IIoT Applications in the Oil and Gas Industry is the fourth consecutive report from Berg Insight analysing the latest developments on the use of wireless technologies in this industry vertical worldwide.

This strategic research report from Berg Insight provides you with 150 pages of unique business intelligence, including 5-year industry forecasts, expert commentary and real-life case studies on which to base your business decisions.

**Highlights from this report:**

- **360-degree** overview of the IIoT ecosystem in the oil & gas industry.
- **Insights** from 30 new executive interviews with market leading companies.
- **Comprehensive** overview of the value chain and key applications.
- **In-depth** analysis of market trends and key developments.
- **Detailed** profiles of 65 key players in this market.
- **Updated** market forecasts lasting until 2023.

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IIoT solutions drive margin improvements in the oil and gas industry

Oil and gas operators utilise IIoT solutions to increase operational efficiency, secure assets and achieve regulatory compliance throughout the entire value chain. Industrial control systems such as Supervisory Control And Data Acquisition (SCADA) and other industrial monitoring solutions are used to monitor and control remote facilities. These solutions enable operators to remotely monitor a multitude of data points such as pressure, volume levels, flow rates, temperature and operating status and conditions of various equipment at well sites, tank farms and pipeline facilities. A combination of wired and proprietary radio solutions is typically used for communications between sensors, controllers and systems, although cellular and satellite are increasingly used for non-mission critical monitoring applications.

Berg Insight estimates that annual shipments of wireless devices featuring cellular or satellite connectivity for oil and gas applications reached 175,000 units worldwide in 2018. Growing at a compound annual growth rate (CAGR) of 13.1 percent, annual shipments are expected to reach 325,000 units in 2023. Remote monitoring of tanks and industrial equipment in the midstream and downstream sectors comprise the most common applications for wireless solutions in the oil and gas industry. At the end of 2018, the installed base of wireless devices featuring cellular or satellite connectivity in the oil and gas industry amounted to an estimated 1.3 million units.

Internationally, the upstream oil and gas market is dominated by National Oil Companies (NOCs) and Integrated Oil Companies (IOCs), which are largely served by major industrial automation vendors including Emerson, Siemens, Schneider Electric, Yokogawa, Honeywell, ABB and Rockwell Automation. These companies are increasingly focusing on selling complete and integrated systems rather than individual control systems. Today, every major automation supplier has an industrial IoT initiative, including their own cloud-based solutions for monitoring and managing connected assets. These initiatives are aimed at helping customers collect data from assets and optimise processes further through data management and analytics.

Solutions for remote monitoring of assets such as wellheads, storage tanks and pipeline infrastructure are also offered by a large number of specialised providers. Many of the companies that specialise in wellsite automation and remote SCADA monitoring are based in North America, which has the greatest addressable market in terms of facilities. The region is home to the world’s largest number of onshore wells and longest pipeline system. Examples of companies that offer end-to-end solutions for monitoring and automation of onshore wells include Zedi, eLynx Technologies, Critical Control, WellAware and ZTR Control Systems. The market is fragmented and a key consolidator in the space has been Quorum Software, which acquired the Coastal Flow Measurement family of companies and Flow-Cal in March 2019.

The US-based M2M specialist DataOnline has emerged as the largest remote tank monitoring (RTM) solution provider following its acquisitions of Wikon in April 2018, Independent Technologies in August 2018 and Sierra Wireless’ iTank business in December 2018. The company has more than 300,000 tanks under management following the acquisitions. Additional major RTM solution providers with installed bases around 100,000 units include Australia-based Silicon Controls, US-based telematics specialist SkyBitz and the Polish industrial automation vendor AIUT. Other vendors that specialise in RTM include ISA, Sensile Technologies, Varec, Dunraven Systems, ATEK Access Technologies, Powelectrics, SilentSoft and Geoforce.

Due to the remoteness of oil and gas facilities, cellular and unlicensed proprietary radio solutions are typically used for data acquisition and backhaul communications. The largest provider of cellular IoT gateways and routers in the industrial space is Sierra Wireless, followed by Cisco, Digi International, Moxa, Belden, HMS Networks, Maestro Wireless, GE’s industrial communications group GE MDS, Encore Networks, MultiTech Systems, Eurotech and Elecsys. While cellular solutions are today primarily used for non-mission critical use cases such as remote monitoring and metering in the oil and gas industry, there is growing support for use of private cellular networks across critical infrastructure industries. In contrast, unlicensed proprietary radio solutions are today already used in mission critical applications, primarily at well sites, where wired installations are unfit. Major vendors of proprietary radio modems are FreeWave, GE MDS, 4RF, Schneider Electric, OleumTech, Satel and Racom.

