

General Specifications

GS 36J07B20-01E

Model STLSS100
Terminal Logistic Suite VP
Package overview for Terminal Management and Automation



■ GENERAL

A terminal/large depot (hereinafter referred to as a terminal) is a storage area where Oil and/or Chemical products are received through cross-country pipelines and/or marine vessels and are stored in tank farm. These products are then re-distributed by truck, barge, rail car (popularly known as tank car or wagon), and similar means. Yokogawa has accumulated more than 2 decades of experiences in the automation of such terminal and has released a packaged solution Terminal Logistic Suite VP.

This GS is to highlight the features and functionalities of Terminal Logistic Suite VP, and the hardware and software requirements for realizing and implementing terminal automation system.

■ FEATURES

- Comprehensive coverage from terminal business management to automation systems
- Seamless integration with Yokogawa Prosafe-RS system that provides Safety Instrumented System (SIS) and Fire and Gas System (FGS) functions
- Tightly Integrates with SAP and other ERP systems
- Various interfaces for sub systems such as tank gauging, MOV controller, card reader, weigh scale and preset
- Physical and book inventory reconciliation function
- Support Service Terminal Operation that provides logistic services to store and distribute products; such terminal operation typically needs to account for the ownership of the products and will need to accommodate products with multi-owners and multi-customers
- SQL server as open database management system
- User friendly Engineering environment
- Multiple languages support
- High reliability associated with DCS and easy engineering using templates
- User-friendly operation using Windows as the Graphic User Interface

■ Terminal Logistic Suite VP FUNCTIONAL SPECIFICATION

● Tank Truck Loading Control and Management

Control and management of products loading to tank truck including the followings:

- Truck Switch Over:
Change truck prior to loading operation
- Card change:
Temporarily card can be used if truck driver forgot to bring the card.
- Traffic Control and Management:
Queuing management based on configurable truck allocation rules.
- Issue of Instructions for Truck Loading

● Entrance/Exit Management

Authentication for Trucks entering and leaving the terminal

● Marine Loading/Unloading Control and Management

Control and management of Berth for loading/unloading products

- Expected Tank Level Calculations:
Expected tank level is calculated based upon the current inventory by converting the unloading operation.

- Composition check function:
Unloading product composition and property check before unloading
Tank composition and property Estimation before unloading
- Unloading composition and property are calculated and average is also calculated during unloading
- Unloading product Expected Tank Quality calculation:
Receiving tank and transferred tank expected quality calculation based on ship quality

● Tank to Tank Transfer Control and Management

Control and management of tank to tank transfer operations

- Expected Tank Level Calculations:
Expected level of destination tank calculation
- Expected Tank Quality calculation:
Tank expected quality calculation based on source tank quality

● Product Circulation

Manage Circulation mixing during transfer operation

●Tank Inventory Calculation and Management

Tank volume calculation and tank inventory management

●Tank status management

Each tank status is defined by operator. Also, the defined status is informed to control system.

●Inventory Management with Loss/Gain Calculation

- Book-physical inventory differences calculation per materials
- History of inventory management per materials

●Multiple Owner/customer Management

Manage inventory of multiple owner/customer

●Manual Order Input and Modify at Administration Office

Support manual Orders entry and manual adjustment by user with right Authority

- Manual order input:
Inputting orders manually at the administration office is possible for loading and unloading operation
- Order Item Modification:
Order Item can be modified with change control.

●Security Control and Management

Configurable Security management by Administrator

●Reconciliation Management

- Book-physical inventory differences at the reconciliation date which was defined are calculated
- Reconciled data are distributed for each owner per materials

●Master Data Management

- Manage master data such as owner, customer, products, trucks, driver and Ship information
- Manage master file version.

●Terminal Open/Close Management

Management of terminal opening/closing timing

●Data Closing Function

Daily/monthly data of inventory, delivered data, received data and loss/gain data are calculated and summarized (Closed) at the defined time/date

●Daily/Monthly Report

Closed data is printed out which was defined by using report format generation function at the defined time/date

●Custody Meter Monitoring

Custody transfer meters are monitored for verification

●Daily/Monthly Report Format Configurable to Issue

Daily/Monthly report can be configured to issue per product, customer, owner, etc.

