Proven returns for tank farms and terminals
Your trusted partner for maximum safety and efficiency

siemens.com/sitas
A one-stop shopping approach to tank farms and terminals
Operators of tank farms and terminals face many challenges: You need to handle highly valuable liquids safely and efficiently, you have to track capacity and turnovers, monitor quality and emissions, prevent spillages, and reduce loading and unloading times. To gain official approvals and to ensure public acceptance of operations, the processes have to be safe and clean. To ensure maximum return on investment, the equipment has to be operated at optimum load and utilization. Furthermore, to ensure a long-term competitive advantage, processes need to be flexible and expandable to accommodate new or changing requirements.

Efficiency through increased throughput and yield is the key to outstanding returns, an excellent value-to-cost-of-ownership ratio, and, of course, a clear competitive advantage.

As the worldwide leader in automation technology, Siemens supplies a comprehensive range of highly customizable solutions for tank farms and terminals. Geared to optimizing inventories and increasing operational uptime, our solutions, products, systems, and services help to outperform today’s challenging market demands and ambitious customer targets:

- Safe and fast loading and unloading operations for railcars, barges, tanks and trucks
- Seamless integration of all systems from engineering and implementation to diagnostics
- Exact billing and regulatory compliance
- Efficient monitoring and maintenance
- Integrated safety
- High asset availability
- Optimum flexibility in operations
- Reduced Total Cost of Ownership and better investment protection

The perfect fit for every plant:

Utilize our technology and expertise throughout your operations. We offer perfectly aligned systems and solutions for:

- Seaport terminals
- Tank farms
- Airports
- Chemical plants
Ship to shore, tank to truck: Benefit from proven technology and expertise

Your market is highly competitive and fast-paced. Real-time information on asset and process performance is critical for informed decision making, no matter what the size or type of your business. At the same time, tank farms and terminals require a wide range of specialized know-how and resources, covering automation and control, field devices, energy management, services and sustainability. Choosing the right partner for your tank farm management systems will put you in the best position to fully exploit market opportunities and make the most of your operations.
Our solutions, products, systems, and services are compliant with all relevant health, safety, environmental and industry standards, paving the way for cost-effective, flexible, and open process execution and monitoring, as well as reliable data processing.

Thanks to years of experience in the process industry, innovation, and a thorough understanding of the tank management business, we can tailor our proven portfolio of products and systems into customized solutions for tank farms and terminals.

Siemens cooperates with end-users, engineering companies, and original equipment manufacturers, and builds on pro-active partnerships based on trust, mutual understanding and awareness to create outstanding results.

**Our portfolio at a glance**

**Automation and control**
A unique array of automation and control products, systems and solutions from field, production up to management level are designed to achieve maximum productivity, while realizing substantial cost savings in your plant.

**Security and safety systems**
Plant-wide intelligent solutions for safe and reliable operation, such as industrial and site security, fire safety, building, hazard management and alarm systems, permanently protect your assets.

**Drive and switching technology**
Our motors, frequency converters, low and medium-voltage switchgears are designed for maximum safety and efficiency. They ensure environmentally compatible operation and meet the highest industrial demands.

**Energy technology**
Get innovative and environmentally friendly solutions for your power generation, transmission and distribution, as well as energy management strategies, from one of the world’s leading power engineering companies.

**Services and support**
Protect your investment with our lifecycle services and support functions, including feasibility studies, performance enhancements, service level agreements, financial engineering, maintenance and training.

**Sustainable solutions**
We provide eco-friendly processes and constant process optimization throughout the lifecycle, with solutions for energy management, emissions reduction, waste minimization, and the efficient use of industrial water.
Integrated yet flexible: The perfect solution for every task

With Totally Integrated Automation (TIA), we are able to support your operations with a unique, holistic product and system spectrum for the automation of tank farms and terminals. Based on the Totally Integrated Power (TIP) platform, we implement plant-wide, efficient and safe solutions for energy management. Together with our tailored solutions for integrated safety and industrial security systems, TIA and TIP provide the basis for optimum data visibility, process transparency and return on investment in tank farms and terminals.

