

Employer-set project (core component)

A01, A02 and A03
Digital infrastructure: project brief

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Scenario

Currently, only two access points (APs) are installed at the dealership. It is recognised that this is not appropriate or powerful enough for the demands of the business.

You have been provided with a full specification of requirements (Document C) for the Wi-Fi solution and a layout of the dealership (Document D).

Your line manager has asked you to prepare a project proposal and a Wi-Fi solution using the specification of requirements, detailing how you will deliver on the requirements while balancing flexibility, reliability and security.

Instructions

Your project proposal should include:

- an introduction outlining the challenges for the Wi-Fi configuration
- a detailed overview of how to implement the Wi-Fi in the network
- your proposed solution detailed on a network diagram that will accompany the proposal
- a justification of any equipment, software or vendor-specific solutions you decide to use
- estimated costs for any equipment, software or cloud services recommended; your decisions should provide value for money while meeting the brief
- an explanation of any potential network security issues with justification for recommended mitigations
- a final summary.

When identifying costs, no preferred suppliers are identified, other than that they are UK-based. All products must be purchased as new, with costs provided.

Document C: full specification of requirements

Network setup

Network includes:

- three servers, as shown in the following breakdown:
 - server 1: primary domain controller (PDC), DHCP and domain name system (DNS)
 - server 2: file server

- server 3: web server
- a central Power over Ethernet (PoE) switch that supports VLAN with 1GB port speed
- network security appliance before the router
- only two basic APs are available on site for testing purposes
- 10 iPads have been provided for the sales team to help with customer service
- 10 wired desktop locations for the sales team
- back-office computers for the service area – for the sales manager to capture marketing details and administration.

Current issues

The current issues identified have arisen during network testing:

- as a result of the construction of the building, Wi-Fi strength is inconsistent throughout
- limited-to-no signal strength is available outside on the forecourt
- no way to separate corporate-sensitive traffic from general internet access
- low transfer speeds as the current two APs cannot handle the demands from the number of users
- limited security – for example, no encryption
- GDPR/data protection issues with customer details on remote devices.

Requirements

The requirements are:

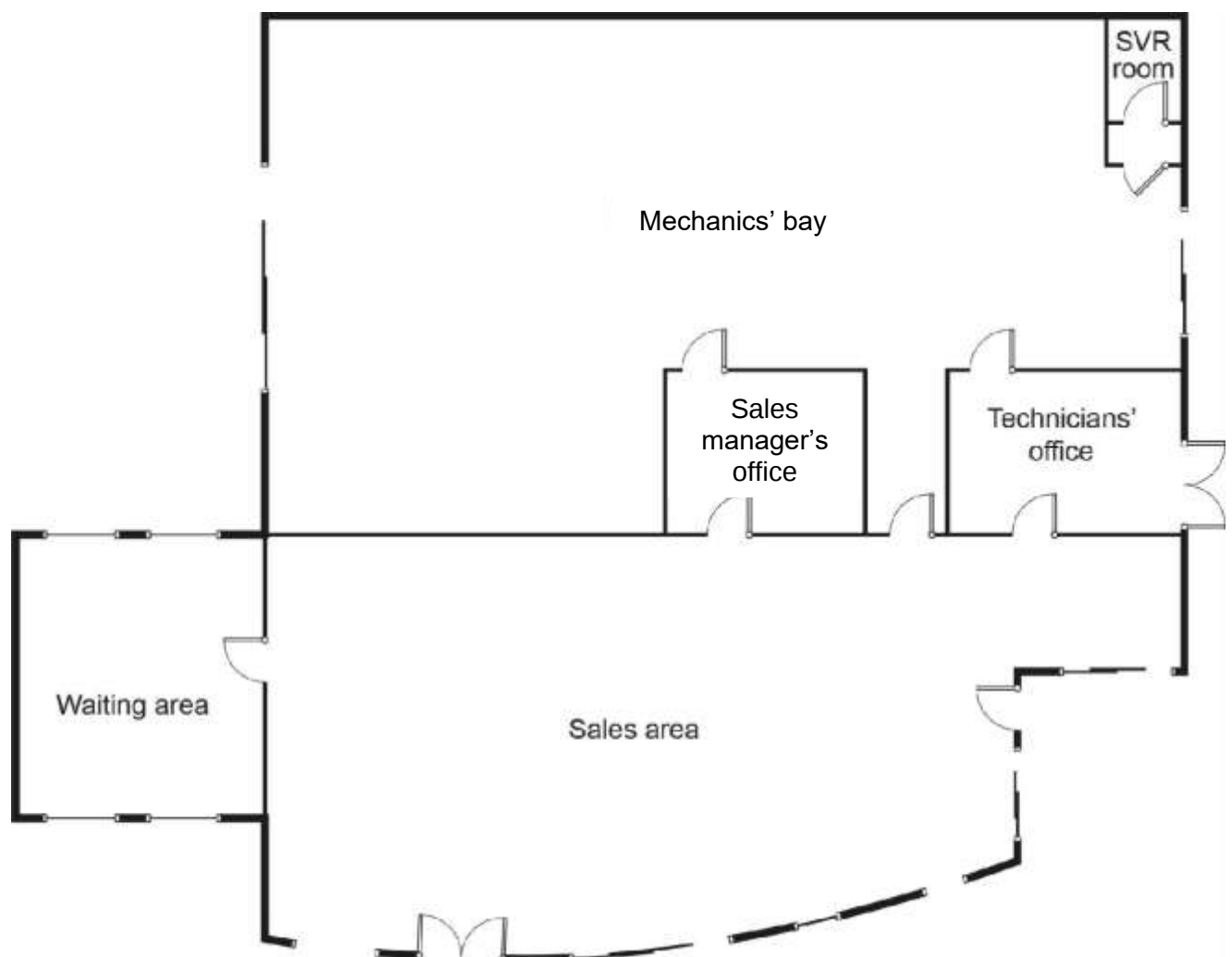
- the sales team should be able to roam the entire site and expect connectivity
- the Wi-Fi should be secure
- public Wi-Fi should require the capture of an email and basic marketing details
- two APs should be fitted to the exterior of the building to support tablet usability on the forecourt

- corporate traffic should be isolated from public browsing
- public Wi-Fi should provide an enjoyable experience for customers.

Document D: layout of dealership

An early draft of the floor plan has been provided. The dealership measures approximately 50 metres in length and width at the widest part of the building.

The exterior forecourt spans a further 40 metres out from the front and right side of the building.



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