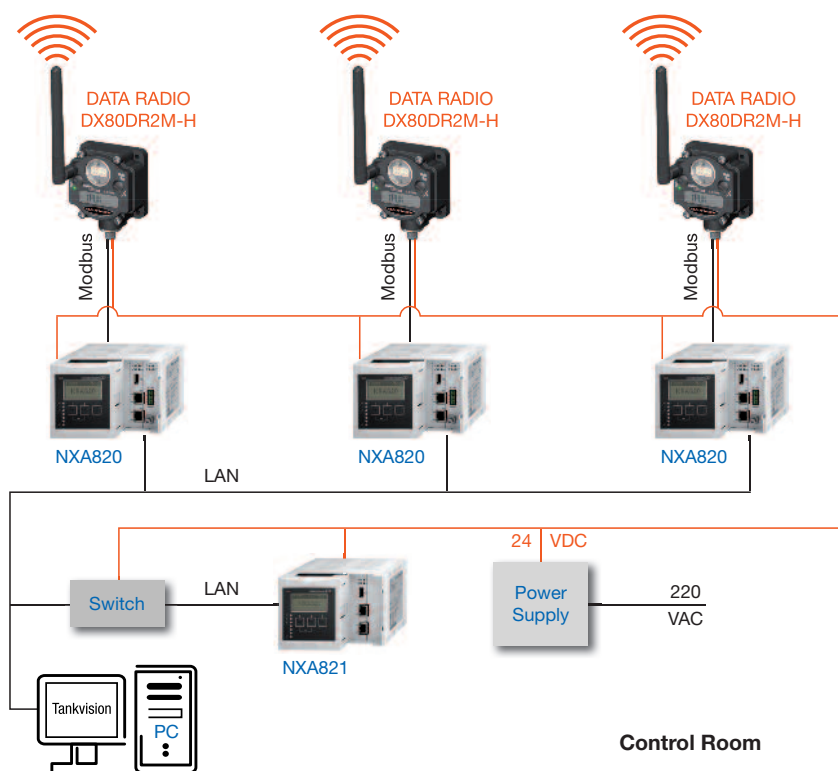


Tank Gauging Solution Real-Time and Wireless

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The Tanzanian & Italian Petroleum Company (TIPER) was looking for a tank gauging solution; they found their perfect solution in a wireless Modbus Tankvision system, combining the knowledge of two experts

Tank gauging refers to the measurement of product in large storage tanks using level, pressure and temperature gauges; it is used frequently in the Oil & Gas and petrochemical industries. The information obtained in this way is used to provide inventory data, assist with internal reconciliations, track movements of product, place orders and detect leakages.

In an effort to overcome the shortcomings of existing tank gauging methods Endress+Hauser developed Tankvision, a tank inventory system based on open browser technology. The technology enables Tankvision to make tank walls truly transparent for authorised users without any increased cost per access point. Users can access real-time information about any tank from anywhere in the world. All that is required is a computer, web-browser and Internet access. They can even group tanks from different parts of the world to obtain a view of the worldwide stock of a specific product. The system also enables users to request a variety of inventory reports including trending. Since its introduction two years ago, approximately 1000 Tankvision Workstation Systems have been installed worldwide, keeping an eye on more than 5000 tanks.

Tankvision is a far cry from the often imprecise, labor-intensive gauging devices that TIPER was using before. With 30 bulk storage tanks spread over a 1km² area, storing roughly 180 million liters of fuel when utilised at full capacity; accurate inventory control was number one on the client wish list. "We looked at all the options and selected on a technical basis rather than price," comments TIPER manager, Piet Niewoudt.

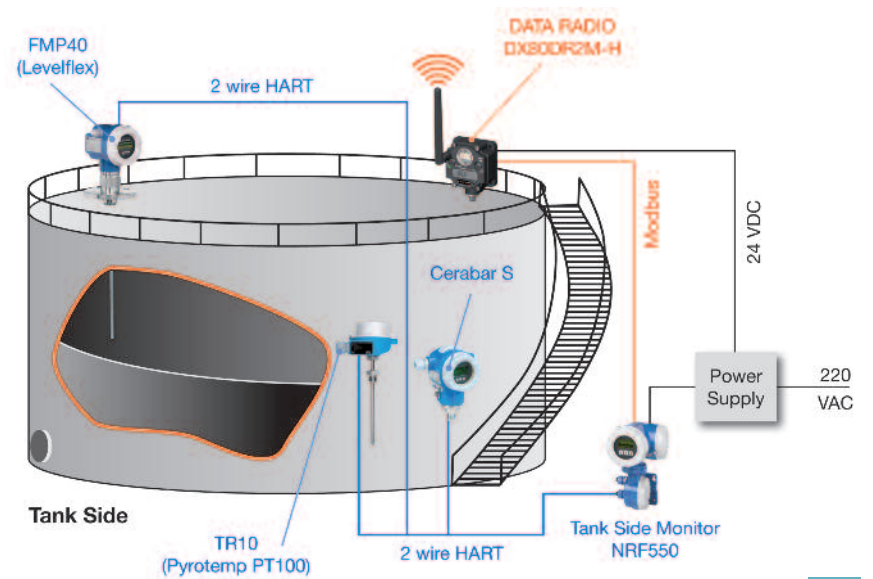


The accurate data which TIPER's Tankvision system provides allows the company to better co-ordinate the purchase of fuel with market fluctuations in the oil price. It also helps guard against fuel losses and inaccuracies caused by human error. These benefits alone have the potential to generate enough cost savings to recover the capital outlay of the new system within months rather than years.

The wireless installation facilitated substantial reduction in costs in terms of labor, material and long-term maintenance. Endress+Hauser approached Banner to help specify the correct SureCross Wireless product for the application. The SureCross Wireless system is an industrial wireless I/O network that can operate in extreme environments while eliminating the need for costly wiring runs. Analogue, discrete, temperature and serial I/O nodes are available in IP20 or IP67 and in intrinsically safe versions for Zone 0 and Zone 20. Nodes are easily deployed throughout the facility for gathering data to be concentrated at the Gateway. Installation is fast and easy with flexible mounting and power options. Nodes can either be 10-30VDC powered or FlexPowered with multi-year battery life or solar powered.

The SureCross Serial DX80 Data Radio was selected. To avoid any delays during the on-site installation phase, the Endress+Hauser project team first conducted a wireless facility acceptance test in South-Africa. The experiment passed the test with flying colors, exceeding a 3 kilometer communication radius. The Data Radio MultiHop module can be setup as a master, slave and also as a repeater. It allows mesh topology to expand the range and ensures perfect and reliable communication. A master can handle up to 46 slaves/repeaters placed on each tank and it is possible to duplicate this configuration based on different networks. The Data Radio can be installed in Zone 1 inside an Ex d metal enclosure. For this application and many others, WirelessHART is not needed.

At present, 32 tanks divided in 3 different networks have been kitted out with Tankvision equipment and are connected to the central computerised reporting system. The remaining tanks are currently being refurbished and will be connected to Tankvision upon completion. Banner's SureCross Wireless solution saved around 30% of installation time.



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