Totally Integrated Automation and Totally Integrated Power help reduce your total cost of ownership and enhance your competitiveness by enabling:

- Shorter planning and implementation times, faster plant start-up
- Higher flexibility of automation systems, reduced commissioning times
- Centralized engineering, operation and for both process control and power distribution systems
- Lower engineering costs through integrated engineering with our COMOS Engineering Software
- Lower installation costs due to the use of bus technology
- Higher transparency thanks to automatic archiving and reporting of process and plant data
- Higher plant availability and lower maintenance costs thanks to integrated asset management functionalities and comprehensive online diagnostics
**Focus on safety**

Plant safety is the number one lever for profitability. Consequently, we have created a unique, integrated answer to your process safety challenge: Safety Integrated. Plus, we support you throughout the lifecycle of your safety system and offer a comprehensive portfolio of products, systems and services:

- A system-wide, uniform safety system comprising controller, engineering with the Safety Matrix safety lifecycle tool and reliable process instrumentation
- A range of services for all phases of the safety system lifecycle, for example, risk analysis, HAZOP study, training, documentation and 24/7 service

Safety Integrated is modular and flexible, so you can determine the degree of integration that is right for you, either executing standard control and safety functions in a single controller or in separate controllers. The safe, fault-tolerant controller can be operated in a single-channel or redundant configuration (up to SIL 3). Utilize the full potential of Safety Integrated by leveraging the capabilities of our process control system SIMATIC PCS 7.

**Safe fieldbus communication up to SIL 2**

We rely on the well-proven fieldbus technology of PROFIBUS DP and intrinsically safe SIMATIC ET 200iSP remote I/O for connecting safety-related I/O modules and devices. Safety-related sensors, such as the pressure transducer SITRANS P DS III (up to SIL 2) can also be connected via PROFIBUS PA. Safety Integrated fieldbus technology with PROFlsafe supports certified communication between controllers, distributed safety I/O, and safety-related process instruments. When combining fixed-speed drives with motor starters featuring the SIMOCODE Safety motor management system or with SINAMICS frequency converters, you can implement a safety loop plant-wide using bus technology, considerably reducing installation costs.

**Easy configuration of safety applications**

The likelihood of a safety event and its consequences can be considerably reduced by means of appropriate measures, such as the use of a Safety Instrumented System (SIS). We offer a safety system that ranges from the sensor and controller to engineering with SIMATIC Safety Matrix. The ability to integrate an SIS into our process control system SIMATIC PCS 7 is unique. The result of the risk analysis is the basis for subsequent plant planning, which is presented in the form of a cause and effect matrix. The SIMATIC Safety Matrix safety lifecycle tool is ideally suited to processes in which defined states demand specific safety responses. SIMATIC Safety Matrix makes configuring safety logic easier, more convenient and faster.

**Safety check on the operating process**

Emergency shut-down (ESD) valves for Safety Instrumented Functions (SIF) must work correctly should a safety event occur, making periodic function tests an essential safety check. In the partial stroke test for the SIPART PS2 position controller, free movement of the valve is checked by means of partial opening and closing during normal operation. This user-friendly solution extends the maintenance interval for a constant SIL level, saving time and costs while simultaneously increasing plant availability.

**Real security from the virtual world**

Connecting plants and systems to the general information landscape via Ethernet connections offers many benefits for plant automation. At the same time, however, production processes that were secure in the past are now open to attack from both the outside and inside – and operators of tank farms and terminals need to address the associated risks. Siemens supports you in implementing the necessary measures as part of our integrated range of products and services for industrial security. Our defense-in-depth approach to industrial security integrates and includes security mechanisms with a comprehensive understanding of automation and provides reliable protection.

**Extended features for plant and process safety**

- Fire and gas detection
- Fire fighting systems
- Environmental protection
- Leak detection
- Overflow protection
- Gas recovery
- Tightness control for pipelines
- Optimization of hydraulic behavior in pipeline systems to prevent pressure surge risks
- Definition of Ex-zones, Ex d-zones and associated safety procedures
- Cathodic protection
- Earthing systems
SITAS TMS –
Your system of choice: Solutions for small to mid-size plants

Managing tank farm and terminal operations is complex enough – schedules get tighter and tighter, products become more diverse, even as we speak, and regulations become more and more stringent. The good news: By choosing the right tank management and automation system, operators can drastically reduce their workload while increasing safety, flexibility and performance.

