



CRYOGENIC-GASES TERMINAL AUTOMATION SYSTEM

SYSTEM DESCRIPTION

CRYO.TAS was specially designed to fulfill all requirements for automated filling of cryogenic air gases, CO₂ and gaseous H₂. A tailor-made product for the gas industry.

Storage, receiving and dispatch of gas products from terminals is a vital part in which automation systems will play an important role by increasing the productivity, reducing risks, improving safety and, saving time and cost.

The high sophisticated quality management system and the implemented change logging combined with the latest standard of gas-analyzer systems enables the generation of 3.1 and 3.2 certificates.

The integrated archiving of all operations, analyses and calibration of analyzers fulfill all requirements for medical and food products.

SYSTEM ARCHITECTURE

CRYO.TAS adopts a client-server architecture using the latest standards. A integrated WEB-Server opens the system for Your customers and makes the system independent of any used operation platform.

The system manages the complete ordering procedure from assignment of order for loading and control of loading procedure and quality control of filled products.

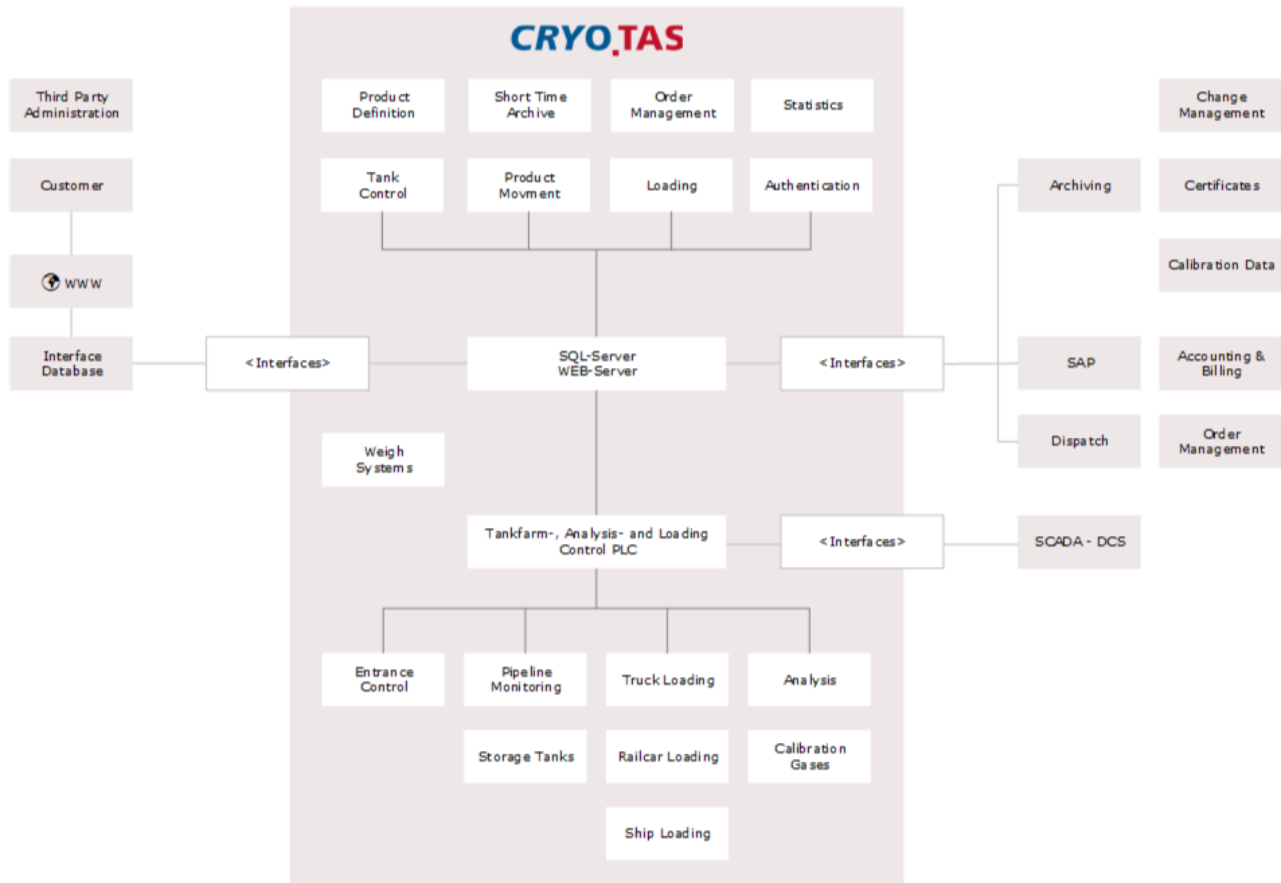
RFID is used for identification of drivers, trucks and railcars. Open for any other ID-system existing.