●Issue of BOL

Print and issue BOL (Bill of Lading)

●Management for Bond System

Tax segregation is applied

●ERP System Interface

Integration with ERP system

■ SYSTEM CONFIGURATION

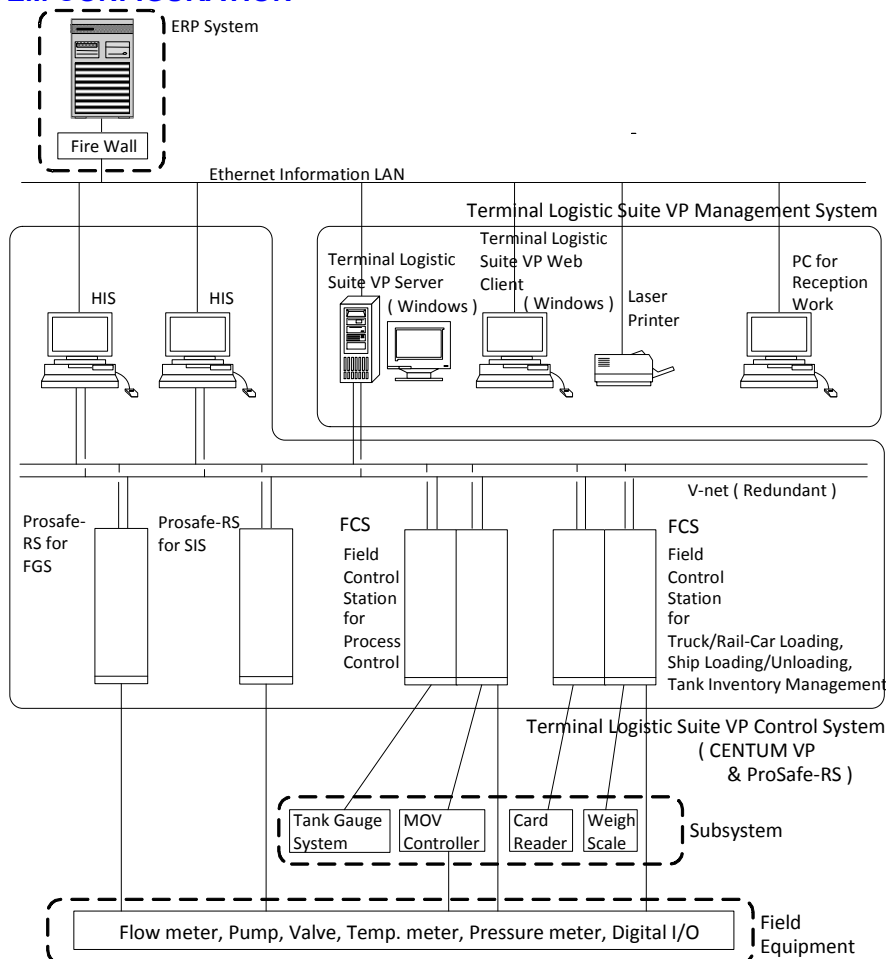


Figure 1: System Architecture for Large Scale Oil/LPG Terminals (CENTUM VP)

● ERP System Connectivity

The ERP system (not included as part of Terminal Logistic Suite VP) is for management of Terminal Business processes such as Orders, Purchase Orders and Payroll.

Web service interface is provided to integrate Terminal Logistic Suite VP with ERP.

● Terminal Logistic Suite VP Management System

Terminal Logistic Suite VP-MS provides Web services functions to integrate with ERP System. It manages the executions of orders downloaded from the ERP System. Upon executions, all the transactions data are retrieved and sent back to ERP.

The Web clients provide human interface functions. Any market-available PC can be used as a client. To facilitate a single window concept, the following is realized for each platform:

- DCS: Terminal Logistic Suite VP client functions can be implemented in HIS (Human Interface Station of DCS).

