Proscend's 4G LTE Industrial Long Reach PoE Extension Solution for the real-time 24/7 surveillance applications in oil and gas industry.

Background

The real-time 24/7 surveillance system with Industrial IoT technology acts as an essential solution for the oil and gas industry to manage emergency conditions, asset monitoring, and predictive maintenance. However, it is a challenge to ensure reliable network connectivity and sufficient power requirements of surveillance infrastructure since the oil tanks are located in remote locations and required long-distance communications in harsh environments.

Application Requirements

Proscend's 4G LTE Industrial Long Reach PoE Extension Solution is well suited for this scenarios by offering a combination of 4G LTE Industrial Cellular Router M330-W with an extended LTE roof-top antenna, a pair of Industrial Long Reach Power over Ethernet Extender 701MP/101MP, and a 48-56VDC power supply to integrate into the weatherproof enclosure with other related surveillance equipment. This solution is designed to maintain productivity and control operating costs you need the ability to monitor and manage remote equipment, alarms, events, and field personnel.

Application Features

- **Long Range High-bandwidth Transmission**

  The deployments of oil and gas fields require long-distance communications networks that deliver reliable and secure data transmission to remote locations. Proscend's M330-W Industrial Cellular Router is a rugged compact Long Term Evolution (LTE) network router that provides wide-area network coverage and high-performance data transmission to meet mobility, connection density, and low latency purposes. Supporting Ethernet interface, RS-232 serial port, and WiFi, the M330-W also can be connected with M2M/IoT devices. With QoS management, and VPN tunnels, the live video surveillance are simultaneously streamed and safely sent the amount of data to the cloud over the Internet for supervising and addressing conditions that may result in unexpected malfunctions, or catastrophic circumstances.

- **Long Reach Data and Power Extension**

  To utilize existing cabling infrastructure, Proscend's Industrial Long Reach PoE Extender 701MP/101MP is designed to transmit data up to 1 km and support IEEE 802.3at/af Power over Ethernet reducing the amount of wiring cabling and offering remote power. Working in pairs for point to point connectivity, the 701MP PoE Extender is the master unit connected at the central site and on the receiving end is the 101MP PoE Extender with 4 PoE (PSE) ports. Without the need for local power supply, each 101MP is equipped with four 10/100Base-TX IEEE 802.3at/af PoE ports for total power budget of 30W that can support any remote IEEE 802.3at/af powered devices (PDs), like IP camera, and wireless AP. The 701MP/101MP PoE

Extender features easy and cost-effective installation to deliver power supply to a remote site quickly.

- **Industrial-grade Durable Rugged Design**

  Most oil and gas tank farms are often exposure to severe temperature variations. Featuring wide operational temperature design is crucial in ensuring stable operation and performance reliability under extreme conditions. The Industrial Cellular Router M330-W can withstand in an operating temperature range of -30°C to 70°C. With extended temperature certified from -40°C to 75°C, the Industrial Long Reach PoE Extenders 701MP/101MP ensure reliable operation consistently. Both durable and hardened design have the versatility you need for space-constrained and industrial applications in highly tough environments.

Product Used

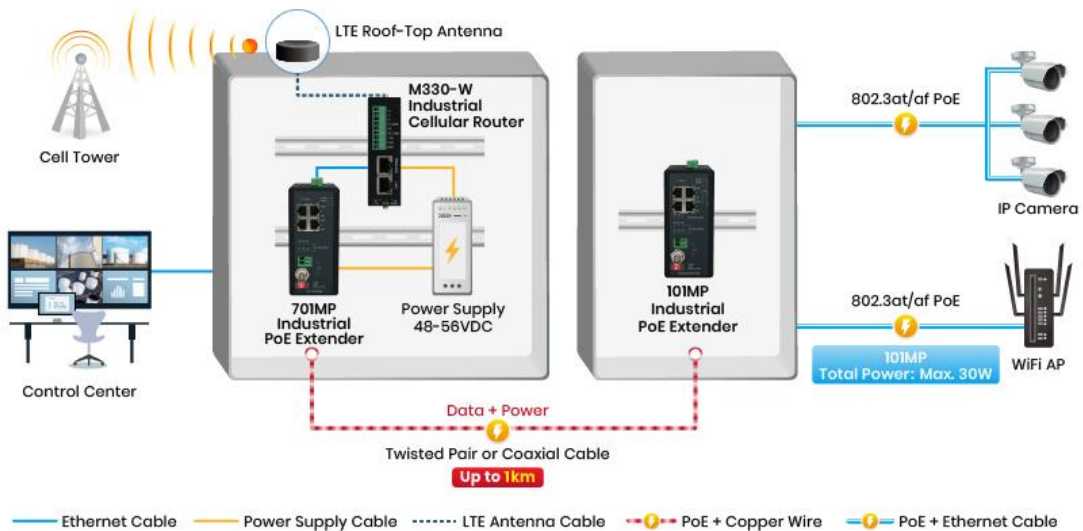### Compact Industrial Cellular Router M330-W5

- 1 x 10/100 Base-TX RJ45 LAN port; 1x 10/100 Base-TX RJ45 WAN port.
- Multi-band support for FDD LTE / TDD LTE / WCDMA / GSM / LTE Cat4.
- IEEE 802.11b/g/n Wi-Fi standards compatibility.
- Built-in micro SIM connector, RS-485 serial port, and DI/DO interfaces.
- Ultra-compact and lightweight metal design with DIN-Rail installation.
- LED indicators for connection and data transmission status.
- Industrial rated from -30 to +70°C for use in harsh environments.
- Flexible power supply range of 8-48 VDC.
- IPv4 and IPv6 dual stack management.
- VPN tunnels, Firewall and cryptographic protocols for cybersecurity.
- Support serial communication protocols for M2M connectivity.

Industrial 4-Port Long Reach Power Over Ethernet Extender (701MP/101MP)

- Complies to IEEE 802.3at PoE.
- Industrial-grade extenders for applications in harsh environments.
- Simultaneous transmission of Ethernet data and PoE Power over UTP wire or coaxial cable.
- Centralized management of power supply.
- Eliminated the need for DC power supply at remote sites.
- Easy cabling for quick installation.
- Long transmission distance up to 1.2km for UTP wire or 1.8km for coaxial cable.
- Quick deployment and easy maintenance.
- Flexible and efficient power management.
- DIP Switch enables remote power supply.

Application Topology

Proscend 4G LTE Industrial Long Reach PoE Extension Solution is suited for oil and gas industry.