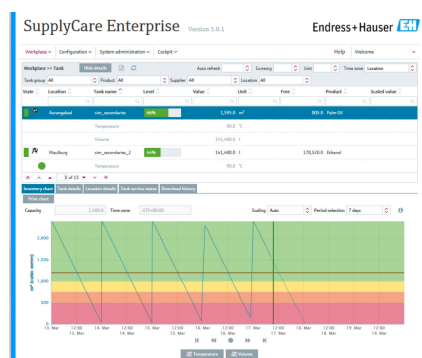


Technical Information SupplyCare Enterprise

System products



Program for inventory management and transparent information flow along the supply chain

Application area

SupplyCare Enterprise is a web-based software for coordinating the flow of material and information along the supply chain.

SupplyCare Enterprise gives you full transparency of inventory in tanks, silos and containers at any time and from any location.

Your benefits

- Improves demand planning and optimizes your inventories
- Enables business process such as Vendor Managed Inventory and Supplier Managed Inventory (VMI, SMI)
- Complete solution for inventory measurement and data acquisition through to integration into your business processes
- Complete visualization of inventories, 24 hours a day, seven days a week, throughout the company, even on mobile devices
- Based on web server technology, your end users can monitor ongoing product levels in tanks and silos from their workplace via a web browser, regardless of the operating system
- A wide range of Endress+Hauser gateways and third-party systems can be connected via the OPC DA technology and used for data acquisition.
- The multi-language user interface supports 10 languages, thus enabling global collaboration using the same platform. The language and settings are recognized automatically using the browser settings.

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System description

Application area

SupplyCare Enterprise is a web-based software for coordinating the flow of material and information along the supply chain. SupplyCare provides a comprehensive overview of levels and material inventories at any time and from any location, either locally at the user's site or in tanks and silos distributed worldwide.

Based on locally installed measuring and transmission technology, current inventory levels are recorded and transmitted to SupplyCare. Critical inventory levels are clearly identified, and users can actively receive alerts about them if desired. Calculated forecasts provide additional reliability for replenishment planning.

SupplyCare Enterprise runs by default in an Apache Tomcat environment on an application server as a service under Microsoft Windows. Operators and administrators use the software via a web browser from their workplace.

Display of inventory data

In SupplyCare, the inventory levels in tanks and silos are recorded at regular intervals. Users can view both the current and historical inventory data at any time.

Management of master data

With SupplyCare, the user can create and manage master data for locations, companies, tanks, products, and users.

Report generation

With SupplyCare, the user can create flexibly configurable reports in formats such as Excel, PDF, CSV, and XML, containing measured values and other information that can then be reused by other systems.

Event management

SupplyCare also includes event management. Events such as falling below safety stock or plan points are displayed. In addition, notification emails can be sent to predefined users. The monitoring of tanks using event management can be configured in many ways. For example, unusual changes in levels or the absence of level changes within specified periods can be recorded and reported.

Alarm notifications

If technical problems occur, such as connection issues, alarm notifications are generated and alarm emails are sent to the system administrator and the local system administrator.

