FuelsManager®
OIL & GAS

Automation solutions for oil & gas, defense and aviation applications

Varec®

"Comprehensive functionality - tank gauging, SCADA and terminal automation - in a single solution"

Microsoft GOLD CERTIFIED Partner

SAP® Certified Integration

A Leading Innovator

Varec has been a leading innovator in the petroleum and chemical sectors for eight decades – working with industry leaders to pioneer inventory tank gauging instrumentation and fuel management systems, setting standards and introducing new technologies. Today, Varec FuelsManager® industry solutions provide features that have been proven across all oil and gas vertical markets.

FuelsManager® Oil & Gas is the industry solution for terminal and refinery automation, including load rack automation, inventory management, tank gauging, SCADA and product movement tracking for most major oil companies.

FuelsManager® Defense provides an automated fuels management solution at over 600 US Department of Defense air, ground and naval facilities, as well as many NATO and foreign military facilities worldwide.

FuelsManager® Aviation is now the system of choice for fuel farm management, load rack automation, aircraft refueling and enterprise reporting for many airports, airlines and fuel service providers.

Tank Farm, Terminals, Refinery,

FuelsManager® OIL & GAS

Which FuelsManager Oil & Gas Edition is Right for You?

FuelsManager Oil & Gas is available in four editions: Standard, Professional, Terminal Automation and Enterprise. This allows you to choose an edition that suits the level of functionality your operation requires.

Standard Edition. Provides a set of features for bulk liquid asset management, including:

- Tank gauging
- Inventory management
- OPC Interface
- Alarm management
- Reporting

Professional Edition. Provides all the standard edition features plus additional functionality for a fully automated solution, including:

- Real-time SCADA
- Configurable user interface
- Extended networking
- Systems integration

Terminal Automation Edition. Provides all the standard and professional edition features plus new functionality for a complete terminal automation solution, including:

- Load rack automation
- Order entry and management
- SAP integration
- Inventory reconciliation
- Product movement tracking

Enterprise Edition. Provides a corporate-wide overview of inventories, plant status and reports via the Internet/ Intranet. It also enables remote users and customers to access data relevant to their business operations.

Optional Features. Integrate additional functionality into your FuelsManager Oil & Gas.

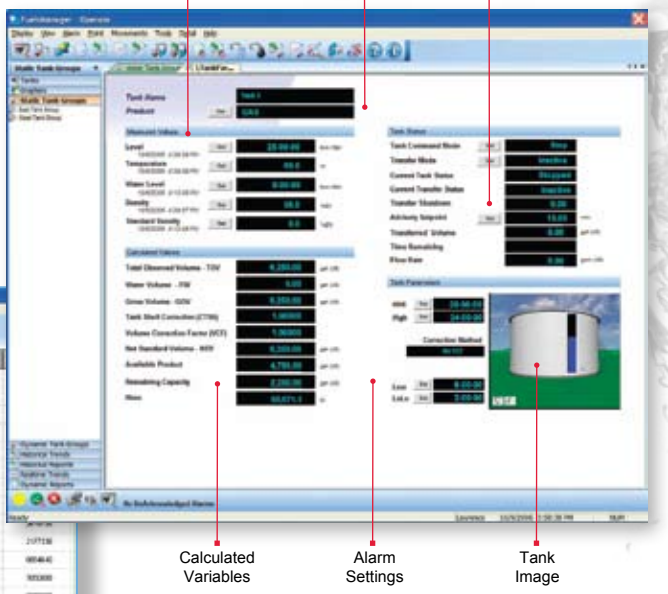
- Product movement tracking
- Leak detection
- US EPA Title V
- Automated data output
- Web server

