Proven and approved worldwide

TankMaster is developed and supported by Saab Tank Control, the market-leading supplier of radar-based level gauging systems for inventory tank gauging.

The company is AAA classified and fully certified according to ISO 9001 quality standards and ISO 14001 environmental standards.

But perhaps most important, we have more than 25 years of proven customer satisfaction.

ISO 14001 — Environment

ISO 9001 — Quality

Triple A — Credit rating

A Global Service Organization

You are never far from your nearest Saab Tank Control representative. Saab subsidiaries and authorized dealerships are located worldwide ensuring customers professional service support from over 200 highly trained service engineers, available in 80 countries. We also organize courses for our customers in basic and advanced service and system commissioning.

For further information and detailed technical descriptions, please contact your nearest Saab Tank Control representative:

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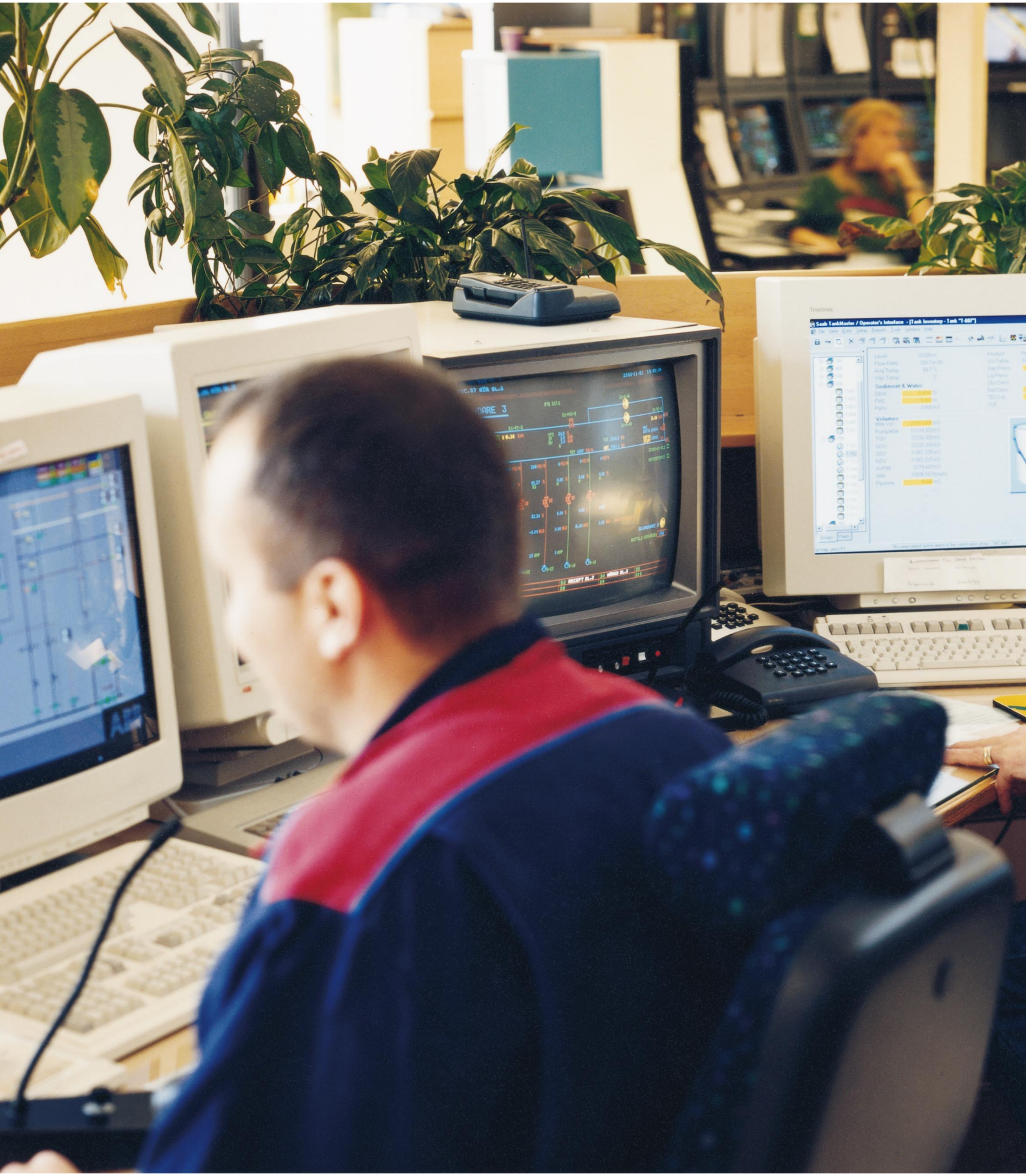
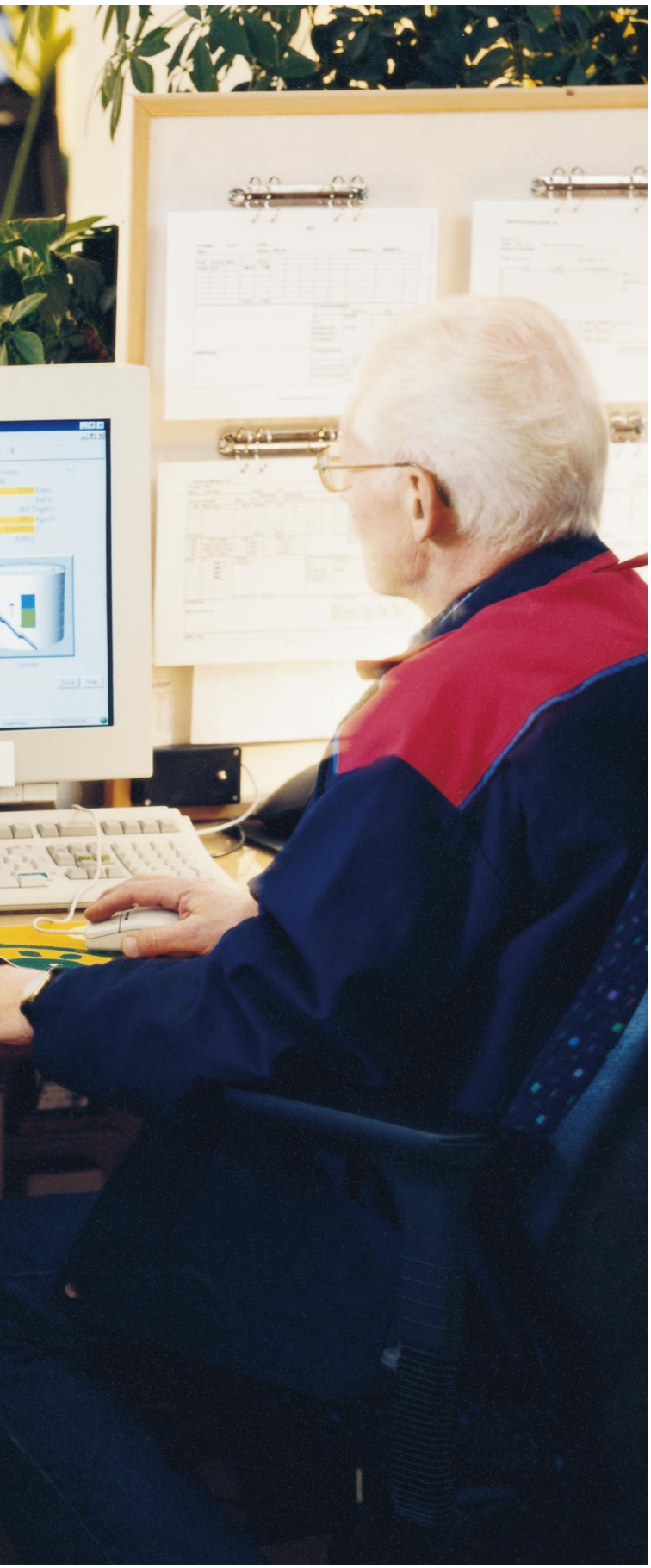
Saab TankMaster™ – so advanced that it's easy to use


