



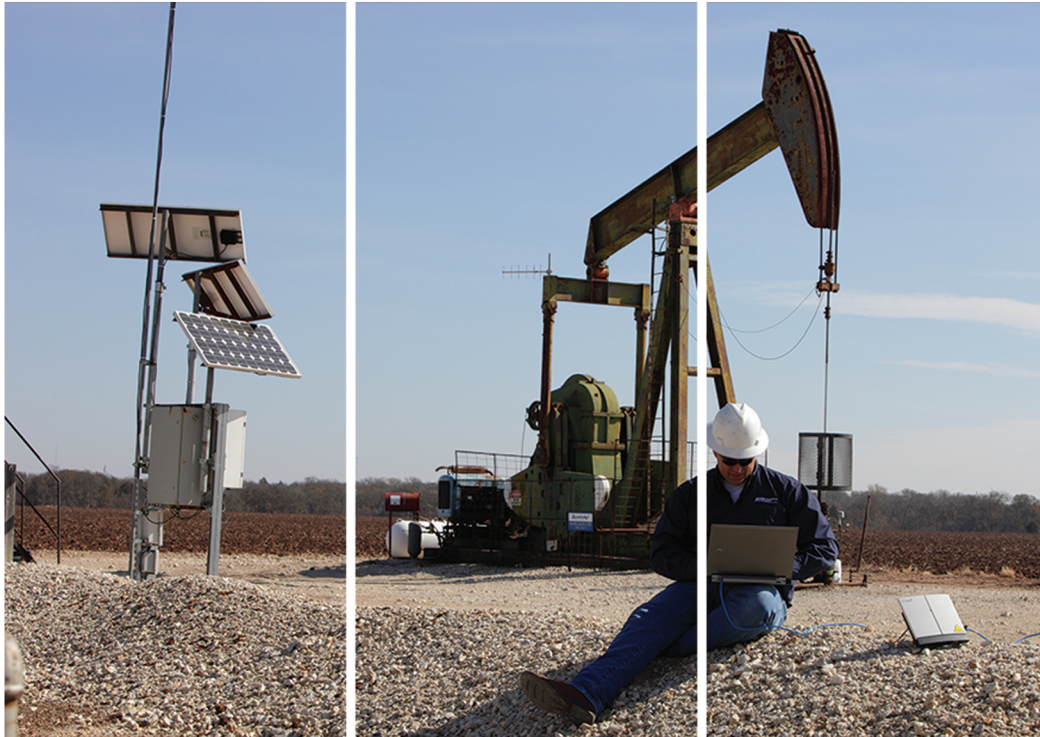
Digital Oil Filed

The oil and gas industry is one of the few industries where almost all of the assets reside in remote and difficult to reach locations. Maintaining production and control of these assets requires a high level of cost, attention, significant travel, and resources, and is precisely why the majors have invested so heavily on automation infrastructures.

While the demand for hydrocarbons continues to rapidly increase, even as the supply of the skilled labor needed to produce them is leveling off. The oil industry has developed an approach that increases output without raising labor requirements: the Digital Oil Field (DOF). In an industrial environment as complex and varied as a hydrocarbon extraction field, on-site expert presence is still often required. The goal of the DOF is, therefore, to bring the field to the expert using remote monitoring and control by saturating an extraction site with thousands of sensors, video cameras, and control computers. Consequently, the digital oil field is a perfect example of what is known today as “big data analytics,” and a prime example of how cloud computing and the Internet of Things are already changing the world we live in. Below we will discuss the critical factors of building the digital oil field.

As a solution to address the needs of modern oil and gas fields, we provide a new approach for integrating the SCADA system to Telecom backbone and analytical platforms to support digital integration of upstream applications.





What we can propose for you to make it digital

1- A SCADA System:

Make it possible to

- Process data monitor and operation
- Alarm handling
- Historical data storage and retrieval
- Report generation – time-based, event-based, on-demand
- RTU/PLC-system monitor and operation
- Communication with the other systems
- Protection of people, equipment and environment
- Graphical displays showing RTU process conditions of the field
- Trends of selected RTU process variables
- Alarm management for RTU including alarm acknowledgement
- Commands to control the RTU to change the operating state of valves such as opening or