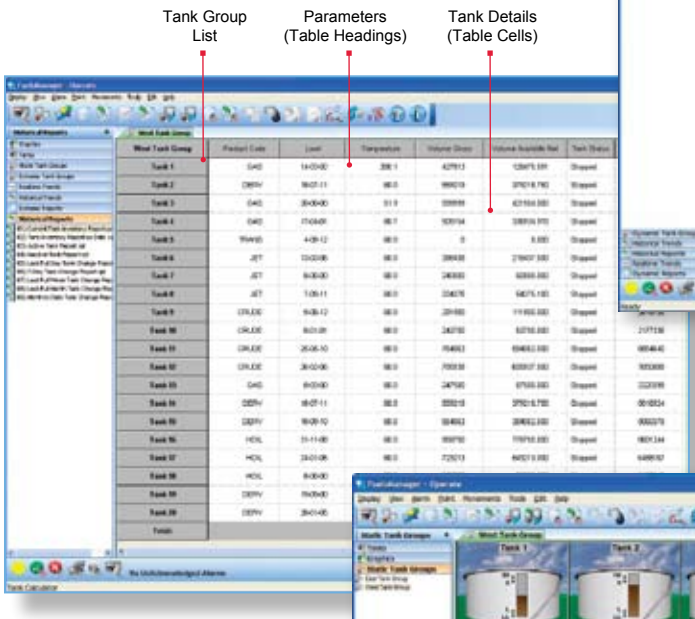
Chemical Plant & Pipeline Facilities

Varec®

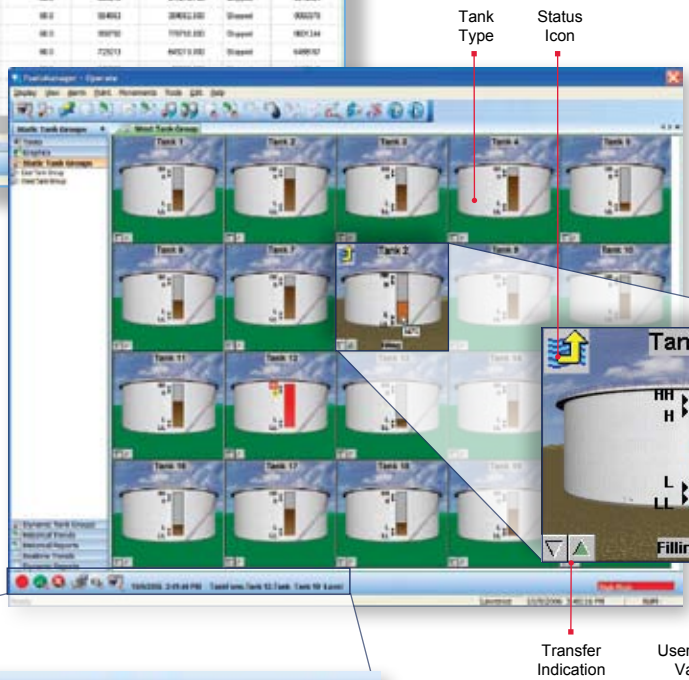
"Integrate all major types of tank gauging technologies - into a single system - for comprehensive management of your bulk liquid inventories"

Single Tank Displays. **Each display provides inventory management information relating to a single tank, such as data collected from tank gauges, calculated data, overfill alarm settings and tank status.**

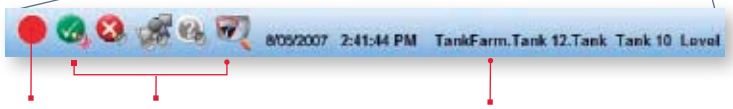




Multiple Tank Displays. **Each display provides an overview of critical data for groups of tanks at your facility and a means of quickly accessing additional "Process Data" for an individual tank. Operators can create and modify tank groups in real-time, manually or automatically, choosing which tanks and tank data are displayed in a group. Your operators can also quickly switch between a graphical and tabular view of any tank group.**



Tank Group Graphics. **Each display allows you to quickly identify the status of tanks in the group and provides the key information your operators require. Rolling your mouse over a particular item provides further detailed information.**



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Powerful Features for Terminal Operators

Using features, such as configurable tank displays and powerful alarm tools, your operators are easily able to monitor key information, efficiently managing your bulk liquid inventories and reacting quickly to changing conditions across your facility.

Customize all aspects of the user interface and make a truly intuitive system for your terminal operators.

Monitor measured and calculated variables, such as levels, temperatures, volumes, flow, etc., and select engineering units for individual variables based on your measuring applications.

Perform calculations to recognized standards, such as American Petroleum Institute's (API) 2004 standards, ASTM, IP, GB/T, GOST, JIS, Polynomial and others.

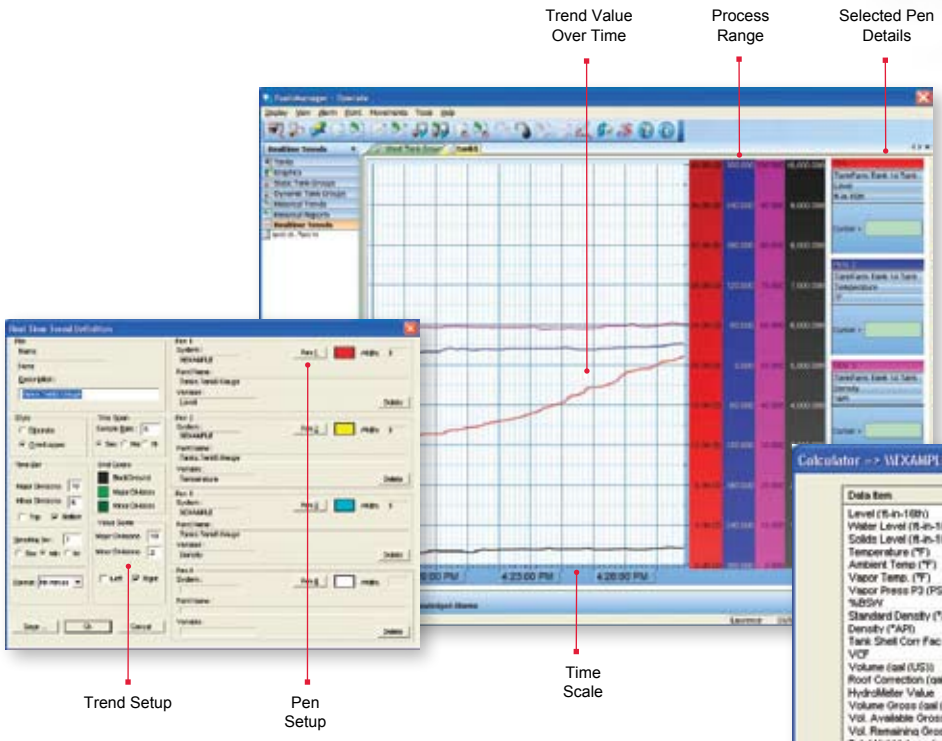
Schedule gauge commands automatically, such as density profiling or water bottom measurement, for known down times or based on a daily schedule.

An integrated alarm toolbar and pop-up alarm notification provide real-time visual and audible notification of alarms or events. The toolbar also provides access to an active alarm summary, a historic alarm log and an alarm log file browser that allows your operators to view and print reports of alarms or events in detail.