Today, state-of-the-art tank automation means much more than simply monitoring and controlling filling levels, pumping performance, energy consumption or motor data. The vast diversity of fuels, lubricants and chemical products calls for intelligent solutions that make sure current market demands can be met in shortest time. At the same time, product quality is absolutely essential. Our SITAS TMS tank farm management system provides all the features required for safe, efficient operations – for facilities of any size and complexity.
Easy-to-use automation that will grow with your plants

For small plants that require a limited scope of monitoring and control functionality, we recommend implementing a SCADA system based on our proven SIMATIC S7 controller technology and our versatile SIMATIC WinCC process visualization system. Providing intuitive and straightforward operation through dynamic graphic user interfaces, SIMATIC WinCC allows you to visually identify locations on a map and highlight specific flow meters or line segments. In addition, it significantly decreases the amount of training required for operators to be able to utilize the system effectively, and offers the necessary alarm audit logs to meet regulatory requirements. Added benefit: SIMATIC WinCC can be flexibly expanded should your plant or requirements grow and is perfectly aligned with the operator stations of our scalable SIMATIC PCS 7 process control system to ensure smooth transition for operators.

Modular system for maximum flexibility

For mid-size plants and more complex applications, we recommend our SITAS TMS tank farm management system. SITAS TMS is a completely integrated yet modular solution, allowing for consistent automation and management of all tank farm and loading bay processes according to ISA 95 standards from the field device level via the automation system, through the management execution level (MES) and through integration into the enterprise resource planning (ERP) system.

Available as a stand-alone system to be operated with an existing infrastructure, or as an element of a complete tank farm management solution that includes instrumentation and automation, SITAS TMS paves the way for outstanding cost-efficiency in product storage and dispatch. It ensures seamless processes and optimal information flow throughout all operation levels. With SITAS TMS, you can react to demands and requirements in real time and accommodate for changes and expansion of the existing information network as they arise.

SITAS TMS: the benefits

- Increase flexibility with a comprehensive, highly customizable modular system
- Easy system handling thanks to reasoned GUI design and ample visualization
- Improve transparency in material handling by versatile calculation and online reporting
- Reduce time-to-market through fast commissioning and system start-up
- Fulfilling highest safety standards (SIS/SIF) thanks to Safety Integrated
**Maximum performance for your operations**

Characterized by modular design, open software architecture, and its compatibility with third party vendors, SITAS TMS integrates tank farm balancing, ensures the safe and traceable management of all relevant master data, and supplies a wide variety of practice tried and tested reports to support process optimization.

SITAS TMS includes comprehensive inline and batch blending control features in its tank automation module to support on-the-fly production of fuels, as well as lubricants and chemical products. Users achieve additional benefits through flexible formulas (statutory or individual) that take into account the quantities, qualities and costs of available raw materials, resulting in overall cost savings. Moreover, product quantities and qualities can be registered and corrected online, which ensures exact compliance with standardized product specifications.

**SITAS TMS** is based on SIMATIC PCS 7, our benchmark system for process control, and using the proven, high performance communication protocols Industrial Ethernet and PROFIBUS.

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**Best practice examples around the world**

**NPK-Galychyna, Drogobych Refinery, Ukraine**

**Project outline:**
Tank farm management system and tanker truck loading station

**Scope of supply:**
- Engineering, assembly, test run and start-up
- Mechanical components
- Switchgear technology (0.4 kV) incl. cabling
- SIMATIC automation and visualization
- Data interface to Novell/Oracle-based host

**NOORD NATIE TERMINALS, Belgium**

**Project outline:**
Terminal Automation System (TAS) for new tank pit

**Scope of supply:**
- SIMATIC automation
- Motor control
- Process instrumentation incl. overfill protection
- Fiber net communication
- Lightning solution
GPS CHEMOIL LLC, Fujairah/UAE
Solution Partner: L & T Electrical & Automation FZE (Dubai/UAE)