Trinitron



The easy way to control your tank farm conditions

It takes only one word to describe the new Saab TankMaster tank inventory system. Easy. Both to work with and to install on a PC. And it makes it easy for operators to have full control and for engineers to configurate and service tanks. And of course, the system is easy to connect with other systems as well as other Windows programs.

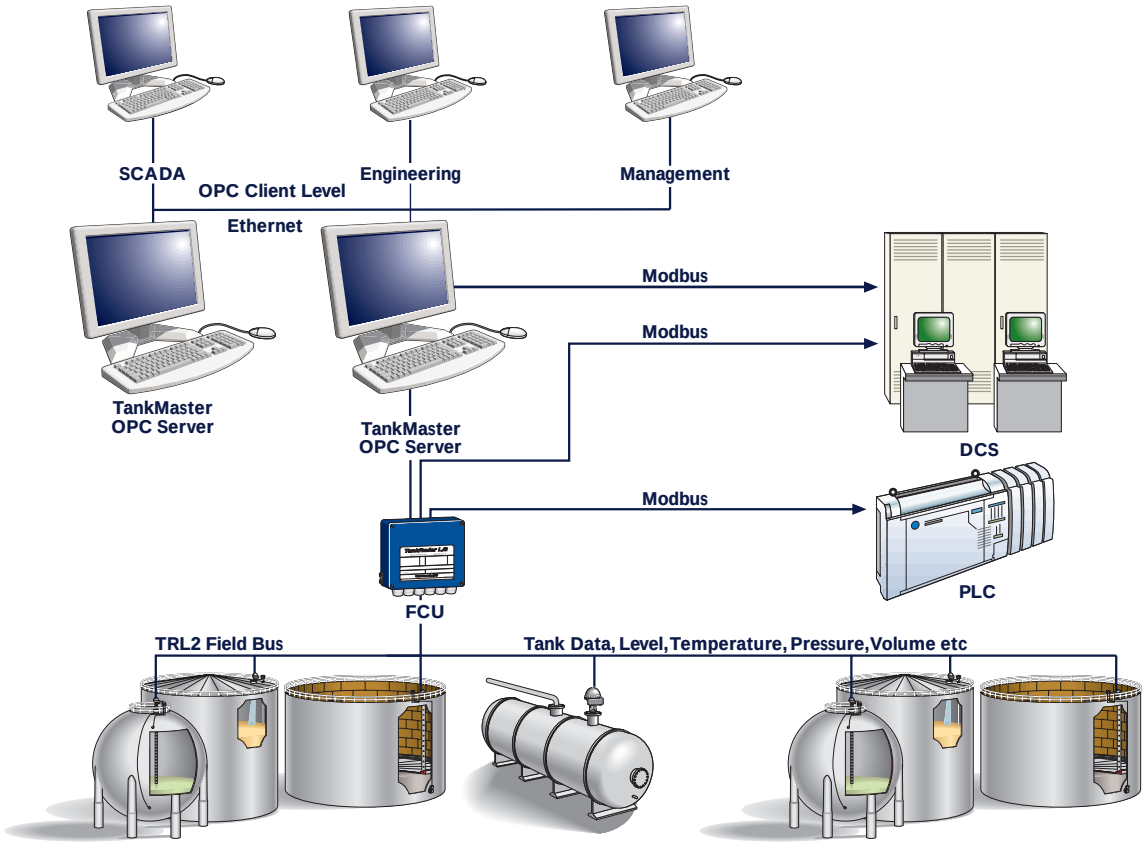
TankMaster is the powerful Human Machine Interface (HMI) for tank inventory management. It provides configuration, service and set up, inventory and custody transfer functions for Saab Tank Control's tank gauging system. All calculations are based on current API and ISO standards.

TankMaster can communicate with Microsoft programs and OPC compatible systems like Intellution's iFIX® and Wonderware´s InTouch®. By sharing data with users on all levels of the enterprise, operators and plant management are better equipped to make timely decisions.

TankMaster is developed and supported by Saab Tank Control. This ensures that you get a reliable leading edge system with full technical and global support. Or in other words – you get a system that is so advanced that it´s easy to use.

Tank inventory management in action. Preems Milan Geld, Shift Supervisor Offsite Loadingmaster and Sven Alveskog, Operator, are pleased to work with Saab TankMaster.

User - friendly and efficient features



Real time tank gauging data

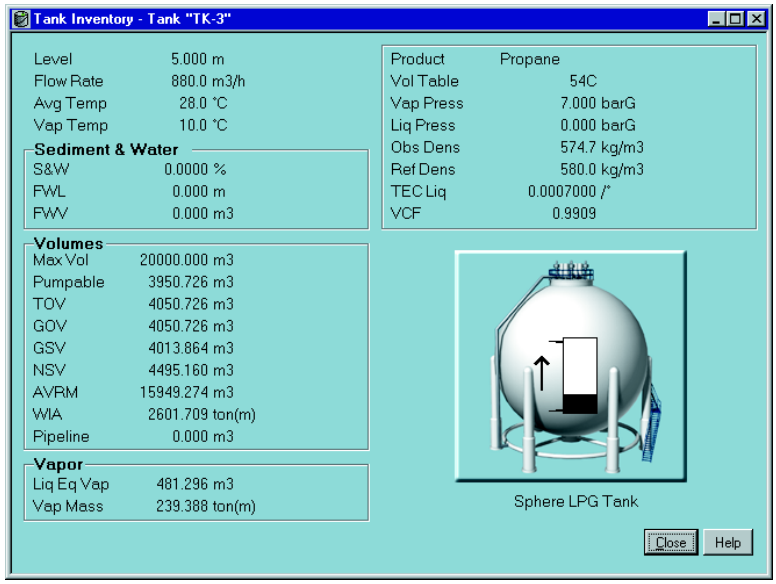
Getting all tank gauging data such as level, temperature, water interface and pressure at a glance, you can automatically calculate volume and mass for your inventory and custody transfer tanks. This will maximize the plant effectiveness, increase productivity and reduce costs. The operator will be able to respond faster to changing tank farm conditions.