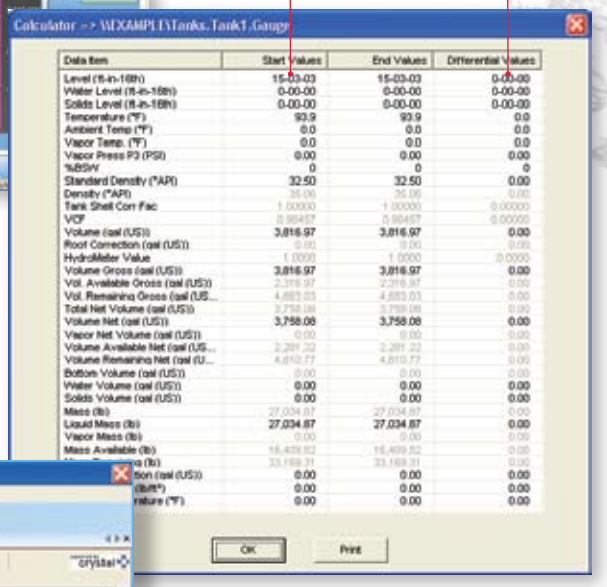
Integrate FuelsManager with all major instrumentation, such as float & tape, servo, radar or magnetostrictive tank gauges, pressure transmitters, flow meters and leak detection systems with Varec's Remote Terminal Unit (8130 RTU) or TankGate Interface (8300 TGI) devices.

Varec®

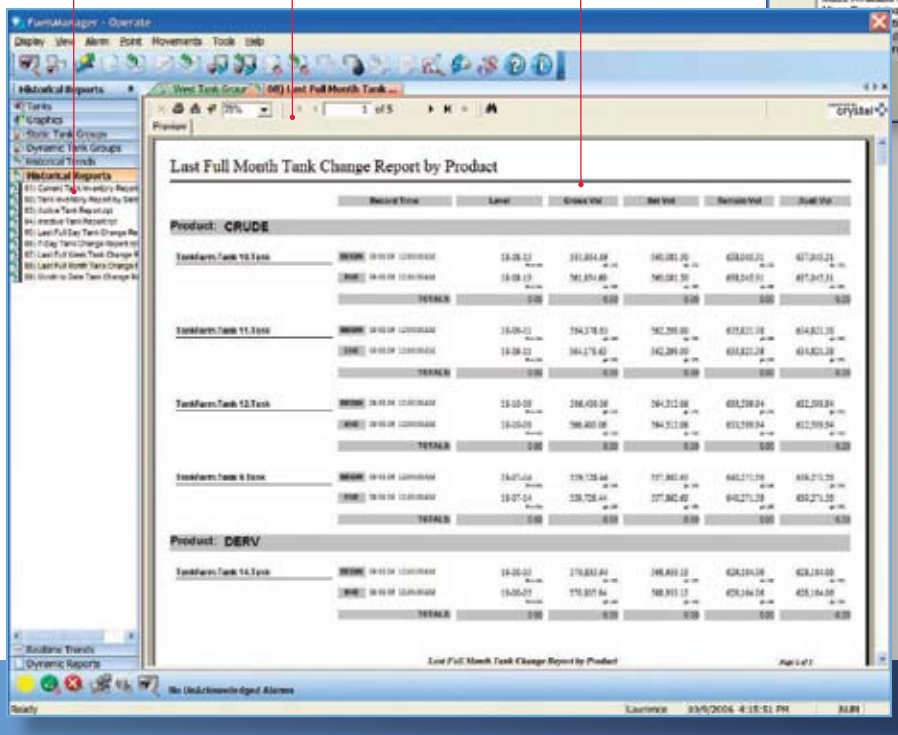
"Observe, analyze, plan and report for all your bulk liquid inventories"



Tank Trends. **Your operators are able to select and define data for trends using a single dialog box. Up to 4 data points (e.g. level, flow, pump status, valve position, etc.) can be displayed per trend window and multiple windows can be opened simultaneously.**

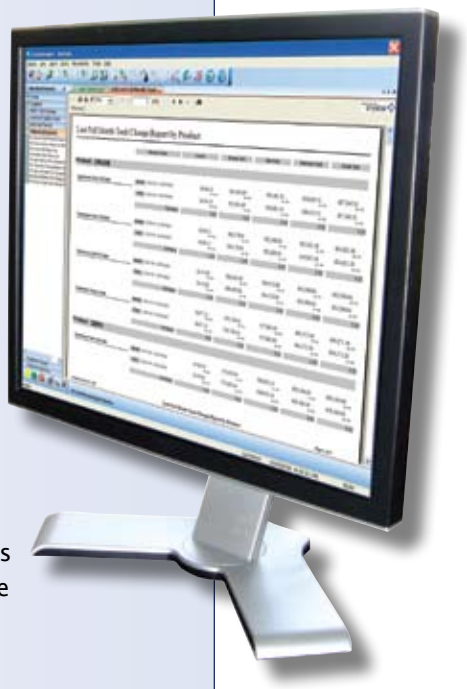


Tank Calculator. **The Tank Calculator is a valuable tool for scheduling and planning based on "what if" scenarios.**



Real-time and Historical Reports. **Your operators can display, print on demand or schedule printing based on your operational time scales. Various reports are included as standard and custom reports can be created using Seagate Software Crystal Reports™.**

FuelsManager® OIL & GAS



Analyze Activities Using Real-time or Historical Data

In addition to providing real-time information, FuelsManager archives all data for historical use in tracking trends, performing calculations and reporting inventories. This allows your operators to review daily activities across your facility in a clear and concise manner.

Utilize predefined reports, which can be displayed by opening them from the main menu, task group or icon toolbar. Real-time reports display live data while Historical reports are created from archived information within FuelsManager.

Print on demand with the integrated Seagate Software Crystal Reports™ print engine. Historical reports can be printed as required or exported for use in Microsoft Office. Real-time reports can be printed as required or scheduled to print at defined times, such as at the change of an operator shift.