Project outline:
Terminal Automation System and unified control in a distributed tank-farm solution
Narrow project time-line and need for timely commissioning
Reliable control system for preventing downtimes

Scope of supply:
• SIMATIC PCS 7 process control system in a client-server architecture
• Safety system incl. shutdown up to SIL 3
• Siemens support for easy diagnostics and reduced maintenance costs

The path to better route control
One key task of tank farm management is managing material transport through pipe networks. As the transfer of a fluid or gaseous medium from a defined source to a defined destination often requires highly sophisticated algorithms, SITAS TMS and SITAS IT comprise SIMATIC Route Control, an industry-neutral system for configuration, control, monitoring and diagnostics of material handling. Suited for pipe networks of virtually any complexity and scope, SIMATIC Route Control provides full automatic routing or semi-automatic routing, which enables the operator to choose between different transfer ways.

Safe and versatile loading operations
Perfect availability and economical operation are top of the list during the development and commissioning of loading bays. Siemens supplies mechanical, electrical and automation solutions for all loading and unloading facilities covering all loading bay types (gallery, on-spot, railcar, truck, tank, barge, top and bottom loading). They are seamlessly integrated into SITAS TMS and your direct billing facility.
To ensure highest safety standards within the loading bays and for its operators, Siemens only uses equipment suitable for ex-zones, installs provisions for gas detection and fire fighting, and provides reliable systems for overflow prevention, leakage detection, and vapor recovery. Using our most advanced systems, you can even operate unmanned terminals without compromising safety.

Sea-Tank Terminals Antwerp, Belgium

Project outline:
Electrical and instrumentation turn key solution to build new tank terminals

Scope of supply:
• Phase 1: Earthing network
  – Medium and low voltage switchgears
• Phase 2: Full electrical equipment and construction
  – Energy distribution
  – Basic and detailed engineering
  – Process instruments
  – Sinamics frequency converters, pump motors
  – SIMATIC PCS 7 process control incl. safety integrated concept for shut down and emergency systems
  – Fire and lightning safety systems
Even larger? Even smarter: SITAS IT for MES applications

When your plants get larger, there will be some very unique challenges for optimizing your operations: Compiling and processing large amounts of data into meaningful reports so you will know what is going where and how to best respond to market and production requirements. For these purposes, SITAS IT provides an integrated manufacturing execution system (MES) with customized functionality for tank farms and terminals.
SITAS IT provides extensive monitoring and control on the enterprise level for optimal market and manufacturing responsiveness, enabling optimum data transparency and accessibility for the execution level. It explicitly represents your tank terminal operations as graphical workflows and effectively synchronizes, coordinates, analyzes and optimizes your entire tank terminal. SITAS IT is based on the SIMATIC IT framework. Combined with our automation system, you receive an integrated system architecture and centralized IT with powerful functions.

**SITAS IT at a glance**

SITAS IT offers a comprehensive range of functionalities for typical terminal management needs that help you streamline your operations:

- Supply and demand planning
- Order and inventory management
- Quality assurance/product quality management
- Safety and security management
- Energy and waste management
- Maintenance management
- Link to enterprise resource planning (ERP), product lifecycle management (PLM), and supply chain management (SCM) on the business level

**Clever management of sales orders**

Our order execution module translates order schedules (sales orders) into operational orders for execution. It provides chronological functionalities, such as pre-registration, order preparation and order finishing. All of them are designed towards optimizing the complete execution route of the order. It also features slot and contract handling. Order status and transactions are synchronized with the business system; operational orders are available for process control for order based loading.

**Flexible inventory management – even multi-owner**

Our stock management features stock accounting of the booked stock, and consolidates the booked stock with the physical stock through reconciliation. Tank based and/or product owner based stock management (local stock and stock in transition) is possible with contract rules applicable to co-mingled stock.
SITAS IT: the benefits

- Higher efficiency and customer satisfaction thanks to higher throughput and lower total turnaround time
- Higher productivity through better asset utilization, shorter waiting times, fewer errors caused by manual operations
- Better control through improved distributed visibility of centralized information on all terminal operations (both real-time and historical)
- Compliance with legal safety and environmental requirements and with international standards

Manage all equipment easily

The operational components (Reception, Storage, Handling and Delivery) ensure the support of loading and unloading operations by truck, rail car, ship or pipeline, as well as internal operations, such as internal transfers, tank circulation or pre-blending processes.

