

Swedish refinery expands wireless Tank Gauging system by installing Pervasive Field Network

RESULTS

- Fast and reliable communication
- Minimized engineering time and installation cost
- Quick and easy installation
- Direct remote access to wireless field network



APPLICATION

St1 uses Rosemount Tank Gauging equipment from Emerson for inventory measurements in liquid storage tanks. The plant has a mixture of wired and wireless equipment for level and temperature measurements. Their wireless tank gauging system is complemented with a wireless link between the field network and the control room.

CUSTOMER

St1, a Swedish petroleum refinery, located in the Gothenburg harbor area.

CHALLENGE

Initially, there was no direct access from the control room to the Smart Wireless Gateway, which collects tank data from the wireless field network.

To be able to monitor the wireless network status, and configure the devices, instrument technicians had to go into field and investigate. Work permits, and keys were required for entering the locked facility, where the PC connected to the gateway is situated.

SOLUTION

To improve access to the wireless network, St1 added a wireless connection from the control room to the gateway via the Wi-Fi based Pervasive Field Network (PFN) solution from Emerson.

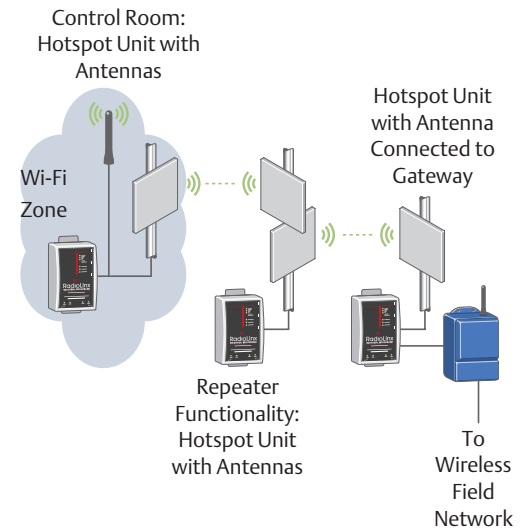
St1 chose the wireless alternative for cost reasons, and because installation of both the field network and PFN is quick and easy.

The PFN link at St1 includes three industrial Hotspot Units, all of which are installed indoors. Each of these is connected to a remotely installed outdoor panel antenna.

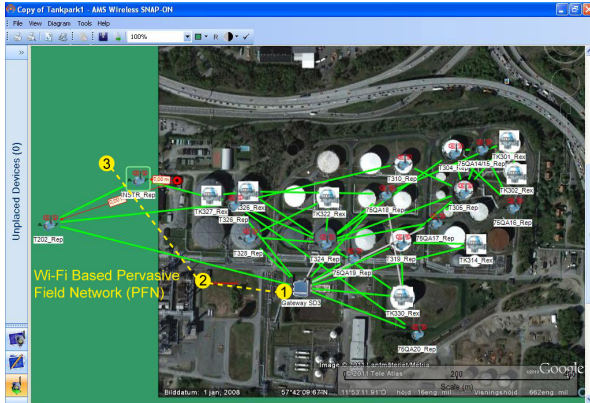
It is also possible to install a Hotspot Unit outdoors.

**“It is like walking around in the tank farm, doing it from your office!
All measurement points are centralized – Gas/oil leakage, level, and tank temperature.”**

Curt Åkesson, Instrument Engineer, St1



- 1 One Hotspot Unit is connected to the gateway, and a remotely installed directional panel antenna.
- 2 Another Hotspot Unit serves as a repeater to achieve line-of-sight. It is connected to two remotely installed panel antennas, one receiving and one transmitting, to be able to relay data.
- 3 The third Hotspot Unit is installed in the control room area. It is also connected to a remotely installed panel antenna. In addition, it is equipped with an integrated antenna to create a Wi-Fi zone. This enables the operator to access the wireless network from any place in the control room, via a laptop, equipped with AMS Wireless Configurator, AMS Wireless SNAP-ON, and/or TankMaster.



AMS Wireless SNAP-ON gives you a graphical overview of the tank farm, the devices in the network, and their status.

Emerson Smart Wireless Solution

Emerson’s Smart Wireless solution is based on IEC 62591 (WirelessHART), the emerging industry standard for wireless field networks.

A WirelessHART device can transmit its own data as well as relay information from other devices in the network. The self-organizing mesh network automatically finds the best way around any fixed or temporary obstacle. Nodes can identify a network, join it, and self-organize into dynamic communication paths. Reliability actually increases when the network expands – the more devices, the more communication paths!

Technical details are subject to change without prior notice.

Emerson Process Management

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Data from the Rex gauge is sent to the control room via PFN.

RESOURCES

- Smart Wireless Tank Gauging Brochure, 00803-0100-5200
- Wireless Tank Gauging System Reference Manual, 300570En