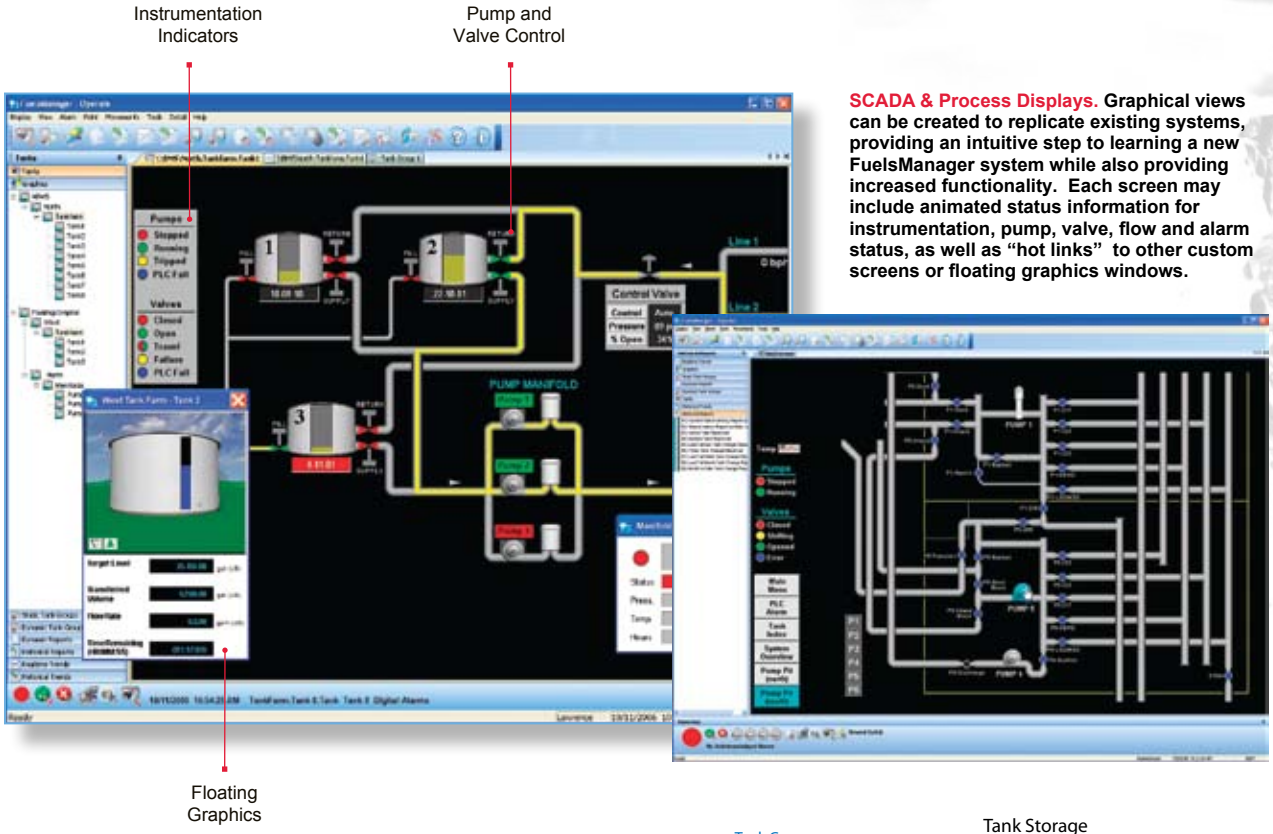
If you require greater flexibility, FuelsManager Oil & Gas Professional Edition provides a built-in real-time report editor for modifying existing reports or creating new reports for your specific business operations.

Share data with other business systems using FuelsManager's OPC server interface.

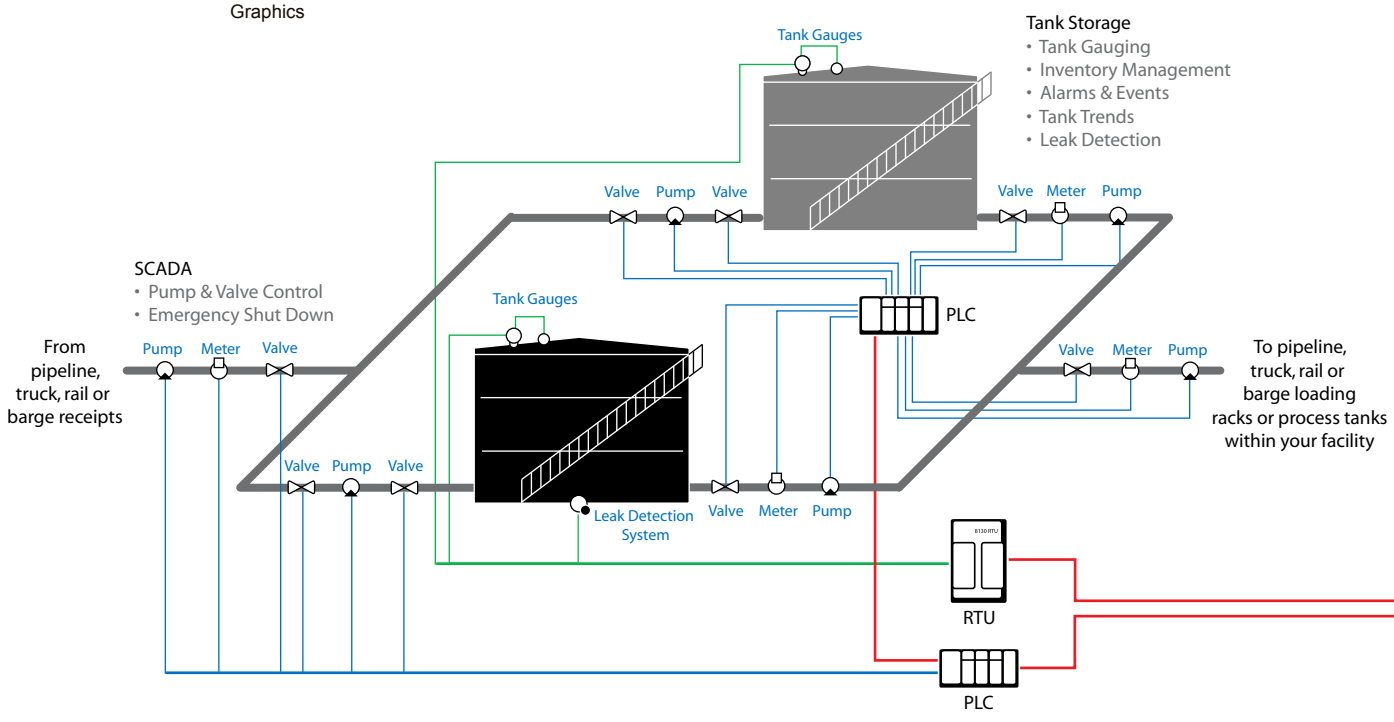
An alternative to traditional strip recorders, graphical trends of collected data over a particular time period allow your operators to easily track data from a single tank, such as tank level, temperature gross and net volumes, or display any data collected in the FuelsManager system, such as tank levels for four different tanks simultaneously.