System overview

Querying measured values via HTTP, cellular radio, or an OPC DA connection

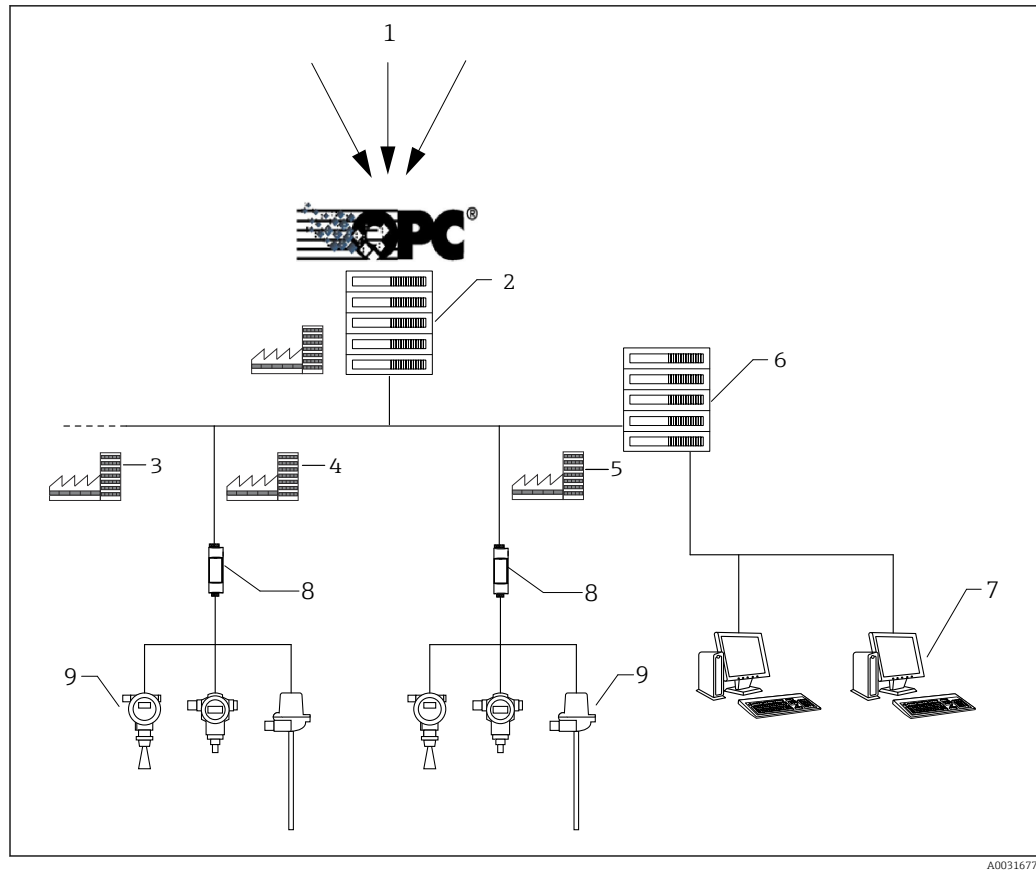
A "scheduler" function is used to set the time and interval at which the SupplyCare queries the measured values.

Gateways (e.g. Fieldgates.)

Endress+Hauser measuring instruments are queried via gateways.

OPC connection

Data from third-party systems can be queried via an OPC connection. To query data via OPC DA 1.0, 2.0, or 3.0 connections via COM, an OPC Bridge is required. The bridge automatically connects via COM with the locally installed OPC servers and provides an HTTP service to respond to queries from SupplyCare Enterprise. This OPC Bridge is included on the SupplyCare Enterprise DVD and is delivered together with the system.



