



Inventory visualization and management

# VEGA Inventory System

Looking Forward **VEGA**

# Measurements without borders

The basis for a fully functioning inventory management system, whether global or regional, is reliable measurement data and a centralized information platform. These are the key areas that can guarantee smooth-running, economical logistics in which all transport and storage facilities are optimally utilized.

This applies to suppliers with globally distributed customers, as well as to large companies that have to supply their own subsidiaries.

With VEGA Inventory System, the current inventory status can be determined at a glance. This means the user can be certain that ordered replenishments will arrive on time.



**Houston**



**Buenos Aires**





Rotterdam



Singapore



## Until now: the risk of gaps in the supply chain

In the supply management processes between customer and supplier there can be many points of friction. Each company has its own operating procedures, internal schedules and planning requirements. In day-to-day operations, these things are often not compatible with those of another company.



Many companies still inform their suppliers of their supply needs "by hand". This means that during the hustle and bustle of daily business, the customer has to correctly assess their needs and deter-

mine the ideal time to order. That's the only way they can avoid high storage costs on the one hand and disturbances in production or even production downtime on the other.



The supplier tries to plan reasonable and efficient routes to resupply all customers on time in as few trips as possible. In all this, they have to also rely on customers

making purchase requisitions on time. A rush order at the last minute can throw a carefully planned route completely off course.



## From now on: well supplied with VEGA Inventory System

There's a magic word for a perfect customer-supplier partnership and that word is automation. VEGA Inventory System is developed specifically for inventory monitoring in liquid tanks and bulk solids silos. The software works in conjunction with instruments that continuously measure the levels of diverse liquids (e.g. water, chemicals, fuels, lubricants, additives and liquid gases) as well as bulk solids (e.g. cement, grain, powders, granules and pellets).

### **Increased security of supply**

With the web-based platform VEGA Inventory System, users can keep an eye on their inventories at all times – locally and globally.

The automated flow of information within the company or between partner companies creates transparency early on for the supplier – and security of supply for the purchaser.

VEGA Inventory System makes a strong link out of something that has often been seen as a critical weakness in the supply chain.

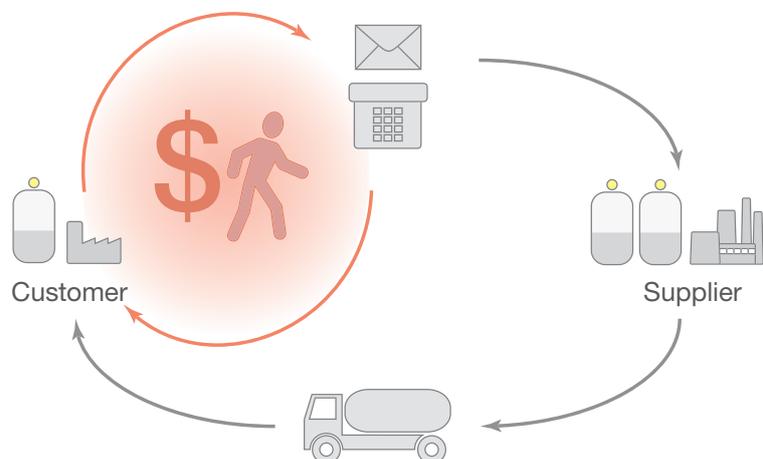
### **Better planning capabilities**

VEGA Inventory System reports supply needs automatically and on time. The software draws not only on current measurement data from the inventory, but also on historical data gathered from consumption trends. Monitoring and planning tools support optimized inventory demand analysis and delivery scheduling.

# A solution for all requirements

## The conventional way of resupplying stocks:

Monitoring by hand and ordering by phone or purchase order represents an additional, cumbersome loop in the supply chain.