Real time inventory calculations based on API and ISO

TankMaster quickly and accurately calculates inventory data, giving you full control over your tank farm. Inventory calculations include gross and net volumes as well as mass calculations, according to current API tables (6, 54, 24, A-D), ISO and other major standards. Tank capacity tables (1000 strapping points) for cylindrical and spherical tanks are also supported. Liquid and mass calculations of vapor in LPG are made according to ISO 4267.

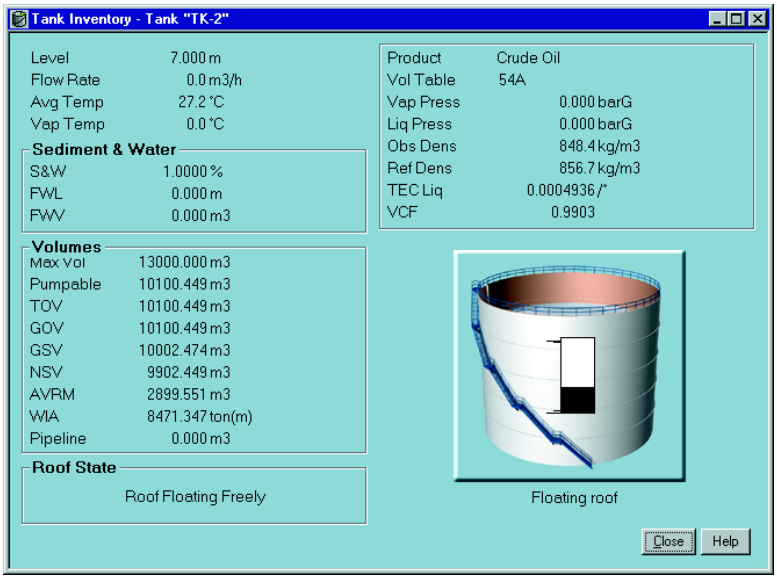
Hybrid tank gauging

With a high accuracy hybrid tank gauging system you can eliminate the need for manual density sampling. With tank gauging data as level, pressure and temperature you get automatic density measurements and mass calculations from the TankMaster system. The density measurements are made in real time just like the level measurement.



API calculator

You can easily keep your reference density updated with TankMaster's API calculator. By manually calculating your reference density by keying in temperature, observed density and an appropriate API table, you get new accurate data. This is the perfect option if you don´t have an automatic hybrid tank gauging system.



Windows NT environment

You work in a familiar Windows NT environment, with full access to the Windows NT security settings and all other features you can find in the operating system.

OPC server with browser

TankMaster uses OPC Data Access 2.0 (OLE for Process Control), an open industry standard, which eliminates the need for costly customized software integration. With the OPC server and the browser it is easy to import all custody transfer and inventory data to other OPC clients such as different DCS:s, PLC:s, Scada systems or Microsoft Office® programs. This way, operators and plant management are better armed to make timely decisions as they work with distributed inventory and tank gauging data. (Website OPC Foundation: www.opcfoundation.org)