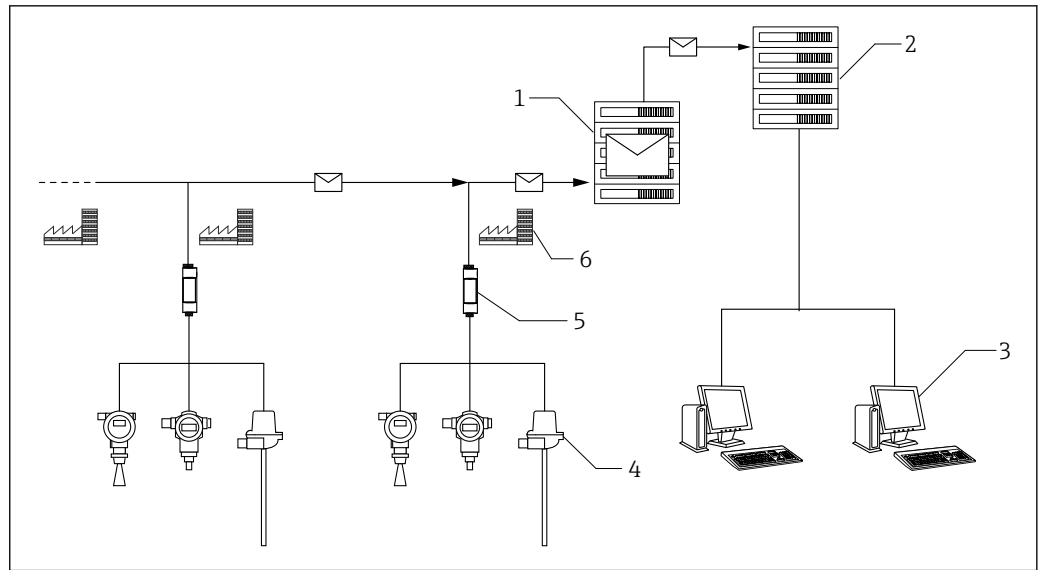
A0031677

- 1 Data from third-party systems
- 2 OPC server and E+H OPC Bridge at one location
- 3 Tank location "n"
- 4 Tank location
- 5 Tank location
- 6 SupplyCare Enterprise application server
- 7 SupplyCare workplace
- 8 Endress+Hauser gateways
- 9 Endress+Hauser measuring instruments (level, pressure, etc) at the tank location

Querying measured values via incoming emails from the gateways

Another option is to query the measured values via incoming emails from the gateways. In this case, the measured values are embedded in gateway emails and sent to a dedicated email server. SupplyCare Enterprise retrieves these emails from the email server and processes the measured values they contain. The email server is not included in the standard delivery scope.

SupplyCare offers a convenient method to create gateways. As soon as a new gateway is connected to the measuring chain and sends e-mails, this gateway is automatically listed as a new gateway.



A0031705

- 1 Email server
- 2 SupplyCare Enterprise application server
- 3 SupplyCare workplace
- 4 Endress+Hauser measuring instruments (level, pressure, etc) at the tank location
- 5 Endress+Hauser gateway
- 6 Tank location

System requirements

Recommended specifications

Browser for desktop:

- Microsoft® Edge 128 (or higher)
- Mozilla Firefox 130 (or higher)
- Google Chrome™ 128 (or higher)

Browser configuration:

- Active Scripting enabled
- JavaScript enabled
- Allow cookies

These are the officially supported browsers recommended by Endress+Hauser for the SupplyCare Enterprise application. Using a different browser version or technology may lead to limited functionality and display issues.

Operating systems

- Microsoft® Windows® 10 (Enterprise)
- Microsoft® Windows® 11 (Enterprise)
- Microsoft® Windows Server® 2016 (Standard)
- Microsoft® Windows Server® 2019 (Standard)
- Microsoft® Windows Server® 2022 (Standard)

SupplyCare Enterprise runs by default in an Apache Tomcat environment on an application server as a service under Microsoft Windows. Operators and administrators use the software via a web browser from their workplace.

Hardware

- Processor type: 4 cores, 3 GHz or higher
- Main memory (RAM): 8 GB available
- Hard disk capacity (HDD): 50 GB for full installation, depending on database size
- Monitor resolution, display: 1280 x 800

Installation

Installation and scope of delivery

To work with the SupplyCare Enterprise Software, you need a PC connected to the Internet or Intranet.

Scope of delivery

- DVD-ROM
- Quick start guide

 Updating the application server and the Java environment included in the scope of delivery is the responsibility of the customer. For queries regarding compatibility of SupplyCare Enterprise versions, please contact Endress+Hauser.

Performance

The performance of the application depends on factors such as server characteristics, infrastructure, and the amount of data to be stored. The following table shows 2 possible hardware configurations and the corresponding performance.

Number of measured values	CPUs	RAM	Hard drives
5 million	4	8 GB	50 GB; standard*
20 million	4	16 GB	100 GB; standard*
*Recommendation: use SSD and RAID technology to set up data storage systems.			

If the number of measured values to be stored exceeds these figures, please contact Endress+Hauser. This will allow a decision to be made as to whether the database will affect the performance of the application. If necessary, a database solution tailored to the application will be developed. The use of a tailored database solution may result in additional costs. The number of measured values is calculated using the following formula: measuring points x measurements per day x data retention period in days.

User interface and functions

User interface

The user interface supports the following 10 languages:

- German (DE)
- English (EN)
- French (FR)
- Italian (IT)
- Japanese (JA)
- Portuguese (PT)
- Russian (RU)
- Spanish (ES)
- Turkish (TR)
- Chinese (ZH)

SupplyCare Enterprise makes use of the intuitive nature of Windows-based graphical user interfaces (GUI) and multitasking, allowing multiple windows to be open at the same time and third-party applications such as the Microsoft Office Suite to run simultaneously.

Displays are loaded within a very short time and can be scaled, minimized, maximized, and moved so that the user can arrange the desktop according to individual requirements.