## A new kind of inventory monitoring with VEGA Inventory System:

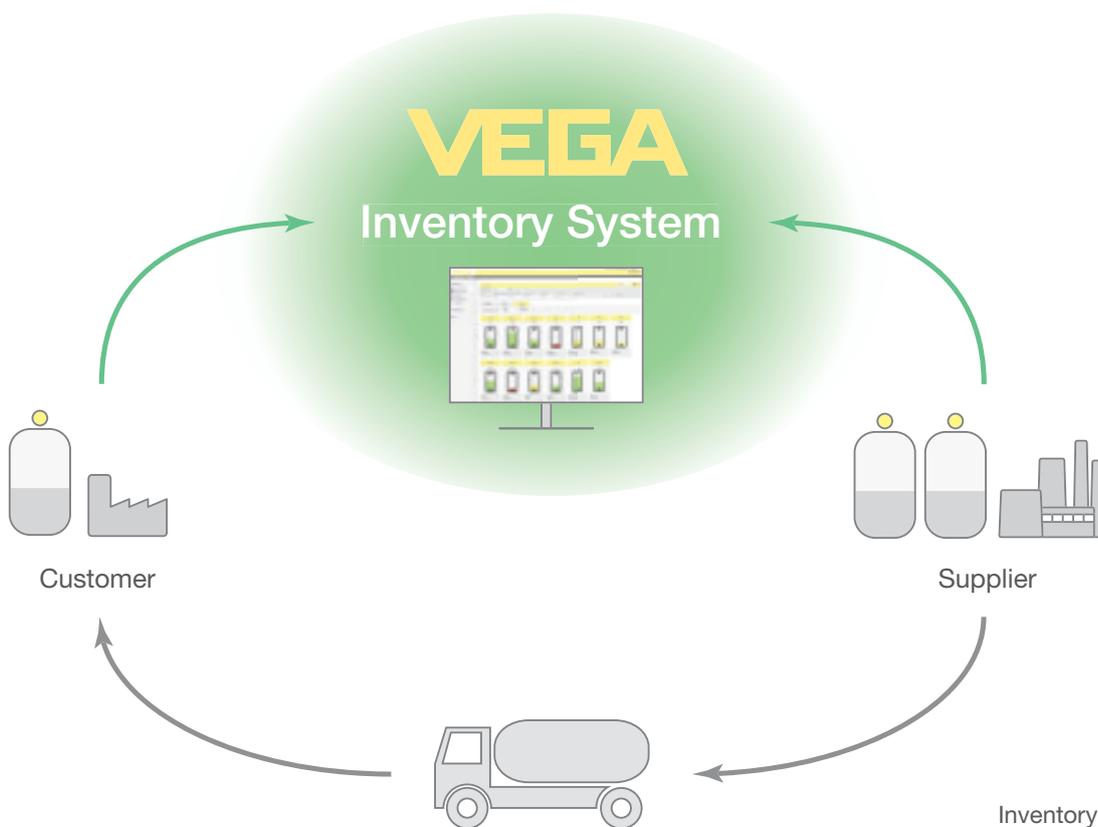
There are two main models of application for VEGA Inventory System and in both it ensures that stocks are always full – the traditional vendor-customer partnership and also the storage and distribution logistics within individual companies.

### **Model 1: Vendor Managed Replenishment**

In this model, the customer transfers the responsibility for monitoring and replenishing his stocks completely to the supplier. Through VEGA Inventory System, they grant their supplier access to the real-time inventory data directly from their tanks and silos.

### **Model 2: Inventory Monitoring within the Enterprise**

In this model, VEGA Inventory System is used by a company to monitor and manage its own stocks at one or more locations. The software can also be used to optimally coordinate raw materials replenishment between the main plant and external facilities.



Inventory visualization helps to ensure that ample replenishments are delivered at the right time.

