



## Tank Terminals – Proven Solutions for Liquid Bulk Storage and Distribution Terminals

Industrial Technologies

**SIEMENS**



# Liquid bulk storage and distribution terminals:

Safe and future-proof solutions from Siemens







Finding the right combination of terminal automation equipment and safety and communication solutions is vital for keeping costs low. Solutions are defined to aim at the highest possible Mean Time Between Failures and the lowest possible Mean Time To Diagnose and Mean Time To Repair. It is crucial for the successful and reliable operation of liquid bulk storage and distribution terminals. That is why integrated engineering solutions have become indispensable in this field.

#### **Integrated know-how for your success**

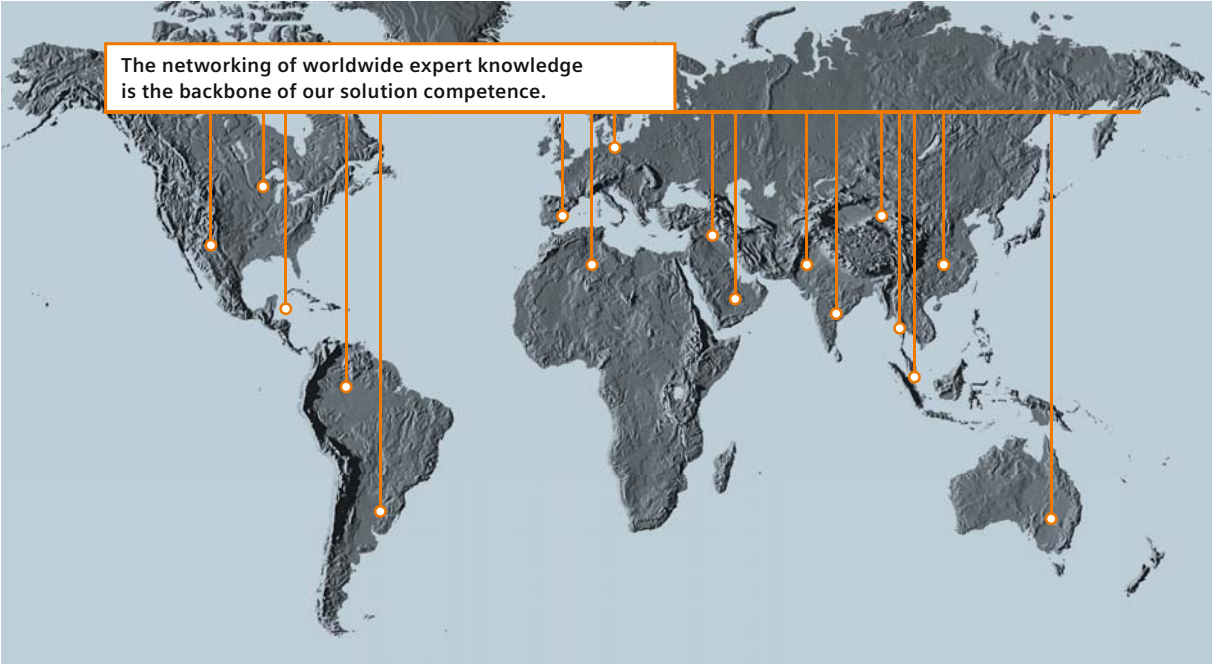
Siemens Industrial Technologies has a long-established reputation for developing and implementing world-class solutions for liquid bulk storage and distribution terminals. Our customers benefit from our broad spectrum of expertise and resources that cover both terminal and process design, including development of the basic concept and analysis as well as hardware and software engineering. We also offer integrated solutions for automation, operation and maintenance of your assets. Our solutions always aim to maximize productivity and reliability while minimizing costs.

#### **Reliable life cycle partnership**

We see ourselves as a life cycle partner for all your needs in any phase of your project, including hardware, software, automation and communications. That is why our integrated approach is modular, covering everything from construction and assembly to site commissioning. And with our global Siemens service network we are never far away – your project will always benefit from local Siemens resources for engineering, assembly and commissioning. You are also automatically guaranteed the benefits of all of the after-sales services and assistance for any modifications, adaptations or future extensions. Well-organized Siemens teams deliver full on-site or teleservice support and services, including access to spare parts and 24-hour service for all applications.

#### **Your link to competitiveness**

Based on our concepts for Totally Integrated Power, Totally Integrated Automation, drives and instrumentation, Siemens Industrial Technologies can cover the full range of electrical equipment, retrofitting, extension and servicing. What is more, a partnership with Siemens is your link to the latest innovations in all automation fields as well as reliable power supply solutions – an important step on your path to staying competitive both today and in the future.



# Liquid bulk storage and distribution terminals:

## Optimized terminal automation solutions from Siemens

### Optimized safety

The first order of business for operating any liquid bulk terminal in industrial and logistic applications is maximizing the safety of people, equipment, processes and the environment. Siemens Industrial Technologies addresses the latest environmental rules and regulations based on local knowledge and international experience. Our offerings include integrated solutions for control and safety, flexible and modular redundancy concepts, and special safety life cycle engineering.

### Optimized reliability

Sometimes keeping your plant running reliably requires cost-intensive maintenance. To meet these demands, Siemens has developed the SIMAIN modular service portfolio that gives operators an individualized maintenance strategy for optimizing Maintenance and minimizing potential downtime costs. It includes services tailored to support in-house maintenance teams and a process-oriented service package to optimize specific customer maintenance processes.