BENEFITS

- Process security
- Efficiency due to full automation
- Tailored to your needs
- OS-independent operation
- Compliance with international regulations for loading of hazardous goods
- Continuous process and quality monitoring

- Auto created quality certificates
- Saving resources by third-party Administration
- Administration at one glance
- Batch creation for medical - , or other special products
- Validatable
- Zero-man-operation

CRYO.TAS MODULES



CRYO.TAS FUNCTIONS

ORDER MANAGEMENT

- Order import from internet (Add-on) or from dispatch systems
- Order validation
- Customer information system
- Quota management
- Interfaces to ERP systems (e.g. SAP)

INVENTORY MANGEMENT

- Product receipt (certificates, BOL, transport documents)
- Supervision and control of all related field devices
- Real time monitoring
- Reporting

PRODUCT MANAGEMENT

- Administration of all technical -, special— and medical products
- Recipe management for mixed (blending) products
- Four-eyes principle and separated QP-area

TANK MANAGEMENT

- Cyclic tank control, batch analysis
- Batch release control
- Tank monitoring and product reservation
- Product availability check
- Batch generation

LOADING

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- Safety - and operation instructions (ADR), multilingual
 - Individually assignable loading permissions
 - Driver/Truck/Railcar identification with location detection
 - Video loading documentation/Streaming
 - Volumetric & mass control, overloading protection (loading on weigh-bridge or mass flow system)
 - Auto-Start analysis system
 - ESS and force presence monitoring

ANALYZER MANAGEMENT

- Automatic device selection in accordance with the product specification used
- Automatic device locking
- Automatic device validation and adjustment with drift monitoring
- Calibration gas management
- Evaluation of all data with fault analysis

ARCHIVING (ADD-ON)

- Free definition of long-term archiving data

SCALABILITY

- Unlimited scalability. Each module is single functional for themselves
- Expandable without limitation
- Scalable licenses

ADMINISTRATIVE FUNCTIONS

- Truck fleet management
- Individual creation of timed authorizations (e.g. ADR, loading permission for medical products, drivers license)
- Customer database management (customer tanks, products, delivery places)
- Supplier database management (self collectors, competitors)
- Personal database
- Object parameter database (e.g. process data, alarms & events, quota control)

- Entrance monitoring & control

REPORT GENERATION

- Inspection certificates (e.g. 3.1 and 3.2 acc. EN10204; Pharmacopoeia; FDA)
- Loading documents / transportation documents / BOL
- Loading details / events
- Product movement
- Calibration data reports
- End of day -, end of week -, end of month reports
- Batch tank certificates
- Log-book