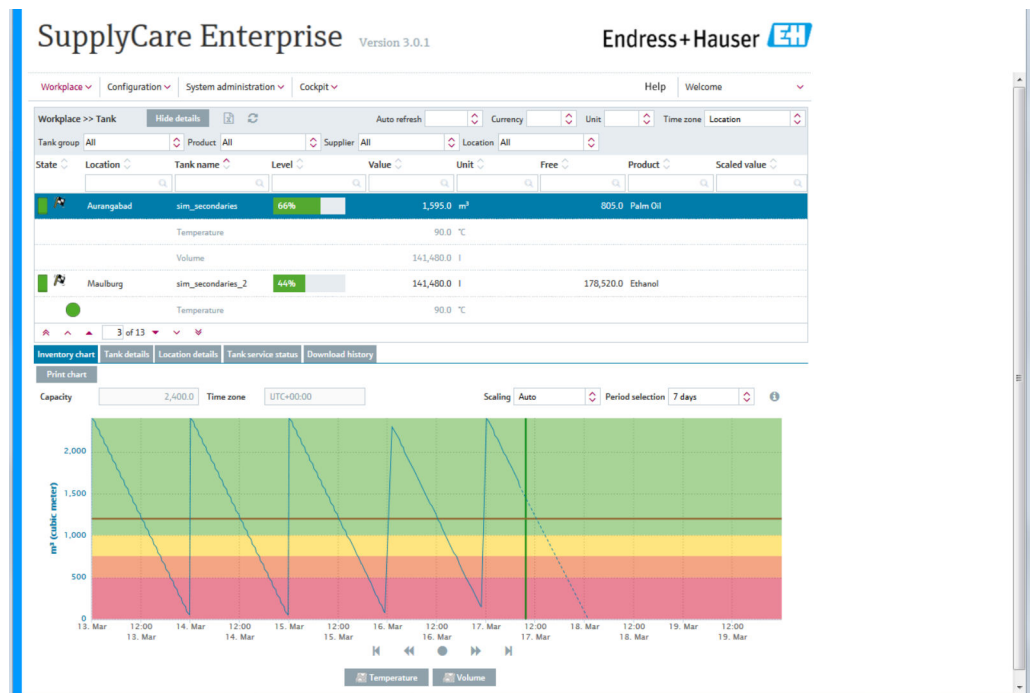
Main page - Portal window

The first page of the graphical user interface is the Portal window, which displays the **Tank workplace**.

This page provides a clear, tabular overview of all tanks and displays details as soon as a tank is selected.

The Portal window is the center console from which all other functions can be quickly and easily accessed. Navigation through the different screens is simplified through the use of toolbars, menus, and short-cut links. Tanks can be filtered based on available features.

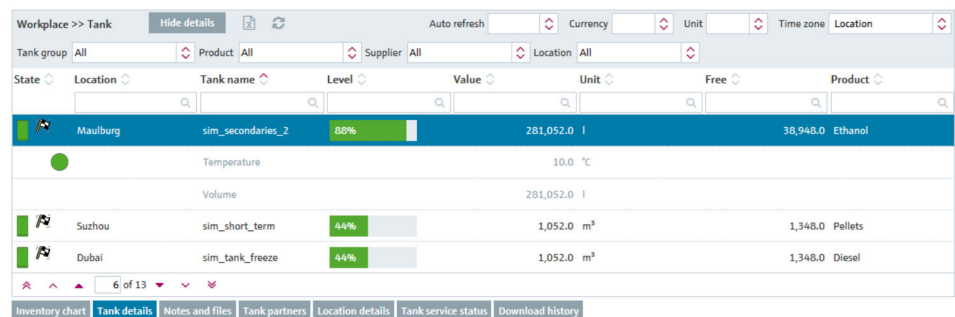
- **Overview:** In the overview, users or data are listed in tabular form.
- **Detail view:** The lower panel displays detailed information on the row selected in the table.
- **Tabs:** The tabs allow you to create, modify, and delete objects. Forms or tables are displayed on the selected tabs.