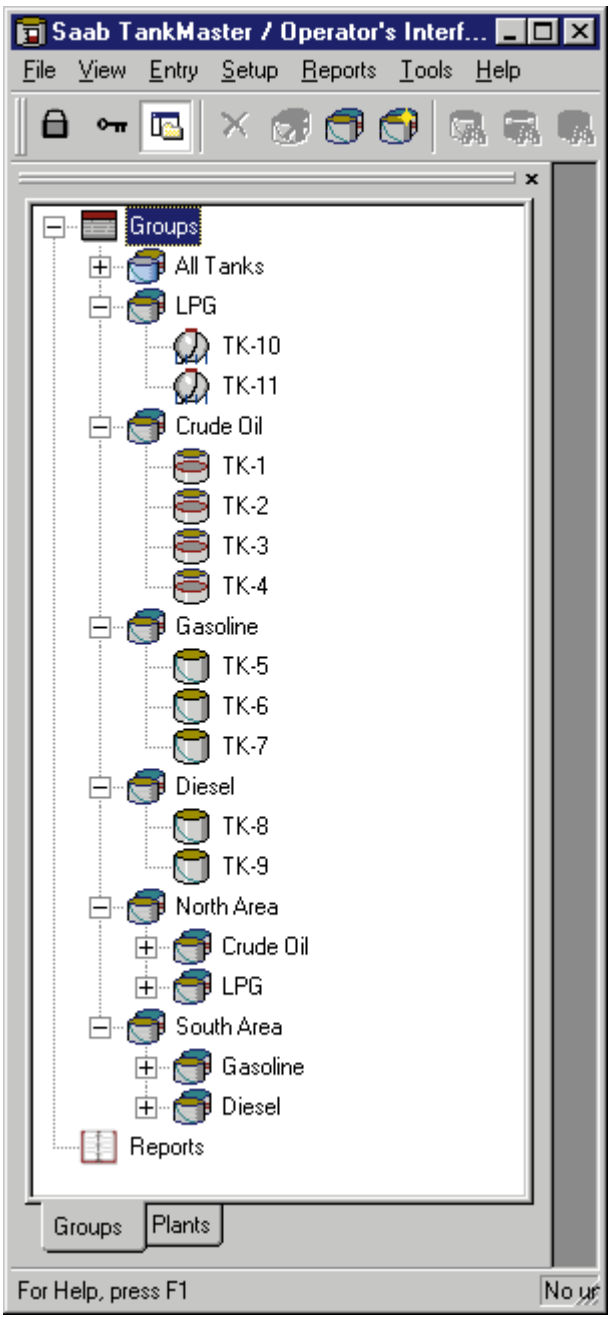
OPC™ FOUNDATION MEMBER

Full network capabilities

The networking function makes it possible to work with TankMaster from any PC in the network. Updated real-time data are available on all TankMaster client PC:s improving the corporate communication. The operator can install tanks, handle tank gauging and inventory data and accept alarms everywhere, by simply consulting a PC nearby. Authority for alarm handling can be distributed in the network. If you have many control rooms you can decide who will be responsible for which tanks in the tank farm, giving high safety.

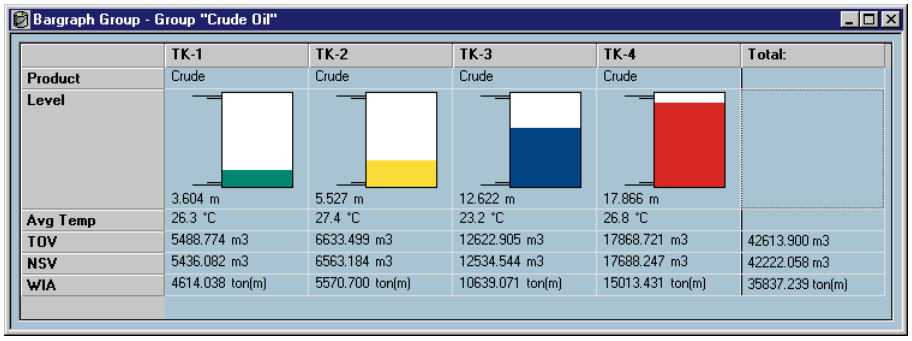
User friendly navigation

The "tank farm explorer" makes it easy to navigate in TankMaster. Just like in "Windows explorer" it is possible to expand and minimize fields and get direct group and tank access by double-clicking the specific group or tank icon.



Interactive configuration and installation

A wizard will guide you through the interactive installation and configuration of the transmitters. The wizard guide is based on graphics and explicit messages. Additional help functions are always available. After the installation you can easily see which transmitters and data acquisition units that belong to a tank.

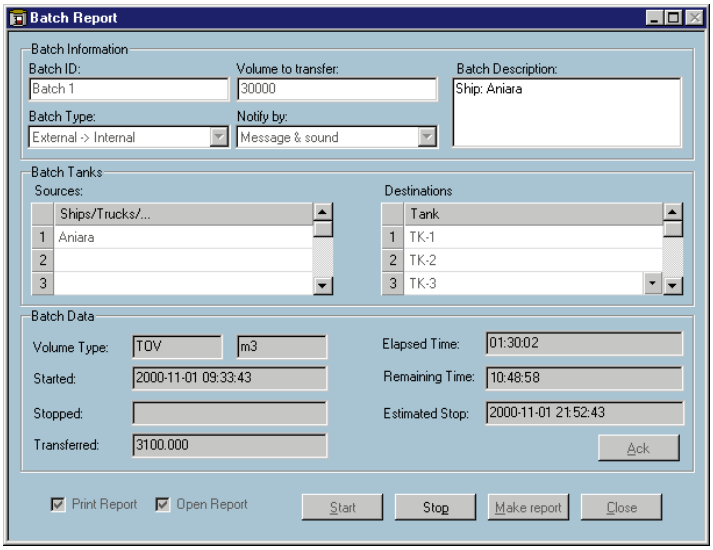


Advanced group configuration

You can easily organize the tanks in e.g. geographical or product groups, with associated sub groups. For example you can choose to see the actual tank gauging and inventory data in a bargraph group, giving a quick overview of tank farm activity. Or view only tanks with changing levels, in a tank movement group. Arrows inform the operator whether the tank is being filled or emptied.

