Oil and Gas Exploration and Production

Benefits

– Real-time data collection and analysis increases efficiency
– Remote equipment adjustment and reconfiguration boosts production
– Fewer employee hours wasted driving to distant locations
– Track assets in field
– Voice and data communications, even in areas without cellular coverage
– Enhanced worker safety and site security without cellular coverage

Tropos Technology Differentiators

– Performance – multi-megabit capacity, low latency
– Security – firewall, IPsec VPN, AES encryption in every router
– Reliability – ruggedized and weatherized equipment, patented mesh routing algorithms use multiple paths, channels and frequency bands
– Scalability – can be used across 10s, 100s, and 1000s of square miles
– Mobility – seamless roaming across entire coverage area
– Radios – maximum power, best receive sensitivity, outdoor optimized
– Management – most comprehensive configuration, analysis and reporting
– Class I, Division 2 certification for use in hazardous areas pending

Oil and gas fields can span hundreds or even thousands of square miles in remote areas that often lack cellular coverage. Some are subjected to extreme cold, ice and snow, others to searing heat and still others to high humidity, wind, rain and salt fog. Tropos networks meet the communications needs of oil and gas exploration and production, delivering reliable, high capacity networks that operate over large areas under extreme conditions to increase operational efficiency and safety.

Increasing Oil and Gas Exploration and Production Efficiency

Oil and gas exploration and production operations have long measured a host of parameters such as temperatures, pressures and flows at drilling rigs and wellheads. Measurement, logging and adjustment were typically performed by well tenders who often drove long distances from well to well in remote areas.

Wireless communications can significantly enhance the efficiency, productivity, safety and security of oil and gas exploration and production. Drilling rigs and wellheads can be monitored remotely, in real time, to better utilize skilled engineering resources, enable faster problem resolution and eliminate wasted driving time. In addition, a wireless network can cost-effectively provide voice and high speed data service to field facilities even in areas that lack cellular coverage.
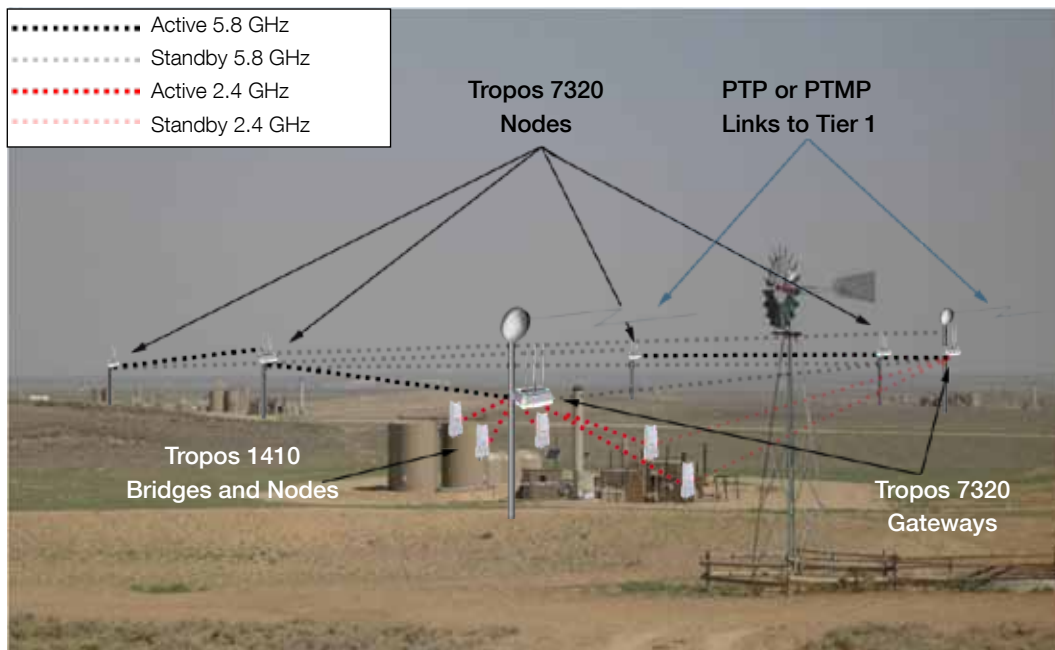
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Multi-Use Networks for Oil and Gas

Tropos' wireless broadband networks provide a scalable and reliable next-generation communications platform to securely support multiple applications on one low-cost physical infrastructure. A single network can simultaneously support a range of oil and gas exploration and production applications such as:

– SCADA – production and injection well monitoring, measurement, logging and control; source and disposal water well monitoring; emergency equipment shutdown and recovery

– Real-time video feeds and surveillance – increase situational awareness; enhance security by monitoring wellheads and other key facilities

– Safety and security systems – improve worker safety; enhance facility security with control access

– Drilling rig communications and diagnostics – monitor drill bit depth and tilt, mud weight, temperatures and pressures; remotely run diagnostics and analyze results

– Asset tracking – track and update the location of assets in the field to improve operations and to enhance safety and security

– Field workforce connectivity – keep work crews in the field connected with access to SCADA data, instant messaging and email at remote sites even if they lack cell service

– Voice – use IP phones for mobile worker voice communications even in remote areas with no cellular coverage

Oil and Gas Network Building Blocks

Tropos wireless mesh routers located at oil and gas well sites can connect drilling rig and wellhead sensors and controls, video surveillance and security systems, and field workers' laptops, tablets, handhelds and IP phones. Mesh routers at well sites located near one another can form a single mesh network, enhancing reliability and allowing long-range backhaul links to be shared by several wells. Backhaul from the well sites to the company's enterprise network and data center can be implemented using Tropos PTP and/or PTMP radios.

Oil and Gas Field Deployment Concept

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