

WIRELESS SMART CCTV CITY SURVEILLANCE



A use case on Mimosas wireless infrastructure for Smart CCTV surveillance application for Majlis Bandaraya Petaling Jaya, Malaysia

OVERVIEW



Located in the state of Selangor, Peninsula Malaysia, Petaling Jaya which is commonly known as the twin sister of Malaysia's capital Kuala Lumpur is one of the most busy cities in Malaysia that consist of numerous commercial, residential and business districts. The city which covers an area of 97 square kilometers is administered by the Petaling Jaya City Council (MBPJ).

In transforming PJ into a smart city, MBPJ has upgraded its street surveillance cameras into smart CCTV surveillance system with the addition of artificial intelligence components and IOT sensors to monitor traffic, deter petty crimes, flood mitigation and other smart applications. Connecting all these solutions together using cable is challenging due to the large area covered and the CCTV cameras are spread out at different locations. The effective method is using high capacity gigabit wireless technology to link these cameras together.

To implement this, MBPJ has selected Mimosa Networks Point to Point and Point to Multipoint fixed wireless infrastructure technology. Deployment using Mimosa wireless technology not just saves time and cost but more importantly, the ability to integrate multiple applications using its high capacity wireless backhauls.

OBJECTIVES:

Fulfilling their smart city and security initiatives, MBPJ wireless CCTV surveillance solutions are designed based on the following objectives:

- The CCTV surveillance system network at MBPJ must be robust and foolproof with redundancy backup without single point of failure.
- Support integration of multiple components including high definition intelligent cameras, voice, IOT and AI applications.
- Using high capacity gigabit wireless backhaul to cater for existing cameras and future expansion.
- The infrastructure must be able to support state-of-the-art surveillance cameras with facial recognition and other crucial applications which promote Petaling Jaya as a safe and smart city.



THE CHALLENGE

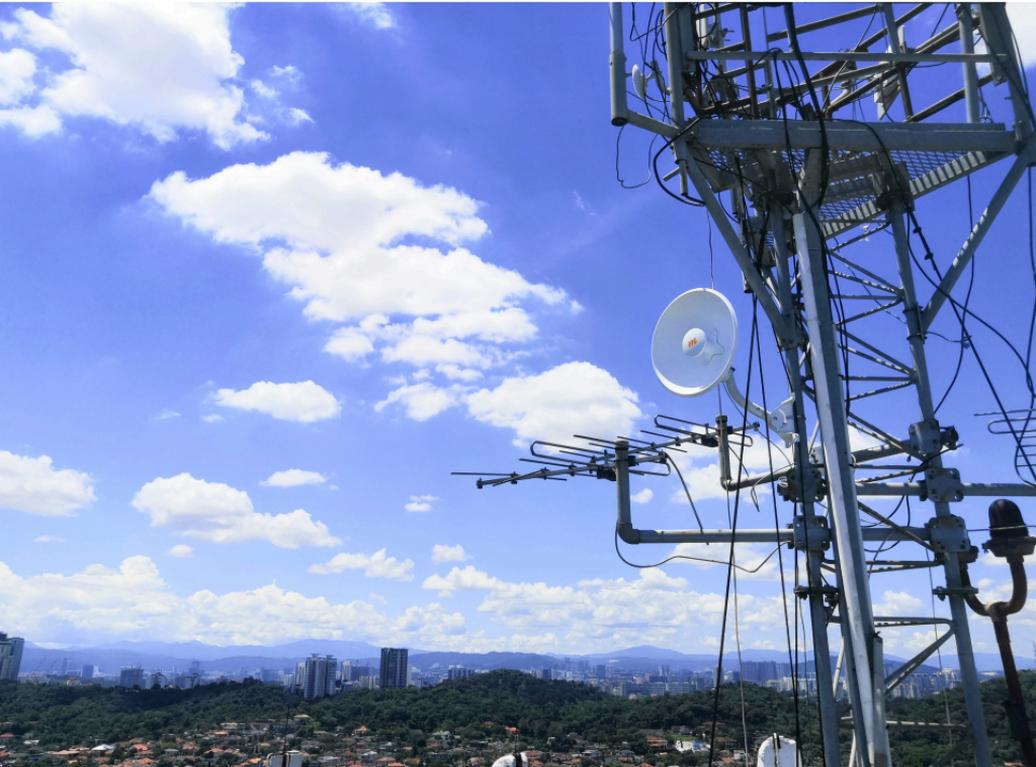
Few challenges were presented during the initial discussion with customer in relation to the deployment of the wireless surveillance network:

- **Complexity** - Connecting HD cameras using wireless technology throughout the city poses great challenge especially mitigating radio interference
- **Obstructions** - Cameras are located in various distances with high rise buildings surrounding the city poses difficulties in getting stable connectivity
- **Scalability** - Traditional wireless radio have low throughput capacity and unable to scale for future expansion
- **Manageability** - Large scale wireless deployment requires a comprehensive Network Management System

THE SOLUTION

With such a large number of surveillance cameras' requirements yet having limited locations to lay cables, the fast and practical approach to solve this is using total wireless network infrastructure. A combination of different Mimosa radios were being deployed:

- Mimosa high-capacity wireless solution eliminates the need to lay physical fibre optic cables. The high-capacity wireless radios provide up to 1.5Gbps Point to Multipoint wireless network as well as Point to point backhaul on the 5GHz unlicensed band spectrum.
- To eliminate radio spectrum congestion, Mimosa B5 series license free point to point backhaul radios that support frequency range between 4.9GHz-6GHz provides up to 1.5Gbps capacity were deployed as main backhaul. This frequency range allows full utilization of the spectrum effectively.
- C5x CPE radios were deployed giving up to 600Mbps capacity to each camera. This flexible and cost effective radios allow quality images that require high bandwidth to be transmitted without dropping the performance.



THE RESULT

With the high capacity Mimosa wireless solution deployed at MBPJ, the objectives are achieved with much lesser investment. Besides, the entire project deployment time took less than one month to complete.

This project has exceeded customer's expectation. The excellent performance of Mimosa's wireless solutions fulfilled both MBPJ's current and future infrastructure requirements for CCTV surveillance needs.

Customer: Petaling Jaya City Council, Malaysia

Location: Petaling Jaya, Selangor, Malaysia

Applications: Wireless CCTV surveillance

Products deployed: Mimosa A5c Base Station, B5c backhaul and C5x CPE



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