



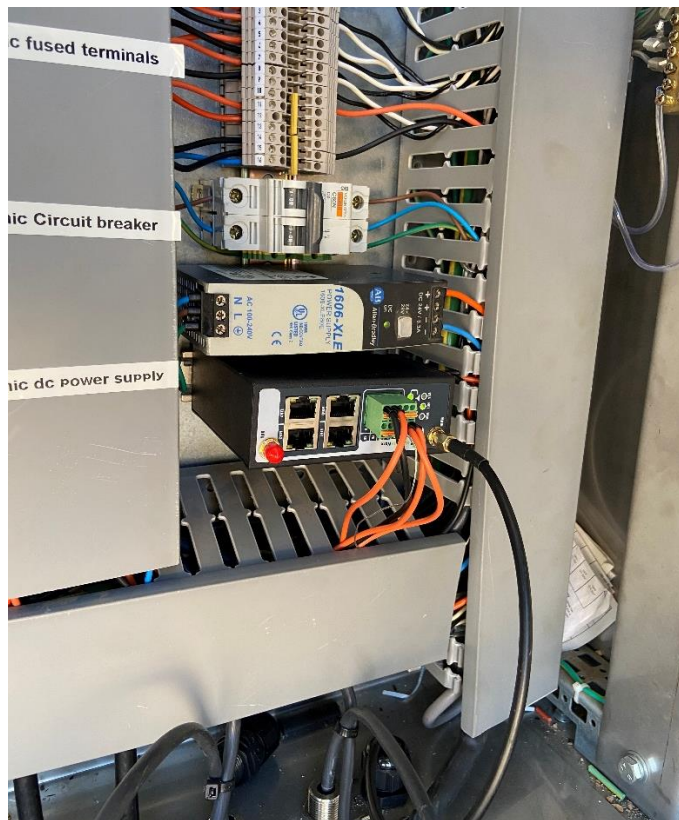
NavigateWorx

Case Study 003

Remote Gas Pipeline
Monitoring via LTE Wireless

Customer Background

Customer from Australia, which is specializes in Sales, Installation & Calibration Service of Instrumentation equipment in the Oil & Gas industry. Their services are tailored to match client's specific needs, consistent with international standards and hands on approach to ensure prompt delivery and high level of customer satisfaction. They provide Process Control optimization via instrumentation and electrical engineering support, from the feasibility stage through to maintenance.



Customer Needs

There is a HONEYWELL Sonik Gas Leak detector which is located on a Remote gas station on a Gas Pipeline in the Northern Territory. The Sonik is monitoring GOR (gas-oil ratio) gas leaks, which then will create an alarm. The Sonik is communicating by Modbus RTU protocol and need to send to cloud based dashboard via 4G Internet. Customer also need DI alarm trigger, when DI alarm occurs then 4G Router need to send SMS notifications to designated people.

Why Navigateworx?

- Working In Harsh Environment

With NR500 LTE VPN Routers, now it's flexible enough with its strong and high EMC level design, it could get all equipment connected and have internet access to be online for remote visitors all the time.

- Reliable Network Communication

NR500 LTE VPN Routers provides reliable low latency communications between machines and the center. Dual SIMs capabilities for redundancy mobile operator, switch cellular link between different 4G mobile data carriers.

