Hong Kong Modern Terminals Has Chosen Altai Technologies' Super WiFi Solution to Upgrade its Network

Hong Kong Modern Terminals is one of the busiest container ports in the world. Modern Terminals currently operates 7.5 berths with total handling capacity of 7 million TEUs.

To cope with the daily logistic operation of the port, Modern Terminals had implemented traditional mesh AP network for data application. However, the network performance was not ideal due to the complexity and high interference signal at the berths as well as the constraints of site facilities. Besides, the WiFi signal is usually blocked by mobile cranes and containers. These problems last till they adopt Altai Technologies' super WiFi solution. The Altai wireless solution is custom-made for the special environments such as container port.

The implementation of Altai's wireless solution is divided into two phases. In phase one, 5 Altai A8 WiFi base stations have installed in berth no. 1, 2, 5 and 9 to cover the whole container terminal with wireless broadband network. Multiple coverage is required for container terminal as it required highly reliable, high speed Internet access for operation. In case of any base stations failure, user can associate to another base station automatically.

In the container port, long range technology is required as there are limited sites for equipment installation. By using multiple radio and smart antenna technology, Altai A8 base station is able to attain extra

antenna array gain, diversity gain from signal processing technique. Each Altai A8 base station offers 20 Mbps access throughput to users without the need of hopping in normal case. The unique design of antenna allows more flexibility in site installation. Each of the 4-sector antenna can be installed at different positions and angles. This is particularly useful in the complex container port environment.

Furthermore, Altai base station is equipped with the patented Adaptive Interference Control and other special signal sampling technique, therefore Altai A8 can operate in high interference signal environment and co-exist with near-band radio equipment such as GSM and CDMA. The Altai wireless broadband solution not only help Modern Terminal to improve the overall network performance, but also reduce the total cost of ownership as fewer base station is required per area and less maintenance work.

About Modern Terminals

Modern Terminals has been continuously aiming for service excellence ever since it opened Hong Kong's first purpose-built container terminal in September 1972. Apart from optimizing its business in Hong Kong Port, it has also been actively expanding into China in recent years.

Requirements

- Provided stable WiFi signal
- Required multiple coverage
- Flexibility in site installation
- High data transmission throughput and low latency
- 802.11b/g multimode
- Triple play WiFi support and bandwidth for interactive applications and video streaming

Solution

- Five Altai A8 base stations have mounted on the 30m high light towers to provide total coverage to berth no. 1, 2, 5 and 9
- Altai Network Management System (AWMS) is used for monitoring the network performance

Benefits

- Altai A8 base station provides 7X increase in area coverage than the traditional mesh AP. One A8 covers more than 600m over cranes and 300m NLOS over container stacks
- Each base station provides 3X in data transmission throughput, that is 20 Mbps access throughput to users without the need of hopping
- Altai wireless broadband solution provides backhaul protection and interference mitigation
- The powerful coverage of A8 has greatly reduced the number of mounting locations, these help minimize the entire cost of deployment and maintenance
- The AWMS not only provide performance and fault monitoring on network, but it also provides a lot of statistical information on Mobile Client Management including MAC address, user name, IP address, association time, signal strength etc.

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