



Case Study: Oil and Gas

Serial M2M communication solution supporting SCADA and MODBUS over TCP for Oil & Gas application

Executive profile

Information transmission is critical in Oil & Gas field. Any minor error may cause a serious consequence. A system integrator in North America provides Oil & Gas customer an advanced LTE solution to monitor and manage the equipment remotely in the entire oil field to prevent any abnormal operating condition. SCADA (Supervisory Control and Data Acquisition) devices and sensors are installed on the pipeline to measure pressure, flow, and potential leaks. These sensors could send the metrics back to the central control console and deliver real-time information to pipeline manager.

Challenge

The Oil & Gas sector requires high bandwidth, low latency, and secure and reliable communications system in the most remote locations. As the Oil & Gas companies have to make the time-critical decision in real-time, the communication devices must support high availability and security. Thus, the system integrator was looking for a 3G/4GLTE solution to optimize the stability and the security of data transmission between sensors and control center, as well as to boost system efficiency and minimize the occurrence of connection failures.

The communication device must support Serial communication with MODBUS all over the TCP protocol to transmit data from sensors to the central control console. MODBUS was designed to provide client-server communication between devices such as PLC, HMI, Control Panel, Moto Driver, Card Reader, Meters, I/O device, etc. in different networks on the serial port.

Our solution

Billion provides M100, Industrial 3G/4G Router, to be installed next to SCADA equipment as data acquisition device and protocol converter. M100 can support SCADA equipment directly from its serial port and diminish the need for connected switch between two devices. Meanwhile, M100 supports serial communication with MODBUS over the TCP protocol and can deliver the pipeline monitoring data to control center without interruption, allowing the pipeline manager to make crucial decisions and operate more efficiently to meet their specific application needs.



M100 supports IPSec VPN protocols to enable users to establish up to 16 VPN tunnels simultaneously in which all the data will be encrypted and transferred safely. The VPN protocol can dramatically

enhance the stability and security of data transmission to prevent data tampering and loss.

"M100 is designed to target the mission-critical applications. By using this advanced Industrial 3G/4G Router, our system integration customers can receive in-time information, make critical decisions, and save significant money from remotely managing the equipment in the entire Oil & Gas field", said Project Manager at one of the largest Oil & Gas system integration companies in the North America.



Benefit

High Availability and Redundancy

M100 supports both GbE EWAN and 3G/4G wireless connections. Either wired or wireless connection can be setup flexibly to the primary or backup WAN port. M100 monitors the primary and backup connection for fully automated failover. When the primary WAN interface fails, the secondary WAN interface will automatically back up the connection, allowing WAN interface to restore in time and minimize service interruption.

Highly secured and protected

M100 supports IPSec VPN to build up to 16 private and encrypted transmission tunnels in which secure information transmission is guaranteed between the managed endpoint and data center over the public internet.