IoT FOR REDUCING RISKS IN CONSTRUCTION SITES

SUMMARY

The construction business is challenging for many reasons. One of the biggest problems is ensuring the security of the sites. Can you imagine that in the UK alone construction site theft costs 800 million pounds per year? The most common target of thieves is expensive construction equipment and costly materials, like metal. Besides theft, construction sites often become victims of vandals or arsonists. Implementing smart technology is an efficient way to prevent such crimes or track the criminals after a break-in.
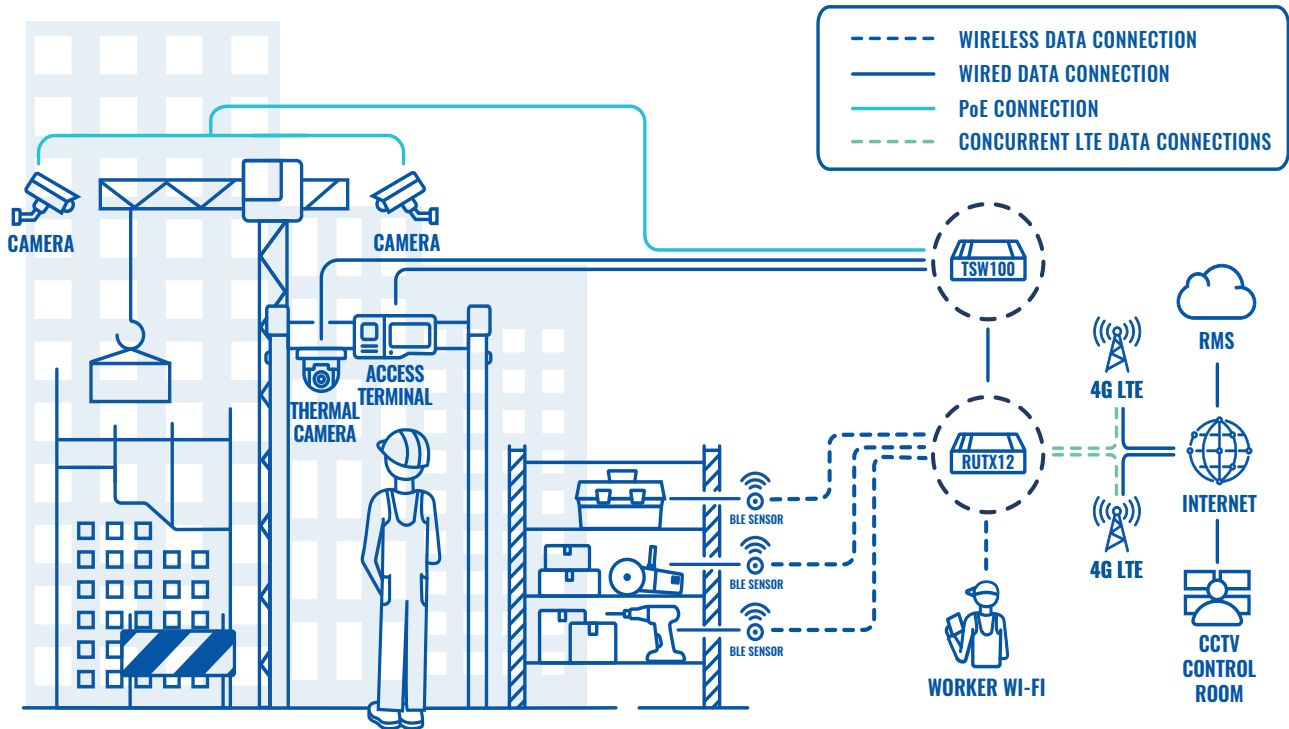
CHALLENGE

The construction business is dynamic. The location is constantly changing with each new object and therefore the whole infrastructure needs to be easily adaptable to the next project. Real-time inventory monitoring can be difficult due to a variety of expensive tools being used on-site so several days or weeks may pass after the theft until the fact gets noticed. Although CCTV cameras are already widely used for construction site monitoring, storing the footage on the same site is not an efficient method as it often gets stolen or compromised. As the areas where construction sites are located don't always have developed infrastructure, the wired internet connectivity might not be available or may have limited capacity.

SOLUTION

In this solution, we have chosen a highly powerful and rugged RUTX12 router. It has two simultaneously operational LTE Cat 6 modems and a load balancing option for fast and seamless performance. Dual SIM with instant automatic failover ensures there is no internet downtime.

TOPOLOGY

WIRELESS DATA CONNECTION
WIRED DATA CONNECTION
PoE CONNECTION
CONCURRENT LTE DATA CONNECTIONS

CAMERA
CAMERA
ACCESS TERMINAL
THERMAL CAMERA
TSW100
RUTX12
4G LTE
4G LTE
RMS
INTERNET
CCTV CONTROL ROOM
BLE SENSOR
BLE SENSOR
BLE SENSOR
WORKER WI-FI

Another Teltonika Networks device - TSW100 is used to connect CCTV cameras with Power over Ethernet (PoE) technology for a simplified power installation. The footage from the cameras is sent to a Centralized CCTV Control room for remote management and monitoring. This way the footage is safe from theft and damage. Various expensive tools and machinery have got ID Coin or ID Puck sensors for easy inventory tracking using Bluetooth. Besides, the Slim ID beacons enable easy monitoring of people entering and leaving the site at an exact time. Zero-touch access control with a thermal camera at the entrance ensures staff with fever cannot enter the site and is important for the prevention of COVID-19 or other diseases.

BENEFITS

• Easy installation allows using the same infrastructure on multiple sites regardless of location.
• Reliable and fast connection ensured by two simultaneously working LTE Cat 6 modems and a load balancing.
• Safe storage of CCTV data outside of the construction site.
• Real-time tracking of tools using Bluetooth technology.
• Remote management allows to access data about employee working hours, location of tools and equipment, video footage as well as complete configuration, updates, and troubleshooting from anywhere in the world.
• COVID-19 prevention is enabled by zero-touch access control and a thermal camera.

WHY TELTONIKA NETWORKS?

Teltonika Networks has a long-standing experience working with various partners from all around the world and multiple industries, including construction. Having this experience and know-how enables us to offer the simplest version of a solution that will be easy to install, reliable, secure, and affordable. Besides, having worked with multiple projects affords us the knowledge required for the efficient prevention of possible problems before they occur and save valuable time and finances through the implementation process and further on.