Monitoring tanks

The **Tank workplace** provides the following information and functions:

- **Tank details:** tank name, tank type, tank status, capacity, optimum, location, time zone, timestamp, level, unit, data sources, product, supplier, buyer, plan point, ship point and safety stock.
- **Inventory chart:** Displays the historical stock trend and the forecast for inventory management.
- **Event details:** Shows details of the current event, e.g. "Safety stock reached".
- **Save history:** Displays the measurement history for a tank selected in the overview in a diagram.
- **Secondary values:** Various measuring instruments allow additional measured variables (secondary values) to be recorded alongside the primary variable (primary value). A tank can be assigned one primary value and up to 8 secondary values.

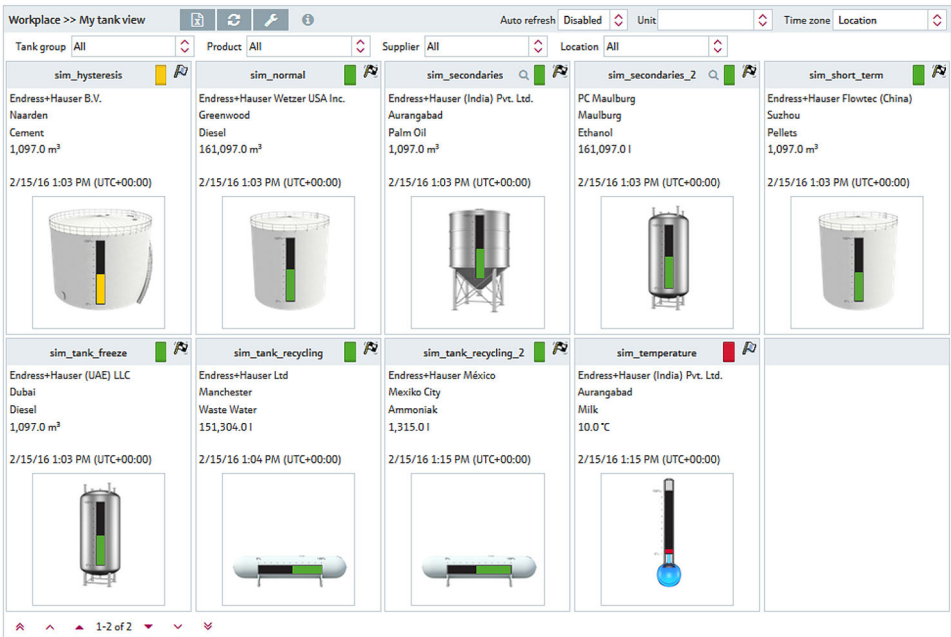


Organization		Limits	
Tank name	sim_secondaries_2	Capacity	320,000.0
Value	281,052.0	Optimum	
Unit	l	Plan point	120,000.0
Time stamp	3/3/16 1:48 PM	Ship point	60,000.0
Product	Ethanol	Safety stock	32,000.0
Location	Maulburg	Hysteresis	0.0
Time zone	UTC+00:00	Free capacity	38,948.0
SDT	0	Tank type	<input checked="" type="radio"/> Standard tank <input type="radio"/> Recycling tank



Tank overview

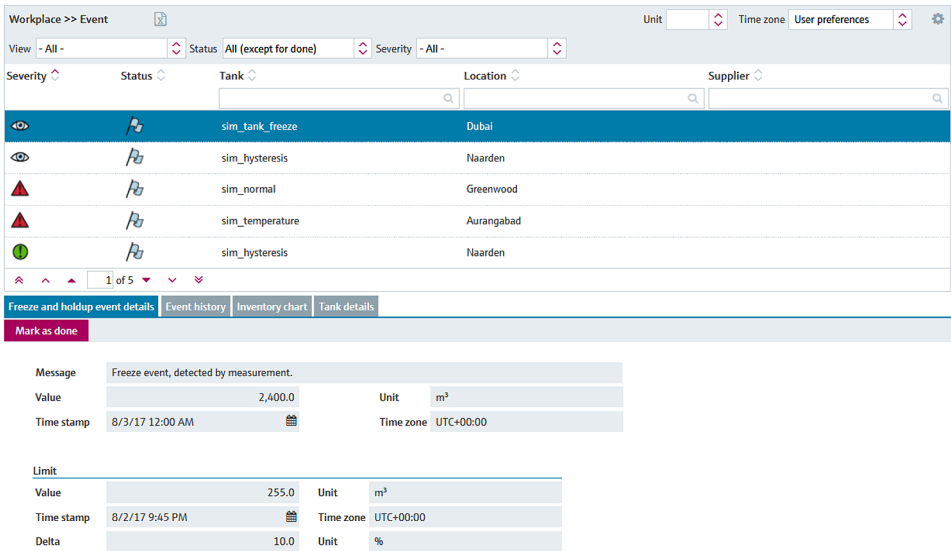
The **Tank Overview workplace** is a graphical view in which the tanks assigned to the user in their user profile are displayed. Using various filter functions, the user can display only the tanks belonging to a specific tank group, product, supplier, location, unit, or time zone.



