FALKEN Secure Networks

RFID Site Survey – Scope of Work

One of the main challenges of implementing an RFID system is finding out what in your facility will affect the RFID tags and transmission of data. It is critical this be determined since the tag readability and system accuracy depends on a total understanding of the RFID physics and variables in the environment it will operate in and ensuring the proposed solution is designed and engineered accordingly. A site survey will also ensure that optimum economics are achieved and the system is neither over nor under-equipped while ensuring the avoidance of performance issues that are costly to fix.

A RFID (Radio Frequency Identification) site survey constitutes a physical review, analysis, recommendations and report by a qualified RFID Engineer of the premises or site where RFID infrastructure and equipment will be installed to track the movement of RFID-tagged assets, property and inventory. The survey provides a complete understanding of customer requirements for an RFID installation in the context of the facilities where it's to be deployed and identifies the feasibility of successfully deploying RFID technology and determines optimal locations for the physical installation of RFID readers and antennae, taking into account such factors as metal interference, power supply, mounting options and IP network connectivity. This includes documentation and integration requirements for systems requiring integration with the RFID network.

When considering the use of RFID equipment, it can be difficult to predict the propagation of radio waves and detect the presence of interfering signals without conducting a site survey. Every environment where RFID is to be installed can be expected to be different from an RF perspective. Interference from wireless networks, short-range radios, cordless phones, and so forth can dramatically and negatively affect RFID system performance. Sources of this interference can be behind walls, around corners, or otherwise hidden.

Regardless of the antennae technology being considered, radio waves do not travel the same distance in all directions. Walls, doors, rebar, electric motors, ventilation shafts and other obstacles create varying degrees of attenuation, which affect radio frequency (RF) radiation patterns, making them irregular and therefore must be specifically accommodated in the recommended design. As a result, it's absolutely necessary to perform a RFID site survey to fully understand the behavior of radio waves within the operating environment before installing fairly costly RFID Readers.

No universal labels or tags – *"one size fits all"* – exist because of the number of material, packaging, environmental and application variables that can affect their selection. For example, as already mentioned, metals and liquids pose challenges that good RFID engineering can help solve.

In addition, different kinds of labels and tags are available depending on the specific

need, and of course with different prices. Active, battery-powered ones cost more than passive, inductive ones but they can be read from a much longer range. Read/write tags cost more than read-only tags, but they can have information added to them in their transit affixed to pallets, cartons or items.

The total number of assets to be tagged and overall economics are generally the strongest influencers regarding the recommendation of the type of tag or label used.

Placement is also a related issue – just having the right label or tag for the application isn't enough. The label or tag needs consistent placement in the right spot for being read in the many and various scenarios it will pass through en -route to its final destination.

A RFID site survey determines, among other things, the number of unique RFID Zones, or cells, of coverage for a proposed system. Our RFID Systems Engineer will provide a full featured site survey analysis of each individual facility defined by the user.

Included with each site survey will be a site survey analysis document, detailing the required location for each RFID sensor. This document will provide detailed information as to the type of cabling to be installed and an overall picture of how the RFID system will integrate into the existing network.

Documentation:

- Site Requirement Document
- Estimated Project Schedule
- Statement of Work and Best-Practice Recommendation
- Site Survey