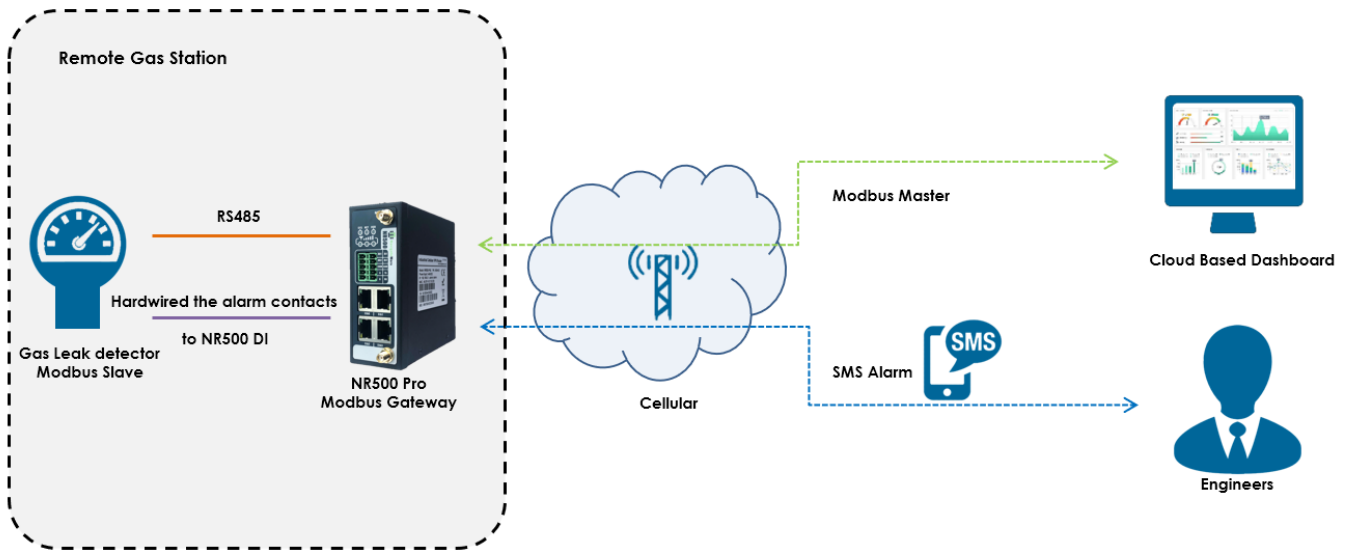
- Multiple Industrial Interface for Machines

NR500 LTE VPN Routers has 4 x Ethernet ports, 1 x RS232 and 1 x RS485 interfaces supports Serial to IP communication. 2 x Digital Input and 2 x Digital Output for the connection of Sensors and Actuators.

- Saving Costs

Navigateworx help engineers monitor real-time operation of the machines, response to faults with shortened time, and plan for preventive maintenance, saving both manpower and costs significantly.

Solution Application



Solution Advantage

- NR500 Pro provides reliable low latency communications on 4G network, maintain the TCP connection for Modbus RTU convert to Modbus TCP.
- The information from the Sonik is transmitted via Modbus RTU to NR500 Pro, then NR500 Pro is transmitting via 4G connection to the Internet, where we are hosting a cloud-based dashboard, so the client can see the Sonik values, alarm status and other information. The dashboard will send emails to designated people.
- Customer also hardwired the alarm contacts from the Sonik, to the DI on NR500 Pro. If an alarm occurs the modem sends SMS to designated people.

Customer Feedback

I am extremely impressed with the support provided by engineer Ken, it is so good to know a manufacturer that stands by and support their product like this. I will continue to find opportunities for NR300 and NR500.

-- SAID BY MR. Nellen

Product Highlights - NR500 Pro

| | |
|-------------------------------|---|
| Dual SIM failover | Redundancy mobile operator, switch cellular link between different 4G mobile data carriers. |
| Data Ports | 4 x RJ45 + 4G Modem Serial port: 1 x RS232 + 1 x RS485 Digital IO: 2 x DI + 2 x DO |
| Wide Range Power input | 9 to 48 VDC |
| VPN Features | IPSec, GRE, PPTP/L2TP, OpenVPN |
| SMS Control | SMS Configuration, SMS Gateway, SMS Notification |
| Modbus Gateway | Provides protocol conversion between Modbus/RTU (or ASCII) and Modbus/TCP |



About Navigatworx

Guangzhou Navigatworx Technologies Co., Ltd is a dedicated IIoT / M2M Hardware Manufacturer and Solution Provider. Since its establishment on the forefront of the evolving IIoT / M2M Industry, she offers a unique combination of extremely talented Wireless and Wireline Experts to help you navigate the overwhelmingly complicated IIoT / M2M Industry.

We continue to learn and embrace the front line of advanced technology in the IIoT / M2M Space and bring practical and dependable Solutions to our customers. We have enhanced and utilized the most effective and efficient Technologies, Processes, and Procedures in the IIoT / M2M Market to continuously develop, deploy, manage our products and services to our customers.

NavigateWorx Hardware and Solutions had been widely used in different vertical markets like Energy (e.g. Wind Turbine Generator Monitoring), Retail (e.g. Vending Machines / Kiosk), Smart City (e.g. Video Surveillance), Environment (e.g. Weather Station Remote Monitoring), Transportation (e.g. Intelligent Traffic System), Industrial Automation (e.g. Package Machines Remote Monitoring) etc. With the great help of Global Distribution Network, our Routers had been shipped to more than 80 Countries and we're proud to contribute our effort into IIoT / M2M Market.

NavigateWorx would continually concentrate on IIoT / M2M Industry and bring more and more reliable, trustable Solution for our clients. That is NavigateWorx.