Complex monitoring and reporting functions

SITAS IT provides online terminal visibility, as well as flexible time-based reporting per customer, product owner, product and/or tank. It also provides loading result overviews, turnaround time analysis, efficiency and performance statistics (KPIs), all based on the business objects reporting tool.

Simple access management for terminals

Rule-based truck logistics help achieve better physical flow control, avoiding bottlenecks and ensuring better safety. Dynamic and flexible location definitions enable operations tracking to provide the necessary terminal visibility and historical tracing. SITAS IT can manage dispatches even in unmanned terminals.

Gantry management – more than route control

Benefit from our gantry management solution that provides static route definition and control – for better physical flow control and manageable equipment. SIMATIC Route Control is integrated anyhow.
Vopak New Terminal Antwerp Eastbank, Belgium

**Project outline:**
Turn key solution to build a new tank terminal in a consortium with two construction companies

**Scope of supply:**
- Project management for the total project
- Basic and detailed engineering for piping and electrical
- SIMATIC PCS 7 automation system incl. safety integrated concept for shut down and emergency systems
- Full scope of instruments, utilities, appendages and valves
- SITAS IT Manufacturing Execution System
- Continuous on-call services

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Saudi Aramco, Saudi Arabia

**Project outline:**
Terminal management system for 17 locations throughout Saudi Arabia, including integration of all terminals into the enterprise-wide SAP R/3 system

**Scope of supply:**
- Project management, detail engineering, system integration and testing
- Installation, and commissioning of the system including SAP business system
- Process controllers (PLC), emergency shutdown system (ESD), uninterrupted power supply system (UPS), preset controllers
- Equipment building and fiber-optics intercom backbone

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TNG Tamanneftegaz, Port of Taman, Russia

**Project outline:**
Terminal Automation System (TAS) for liquefied hydro-carbon gases base (LPG) and oil terminal (TOT), designed for transshipment from rail tank cars to gas tankers, storage farms for pressurized storage, pumping stations and pipeline systems

**Scope of supply:**
- SIMATIC PCS 7 process control system
- Emergency shut down system
- Automation of fire fighting system
Secure your performance with intelligent field instruments

Accurate and reliable tank level monitoring
For level monitoring, we offer a wide variety of technologies, especially radar, for measuring different product types in tanks, such as liquids, slurries, solids, and low-dielectric media (like LPG). Our portfolio covers tank monitoring applications in storage tanks of all types, for example vertical, horizontal, cryogenic and underground tanks, or tanks with a stilling well. Our range of level measurement instruments comprises simple to highly developed units.

Enhance safety with overspill protection
Overfills can cause major safety issues, regulation problems, loss of material and loss of production, thus suitable protection measures are a key component of tank farm instrumentation systems. For these back-up purposes, point level switches are the best choice. Our spectrum of point level switches offers cost-effective solutions for applications in practically all liquids and solids. They use ultrasonic, rotating, vibrating, and inverse frequency shift capacitance technologies. Additionally, our devices can be used for dry run pump protection and process flow/no flow applications.

Best-in-class measurement for interface detection
Our capacitance instruments SITRANS LC500 or Pointek CLS, as well as our guided wave radar SITRANS LG200 provide highly reliable, precise point and continuous level measurements for interface detection in tanks. These devices allow you to benefit from high-precision interface measurements of liquids, solids and foam. In addition to being unaffected by vapors, product build-up, dust and condensation, they are also highly resistant to toxic and aggressive materials.

Our clamp-on ultrasonic SITRANS FUH1010 flowmeter is an ideal choice for interface detection in pipes. It detects gasoline, crude oil and multi-product interfaces by calculating multiple variables, such as sonic velocity, rate of change, and pressure and temperature compensation. The SITRANS FUH1010 is also perfectly suited for applications such as product identification, auto batching control, detection of entrained water and gas in all products, as well as scraper (“pig”) detection.
Your key concerns are safe, reliable and efficient operation? You need to ensure full compliance with regulations and standards? Then what you need are intelligent systems for process monitoring and control. Our comprehensive process instrumentation, analytics and weighing portfolio delivers outstanding precision, transparency and usability – for all the tasks in tank farms, from measuring level, flow, pressure or temperature, to supervising gases, valves or weighing loads.

