

Condor Improves Comms at German Tunnel Project

OVERVIEW

Close to Stuttgart, Germany a new tunnel is being mined for a railway and an ever-expanding community of rail users, it's not an easy task and there are lots of factors to consider with such a large infrastructure project.

Being efficient is not just a German quality, it is a business quality and when timeframes started to blow out the contractor knew they had to investigate to see what the problem was to get back on track. It appeared that the radio system they were using was unreliable and would often breakdown which led to serious downtime and trucks not receiving the right instructions.

As you can imagine digging a tunnel means handling a lot of excess rock. Once unearthed these rocks are placed onto the conveyor and delivered to the loading yard where it is collected and dumped into waiting trucks. All sounds very simple. Dig out rocks, place rocks on the conveyor, rocks are dumped into a truck, truck removes rock from the site.

But, what happens when the radio system breaks down, is that trucks were not receiving the information that the rocks were ready to collect. This created stockpiles of excess rock. Imagine trying to manage a fleet of 600 trucks every day collecting rocks, moving rocks and moving around the site and when some of the trucks did collect the rock, they were not being issued with full loads.

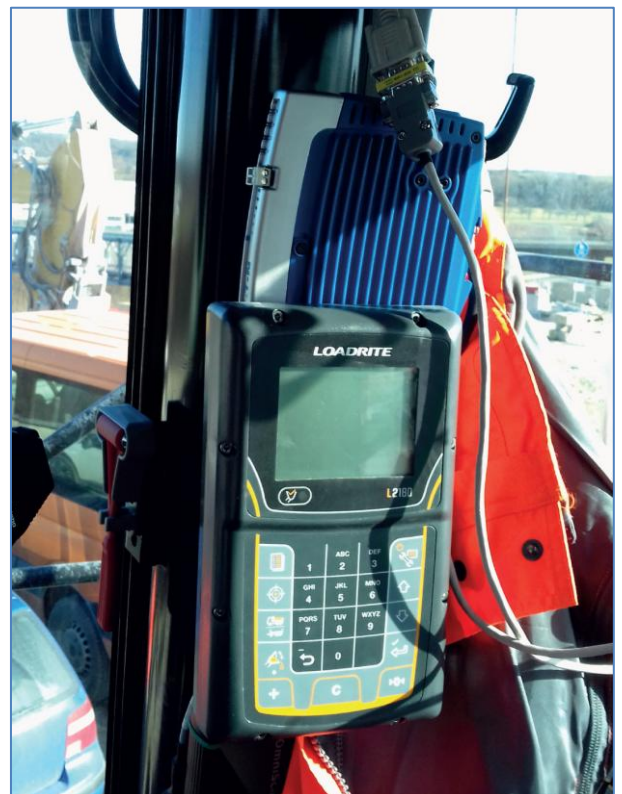
Queues of trucks started to form and idle trucks cost a lot of money, something had to be done about this radio issue.

ABOUT PERICOM

Pericom, an industrial communication provider in Germany were called in to help solve the problem. For over 18 years Pericom has been working to solve industrial long-range

communication problems using their broad, coordinated product portfolio and competent advice.

The team at Pericom went out to the Tunnel site and carried out a 'measurement in advance' to assess the scope of the problem. They then came back to the office and devised a new way of configuring the radio comms on the site, this included re-establishing the locations of the stations and the repeaters around the site and solving the problem of data transmission to help maintain a consistent weight of loads.



THE SOLUTION

Pericom commissioned a new radio system using the ELPRO Technologies latest market offering - The Condor 415U-E-C4 unit which is an industrial modem with long range secure communications not requiring line of sight (over several kilometres).

Condor has excellent receiver sensitivity and high throughput allowing reliable connectivity. It was a much more sophisticated system than what was in place prior. The radio solution was combined with sophisticated LOADRITE scales from Trimble, making the whole on site solution light years ahead of what they were previously using.

The new system not only improved communications on site, but it also helped to fix the problems associated with weigh loads. So now when the trucks come to the central gate, it drives onto the weighing system and the data from the weighbridge is transmitted back to the server. The server then creates jobs for the wheel loaders out on site, essentially saying that this specific truck (identified by number plate) is ready for a full load and the loaders spring into action to fill the truck (each wheel loader is fitted with a LOADRITE scale system which captures the data of what was delivered on that job number).

All of the data from the wheel loaders and the truck are then fed back into the system alleviating the need for the truck to be reweighed. It has made the whole process much faster, much more reliable. Pericom has stated that the ELPRO Condor 415 units are very reliable, with easy configuration and diagnostics/monitoring abilities and that the team at Pericom and their client are all very satisfied with the outcome of the installation



PROJECT FEATURES

- Long distance communications with multiple repeaters
- Built-in Redundancy with Meshing Protocol
- Gradual rollout as sites moved on line
- Provided Modbus TCP communications for DCS system
- 72 Remote Sites now Report to the Master spanning 150 miles up the valley
- Aggregate live flow data allowing for highly accurate flood prediction
- Personnel only sent to problem sites, reducing overtime during storm events.
- Reduced Flood Risk for this important economic area