Plan for "what-if" scenarios, such as inventory movements, using the tank calculator. You are able to manually perform calculations using current tank data without changing any tank values. For example, "What would the level be if 100,000 gallons (378,541 liters) was added?" or "What volume could be added to reach the high level limit?".

"Interface to field control devices to provide supervisory control, data acquisition and automation across your facility in real-time"



SCADA & Process Displays. **Graphical views can be created to replicate existing systems, providing an intuitive step to learning a new FuelsManager system while also providing increased functionality. Each screen may include animated status information for instrumentation, pump, valve, flow and alarm status, as well as "hot links" to other custom screens or floating graphics windows.**



Supervisory Control & Data Acquisition

FuelsManager® OIL & GAS

Intuitive SCADA Interface for Terminal Operations

FuelsManager Oil & Gas SCADA displays provide a true representation of your facility's specific locations, processes and features. Field devices can easily be integrated, data can be input, acquired, validated, displayed or provided to other systems to bring complete automation capabilities directly to your terminal operator.

Seamlessly integrate data to and from OPC equipped PLC and remote I/O systems using Varec's OPC client interface.

Easily input logic using translation tables and formula or create custom application extensions using the Standard Application Programmable Interface (API).

Combine automation with inventory management to reduce the number of systems that your operators have to manage.

Interface to leak detection systems from all major manufacturers, initiate leak tests and display collected data on custom graphic displays.

Real-Time Configuration of All System Parameters

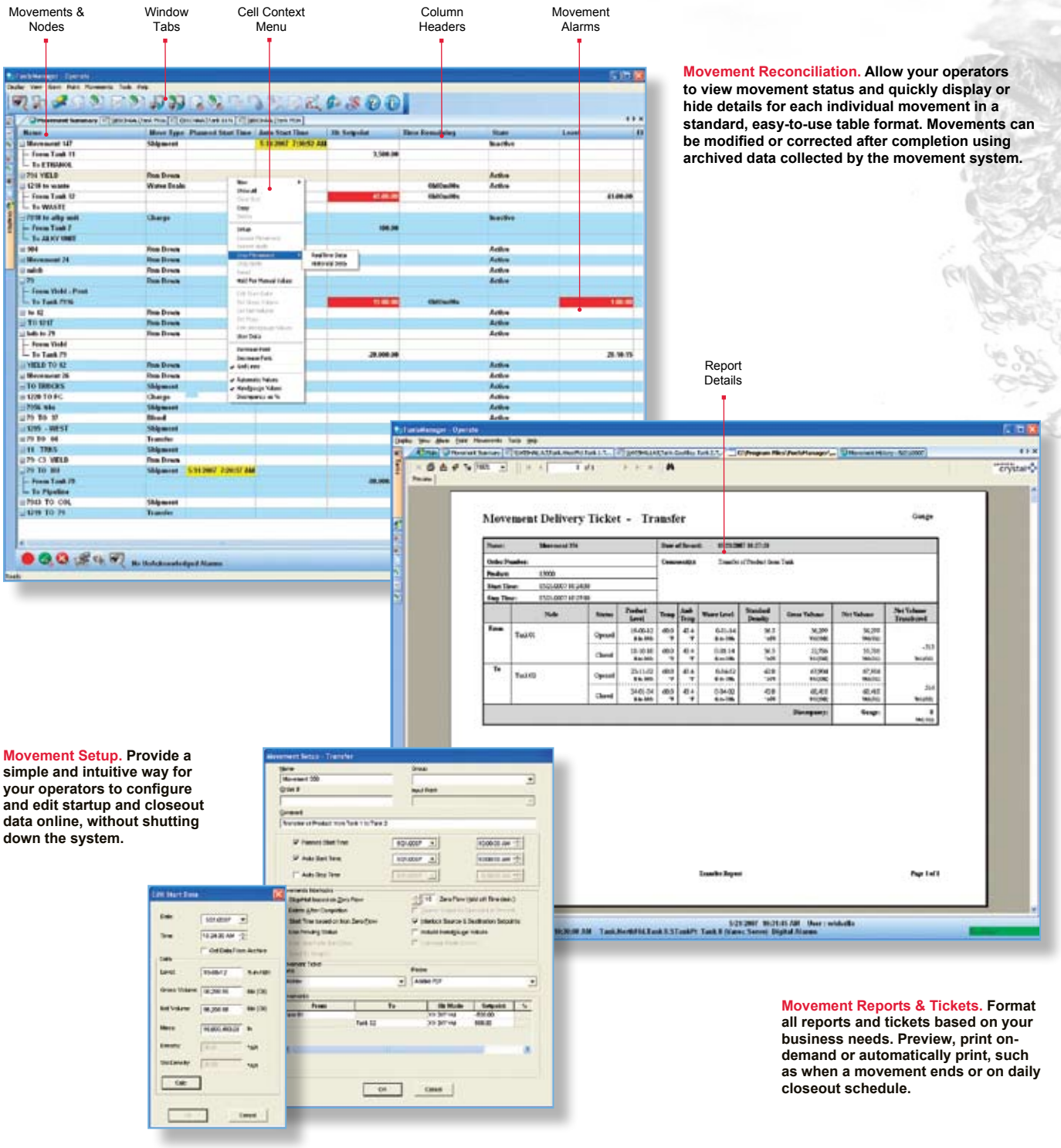
Operators and administrators interact with FuelsManager Oil & Gas via a standard Microsoft Windows® interface and a standard browser-based user interface. Any configuration changes that streamline your operations can be completed as your operators work, without the need to shut down or restart the system.