Handling events - Event workplace

An event is triggered if a limit value (plan point, ship point, safety stock) is undershot, or if unexpected level changes occur. The severity is defined by the limit value, i.e., reaching the plan point is classified as non-critical (low), while reaching the safety stock is classified as very critical (high). After an event has been generated, the user can change its status to **Acknowledged** or **In progress**. To ensure later traceability, the change is saved along with the timestamp and user name.

If a critical limit value is reached and confirmed by a subsequent measurement, the event is assigned the status **Open**. If standard tanks have an inventory level above the plan point, or recycling tanks have an inventory level below the plan point, the event switches to the status **Completed**, and no further activities are required.



Managing deliveries and disposals – Scheduling workplace

With SupplyCare , the delivery and disposal of material can be planned in detail, and the execution of these tasks can also be monitored. When a new delivery/disposal is created, the system checks whether it is scheduled for too early or too late a time. For this check, the forecast values determined by SupplyCare are used. The user can reschedule an early or late delivery/disposal or confirm it as an early or late delivery/disposal. Deliveries and disposals are monitored daily by SupplyCare. If an early

or late delivery/disposal is detected, it can be confirmed. If a missing delivery/disposal is detected, it can be marked as "fulfilled".

OverviewPlanning

Workplace >> Scheduling >> Overview

UnitTime zoneLocation

State	Message	Location	Tank name	PD	Time zone	PD Amount	Unit	State changed at
	Early delivery (conf...	Suzhou	sim_short_term	8/3/17 6:00 PM	UTC+00:00	1,400.0	m³	8/3/17 2:07 PM
	New planned delivery	Maulburg	sim_secondaries_2	8/22/17 12:00 PM	UTC+00:00	217,913.4	l	8/3/17 2:06 PM
	Late delivery (confi...	Aurangabad	sim_secondaries	8/4/17 12:00 PM	UTC+00:00	1,200.0	m³	8/3/17 2:05 PM
	New planned delivery	Greenwood	sim_normal	8/16/17 12:00 PM	UTC+00:00	150,000.0	m³	8/3/17 2:04 PM
	Late delivery (confi...	Naarden	sim_hysteresis	8/5/17 12:00 PM	UTC+00:00	2,400.0	m³	8/3/17 2:03 PM

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DetailsHistory

MessageNew planned delivery

Planned delivery

Amount	217,913.4	Unit	l
Time stamp	8/22/17 12:00 PM	Time zone	UTC+00:00
Comment			

Performing totalizations –
Totaling workplace

The **Totaling workplace** enables values to be added, for example, to determine the available capacity at a location. The totaled **Level** is then represented graphically. The values of standard tanks can be totaled in the **Standard tanks** and the values of recycling tanks can be totaled in the **Recycling tanks** tab. Tanks and aggregated tanks can be included in the calculation.

In the **Totaling workplace**, the user can also save a specific selection as a template, create new templates, and edit, overwrite, or delete existing templates.