### Optimized management and communications

One of the most important features of the Totally Integrated Automation (TIA) concept is the user's ability to communicate and use available data and functions freely across all management levels, from the Enterprise Resource Planning (ERP) system to the field level. To achieve this, we use SITAS IT, Siemens' product solution for operational terminal management. Specific components are in place to cover typical terminal management needs such as order management, access management, operational tracking, stock accounting and reconciliation, contract handling, slot handling, etc. SITAS IT will provide the possibility support all incoming and outgoing operations for trucks, rail cars, vessels and pipelines as well as internal operations such as internal transfers, pre-blendings, tank circulations etc. SITAS IT, as a modular concept and centralized management solution, allows for optimized operational control under any circumstances – and plays a crucial role in minimizing operational costs.

### Optimized process automation

The specialized approach of Siemens Industrial Technologies in different fields is based on a process concept developed in-house that includes products and systems. It is also derived from specific expertise in the hydraulic behavior of various liquids in hydrant and pipeline systems. The appropriate Siemens process technology is used for Safety Integrity Level (SIL) requirements, tank management systems, flow-weighbridge control, Ex zones, leak detection pump stations, and pressure regulations, as well as for fire-gas protection techniques and emergency shutdown systems.



Storing and distributing liquid goods requires considerable attention to safety and reliability in order to guarantee the success of subsequent processes. Achieving a competitive cost-to-quality ratio requires optimized automation processes.



#### Optimized Quality and Management Systems

Liquid bulk and distribution systems are built in compliance with international standards, API/IP, ASTM, NFPA, Joint Inspection Group Guidelines, ADR, and local standards. From the earliest days, Siemens has always regarded Quality as one of its prime objectives.

##### ■ Quality Assurance

The Siemens project division and the associated economic and financial management division apply a Quality Assurance (QA) system.

##### ■ PM@Siemens – Project Management

An important aspect of project execution is the “Project Management” (PM). PM forms an integral part of Quality Assurance. The PM guidelines deal with the systematic and organizational progress of a project and make it possible to obtain the agreed technical and economic results.

#### Optimized Services

##### ■ EPC

In a consortium with local partners, Siemens is able to supply complete EPC contracts.

##### ■ Upgrade

Are you thinking of upgrading your existing installation to the newest international standards? Are you looking to increase your terminal efficiency? Come and talk to us; modernization and upgrade is one of the many areas we specialize in.

## Scope of supply:

#### Integrated Systems

- Energy supply and distribution
- Terminal automation: PLC, SCADA
- Pumps, motors, valves and actuators
- Instrumentation, e.g. tank gauging, pressure control, etc.
- Security & building technologies, e.g. CCTV, access control, lighting, etc.
- Mounting, installation, cabling
- Water treatment

#### Safety Integrated Solutions

- Fire & gas detection, fire fighting system
- Environmental protection
- Leak detection/tightness control of pipelines
- Optimization of hydraulic behavior in pipeline systems to prevent pressure surge risks
- Identification Ex-zones, Exd-zones and associated safety procedures
- Cathodic protection
- Earthing

#### Terminal Management Solution

- Vertical integration of automation and business administration (ERP)
- Order management
- Inventory management of local stock and stock in transit
- Support of all operation external and internal operation types
- Access management
- Product quality management
- Gantry management/route control
- Operational documents and reporting

#### Life Cycle Services

- Financing solutions
- Project and site management
- Maintenance and service



# Liquid bulk storage and distribution terminals:

References around the world







With Siemens Industrial Technologies, you can rely on an experienced partner who helps you minimize your own project risks and reduce delays and costs – thanks to Siemens' ability to deliver engineering, installation and after-sales service from a single source. On this page, we show only a small representation of the numerous Siemens success stories in the field of Liquid Bulk storage and distribution terminals.

### Customer benefits:

- Worldwide presence, local competence
- Reduces project risks by eliminated responsibility for contractual interfaces
- Reduces delays and costs by reduced technical interfaces
- Reduces project organization complexity by having design and installation responsibility within one partner



**Vopak New Terminal Antwerp Eastbank, Antwerp, Belgium**  
Scope of supply:

- Turnkey – Consortium with 2 construction company's Project management for the total contract
- Basic + Detailed Engineering for piping and electrical
- SIMATIC PCS7 inclusive safety integrated concept for shut down and emergency systems
- Full scope of instruments, utilities, appendages and valves
- MES (Manufacturing Execution System)
- Continuous on-call services



**Oiltanking Deutschland GmbH, Germany**  
Scope of supply:

- Revamp of automation systems in several German locations
- Integration of existing instrumentation
- Installation of video surveillance systems
- Continuous on-call services
- Interfacing to customers ERP-system



**Seatank Terminal Antwerp K405, Antwerp, Belgium**  
Scope of supply:

- Turnkey E&I project
- Basic + detailed engineering electrical and automation
- Medium & low voltage systems + energy distribution
- Frequency converters, pump motors, switchgears
- SIMATIC PCS7 inclusive safety integrated concept for shut down and emergency systems
- Fire & lightning safety systems



**Imerys Tank Terminal, Antwerp, Belgium with factory plant for China Clay/Kaolin production**  
Scope of supply:

- Turnkey E&I project
- Low voltage distribution & pump drives
- Terminal automation & PCS7 factory automation
- Interfacing on customers ERP-system
- Instrumentation

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