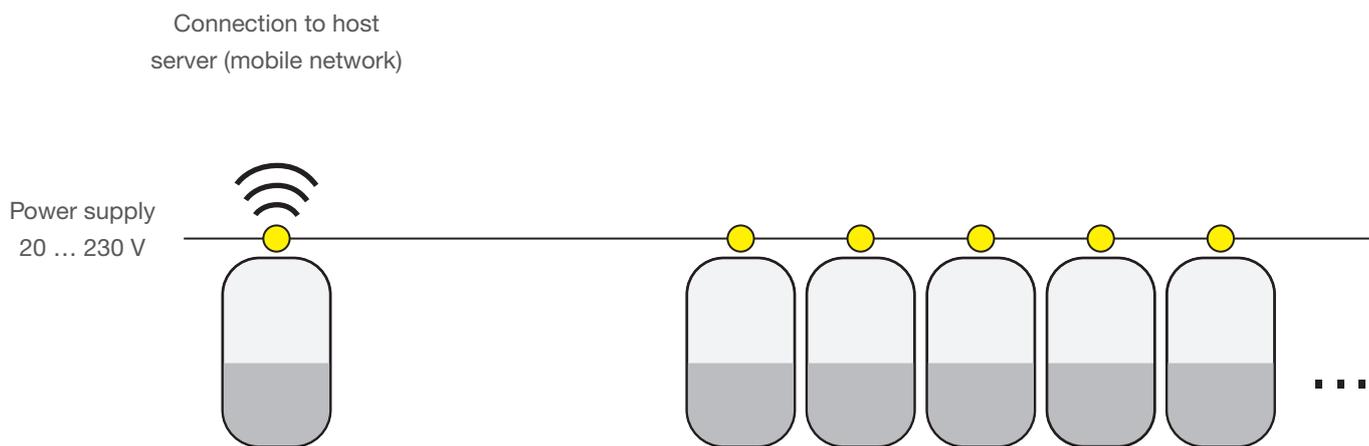
### Advantages for the supplier

- Quick access to current and historical customer consumption data
- Cost-effective production and inventory management in own facilities
- Increased efficiency of planning processes
- Cost savings through optimized logistics
- Improved customer relationships and long-term customer loyalty

### Advantages for the customer

- Security of supply: no more “out of stock” situations and costly rush orders
- Avoidance of production stoppages
- Cost savings through reduced administrative work
- Higher efficiency thanks to automation
- Concentration on core business

# Tanks at different locations? All fully supplied!



## Which instruments are needed?

Reliable, precise measuring instruments are essential for automated inventory monitoring.

VEGA Inventory System is compatible with measuring instruments from other manufacturers, however, these must be connected to a VEGA signal conditioning instrument.

Up to 15 instruments can be connected via HART multidrop. For mobile silos there is PLICSMOBILE, which transmits the data via the mobile network.

## Areas of application

VEGA Inventory System ensures reliable resupplying of storage containers at different locations. There are numerous potential applications. It can ensure, for example, that petrol stations never run out of fuel or diesel additive or that construction sites are always adequately supplied with cement.



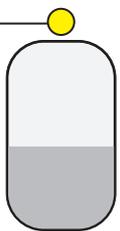
## Application example Cement Industry

A cement distribution centre needs to produce various cement products and transport them to many different end customers. Efficient operating logistics is crucial for this transport-intensive business.

Planners must respond to the changing needs of customers and ensure that enough stock of dry cement and other raw materials is available for production. Sensors and measurement data transmission ensure reliable monitoring of silo content that replaces the work previously performed manually.

VEGA Inventory System gives planners a detailed overview of their own in-house inventory as well as those in remote mobile silos.

The result is a simple, structured inventory management and demand planning system, as well as increasing the efficiency of transport logistics.