This report answers the following questions:

- Which are the leading wireless IIoT solution providers for oil and gas applications?
- What offerings are available from device vendors and service providers?
- What impact will new regulations have on the market?
- What are the key drivers behind the adoption of IIoT solutions?
- What impact will technology advancements have on the market?
- What is the split between cellular and satellite connectivity?
- What are the recent merger and acquisition activities on this market?
Executive Summary

1 The oil and gas industry
   1.1 Introduction to the oil and gas industry
   1.2 Industry players
      1.2.1 International and national oil companies
      1.2.2 OPEC
      1.2.3 Independent exploration and production companies
      1.2.4 Oilfield service companies
   1.3 The oil and gas market
      1.3.1 Oil and gas reserves
      1.3.2 Oil and gas production
      1.3.3 Oil and gas consumption
   1.4 Oil and gas production and distribution
      1.4.1 Exploration, development and production
      1.4.2 Transportation and storage
      1.4.3 Refining and marketing

2 Wireless IIoT solutions in the oil and gas sector
   2.1 Wireless IIoT infrastructure in oil and gas
      2.1.1 Facilities segment
      2.1.2 Service segment
      2.1.3 Network segment
   2.2 Operations management
      2.2.1 Exploration and production management
      2.2.2 Distribution and marketing management
   2.3 Equipment management
      2.3.1 Equipment diagnostics and maintenance planning
      2.3.2 Security and Safety
   2.4 Regulatory compliance and reporting
      2.4.1 Regulation
      2.4.2 Tax collection
   2.5 Business models and project strategies

3 Market forecasts and trends
   3.1 Market analysis
      3.1.1 Installed base and unit shipments
      3.1.2 Wireless technologies
      3.1.3 Regional markets
      3.1.4 Major vendors
   3.2 Market drivers and barriers
      3.2.1 Macroeconomic environment
      3.2.2 Regulatory environment
      3.2.3 Competitive environment
      3.2.4 Technology environment
   3.3 Value chain analysis
      3.3.1 Wireless IIoT and telemetry industry players
      3.3.2 Industrial technology vendors
      3.3.3 Wireless network operators and managed service providers
      3.3.4 IoT platform and IT industry players
   3.4 Future industry trends

4 North American vendors
   4.1 AMCI Wireless
   4.2 American Innovations
   4.3 ATEK Access Technologies
   4.4 Banner Engineering
   4.5 Belden
   4.6 Bentek Systems
   4.7 Critical Control Energy Services
   4.8 DataOnline
   4.9 Digi International
   4.10 Elecsys (Lindsay Corporation)
   4.11 eLynx Technologies
   4.12 Emerson
   4.13 Encore Networks
   4.14 FreeWave
   4.15 General Electric
   4.16 Geoforce
   4.17 High Tide Technologies
   4.18 Honeywell
   4.19 Inductive Automation
   4.20 MultiTech Systems
   4.21 OleumTech
   4.22 OmniMetrix
   4.23 ORBCOMM
   4.24 Pason Systems
   4.25 Quake Global
   4.26 Quorum Software
   4.27 Red Lion Controls (Spectris)
   4.28 Rockwell Automation
   4.29 Sierra Wireless
   4.30 SkyBitz (Ametek)
   4.31 SPOC Automation

4.32 Varec
4.33 WellAware
4.34 Willwglen Systems
4.35 Zedi
4.36 ZTR Control Systems

5 European and Rest of World vendors
   5.1 ABB
   5.2 Abiox
   5.3 Acksys
   5.4 AIUT
   5.5 Atmos International
   5.6 Dashboard
   5.7 Dunraven Systems
   5.8 Endress+Hauser
   5.9 Eurotech
   5.10 GasSecure (Dräger)
   5.11 HMS Networks
   5.12 ISA – Intelligent Sensing Anywhere
   5.13 Kingspan
   5.14 Maestro Wireless Solutions
   5.15 Moxa
   5.16 OptaSense (QinetiQ)
   5.17 Pepperl+Fuchs
   5.18 Powelectrics
   5.19 PSI
   5.20 Racom
   5.21 Schneider Electric
   5.22 Servelec Technologies
   5.23 Sensile Technologies
   5.24 Siemens
   5.25 SilentSoft
   5.26 Silicon Controls
   5.27 SRETT
   5.28 WFS Technologies
   5.29 Yokogawa

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