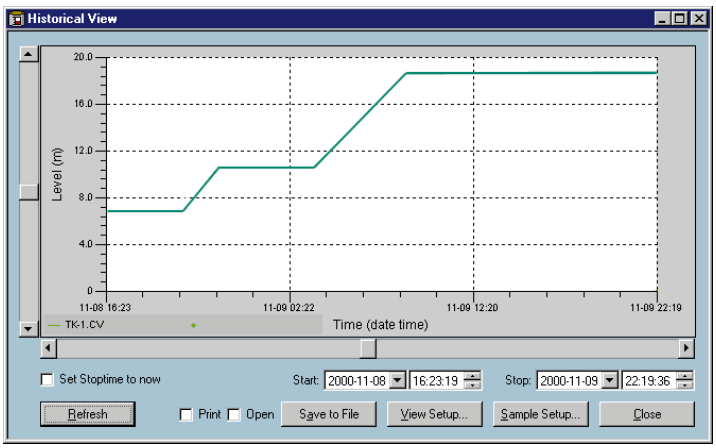
Batch report for internal and external transfers

The batch report gives you full transfer supervision, when making internal and external transfers in inventory and custody transfer tanks. When e.g. a ship calls at your plant you can start a batch report and get information about when the transfer was started, elapsed time, remaining time and estimated stop. You get an alarm 5 minutes before, as well as after the transfer is ready. When the transfer is ready, you can print out the batch report for your records.



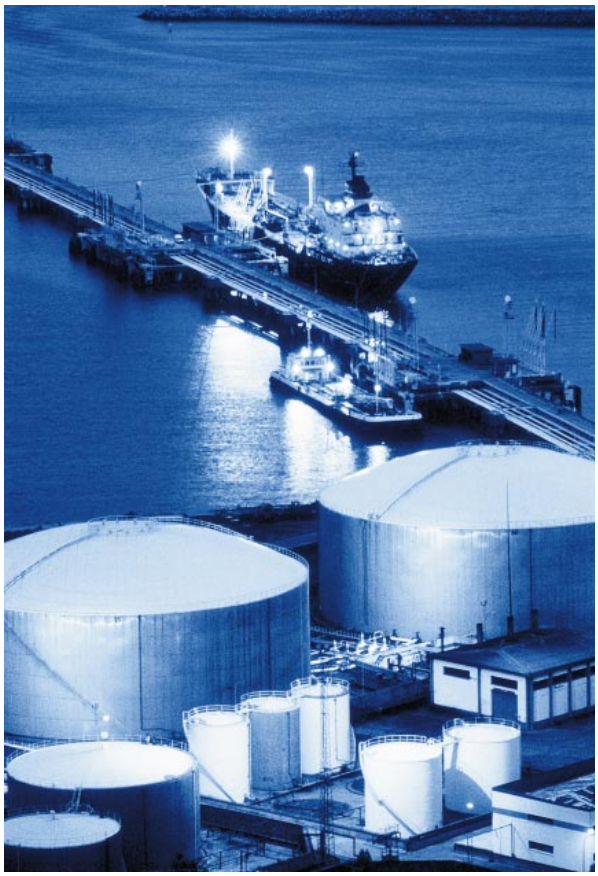
Historical data sampling

The operator can collect historical data for reliable follow up. More than 100,000 samples per tank can be saved periodically. The reports are generated directly from TankMaster and saved to file. In TankMaster you get a graph of the historical trends.



Real time view

In TankMaster you can see real time tank gauging data directly in a graph. You can follow e.g. a tank level graphically and save the result to a file. By using a print key program you can print out your graph.



Automatic reports

TankMaster automatically generates standard reports for each shift, every twenty-four hours or at other intervals specified by the operator. Two types of standard reports can be generated, LogReports or MassBalanceReports, which are arranged by tanks or groups. You can adjust the parameters in the reports. All activities have a time stamp for reliable follow up.

