



SITAS IT

Tank Terminal Operations Management –
modular, flexible and standardized

Industrial Technologies

SIEMENS



SITAS IT

For the modular, flexible and standardized management of tank terminal operations

The challenge

In general, Manufacturing Execution Systems (MES) in the Tank Terminal industry have to achieve:

- full financial benefits for the level of investment injected
- required flexibility in usage and
- acceptance by users

Siemens has the experience, the technology and the business understanding to meet the customer's challenge and more.

SITAS IT is the answer

Modular

Build the solution matching your needs and expand according to your needs.

Flexible

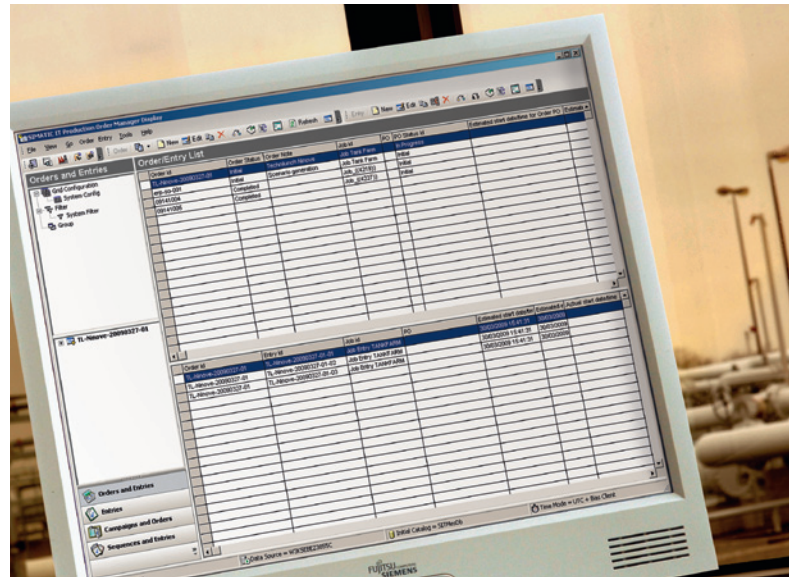
Integrate your in-house modules, combine these with best-in-class Siemens as well as partners components and develop your own specific models.

Integration

Deploy your MES corporate-wide on a standard execution platform, integrating seamlessly with process automation and ERP. SITAS IT components are based on the ISA-95 standard. This standard defines the terminology and models used in the integration of ERP and process automation systems.

SITAS IT Approach

In order to achieve a highly flexible, standard-based and scalable MES solution, **SITAS IT** explicitly represents the customer's business and operational processes as graphical workflows and effectively synchronizes, coordinates, analyzes and optimizes the entire execution part of the terminal.



SITAS IT comprises:

- **SIMATIC IT Framework**, a graphic modelling environment where customer's tank terminal business processes and SITAS IT Components are coordinated and synchronized by graphical rules. This representation of the customer's plant provides a transparent and dynamic view of the plant's operation. The unit libraries can be adapted to integrate your know-how.
- **SITAS IT Components**, which provide dedicated functionalities to manage specific manufacturing tasks. These components, as well as third party packages, are plugged directly into the SIMATIC IT Framework, where they are managed in a consistent way.

SITAS IT Components

- **Order Execution** transitions order schedules (sales orders) into operational orders for execution. 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 (i.e. independent operations, automatic order break-down, product availability check, loading result calculation, dispatch loading and transport documents). It also features slot handling and handling of contract constraints if available. Order status and transactions are synchronized with the business system, operational orders are available for process control for order based loading.
- **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.
- **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.

Benefits

SITAS IT solution will directly result in:

