



SMART WIRELESS SCADA SYSTEM

OVERVIEW



The use of smart data analytics can revolutionize the water treatment and distribution companies.

Water treatment service remains an important essential industry to deliver clean water supply to the public. The use of technology like smart Scada system is vital to provide constant monitoring and control at all vulnerable areas of the treatment plant. An ideal monitoring solution is a system that is networked throughout their entire operation. It would immediately detect, manage and control any abnormal operating conditions for various devices including pumps, valves, sensors and etc. It would eliminate any necessity for regular patrols, drastically reduce the frequency of visits to remote sites.

Air Selangor is the largest water operator in Malaysia, distributing clean and safe treated water to consumers in Selangor, Kuala Lumpur and Putrajaya. It operates 34 water treatment plants providing safe water to about 8.4 million consumers.

To enhance the efficiency of water supply management, Air Selangor has implemented the Smart Connected SCADA system running on the Mimos Networks wireless infrastructure to achieve its operational efficiency.

OBJECTIVES:

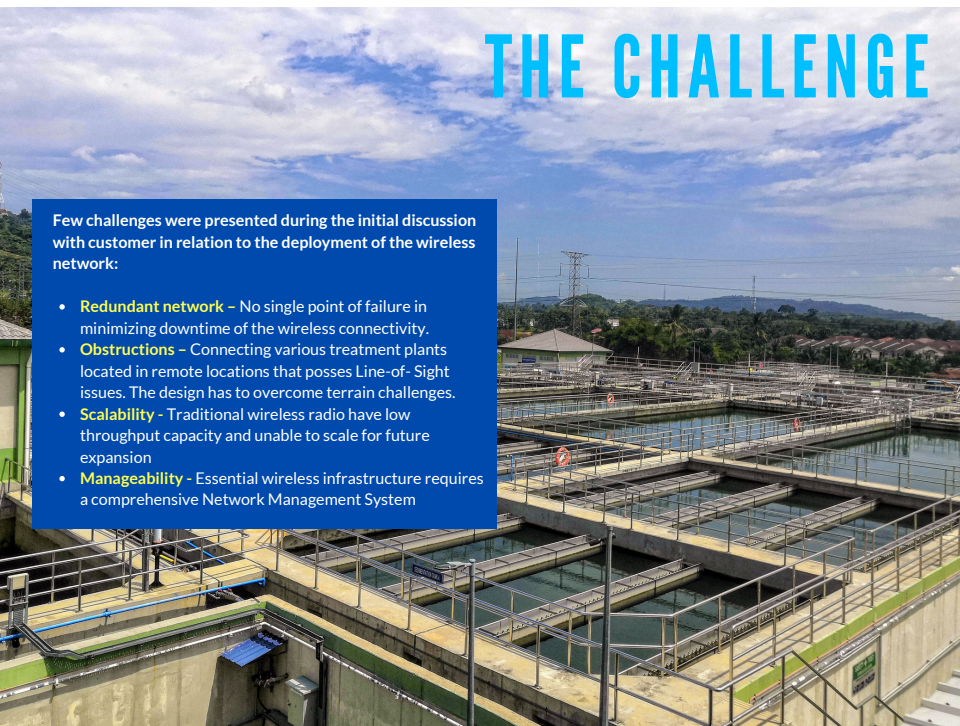
Fulfilling their initiatives in using technology to automate their operations and management, Air Selangor high capacity wireless network are designed based on the following objectives:

- Support various SCADA applications in collecting data and automated management pumps, valves, motors and sensors.
- Support integration of multiple components including high definition intelligent cameras, IOT and AI applications.
- Using high capacity gigabit wireless backhaul to connect to various application devices now and for future expansion.
- The infrastructure must be able to run without single point of failure. A back-up redundant wireless network is compulsory.

THE CHALLENGE

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

- **Redundant network** – No single point of failure in minimizing downtime of the wireless connectivity.
- **Obstructions** – Connecting various treatment plants located in remote locations that poses Line-of-Sight issues. The design has to overcome terrain challenges.
- **Scalability** - Traditional wireless radio have low throughput capacity and unable to scale for future expansion
- **Manageability** - Essential wireless infrastructure requires a comprehensive Network Management System



THE SOLUTION

The Mimosa Networks high capacity 1.5Gbps point-to-point backhaul and 1Gbps Point-to-Multipoint base station delivers blazing fast speed to support multiple devices providing real-time monitoring and control for sensitive applications. The Mimosa wireless solution design provides a complete long distance, high capacity and secured private network infrastructure for Air Selangor without the need to lay cables. A combination of different models of Mimosa radios were being deployed:

- **1.5Gbps** B5c backhaul with full N+1 redundancy to ensure robust and high availability networks. The B5 point-to-point radio operates on 5GHz unlicensed band spectrum
- **1Gbps** A5c point-to-multipoint base station at the central building providing wireless connectivity to surrounding treatment plants
- **600Mbps** CPE end point tapping into various SCADA applications providing high capacity connectivity.



THE RESULT

With the high capacity Mimosa wireless solution deployed at Air Selangor water treatment plant, 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 Air Selangor's current and future infrastructure requirements for SCADA and other IP related applications.

Customer: Air Selangor

Location: Semenyih & Putrajaya

Applications: Wireless backhaul and last-mile for SCADA connectivity

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



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