Operate your system on standard Intel servers and workstations running Microsoft Windows and Windows Server. FuelsManager also supports redundant server configurations using Microsoft Clustering Services and utilizes a Microsoft SQL Server database and Reporting Services. Web-based applications require Microsoft Internet Information Server.

Choose from a wide range of communications possibilities when connecting equipment or sharing data throughout the FuelsManager Oil & Gas system. Connections to new digital buses can be utilized, such as Ethernet, Foundation Fieldbus or Profibus. Alternatively, wireless communications can be used, such as spread spectrum radio and WiFi, that eliminate expensive wiring at the terminal.

Varec®

"Track product movements - automatically generating pipeline receipt tickets and eliminating manual forms and spreadsheets - throughout your business"



Movement Reconciliation. Allow your operators to view movement status and quickly display or hide details for each individual movement in a standard, easy-to-use table format. Movements can be modified or corrected after completion using archived data collected by the movement system.

Movement Setup. Provide a simple and intuitive way for your operators to configure and edit startup and closeout data online, without shutting down the system.

Movement Reports & Tickets. Format all reports and tickets based on your business needs. Preview, print on-demand or automatically print, such as when a movement ends or on daily closeout schedule.

Movement Tracking System

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Configurable, Real-time Monitoring

FuelsManager's product movement tracking system automatically captures and archives product movement data, allowing your operators to reconcile the movement after it has completed and display/print movement tickets and produce reports detailing the actual amounts of product transferred.

- Receipts
- Shipments
- Blends
- Tank-to-Tank Transfers
- Yields (rundowns)
- Charges
- Water Drains

Generate reports of all totals and discrepancies for every movement and export report data for use in standard business documents, such as Microsoft Excel or Adobe PDF.

Reconcile measured volumes against third-party certified, hand gauge data to provide complete accountability.

Configure operational alarms at critical setpoints to automatically alert your operators.

Download bulk shipment schedules and upload movement volumes from head office or pipeline systems via custom interfaces.

Automatically start and stop movements based on pump and valve status or scheduled start and stop times.

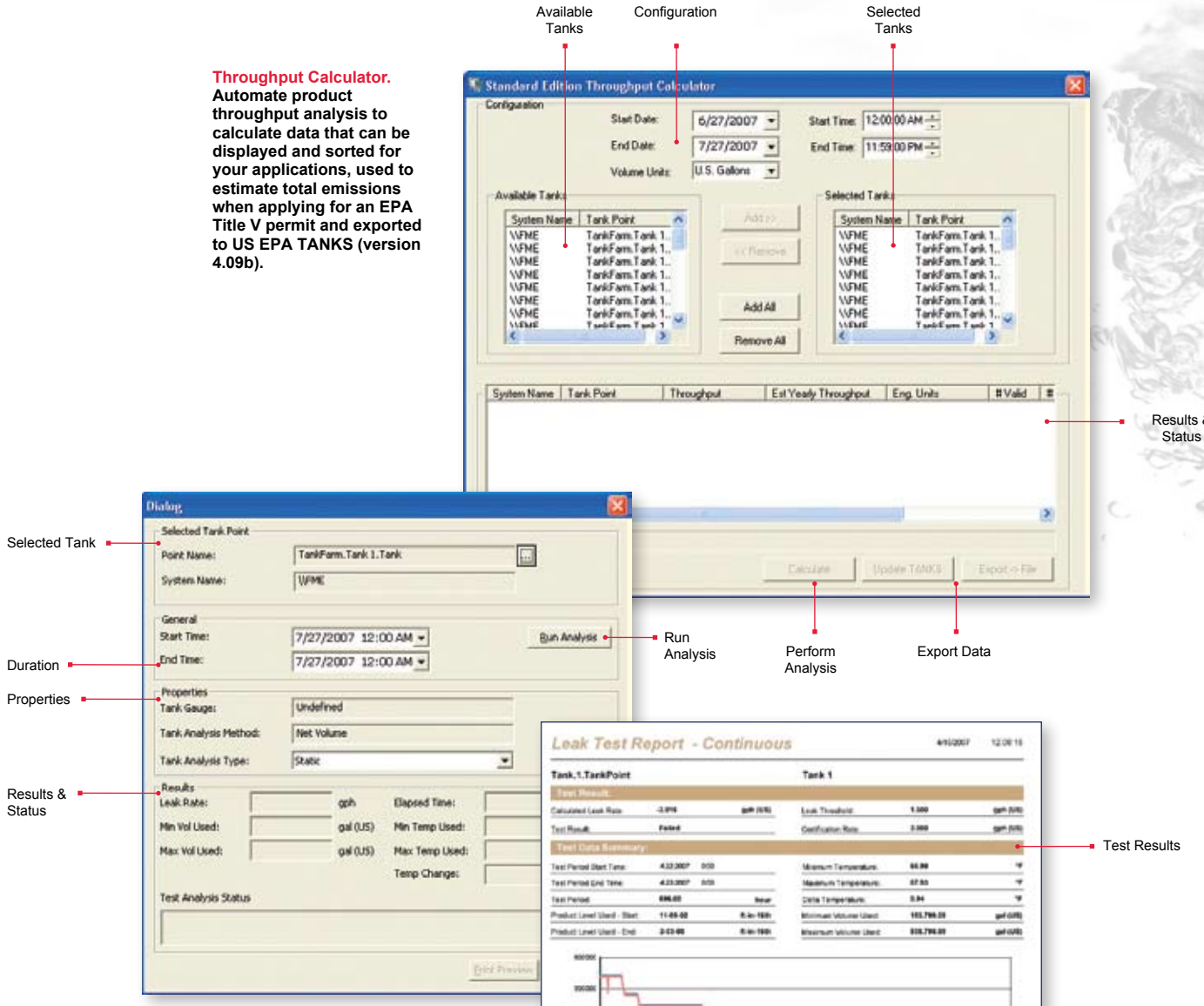
Capture inventory data from field devices, such as RTUs, PLCs, automatic tank gauges and reset/rollover flow meters.

