



OIL & GAS DIGITAL TRANSFORMATION

The Oil & Gas market continues to focus on profitability by deploying advanced automation solutions, including network hardware devices, artificial intelligence modules, and other distributed applications and tools to increase the efficiency from upstream to downstream processing. SqwaQ can help provide better data connectivity to remote sites, increase the bandwidth, and provide a higher level of security for these mission critical functions. Here are some examples of applications that require connectivity/bandwidth:

DATA SOURCE EXAMPLES

- Thermal/IR Imaging
- SCADA Systems
- Sensors & actuators
- Flow Controllers
- Flare Stack Inspections
- Floating production storage monitoring of tanks
- Software Automation Protocols
- Real Time Events w/A.I.
- Security Camera & Monitoring
- Industrial IOT Devices
- Lease automatic custody transfer (LACT) monitoring
- Asset Digitization & monitoring
- Gas detectors

PREFERRED SERVICE REQUIREMENTS

- Fixed wireline or other broadband
- Wireless via LTE with multiple channel option if available Systems
- High Availability/Redundant data connectivity
- Diverse carrier option for mobile office/truck
- Connected Drones with direct access to data network
- Scalable based on existing needs & future add-ons
- Prioritization of traffic types
- Secure & encryption option
- Easy to use & set-up







OIL & GAS EXAMPLE APPLICATIONS

The Oil & Gas production is continuing to improve their efficiencies and are using many Technology advances. Here are a few examples of how this market can take advantage of bandwidth availability in the Upstream, Midstream, and Mobile Offices:



UPSTREAM

In many cases new drill site locations lack broadband service connectivity. When other broadband connectivity (e.g. wireline) services are not available, a public or private cellular can provide connectivity. However, a single 4G LTE channel is not typically enough bandwidth for many types of services, including:

- Site surveying, layout, engineering, and monitoring of site construction/deconstruction
- Security monitoring of site via live feeds or motion detection device activated video
- Geo-steering drilling system with automation and Artificial Intelligence (A/I)
- Entrance and exit monitoring, SCADA Monitoring, and other production controls



MIDSTREAM

Midstream locations are often remote locations without broadband service connectivity. There are many applications that could benefit from higher bandwidth connectivity at midstream locations, including:

- Monitor and manage control valves, and monitor EFM Compression
- Lease Automatic Custody Transfer (LACT) unit control/monitoring
- Site surveillance, Audio challenge, and video monitoring



MOBILE OFFICE

Mobile personnel as an example, traveling from oil well to distribution pipelines and throughout oil and gas territory can also benefit from higher bandwidth. Additionally, field crews have test equipment and applications requiring intranet/internet. communicate with operation centers. Here are ways higher broadband connectivity can assist these mobile crews:

- WiFi connectivity for devices in their truck/SUV
- Control of gates and entrance approvals
- Consistent communications within a region
- Switch between LTE carrier footprints for continuous communications
- Bandwidth aggregation for scalable bandwidth needs



SQWAQ FOR FIXED/MOBILE/AERIAL BANDWIDTH

SqwaQ is providing MVNO (Mobile Virtual Network Operator) service offerings across diverse cellular networks for Fixed/Mobile/Aerial high bandwidth needs of n x 4G LTE. Our market Verticals include: Oil & Gas, Aviation, Drones, Utility, Pipeline, Security, GIS, Construction, Smart Agriculture,

Public Safety & Emergency Response,

DOD, DHS, and Telemedicine.







