

TBOX SIMPLIFIES SYSTEM UPGRADE IN MALAYSIA



BACKGROUND

Air Selangor manages the distribution of water in the State of Selangor, Malaysia, and in 2019 undertook a major SCADA upgrade. Major upgrades require equipment that can fulfil needs well into the future, but also maintain compatibility with existing systems during upgrade process. The cost of training staff on new equipment must also be considered.

A key concern is the management of cut over dates, when site controls are switched from older equipment to new equipment. Any misalignment of site work with changes in the central SCADA system result in slippage, and perhaps a loss of monitoring or control.

THE PROJECT

Teknik Segala, an Ovarro partner and Air Selangor partner for 20 years, proposed TBox RTUs for the project. Existing RTU's and PLC's at large sites would be replaced by the modular TBox MS, with smaller sites upgraded to a TBox LT2. Air Selangor have used TBox for many years reducing training requirements.

Of great value to Air Selangor was the ongoing development of the TBox RTU which is continuously modernised to include current, IT protocols and cybersecurity features in addition to traditional SCADA functionality. This is ideal to maintain compatibility with existing systems and provide a foundation for future projects.



©Ovarro. TBox MS



©Ovarro. TBox LT2



WATER



MONITORING & CONTROL



RTU'S



MANAGING THE PROJECT TIMELINE

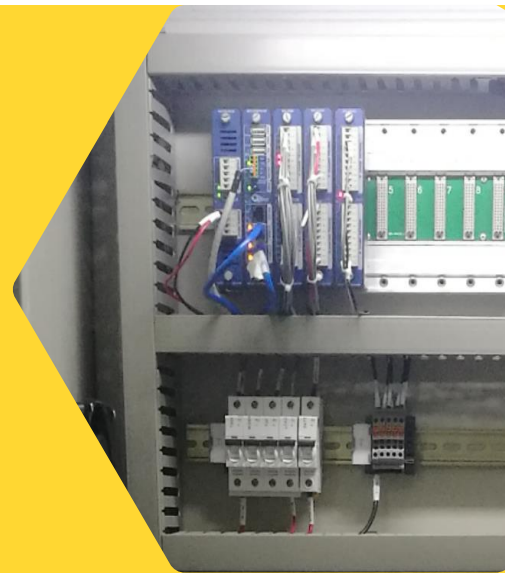
A crucial task of any SCADA upgrade is the verification of the data path from the transmitter to the screen. Projects must undergo a meticulous process to verify each data point, requiring alignment of field work and SCADA database updates. Any misalignment between teams will cause timeline slippage resulting in costly delays.

Air Selangor uses a DNP3 SCADA system, and a parallel data acquisition system based on MQTT. The secondary system is used for non-critical data and became a very useful timeline management tool for this project. MQTT relies on the remote client to publish data with a full “topic” or description of the data point. Unlike most SCADA protocols where mapped references are required, MQTT data is associated with topics that automatically become the reference. The system auto configures itself. TBox RTUs can utilise DNP3 and MQTT, concurrently, on the same 4G connection.

Site commissioning began with MQTT. Once the MQTT data path was verified, the site could be released to a temporary operations team. When the SCADA team was ready, they could send parallel commands via DNP3 on the same connection. This allowed much of the site commissioning work to be separated from the operational cutover, providing flexibility to the timeline, reducing project risk and cost.



“We are very proud to be working and associated with Air Selangor. Their professionalism and integrity are truly top class. We look forward to continue providing our best technology, products and services to Air Selangor to fully support Air Selangor in tandem with their inspiration to be among the best water authority in the region and the world.” **Zailan Amir, MD Teknik Segala.**



KEY DELIVERABLES

- **FUTURE PROOF** - Continued improvement path for future water management functions
- **REDUCED PROJECT RISK** - Parallel communications to independent SCADA Hosts
- **FLEXIBLE** - Traditional OT and modern IT protocol support
- **SECURE** - Improved cyber security thanks to inbuilt security features of the TBox
- **OPERATIONAL EFFICIENCY** - Common platform for monitoring and control at all sites

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