Standard tanksRecycling tanks

Workplace >> Totaling

Auto refreshDisabledCurrencyUnitTime zoneLocation

Tank groupAllProductAllSupplierAllLocationAll

Select	State	Location	Tank name	Level	Value	Unit	Free	Product
<input type="checkbox"/>		Naarden	sim_hysteresis	37%	896.0	m³	1,504.0	Cement
<input type="checkbox"/>		Greenwood	sim_normal	47%	150,896.0	m³	169,104.0	Diesel
<input type="checkbox"/>		Aurangabad	sim_secondaries	37%	896.0	m³	1,504.0	Palm Oil
<input type="checkbox"/>		Maulburg	sim_secondaries_2	47%	150,896.0	l	169,104.0	Ethanol
<input type="checkbox"/>		Suzhou	sim_short_term	37%	896.0	m³	1,504.0	Pellets
<input type="checkbox"/>		Dubai	sim_tank_freeze	37%	896.0	m³	1,504.0	Diesel
<input type="checkbox"/>		Aurangabad	sim_temperature	25%	30.0	°C	90.0	Milk

of 7

Total

Calculate

Level0%

Value

Capacity

Free

PD Amount

Monetary value

Displaying analysis data –
Analysis workplace

In the **Analysis workplace**, the user can view key figures for the inflows and outflows of individual tanks in the form of data and charts. Using this data and these charts, past trends can be analyzed and used as a basis for future planning. All information can be exported to Excel. The user can also print the charts.

Workplace >> Analysis

Unit

Tank group: AllProduct: All

Tank name	Location	Time zone	Unit	DO	ADO	DI	ADI	Product
sim_hysteresis	Naarden	UTC+00:00	m³	2,345.0	2,345.1	2,318.9		Cement
sim_normal	Greenwood	UTC+00:00	m³	9,914.9	9,984.9	0.0		Diesel
sim_secondaries	Aurangabad	UTC+00:00	m³	2,345.0	2,345.1	2,318.9		Palm Oil
sim_secondaries_2	Maulburg	UTC+00:00	l	9,914.9	9,984.9	0.0		Ethanol
sim_short_term	Suzhou	UTC+00:00	m³	2,345.0	2,345.1	2,318.9		Pellets

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KPIsOutflow/inflowChart hourlyChart daily

Daily outflow

2/16/2016

9,914.9

l

Average daily outflow

2/16/2016

9,984.9

l

Daily inflow

2/16/2016

0.0

l

Day(s) until reaching safety stock

10d 21h

Next planned delivery

2/23/2016

UTC

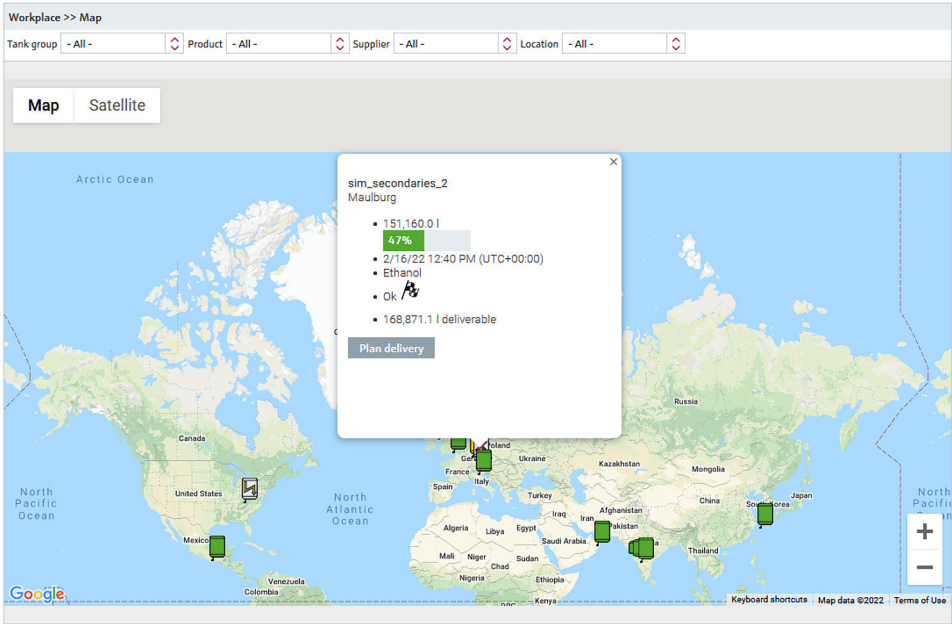
50,000.0

l

From dateTo dateShow available period

Displaying tank locations in the map – Map workplace

In the **Map workplace**, the user can view the locations of individual tanks on an overview map (Google Maps). The tanks can be filtered by tank group, product, supplier, and location. Detailed information can be viewed for each tank, such as such as level, planned deliveries, or planned disposals.