**Accurate sensors for custody transfer**

Fiscal metering and all types of high-precision applications in and around tank terminals, such as pipeline balancing, terminal transmix metering and airport facility management, require a high level of accuracy. For custody transfer applications in loading and offloading facilities, pipelines, refineries, etc., we offer a selection of flow measurement devices. The ultrasonic SITRANS FUT1010 spool meter provides highly accurate measurements due to the WideBeam transit-time technology. It meets the strict requirements of OIML R117 and API.

Alternatively, we offer the SITRANS FC430 Coriolis flowmeter, certified for custody transfer and engineered for high measuring performance. It stands for fast response to rapid changes in flow, high immunity against process noise and high turndown ratio of flow rates. The device is suitable for liquid and gas service and easy to install, commission and maintain.

**The must-have solution for leak detection and location**

In order to increase pipeline control, protect against theft and ensure regulatory compliance, reliable leak detection and location is a must – and demands solutions that offer highest accuracy and proven reliability, like our FUS-LDS (Leak Detection System). The low-maintenance external sensors stand for extreme sensitivity and continuous robustness. The FUS-LDS is a complete software and hardware solution that detects product releases (including product theft) in real time. It makes pipeline performance data easily accessible. Further benefits: Operation is unaffected by changes in liquid properties and the system is easy to install and operate.

**Monitoring pressure for increased availability**

We offer state-of-the-art measuring devices that can immediately detect overpressure in tank terminals. Our integrated solutions not only provide you with reliable readings and warnings, they also immediately and automatically regulate the pressure. This saves you valuable response time and minimizes risks.
Increasing traffic at loading stations, e.g. at airports, requires strict timetables. So, it is particularly important that refueling goes smoothly in order to prevent delays and additional costs. The parallel pressure system from Siemens ensures reliable fuel flow.

**Truck weighing with compression load cells and built-in intelligence**

Rated up to 280t, Siemens compression load cells are suitable for a variety of applications, e.g. for use in high load container scales or truck scales. For the majority of them, we provide legal trade certification, normally with accuracy class C3 according to OIML R60. Our SIWAREX PLC-based weighing modules provide a comprehensive range of weighing processors for force measurements, hopper, batching, differential batching, bagging and belt scales, and solids flow meters. The device is designed to be future-proof; the weighing terminals can be continuously updated with every new development by upgrading just the software. This supports the optimization of your processes and secures your investments.

**Emission monitoring with gas analyzer**

To increase safety and protect against explosion, the oxygen concentration must be monitored continuously. The measured concentration values are used to immediately initiate preventive measures at the occurrence of critical gas compositions – e.g. nitrogen purge, alarm activation or worst case emergency shutdown. Our in-situ continuous gas analyzer LDS6 is the ideal solution for this application.

The device uses the principle of laser spectroscopy. Its unique features are the integrated reference cell and lifetime stability. Furthermore, the LDS6 is the only device worldwide that never has to be recalibrated.
Reduce TCO with wireless adapters

Our portfolio comprises battery-powered WirelessHART transmitters such as SITRANS AW200 and SITRANS AW210. They are ideally suited for remote measurement, for deployment in harsh environments, for temporary ad hoc measurement and for the expansion and replacement of field devices. The WirelessHART adapters integrate different field devices in a WirelessHART network. Wireless communication offers significantly reduced Total Cost of Ownership (TCO). In the planning phase, there is no need for engineering of a wired network, and the number of required components is reduced. In the commissioning phase, loop and communication test can be performed directly after device installation. Wireless communication also facilitates maintenance, as it supports the change from preventive to predictive maintenance strategy. In addition, users benefit from enhanced flexibility thanks to increased transparency across the entire plant.