● Terminal Logistic Suite VP Control System

Terminal Logistic Suite VP-CS provides control functions. Interfacing template is prepared.

- CENTUM VP, a distributed control system, is fully redundant to provide high reliability and flexibility and is suitable for medium to large sized terminals.

As standard, Terminal Logistic Suite VP-CS is connected to field equipment and subsystems as explained in the previous paragraphs. Control information required for loading/unloading operations is downloaded from Terminal Logistic Suite VP-MS to Terminal Logistic Suite VP-CS where control functionality is implemented. We can propose the user interface of Terminal Logistic Suite VP-CS operation displays and control monitoring display for the operation.

● Subsystems Interface

Typical subsystems are tank gauging system, MOV, SIS, card reader, Preset and weigh-scale. Subsystems are outside the scope of Terminal Logistic Suite VP. However, they are integrated with Terminal Logistic Suite VP using subsystem communication functions.

● Field Devices Interface

Field devices such as flow meters, pumps, valves, thermocouples, pressure gauges, etc. are directly connected to Terminal Logistic Suite VP-CS using the appropriate I/O modules.

■ STANDARD SPECIFICATIONS

Terminal Logistic Suite VP has been designed for a typical terminal facility as outlined below. It should be noted that enhancements can be implemented if the customer's needs demand additional features.

● Terminal Facility

Maximum number of terminal owners: 6

● Orders/Result Information

Maximum number of orders: 20,000

Result data retaining period: limited by database capacity.

● Master Information

Limited by Database capacity.

● Truck/Rail-Car Information

Maximum number of compartments per truck: 12

Maximum number of trips per day: 9

● System Capacity

Maximum number of oil types per BOL: 12

Maximum number of additives per oil type: 2

Maximum number of graphics per HIS: 1000

Note: 'Limited by Database capacity' indicates that there is no limitation from the package viewpoint.

● Maximum Capacities:

Order/Result information is set to 20,000

Truck master can hold 2,000 records

Product master limit is set to 100

Oil-type master limit is set to 100

Note: The number of tanks, bays and berths can be configured based on the capacity of Terminal Logistic Suite VP-CS

■ OPERATING ENVIRONMENT for Terminal Logistic Suite VP-MS

● Terminal Logistic Suite VP-MS Hardware Requirements (Server)

CPU: Xeon quad core or more

Main Memory: 8 GB or more recommended

HDD: 500 GB or more recommended

Communication Device:

Network Card for Ethernet

100Mbps/1000Mbps.

VI702 Control Bus Interface Card for Vnet/IP (for CENTUM VP case)

Peripheral Interfaces:

Ultra SCSI card

RAID1 or 5 disk recommended

Uninterrupted Power Supply

Printer: LBP recommended for BOL Printout (Network Type)

● Terminal Logistic Suite VP-MS Hardware Requirements (Client)

CPU: Core i-5 or more

Main Memory: 4 GB or more recommended

HDD: 40 GB or more recommended

Comm Device: Network Card for Ethernet
100Mbps/1000 Mbps

● Terminal Logistic Suite VP-MS Software Requirements

(Server/Client)

OS: Windows 2008 R2 64bit (for Server)
Windows 7 32bit or 64bit (for Client)

Database: SQL 2012

Office: Microsoft Office 2010 or above

Explore: IE8,9

Terminal Logistic Suite VP: Terminal Logistic Suite
VP Function

OPC: For CENTUM VP
NTPF100 Exaopc OPC Interface
Package (OPC Server)

■ OPERATING ENVIRONMENT for Terminal Logistic Suite VP-CS

● Terminal Logistic Suite VP-CS Hardware Requirement

Standard configuration is CENTUM VP.

● Terminal Logistic Suite VP-CS Software Requirement

Required software for CENTUM VP.

■ MODEL AND SUFFIX CODES

		Description
Model	STLSS100	Terminal Automation and Management Solution Basic Function
Suffix Codes	-S	Software License
	0	Always 0
	0	Always 0
	1	English

■ ORDERING INSTRUCTIONS

Please specify model and suffix codes. Inquiry is required for your quotation.

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