Reports via e-mail

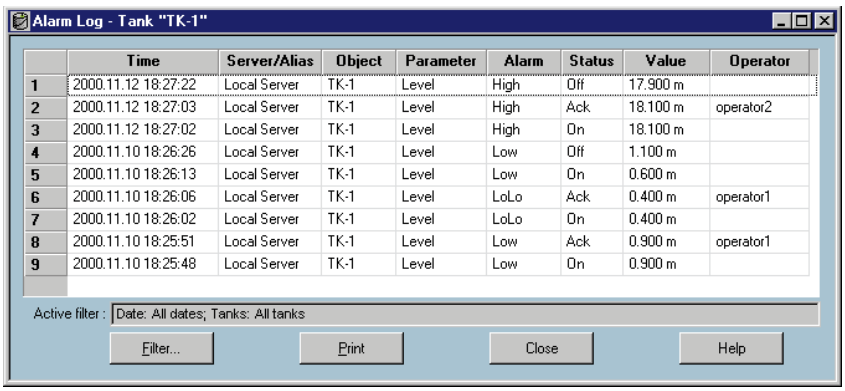
Standard reports can automatically be sent via e-mail to suitable destinations selected from each work-station for quick follow up. The e-mails are based on time of day or shift. This feature requires that you have a mail server in your network.

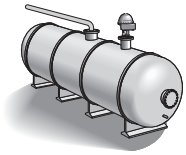
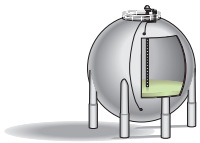
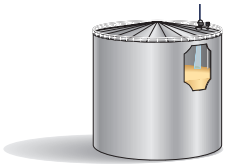
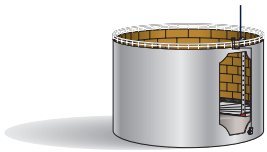
Reports to Microsoft Office programs

The OPC server makes it possible to generate customized reports in Microsoft Office® programs such as Excel. This way, you can get your own plant specific reports. This special feature requires integration between TankMaster and third party complementary programs.

Reliable alarm handling

TankMaster features alarm summary, alarm log and alarm event log for safe and reliable alarm handling. When an alarm occurs, a bell rings and the alarm icon starts to blink. The operator can set different sounds for each alarm type. Alarms are customized at any station in the network and a client signature is saved at every acknowledgement. You can view all alarms in the system or divide the alarms per group or per tank.



User manager

For safety reasons, different access rights per user can be set. The users can log on and log off from TankMaster without restarting the program. In the alarm log you can e.g. track who acknowledged a certain alarm. When the shift is over the operator logs out and the new operator takes over and logs in. TankMaster has four different access levels: view, operator, supervisor and administrator.

Audit log for events

For reliable follow up, events can be stored in an audit log. With the event log you can follow up when and by whom a parameter was changed. If you have many users in the system this is an excellent way to keep track of changes in the system.

Alarms via e-mail

Alarms can be automatically sent via e-mail to suitable destinations selected from each workstation, based on time of day or shift, for quick follow up.

Alarms to mobile phones

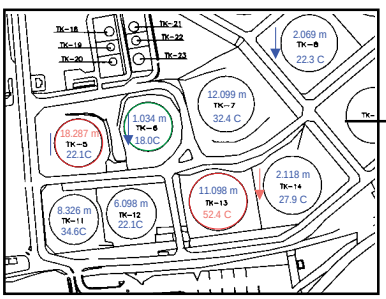
Alarms can be sent to mobile telephones or pagers making the operator mobile. This feature depends on the mobile operator in your country and your e-mail possibilities.

Leakage alarms

When you expect no level changes in your tank for a time period you can activate a leakage alarm. If the net volume or level changes more than a predefined leakage volume or leakage level, you will get an alarm, giving you increased safety and environmental protection.

Customized views

In TankMaster you can change general and specific tank view and setup windows. You have a number of options to design your TankMaster as you like; you can either modify the existing windows or build completely new ones. For example you can have a photo of your own plant giving a quick realistic view and just by clicking a specific tank you will get corresponding tank data.



Metrologically sealed data

TankMaster is designed for use as a legally approved custody transfer system according to the requirements of a number of metrological institutes. The hardware key will in this case be exchanged for a metrologically approved key, which is sealed to the parallel port on the PC and cannot be removed. Legally approved measuring values are clearly indicated on the screen.

Scada / DCS communication via OPC

TankMaster has an open OPC structure, making it easy to connect a Scada / DCS system that handles OPC, e.g. Intellution´s iFIX® or Wonderware´s InTouch®. With this function, all users in the network can easily use the tank gauging and inventory data.

