar	20 Points 3 or more references = 20 points 1-2 references = 10 points No reference = 0 points
3. Wireless Specialist	Cisco Wireless Certification (CCNP Enterprise Wireless, CWDP, CWNE or equivalent) and a minimum five (5) years of wireless design and survey experience.	25 points 25 Points: Relevant certification and experience 0 Points: No relevant certification and experience
4. Wireless survey equipment reseller or resource status	The bidding company must be an authorised/registered reseller with documentary evidence OR have a resource certified in the survey product to be used.	40 Points Authorised/Registered Wireless Survey Equipment Reseller = 40 points OR Certified in the Wireless Survey product to be used = 40 points

		NOT a certified reseller nor have a certified resource in the wireless survey product to be used = 0 points
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To qualify, a bidder must score **80/100** or above across the three criteria

7. COMPULSORY INFORMATION SESSION

- 7.1 The QCTO has one site situated in Hatfield, Pretoria.
- 7.2 It is important to note that site inspection and evaluation of the existing infrastructure is compulsory before sending through your quotation.

8. ENQUIRIES

- 8.1 For further information, please contact the following QCTO staff members:

Technical enquiries can be directed to:

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