User management

User roles

The system allows access only with a user name and password.

Users and their relevant permissions are defined in the **User Role** menu item. Each user role comprises a range of functions and permissions. The different permissions can be assigned to each user by specifying a user role.

Access rights and user roles can be: system administrator, local system administrator, master data, operator, read-only user, scheduler, product–tank assignment.

Configuration

Configuring master data	<p>Master data is the basis of any inventory management system. The Configuration menu can be used to manage, among others, the following master data:</p> <ul style="list-style-type: none">■ Users■ Tanks■ Aggregated tanks■ Tank types■ Tank groups■ Locations■ Companies■ Products■ Linearizations■ Units■ Reports <p>Many settings are critical, which is why access should generally be restricted to specific staff.</p>
Configuring reports	<p>With the report wizard, reports can be created in various formats: Excel files (XLS), text files (TXT), PDF files, CSV files, or XML files.</p> <p>Reports can be distributed via directory, HTTP, FTP/FTPS ¹⁾ or email.</p>

Application packages

Modules	<p>SupplyCare is modular in design.</p> <p>The "Monitoring" and "Logistics" modules offer the following functions:</p> <ul style="list-style-type: none">■ Monitoring<ul style="list-style-type: none">■ Configurable overview page■ History and forecast■ CSV download■ Notification of system alarms (admin)■ Graphics■ Event management■ Report configurator■ Frozen limit values■ Logistics<ul style="list-style-type: none">■ Configurable overview page■ History and forecast■ CSV download■ Notification of system alarms (admin)■ Graphics■ Event management■ Report configurator■ Frozen limit values■ Termination■ Totaling■ Analysis■ Geographical visualization
SupplyCare Enterprise (64-bit)	<p>SupplyCare has a dedicated 64-bit OS Installer to ensure comprehensive and optimal compatibility with the operating system.</p>
OPC Bridge	<p>Measuring instruments from other companies can be queried via an OPC connection. To query OPC DA 1.0, 2.0 or 3.0 connections over COM, a OPC Bridge is required. The bridge automatically connects via COM with the locally installed OPC servers and provides an HTTP service to respond to queries from SupplyCare Enterprise. This OPC Bridge is included on the SupplyCare Enterprise DVD.</p>

1) Please note: Explicit and implicit SSL are supported in both passive and active FTP mode.

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Product identification, order code and software type

Product identification

The following options are available for identification of the software:

Order code with a breakdown of the software functions in the delivery note or on the label on the packaging of the installation medium.

Order code and software type

To determine the exact software type, enter the order code in the search field at the following address:

To determine the exact software type, enter the order code in the search field at the following address:


www.products.endress.com/order-ident

The order code is printed on the label on the packaging of the installation medium.

Documentation

The following document types are available in the Downloads area of the Endress+Hauser website (www.endress.com/downloads), depending on the device version:

Document type	Purpose and content of the document
Technical Information (TI)	Planning aid for your device The document contains all the technical data on the device and provides an overview of the accessories and other products that can be ordered for the device.
Brief Operating Instructions (KA)	Guide that takes you quickly to the 1st measured value The Brief Operating Instructions contain all the essential information from incoming acceptance to initial commissioning.
Operating Instructions (BA)	Your reference document The Operating Instructions contain all the information that is required in various phases of the life cycle of the device: from product identification, incoming acceptance and storage, to mounting, connection, operation and commissioning through to troubleshooting, maintenance and disposal.
Description of Device Parameters (GP)	Reference for your parameters The document provides a detailed explanation of each individual parameter. The description is aimed at those who work with the device over the entire life cycle and perform specific configurations.

Document type	Purpose and content of the document
Safety instructions (XA)	<p>Depending on the approval, safety instructions for electrical equipment in hazardous areas are also supplied with the device. These are an integral part of the Operating Instructions.</p> <p> The nameplate indicates which Safety Instructions (XA) apply to the device.</p>
Supplementary device-dependent documentation (SD/FY)	<p>Always comply strictly with the instructions in the relevant supplementary documentation. The supplementary documentation is a constituent part of the device documentation.</p>



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