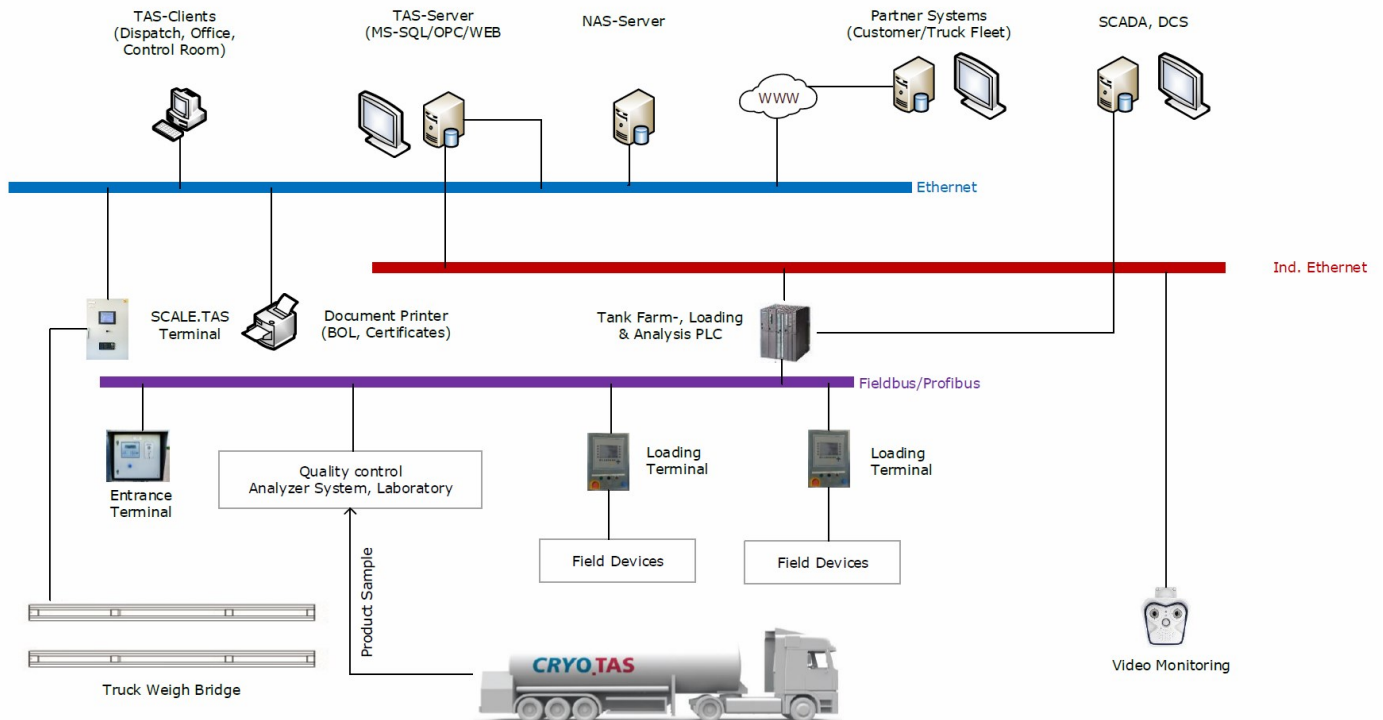
SYSTEM MANAGEMENT

- System Back-Up & Restore
- Data-synchronization and alignment across all sites
- Change monitoring (Audit-Trail)
- Remote diagnosis of all system components
- Alarm and event messaging system (Add-on)

VALIDATION

- Hazardous goods monitoring acc. (DE) GGVSE, (EU) ADR, (AT) GGBG, (CA) WHMIS, (US) CFR, NFPA
- Monitoring functions acc. GMP, Appendix 6
- Qualified according to GMP/EIGA/ISBT/FDA
- Electronic approval and product release for medical products (Add-on)
- Integrated electronic four-eyes principle

TYPICAL CRYO.TAS LAYOUT



CRYO.TAS TECHNICAL DATA

APPLICATION AREA

- LAR / LIN / LOX / KrXe / CO₂ / H₂
- Medical Gases
- Truck-, Railcar-, Ship Loading

SERVER

- MS Server from 2008 R2 or later
- MS SQL-Server (from 2008) with Report Server
- Server-Hardware acc. Customers standard, RAID systems preferred

ID-SYSTEM

- Standard: ID-System RFID 13,56 MHz, Transponder acc. ISO-14443A
- Option: Integration of customer standard ID-System

SCALE SYSTEMS

- Standard: DISOMAT 50 tons truck weigh
- Integration of other scale systems with communication interface
- Connection of existing scale systems

LOADING TERMINAL

- Touch Screen with integrated ESS push button, RFID-Reader and Profibus / Fieldbus-Interface and Ethernet. Ambient temperature: -20°C...+60°C, IP64, remote controllable