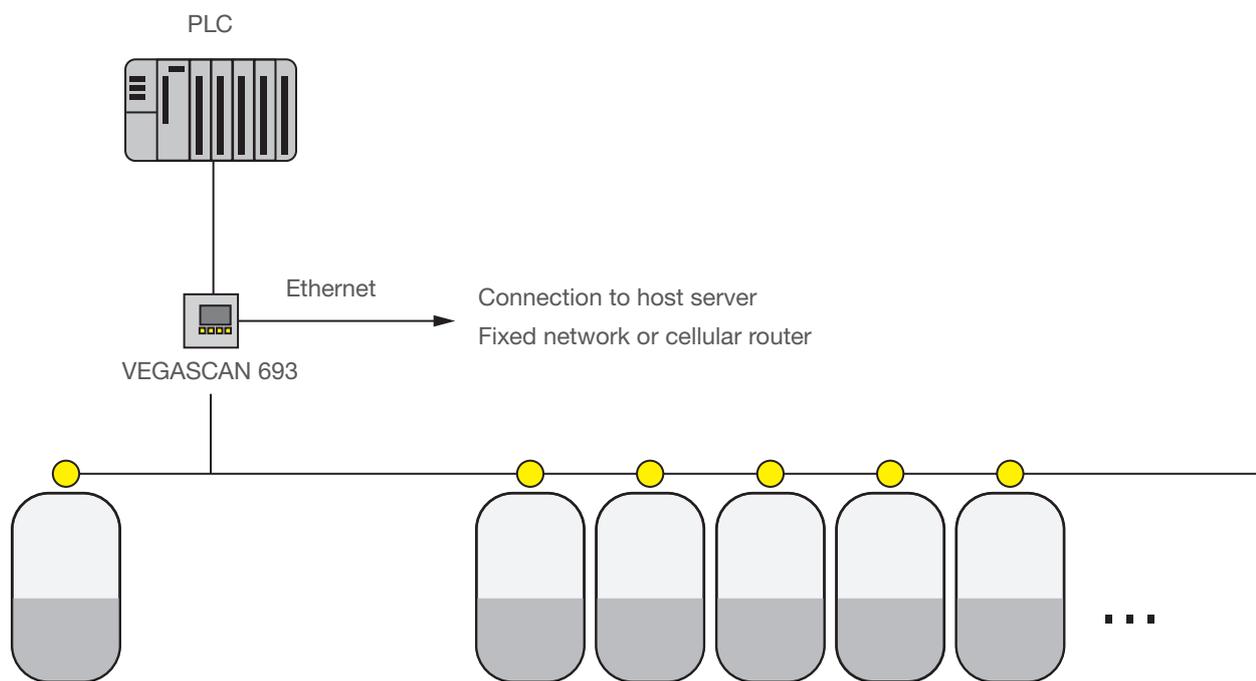
1 to 15 sensors  
(Ex up to 5 sensors)

### Advantages

- Simple installation with integrated mobile solution
- Low investment costs for integration of measuring instruments through HART multidrop concept
- A simple power supply is sufficient: normal mains supply, batteries or solar panels



# New facility planned? Install the best technology, right from the start!



## Which instruments are needed?

The wiring is based on the HART multidrop concept. This allows up to 15 sensors to be connected to a VEGASCAN.

The data are transmitted via Ethernet Modbus TCP.

## Areas of application

Minimal effort, low costs! When planning a modern industrial plant, VEGA Inventory System can be integrated into the process control system right from the start with very little additional effort.

Requirement: a 4 ... 20 mA/HART signal.



## Application example Food Industry

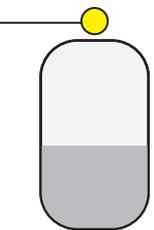
Since the implementation of VEGA Inventory System, a flour mill can always ensure the resupply to the silos of food producers. Each delivery is automatically initiated on the basis of previously agreed stock replenishment levels.

End customers benefit from

- ✓ Transfer of administrative work to the supplier
- ✓ Avoidance of material outages and express deliveries
- ✓ More time to focus on core business

Suppliers benefit from

- ✓ More accurate and current information
- ✓ Better predictive planning for production
- ✓ Cost savings through optimization of scheduling, loading and route planning



