OptimizeIT Well Monitoring System is part of ABB’s OptimizeIT Enhanced Oil Production Suite - a range of systems, solutions and services targeted at increasing oil & gas production.
The on-line flow rates and flow assurance calculations are based on a set of state-of-the-art mechanistic models for multiphase flow, and a fully-fledged compositional model of the fluid. A network solver calculates the properties throughout the network of wells and flow lines simultaneously - providing estimates on a continuous basis.

This field-wide approach guarantees maximum sensor redundancy, and sensors can be evaluated by consistency checking. This way, the system can provide an alarm in the case that a sensor reading is not consistent with the calculated flow rates. If the number of sensors is higher than required for calculating the flow rates, the OptimizeIT Well Monitoring System can also perform on-line estimates of failing sensors.

Running on a Windows® 2000 PC, and utilizing the most common industry standards for program implementation and communication, the OptimizeIT Well Monitoring System can easily be integrated with any kind of production control system. The information provided by the OptimizeIT Well Monitoring System can be transferred to the production control system database, and may be sent to a remote operations center for closer analysis.

**Features**

- Calculates the flow rates of oil, gas, and water as a data reconciliation tool
- Utilizes state-of-the-art mechanistic models for multiphase flow, and a fully-fledged compositional model for the fluid
- Utilizes network redundancy, and can be operative even if a particular sensor is unavailable
- Designed as a stand-alone Windows® 2000 application, which can be integrated with any kind of production control system
- Based on an information system architecture (COM+), which makes the application easy to expand to handle any number of wells
- Member of the ABB OptimizeIT Enhanced Oil Production suite of applications

**What it means to you**

- **Improved reservoir management**, due to real-time allocation of the total production from the field to the various zones in the reservoir
- **Increased throughput**, due to less frequent well testing and early detection of gas or water breakthrough
- **Improved management of production on a daily basis**, due to an overview of the flow everywhere in the production system, component-by-component
- **Increased instrumentation redundancy and validation of measurements**
- **Reduced need for unplanned workovers** due to the instrumentation redundancy
- **Improved Flow Assurance Surveillance** due to the real-time information on pressure and temperature throughout the production network
- **Easy to scale the system** - functionality and size
- **Lower installation and maintenance costs**, as compared to any hardware solution
**Application Areas**

**Multiphase Flow Metering**
OptimizeIT Well Monitoring System is a distributed software Multiphase Flow Meter to be used for Production Allocation from the various zones.

- Calculates the flow rate of oil, gas, and water, based on data from well and flowlines instrumentation
- Detects instant changes in the composition downhole, such as water and gas breakthrough
- Founds the basis for automatic well control, or choke setting optimization
- Input for reservoir simulation
- Improved reservoir management

**Flow Assurance Surveillance**
OptimizeIT Well Monitoring System can provide on-line information on possible formation of hydrates and other flow assurance parameters.

- Real-time information on temperature, pressure and fluid composition
- Tool for minimizing chemical injection

**Instrumentation Redundancy**
OptimizeIT Well Monitoring System can be used as a reliability tool for the well and flowlines instrumentation:

- Validates specific measurements
- Introduces redundancy into the system
- Estimates the measured data at times when the measurement equipment fails
- Increases uptime by reducing the need for unplanned workovers

**Gulf of Mexico, July 2000**
OptimizeIT Well Monitoring System detects water breakthrough in the Gulf of Mexico, July 2000

**Project Execution**
OptimizeIT Well Monitoring System is configured for each specific case, and a typical project includes the following:

- Defining the instrumentation requirements, and integration with the Production Control System
- Configuration of the system to reflect the field layout and fluid properties
- Installation, commissioning, operator training, and tuning of the system
- Service and support during operation