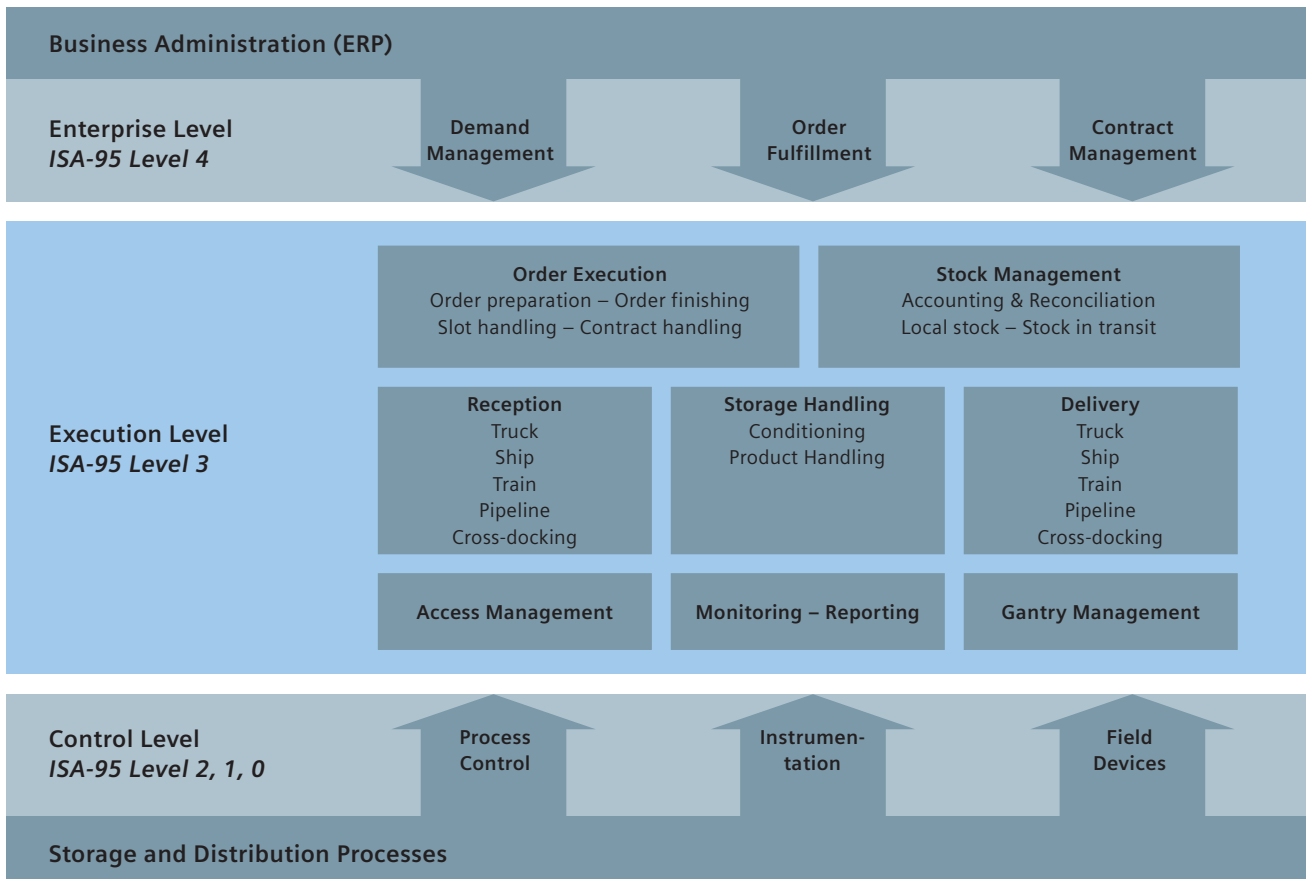
- faster total loading and unloading operations
- less waiting times and unfeasible operations
- better asset utilization
- less physical bottlenecks
- better operations tracking
- less manual operations
- better stock control

This in turn will enable you to achieve the following benefits:

- **Higher Efficiency**, resulting from throughput increase, less total turnaround time which results in higher customer's satisfaction.
- **Higher Productivity**, resulting from asset utilization improvement, less waiting times, independent loading operations as well as avoiding errors by manual operations.
- **Higher Control**, resulting from better distributed visibility of centralized information on all terminal operations, in real-time and historical, therefore having better information for better and faster decision making.
- **Compliance** with legal safety and environmental requirements and with international standards.

- **Access Management** uses rule based truck flow logistics to achieve better physical flow control therefore avoiding bottlenecks and ensuring better safety. Dynamic and flexible location definitions ensure that every customer's needs and constraints will be met. This will also enable operations tracking to provide the necessary terminal visibility and historical tracing.

- **Monitoring & Reporting** 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 times analysis, efficiency & performance statistics (KPIs), all based on the Business Objects reporting tool.
- **Gantry Management** provides static route definition and control for better physical flow control and manageable equipment.



Totally Integrated Automation Solution for the Liquid Bulk Storage and Distribution Industry

SITAS IT (Siemens Terminal Automation System) is part of the Totally Integrated Automation solution. Siemens offers to the market and integrates all the products and services you need for maximizing the performance of your terminal. For each particular task, a component has been defined that:

- Improves the manageability of operations (horizontal integration of functions)
- Integrates the company's information flow end-to-end, helping corporate management to make better-founded decisions (vertical integration of systems)
- Enables your SITAS IT application to align with your strategic objectives and adapt to market needs

Due to the combination of horizontal, vertical and life cycle dimensions, our SITAS IT solutions all aim towards sustained terminal efficiency.

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Order No.: E10001-T480-A195-V1-7600
Printed in Germany
Dispo No.: 21646 K No.: 37500
11/20926 C-INEI5209M0601 08091.0
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