Integrate with customer order and yield-accounting systems via custom interfaces to transmit real-time movement information.

Manage all movements using an intuitive interface that allows users to quickly and easily define views, sort and filter movement data.

"Complying with local, state and federal leak detection and emissions regulatory requirements is a daily task."

Throughput Calculator. **Automate product throughput analysis to calculate data that can be displayed and sorted for your applications, used to estimate total emissions when applying for an EPA Title V permit and exported to US EPA TANKS (version 4.09b).**



Leak Detection. **Operators can perform static or continuous analysis on any tank or group of tanks in the system.**

Leak Detection Report. **Configure the system for automatic monthly reporting and archive all data and reports per EPA requirements.**

FuelsManager® OIL & GAS

Estimate Total Emissions for EPA Title V Permits

FuelsManager Oil & Gas Professional Edition is able to provide product throughput analysis and estimated emissions for a US-compliant EPA Title V permit. Tank farms and terminals may be a major source of emissions and, as such, they require a Title V permit. Users must estimate their total emissions each year. If this estimate is exceeded, they can be heavily penalized.

Reduce your operators' time and effort when complying with Title V of the US 1990 Clean Air Act. Calculate throughput for all tank types, add or remove tanks before an analysis is performed and select time periods, for example analyzing specific tanks per month, per year or over any given period and display the results in the engineering units you select – gallons, bbls, etc.

Easily export data to a file that can be opened in standard business software, such as Microsoft Excel or exported to US EPA TANKS (version 4.09b) software.

3rd Party Certified Leak Detection Analysis

FuelsManager Oil & Gas Professional Edition can monitor underground storage tanks at tank farms and pipeline facilities for leak conditions and alert you to a potential environmental hazard.

Perform a static or continuous leak analysis on your tanks by calculating and analyzing gross and net volumes.

Comply with environmental regulations that pertain to aboveground or underground storage tanks, buried piping and pipelines.

Integrate industry-leading leak-detection systems, such as interstitial monitoring, vapor monitoring and pipeline leak detection systems, to detect and calculate leaks based on tank volumes and tank mass.

Configure the system for automatic monthly reporting and archive all data and reports per EPA requirements.

Automatically monitor critical measurements, such as level, temperature, water level and density, and react to audible and visual alarms if a tank event occurs.

"The optional online features provide access to current inventories, plant status and reports for a single site using a standard web-browser."

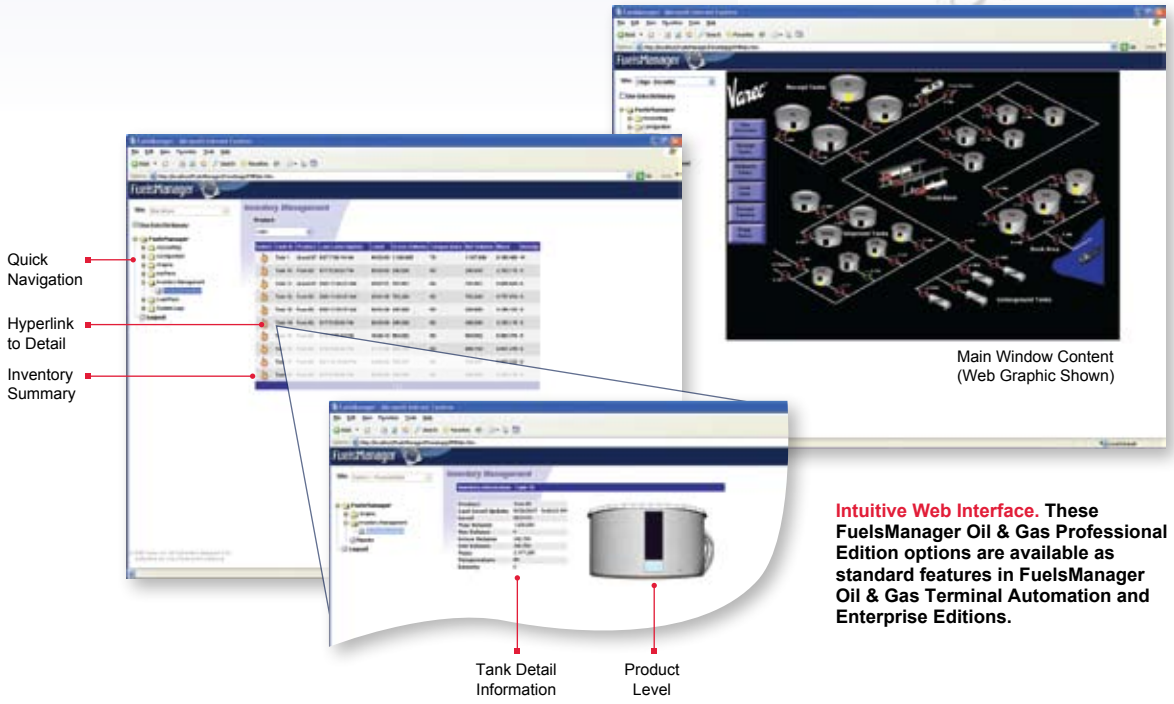
FuelsManager Oil & Gas Online

Allow remote users to access current inventories, plant status and reports for a single site via the Internet/Intranet.