CONTROL SYSTEM

- Standard: Siemens S7 PLC
- Integration of application-specific systems are possible if appropriate interfaces and function blocks are available

ANALYSIS SYSTEM

- Together with our partners we are able to deliver a wide range of analytical systems. Fully assembled as a cabinet installation system or complete system analysis container with integrated system infrastructure

COMMUNICATION

- Administration level: TCP/IP Ethernet
- PLC Interfaces: OPC-Server/Client
- Intermediate communication: Industrial Ethernet
- Field: Profibus or Fieldbus

INTERFACES

- Depending on existing systems, all standard interfaces can be realized.
- SAP/ERP and Dispatch Systems

CRYO.TAS THE OVERALL CONCEPT

Tank-Management

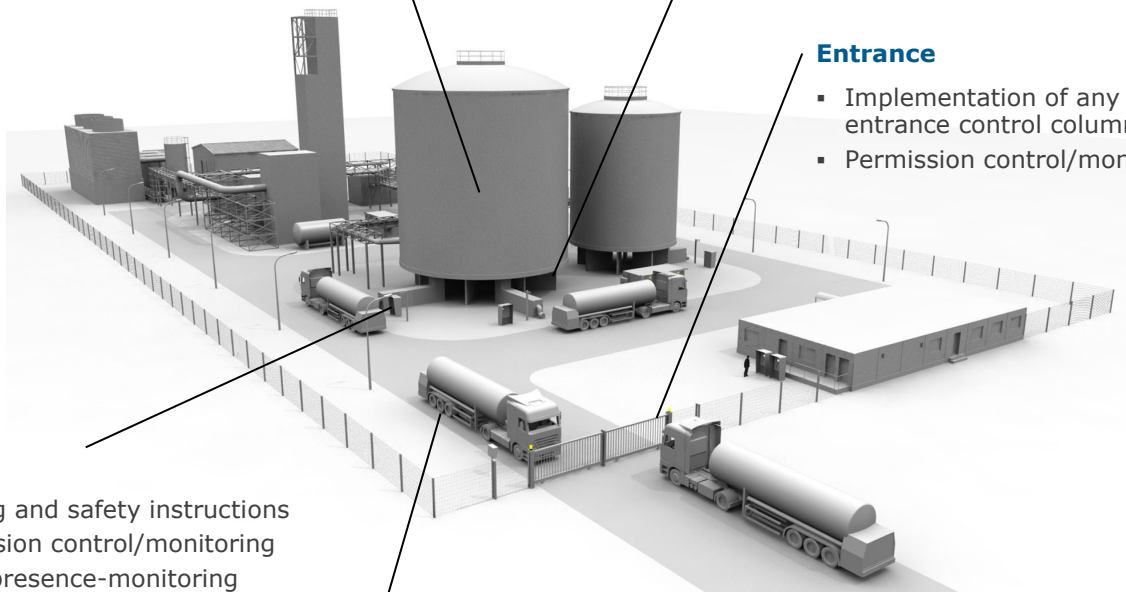
- Product availability monitoring
- Lock and unlock of products
- Batch creation
- Special functions for medical- and food-products
- Calculation of loaded quantities

Analysis

- Automated gas path switching
- Test equipment- and calibration gas monitoring
- Auto-calibration
- Locking and unlocking of test equipment
- Connectivity to a wide range of sample point types (e.g. pipeline)

Entrance

- Implementation of any number of entrance control columns
- Permission control/monitoring



Loading

- Loading and safety instructions
- Permission control/monitoring
- Force-presence-monitoring
- Quality assurance/analysis
- Blending functionality
- Off-loading
- Special functions for medical products
- Control of all field devices

SCALE.TAS

- Usage of any number of weigh bridges
- Free usage of entry- or exit weigh bridge, or both
- Creation of loading/transportation documents
- Quota control

INFORMATION

Would you like more information about the CRYO.TAS system? On the Internet you always get the latest information, or contact us directly. We are always ready to show you the performance of the system in a live presentation.

Simply contact:

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