WirelessHART solutions are considerably more cost-efficient and flexible than conventional concepts for improving production quality, plant safety, and process transparency through the addition of new measuring points. Digital communication means that process variables are available in control systems with no loss of accuracy. The balanced and intelligent use of both wired and wireless communication in tank storage solutions results in the highest possible performance across the entire lifecycle.

Fully integrated wireless networks

The IE/WSN-PA LINK is a WirelessHART gateway for connecting a WirelessHART network to a higher-level system, e.g. a process control system or maintenance station. The integrated network manager allows easy configuration of WirelessHART networks, as well as optimization of the network performance and security settings. The IE/WSN-PA LINK allows wireless diagnostics, maintenance, and process monitoring.

From simple monitoring to complete transparency

Our portfolio offers the right solution for almost any measuring task and plant size. The devices provide modern fieldbus communication capabilities such as HART, PROFIBUS and FOUNDATION Fieldbus and support advanced diagnostics and asset management. With SITRANS RD remote displays, and remote monitoring solutions you have access to instruments anytime, anywhere via the web. Our SIMATIC PDM (Process Device Manager), a manufacturer independent software tool for the operation, configuration, parameterization, maintenance, and diagnosis of intelligent field instruments, helps you manage your process instruments efficiently and allows continuous access to all of the field devices in your facility. Whether you are monitoring one device or many instruments, Siemens gives you the option of seeing only process variables or being able to drill right down to the instrument to view complete diagnostics. Extensive features for device diagnostics increase availability, add reliability and support advanced and preventive maintenance for increased uptime.
Solutions for airports and special applications

For tank farms and terminals acceptable downtime means zero downtime, and acceptable safety means no shortcomings over the lifecycle. So we have tailored our solutions to offer the highest availability – without compromising on the environment, and health and safety. In particular, we care about energy supply, engineering services or project management – if needed the whole lifespan of your operation.

Operating fueling systems for aircraft, safety of people, equipment and the environment are your main concerns. Any accident will immediately impact operations. We can provide a broad range of integrated solutions for automation and control, flexible and modular redundancy concepts, and special safety lifecycle engineering that enables reliable operation that is fully compliant with the latest environmental standards and regulations.

Optimized process automation for airports

Our terminal management solutions offer vertical integration of field devices, automation, MES up to the ERP for optimum equipment utilization. Dedicated functionalities for monitoring, project management, as well as reliable and integrated safety systems, ensure smooth and efficient supervision and control. Additionally, we can support you with tailored inventory management solutions to trace the fuel from tank to plane, including loading/unloading control, pipeline receipt, tank management administration and energy-efficient systems for pumps. Our product quality management helps you document fuel quality, and our solutions for into-plane services will increase service quality by reducing turnaround-times.
Save your assets with access control

Security Management at tank farms is becoming increasingly complex. In order to generate the best possible solutions for you, we conduct a precise risk analysis and define the security level. From this, we create an intelligent system of networked processes and technologies, which simplifies even complex surveillance tasks.

Fire safety with clever fire detection

Optimal fire protection is doubly important in tank areas, where the focus is on protecting people, assets, and the environment. Siemens has developed a competitive fire detection system that offers greater security. We achieve this, above all, with our intensive service offering. We combine innovative state-of-the-art products, technologies, and networks to create a comprehensive system.

Wide-area surveillance with perimeter detection

Every tank storage area has specific requirements, so methods and technologies for perimeter protection have to be selected in accordance with the surrounding area and the risk scenarios. A number of different detection and surveillance methods can be provided and integrated by Siemens, e.g. microwave sensors, laser scanners, infrared sensors, fiber optical sensor cables, etc.

Increase efficiency with our systems for power distribution and energy management

We offer electrical components and systems such as turnkey switchgear for medium and low voltage, as well as motors with IEC and NEMA certification. Variable-speed drives can provide significant energy savings in pumping operations, and our motor management systems help you improve asset utilization. By integrating information from these systems into your automation environment with SIMATIC PCS 7 PowerControl, you can benefit from intelligent motor management and advanced energy management that will yield significant savings both for the short- and long-term.