closing

2- A Telecom Network

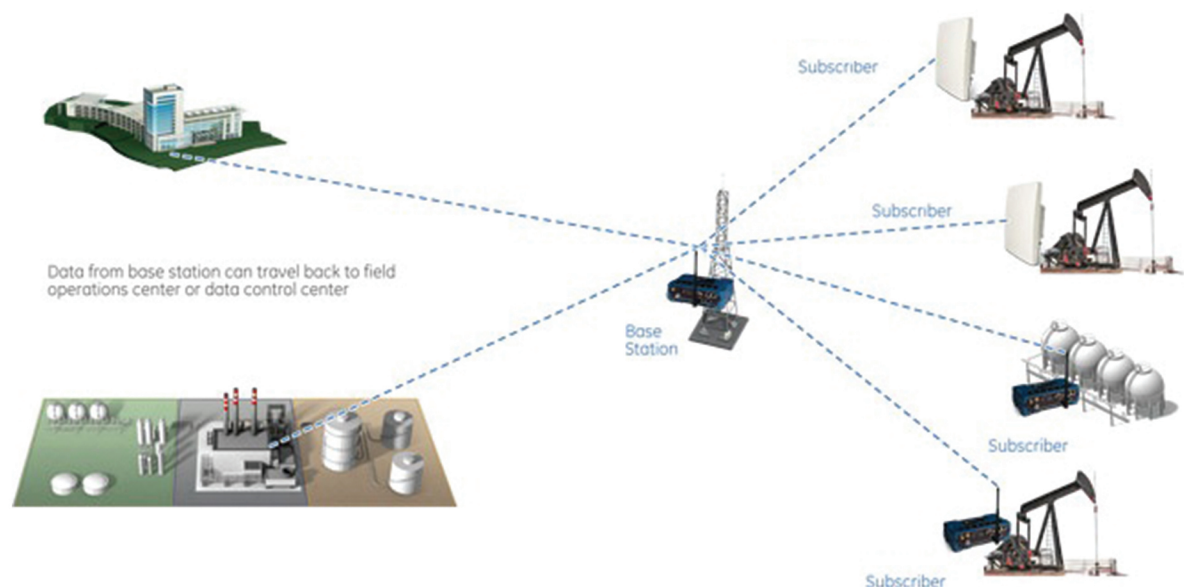
Now most of executed or ongoing projects proposed to use fiber optic based infrastructures like SDH or Ethernet networks while there is some projects also that uses radio networks like TETRA or P-MP systems as communication infrastructure.

SDH system based system has been implemented using installed fiber optic inside the different location of the field.

The backbone fiber optic transmission system shall operate based on active nodes linked by optical fibers to form a reliable and redundant high speed transmission system for Voice, Data and LAN services to the Valve and Compressor Stations as required.

Local area network (LAN) constructed for all systems of the whole project. LAN system should be industrial redundant Fault Tolerant Ethernet and support the TCP/IP network protocols. LAN shall conform to the Ethernet standard.

While The main user for telecom network is SCADA system but usually there are some other users that maybe installed on this backbone like Radio systems, Telephony services, CCTV and etc. so selecting proper infrastructure is dependent to operational philosophy of the plant.



3- Our added value services

They are our specific services we provide for such projects in both SCADA system and also complementary tools.

Our FaSCADA automation software has been developed completely with FASBA's innovative and expert software and automation engineers.

- Windows-based process control data visualization system which is Now the leader in the substation automation and process automation software markets, developed and improving continuously by our engineering team.
- Standard tools like graphic design interfaces and tools, predefined libraries, Alarm, Trends and reporting facilities
- Power systems special tools like load shedding and load sharing
- High secured architecture and configuration for high secure platforms
- Built-in especial tools for power grid and substation control and monitoring



Our analytical platforms help you to analyze process network parameters to make operation and maintenance so easier.

- **DOIS** (Dispatching Online Interface for SCADA) to be connected to both SCADA system software and also analytical software to get the data, analyze, study and generate the results.
- **DPAT** (DIgSILENT Protection Analysis Tools) to simulate relays and protection analysis; whereas in similar software there is no tool for the automatic calculation of the relay settings and now only it could be calculated manually and evaluates the settings coordination. DPAT-Grid, DPAT-Industrial, DPAT-Power Plant and DPAT-Distribution are different software each suitable for one platforms
- **CCSR** (Calculator of Compatible Settings for Relays) to calculate settings for a wide range of different relay types, prepared and used for power transformation/sub-transmission substations, power plants, Industrial networks and distribution networks

4- Our Benefit for you

- Developing main SCADA software by local engineers make it possible for covering Passive Defence requirements like make special security system and cyber security issues, to make more secure SCADA applications.
- FASBA's experience in this field and special tools developed by FASBA can make an important added value facility in conjunction with other SCADA applications.
- Using FASBA's special platforms, it is possible to integrate usual process control facilities with control and analytical method and tools for power distribution and grids used in Oil and Gas industry.