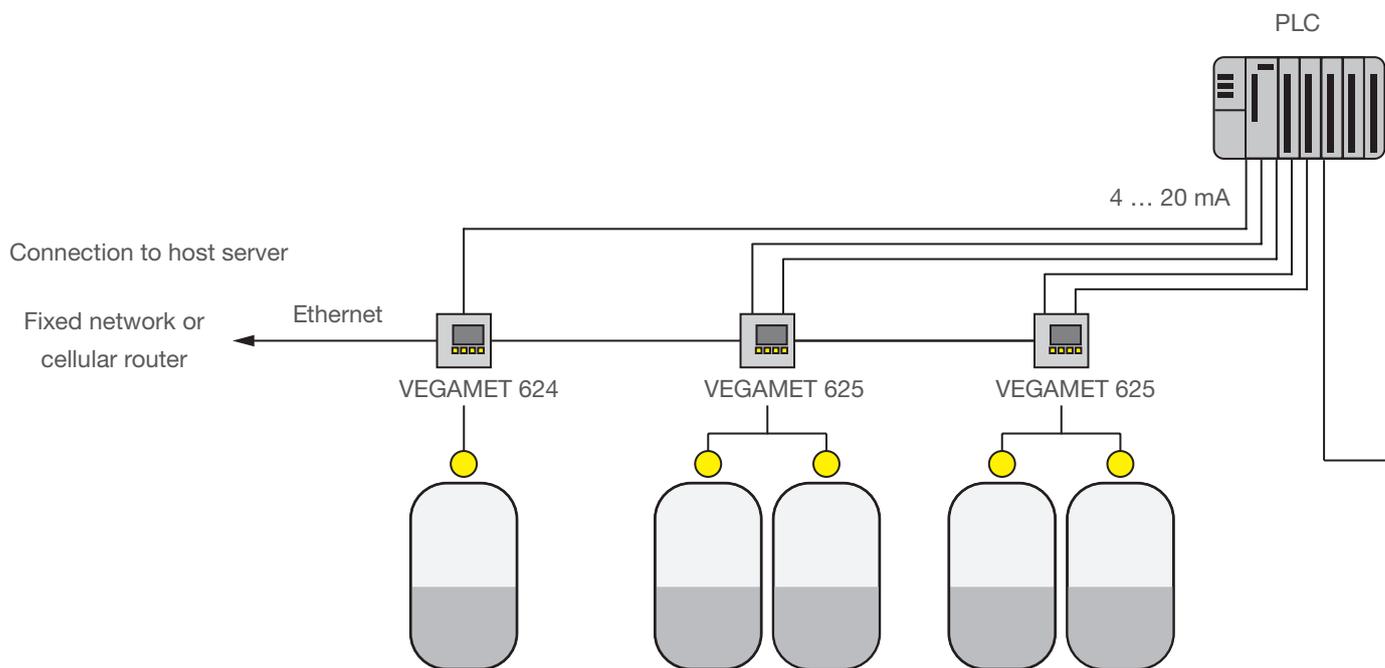
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### Advantages

- Cost-effective, since only a few additional instruments are needed and meters of wiring are saved
- Simple setup and commissioning of VEGASCAN and the connected sensors



# The plant already exists? Make optimal use of the instrumentation already in place!



## Which instruments are needed?

A big plus: all existing instruments can be integrated – no matter whether they use analogue or digital data transmission. Even the manufacturer doesn't matter.

For one analogue 4 ... 20 mA measuring point, only one VEGAMET 624 is required and for every two HART measuring points, only one VEGAMET 625.

For wireless data transmission, PLICSMOBILE can be connected to any VEGA sensor.

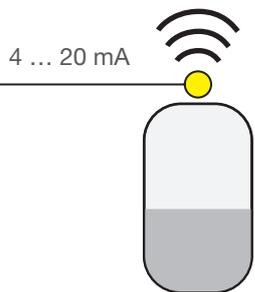
## Areas of application

VEGA Inventory System can be integrated into the process control system of an existing industrial plant where many complex processes are already automated – and where the operator also wants the stock replenishment mechanisms to be automated.

This includes not only plants in the chemical industry but also those in the food, pharmaceutical and plastics industries too.



Connection to host  
server (mobile network)



### Advantages

- On-site display and adjustment
- Integration into an existing PLC
- Integration of existing HART as well as analogue sensors

## Application example Chemical Industry

A distributor of bulk and specialty chemicals is confronted with the complexity of the procurement, storage, mixing and transport of a wide range of products. On top of that, their various industrial customers need particular products in the right quantity at the right time.

VEGA Inventory System is a great solution for monitoring and managing a company's own storage tanks. Additionally, this solution can be used as a stand-alone monitoring system at the customer's premises. This allows the manufacturer, through real-time display of inventory levels and consumption data, to resupply stocks punctually as well as optimizing logistics and delivery flexibility.

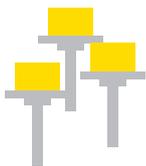


# Perfect partnership between measurement technology and software

Data acquisition, visualization and delivery planning are the core elements of successful, automated inventory monitoring. The interaction between measurement technology and software plays a particularly important role.