Scada / DCS communication via MODBUS

From TankMaster you can get tank gauging and inventory data by using the Modbus protocol. You connect your Scada / DCS system on the serial com port (RS-232) on the PC.

Easy translation

TankMaster can easily be translated to the language you choose in the Translation kit. Users can change text in the dialogs and menus and verify translated text on site. Any language is possible.

Integration with other tank gauging systems

In TankMaster there are interfaces to other vendor's systems. You can connect an Enraf® system to TankMaster and get the measured tank gauging data. Another possible TankMaster connection is to the Endress+Hauser's® MDPII unit.

Saab TankMaster compatibility

TankMaster acts as the tank inventory system for all Saab TankRadar products. Customers using Saab Tank Control's earlier OPI (OS/2) platform can easily upgrade to TankMaster by using the OPI upgrade program. With this program e. g. your strapping tables will automatically be transferred to TankMaster.

On-line help

In TankMaster an on-line help is available giving quick support in all windows. The users have also access to User´s manuals in PDF format. Acrobat Reader is included in the TankMaster package which makes it possible to read the PDF files. With the guidelines and manuals you will be able to do an easy and quick installation.

In-house development

TankMaster is 100% developed and supported by Saab Tank Control, which has over 25 years experience of reliable and accurate radar tank gauging systems. By choosing Saab TankMaster for your tank inventory you will be sure to get a reliable leading edge system with full technical and global support.

IFIX is a trademark of Intellution Inc. InTouch is trademark of Wonderware Corporation. Microsoft Office is a trademark of Microsoft Corporation. Enraf is a trademark of Enraf B.V Endress+Hauser is a trademark of Endress+Hauser (International) Holding AG.

Saab TankMaster™ product information

PC Requirements

Required operating system	Windows NT 4.0 SP5 or later. Distributed COM (DCOM), which is used for network computing.
Required hardware (PC)	Windows NT approved PC. 350 MHz Intel or compatible. 128 MB RAM. 4 GB disk drive (TankMaster requires approx. 200 MB). Graphics card 1024*768 pixels, 65536 colors.
Required hardware (network server PC)	1-2 Network clients – same/better performance on the server PC than the client PC. 3-x Network clients – 500 MHz Intel or compatible, 256 MB RAM on the server PC.

TankMaster, standard packages Note 1

TankMaster WinSetup	Configuration only (Windows 95 compatible).
TankMaster Lite	Configuration, View and alarm handling, standard reports.
TankMaster 5	Complete system, 1-5 tanks, inventory calculations based on API and ISO, configuration, view and alarm handling, standard reports, API calculator.
TankMaster 20	Complete system, 6-20 tanks, inventory calculations based on API and ISO, configuration, view and alarm handling, standard reports, API calculator.
TankMaster Max	Complete system, 21-X tanks, inventory calculations based on API and ISO, configuration, view and alarm handling, standard reports, API calculator.

Options Note 2

TankMaster network clients	Used for TankMaster clients in the network.
TankMaster slave protocol	For connection between TankMaster and Scada / DCS via MODBUS (RS-232).
OPC server (OPC 2.0)	For connection between TankMaster and Scada / DCS / Microsoft Office via OPC (network or locally in the PC).
OPC server (OPC 2.0) with - Office Link	For connection between TankMaster and Microsoft Office via OPC, including the Office Link program (third part program).
Custody transfer	Custody transfer windows with hardware key for custody transfer approvals.
Customized views	Edit / view your own created general or specific tank view in TankMaster.

Extra Note 3

OPI/2 upgrading kit	The OPI/2 upgrading kit includes the TankMaster software + upgradeing program and exchange of registered hardware key. FBM 2171 is needed. Also check the PC requirements for TankMaster.
Translation kit	Language conversion.
Alarms to mobile telephones	Send standard alarms to your mobile telephone.

Future

New functions	Saab Tank Control will continue to develop Saab TankMaster. Please contact us if there is a feature that you are missing.

Note 1 - TankMaster standard packages:
The standard TankMaster packages include the features: real time tank gauging data, user friendly navigation, advanced group configuration, interactive configuration and installation, user manager, batch report for transfer control*, historical data sampling*, real time view*, automatic reports, reports via e-mail, reliable alarm handling, audit log for events, alarms via e-mail, leakage alarms and on-line help. The API-calculations feature include real time inventory calculations and hybrid tank gauging.

* Not included in TankMaster Lite version.

Note 2 - TankMaster options:
The OPC server includes the browser.

Note 3 - Extra:
Alarms to mobiles depend on the telephone operator in your country and on your e-mail possibilities.