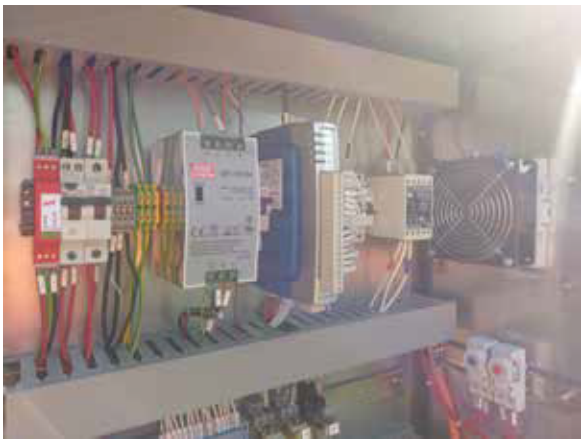
ELPRO Technologies

CASE STUDY

PROJECT DESCRIPTION

Environmental leak detection in mining facility

ELPRO Technologies Condor Series Wireless I/O and Gateway monitors leakage of hazardous materials into the environment and resolves environmental and safety hazards. Transfer of hazardous materials across land can cause catastrophic damage to the environment in the event of infrastructure failure leading to loss of product, large financial fines and corporate relations damage.



Pipeline networks are used to transfer various liquids such as treated and un treated water / waste water, fuel, oil, gas and mining waste. Pipelines need control standards in place for isolation of the line or redirection of the materials. In the event of sealing failure, materials can leak from the pipeline and create environmental damage if not detected and actioned immediately.

A System Integrator was approached by a leading International Fortune 500 mining company to solve an identified hazard potential. Pipeline relief valves were leaking into containment bins which were also overflowing and the detection of the status of the leak was not known unless they were visually inspected. Not only was this a costly exercise in man hours to visually check the area but also posed a safety issue as the pipeline was off road in rough terrain where seasonal rain could wash out the track.

The mining company had previously tried other sensor and cellular based wireless technologies with limited success due to site remoteness, terrain and communication distances. They also required a robust secure and reliable wireless I/O based solution to provide immediate detection of any leaks and for this to be reported back to the control room for immediate action by operation staff.

The System Integrator selected the ELPRO Technologies 415U-2-C4 Condor series Wireless I/O and Gateway due to its long range, secure and reliable communications protocols. With integrated I/O and exception reporting this provided a cost saving on required hardware and the reduction of battery sizing as the remote sites were required to be solar powered.

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PROJECT FEATURES

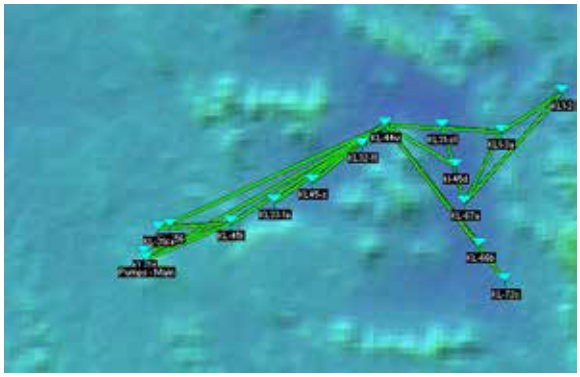
- Remote monitoring of relief valves via Wireless I/O and Gateway

- Store and Forward repeater and roaming functionality for reliability

- Redundant base station communications.

- Reduction of safety hazards and increased productivity by removing operators from needing to drive the pipeline.

- Provided immediate indication of any leaks into containment bins eliminating environmental hazards.



The 415U-2-C4 Condor Series Wireless I/O and Gateway digital radios provide remote diagnostics and connectivity through the radio network to the end devices. This gave engineering and operations the ability to reduce travel time to site for diagnostics and trouble shooting and also allowed for remote access to the network.

The 415U-2 Condor series radio supports common industrial IP protocols providing long term support of critical infrastructure.
The use of the 415U-2-C4 Radios allowed for a reduced configuration, installation and commissioning time providing significant cost savings to the client.
Since installation the 415U-2-C4 network has provided greater visibility and eliminated both environmental and safety hazards for the client.

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