Graphic & SCADA displays provide remote users access to all locally configured custom graphics, such as process, SCADA or facility overviews.

Inventory Management summary and detail displays show a real-time "snapshot" of your product inventories.

Easily export reports in preferred business formats, such as Microsoft Excel or Adobe PDF. Reports can also be customized using Microsoft Reporting Services. A single display provides a list of all available reports configured at the local site.



Intuitive Web Interface. These FuelsManager Oil & Gas Professional Edition options are available as standard features in FuelsManager Oil & Gas Terminal Automation and Enterprise Editions.

FuelsManager Web Server

FuelsManager® OIL & GAS

	Standard Edition	Professional Edition	Terminal Automation Edition	Enterprise Edition*	Optional Features**
Get moving quickly and easily. Predefined tank templates, tabular and graphical tank groups	✔	✔	✔		
Operate to international standards. Select industry standard volume correction methods, including API, ASTM, IP, JIS, GOST, GB/T, polynomial and others	✔	✔	✔		
Know your product inventory. All measured and calculated storage tank parameters are displayed in the engineering units you specify	✔	✔	✔		
View, modify and control. All parameters can be controlled online through the industry standard Windows® user interface	✔	✔	✔		
Integrate all tank gauges into one system. Allows seamless communications to various manufacturers' tank gauges via the 8130 RTU or TankGate interfaces	✔	✔	✔		
Improve safety and prevent tank overfills. Comprehensive real-time alarm and event management	✔	✔	✔		
Standardized reporting. Print or save standard reports of your daily operations, including alarms, events, historical data and others	✔	✔	✔		
Connect to your facility's control or information systems. An OPC client/server interface allows seamless integration of data to and from OPC equipped systems	✔	✔	✔		
Control your liquid assets. SCADA functionality, such as pump and valve control, allows you to control and monitor your facility		✔	✔		
Designed for the way you operate. User configurable tank detail templates, displays and reports can be modified for your specific business operations		✔	✔		
Extended integration possibilities. Additional communications drivers are provided to allow direct connectivity to tank gauging devices, PLCs, DCS and other I/O systems		✔	✔		
Create a FuelsManager network. Provide data to multiple FuelsManager Oil & Gas Standard Edition workstations		✔	✔		
Integrate inventory across your enterprise. Collect inventory data from multiple FuelsManager workstations and view via an intuitive web interface				✔	
SCADA Web Pages. View snapshots of custom SCADA graphics from anywhere using a standard browser			✔	✔	
Reporting services. View, export and schedule reports for e-mail delivery for any data in your system, including BOLs, inventory data, orders and leak detection reports			✔	✔	
Automate your loading racks. Interfaces for presets and driver entry terminals provide fully automated loading racks			✔	✔	
Manage order entry and transactions. Enable terminal personnel or customers to enter and update order information and view order status in real-time			✔	✔	
Account for your inventory. Manage all terminal transactions and perform physical to book inventory reconciliation on a daily basis			✔	✔	
Configure for your business model. All parameters, including products, security, customers and language can be easily configured to represent the way your local facility operates while seamlessly reporting to the enterprise			✔	✔	
Track product movements. Integrated movement system designed to track bulk product transfer to and from your facility or from tank to tank within your facility***			✔		✔
Automate data output. Periodic or triggered logging of user specified data to CSV, HTML or XML data files					✔
Monitor for leak conditions. Integrated statistical analysis of historical data designed to detect possible leaks from underground storage tanks to EPA standards					✔
Estimate tank emissions. Offline analysis of historical data provides throughput calculations to assist with EPA Title V permitting					✔
Share information more effectively. A web interface allows you to publish your facility's operational information and reports to users throughout your organization					✔

* Requires FuelsManager Oil & Gas to be installed at integrated facilities
** Requires FuelsManager Oil & Gas Standard, Professional or Terminal Automation Editions to operate
*** Movement Tracking System is included as part of the Terminal Automation Edition or can be purchased as an option to FuelsManager Oil & Gas Professional Edition

Measurement, Control and Automation

Oil & Gas

Varec has been a leading innovator in the petroleum and chemical sectors for over seven decades – delivering automated systems and professional services for most major oil companies worldwide. FuelsManager Oil & Gas is an integrated suite of software applications specifically designed for terminals, refineries and petrochemical plants, integrating with Varec's full product line of automatic tank gauging (ATG) instrumentation, communications interface devices and wireless products to deliver a complete solution.

Defense

Varec provides mission critical, commercial off-the-shelf solutions that are essential to air, ground and naval fueling applications. FuelsManager Defense manages and controls all bulk liquid assets in the dynamic environment of a military or government owned fuels facility, including functionality for transaction and inventory management, SCADA, tank gauging, dispatch and Automated Data Capture (ADC).

Aviation

Varec is a worldwide leader in fuels management systems, providing performance solutions for commercial aviation fueling requirements. Varec's FuelsManager Aviation is an integrated, scalable solution – from simple fuels accounting to a fully automated airport – utilizing the latest mobile computing, web-based services, wireless communications and paperless ticketing technology.

Go to **varec.com** for more information.

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