Accurate consumption and performance data, and long-time reports will help you evaluate energy consumption and identify and implement targeted measures for improving energy efficiency. Our SENTRON PAC monitoring devices acquire and display all the electrical consumption values, and the SIMATIC powerrate software package acquires, calculates, and logs all the energy data for targeted optimization of energy consumption. The b.data energy management system optimizes workflows by automating all the processes relevant to energy and energy supply.

Manage your facility over the lifecycle

Your operations are becoming bigger and more complex. More and more parties are involved in the process of designing, engineering, operating, maintaining and modernizing a tank farm or terminal. Therefore, an engineering software that manages the data of all involved disciplines in all lifecycle phases on a single, object oriented database provides considerable advantages. COMOS, the integrated lifecycle management software, allows the unique, seamless data handling across all lifecycle phases.

HRS Brussels Airport, Belgium

Project outline
• Complete revamp of automation system for tank terminal and hydrant system
• Several upgrades to utilities and instruments at hydrant pump and fire detection system
• Extension of a fuel farm and development of a fiber optic network

Scope of supply:
• Energy Supply & Distribution
• SIMATIC PCS 7 Process Control System incl. ESD
• Integrated Safety & High Availability system
• Process Instrumentation
• Leak detection equipment
• Pumping algorithm for optimized hydraulic behavior in hydrant system
• Fire fighting system
• Service contract for long-term services

OFC Olympic Fuelling Company, Athens International Airport, Greece

Project outline:
• Terminal Automation System (TAS) for fuel park, hydrant system and tank terminal
• Installation of energy and automation solution for Greenfield project under EPC contract

Scope of supply:
• Energy Supply & Distribution incl. LV technology
• Redundant SIMATIC S7-400 with WinCC
• Integrated SIMATIC Safety & High Availability System
• Process Instrumentation
• Leak detection equipment
• Pumping algorithm for optimized hydraulic behavior in hydrant system
• Fire fighting system
Your trusted project partner

Your market requires a wide range of specialized know-how and resources, covering terminal and process design, including the basic concept and analysis, as well as hardware and software engineering. All this makes Siemens the ideal technology and project partner for your sustainable success – across the entire lifecycle of your installation.
We build tank farms and terminals in compliance with local and international standards, API/IP, ASTM, NFPA, Joint Inspection and Group Guidelines – and with the highest quality standards, in every phase of your project. We see excellent project management (PM) as a core aspect of project execution, forming an integral part of quality assurance. Our PM guidelines ensure the systematic and organizational progress of your project, as well as the technical and economic results agreed.

The advantage of value-added services

As your partner, we help you focus on your core competences by taking over the responsibility to keep your equipment and machinery efficient. Our commitment to your success is always apparent, as we offer performance-based services, wherever possible.

- Faster ramp up of production capacity through professional engineering and training
- Long-term high level of equipment availability and productivity through state-of-the-art maintenance services
- Improved productivity and effectiveness through program management and IT-supported services
- Reduced energy costs with energy efficiency services that ensure short-term pay off
- Protection of infrastructural and intellectual property through comprehensive services
- Decrease of your operational expenditures (OPEX) by systematically combining our service offerings

Services over the entire lifecycle

We will support you throughout the entire lifecycle of your tank farm or terminal with a set of tailored services, including feasibility studies, financial engineering, design and network studies, as well as all levels of preventive and corrective maintenance, performance enhancement programs, service level agreements and training.

Smooth project implementation

Enjoy maximum process safety and product quality, fewer costs with regard to plant and project management and security of investment by utilizing our international experience and extensive expertise for project execution of the automation and electrical engineering solutions. We accept responsibility as the Main Automation Vendor (MAV), Main Motors and Drives Contractor (MMDC) and/or Main Electrical Vendor (MEV). Our concept comprises all essential technology, from the design phase through engineering, in maintenance, optimum device selection, commissioning, and integration. This ensures optimized operation of your plant, right from day one.

Expertise when needed, where needed

Our integrated offer covers everything from planning and engineering to site commissioning. And in the context of our global Siemens service network, with offices in 190 countries, we are never far away – your project will always benefit from our local experts for industry and process engineering, as well as from our after-sales services and our services for modifications, adaptations or future extensions. Our well-organized teams deliver full on-site or remote support and services, including access to spare parts and 24-hour service for all applications.
The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

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