



Altai Super Wi-Fi was deployed to run construction site safety system in Tung Chung East station of MTR in Hong Kong

Background

MTR Corporation is a world-class railway operator renowned for its safety, reliability, and efficiency. The network includes ten railway lines serving Hong Kong Island, Kowloon, and the New Territories, along with a Light Rail service for local communities. With over 13 million daily passengers, MTR trains run approximately 19 hours a day, unaffected by traffic conditions. To improve accessibility for residents and support sustainable urban development in North Lantau, MTR is expanding the railway network, including the upcoming Tung Chung East Station.



Image Source: MTR

Customer:

MTR Corporation Limited

Deployment Location:

MTR Tung Chung East Station

Application:

Private Wi-Fi Network for 4S Construction Site Safety Management

Products:

4x Altai A2
9x Altai AX600-S
AltaiCare WLAN Management Cloud Service

Solution:

- Super Dual-Band Coverage
- Hardened for Harsh Outdoor Conditions
- High-capacity environments

Benefits:

- Enhanced Connectivity
- Wi-Fi for IoT and Mobile Devices
- Fostered safety of construction site
- Durability and Reliability

At the construction site of Tung Chung East Station in Hong Kong, a robust Wi-Fi infrastructure has been successfully implemented using Altai AX600-S and A2 access points. This advanced wireless network is designed to support the Smart Site Safety System (4S), which incorporates various smart devices - smartwatches and AI cameras. 4S refers to the "Smart Site Safety System," which aims to enhance safety performance on construction sites. This system integrates advanced safety technologies and equipment to monitor the site environment in real-time, identify risks, and mitigate them effectively.



By adopting the 4S system, contractors can improve workplace safety and promote a culture of safety within the construction industry. Additionally, projects that receive the 4S label can enhance their corporate image and strengthen their commitment to environmental, social, and governance (ESG) standards. The primary goal of this deployment is to enhance site safety, promote the adoption of 4S technologies within the industry, and improve the corporate image and ESG engagement of developers and main contractors.

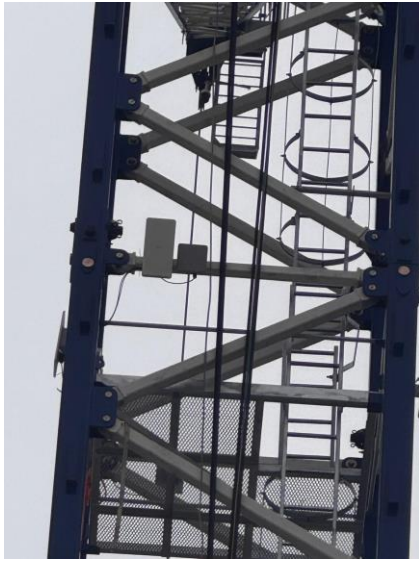
Challenges

The construction site faced several significant challenges that necessitated a reliable wireless solution. Ensuring the safety of workers and equipment was paramount, requiring constant surveillance and real-time data transmission. The extensive area of the construction site made it difficult to provide seamless wireless coverage by traditional networking, as cabling was often impractical in such dynamic environments. The site frequently underwent changes in layout and physical barriers, such as heavy machinery and construction materials, which obstructed signals and hindered connectivity. The need to establish a stable connection over 1km from the site office to the construction area further complicated the situation. Most importantly, there was a need to implement 4S among construction industry stakeholders to enhance overall safety standards.



Solution

To address these challenges, Altai's partner – Apple Solutions developed a detailed implementation plan. A broadband connection was established in the site office to serve as the backbone of the network. Altai A2 access points were deployed to create a wireless bridge linking the site office to the construction area over 1 km. This solution ensured robust connectivity despite any physical barriers in between.



Nine Altai AX600-S access points were strategically installed throughout the construction site to guarantee extensive Wi-Fi coverage. The AX600-S access points are designed for high-capacity environments and feature smart antenna technology to mitigate signal interference. This setup allows for seamless communication between various smart devices, enabling efficient monitoring and management of site safety operations. All equipment was deployed and centrally managed by AltaiCare cloud service, ensuring full control and visibility of the Wi-Fi network.

Apple solutions conducted a thorough site survey to identify optimal locations for the access points, after spotting potential obstacles within the construction site. The installation was completed in four days to minimize disruptions to ongoing construction activities. Apple solutions also

conducted various testing to ensure that the equipment could withstand the harsh environmental conditions typically found in construction sites.

Results

The Super Wi-Fi system deployed at Tung Chung East construction site is the backbone of running 4S system. It has enhanced safety measures, enabling real-time data transmission and monitoring, which is crucial for preventing accidents. The Super Wi-Fi infrastructure supports seamless communication between various smart devices, facilitating efficient management and operation of construction activities.

More importantly, the implementation of 4S system in MTR has prompted other industry stakeholders to adopt similar systems, fostering a culture of safety and innovation in construction practices. Seamless connectivity provided by Altai Super Wi-Fi enables faster data transfer and improved processing time for mission critical operations, ultimately contributing to the successful and timely completion of the Tung Chung East Station project.



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