**VEGA offers a complete system from a single source.**

## 1. Data acquisition



### Level

VEGAPULS  
VEGAFLEX  
VEGABAR

### Signal conditioning instruments

VEGAMET  
VEGASCAN  
PLICSMOBILE

For reliable, accurate monitoring of levels, VEGA has a wide range of universally applicable sensors and signal conditioning instruments in its product line. All VEGA instruments operate reliably, are easy to use and feature self-monitoring and diagnostic functions.

## 2. Visualization of measurement data



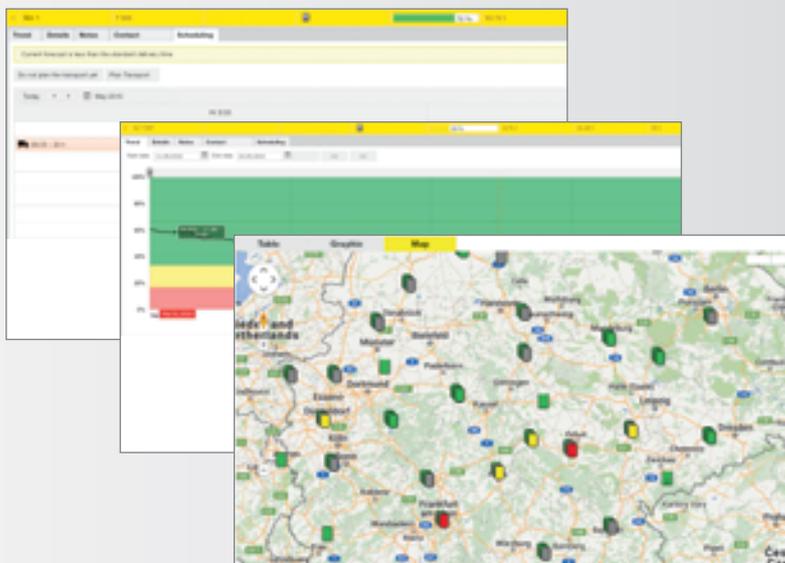
At the visualization level, the measurement data is displayed on screen.

With the VEGA Inventory System that means: clear bar graphs and tank symbols illustrating the filling and limit levels in the various tanks and silos that need to be supplied. So the user has the current stocks in view at all times.



# VEGA Inventory System

## 3. Delivery planning



The analysis and planning tools in VEGA Inventory System allow optimized demand and delivery planning. A consumption forecast is calculated on the basis of historical trend data. The dynamic web map shows the location of tanks and silos as well as their status. In the calendar, the supplier can also directly enter the delivery times and quantities.

# See everything at a glance!



## The information centre

Which customer, which location, which tank, which product? VEGA Inventory System provides the user with a quick overview of all stocks and their current status.

Numerous filter functions allow fast grouping, sorting and listing of requirements, either by product type, level status, alarm level or other factors.

The search radius tool also facilitates the grouping of different sites within a region.

## Two different graphical views

The data visualization of VEGA Inventory System can be displayed in two different ways:

- As a detailed table view
- As a more illustrative level graphic

The inventory data are transmitted automatically at regular, defined intervals, for example every 15 minutes or every hour.

Delivery notifications and alerts are updated automatically in real time.



### Green, yellow – red alert

The traffic light principle runs through all functions of the program. Users can see at a glance where stocks are healthy in the green zone, yellow shows where a delivery is due shortly and red means high time for replenishment, because the stocks are practically depleted.

The limit values for the yellow delivery notification or the red alert can be defined as needed. The alert can be sent additionally by e-mail or SMS.

### Data export and statistics

VEGA Inventory System allows important inventory data and statistics to be exported to other applications.

Data analysis can be easily carried out with standard Office programs.

### Configuration management

For highest account integrity and security:

The user account management functions of VEGA Inventory System make the administration of users and customers easy.

With them, the supervisor can not only manage the access rights of employees and customers effectively, but also define what they can see in the different views.

# Good tools for schedulers



## Delivery planning and calendar

Which driver will take how much of which product, where, when and with what vehicle?

VEGA Inventory System makes delivery planning efficient and easy.

Practical: Simply by clicking on the small vessel symbols that indicate supply requirements, the supplier can directly enter the delivery times and quantities. A truck icon then appears – a sign for both supplier and customer that the delivery is now scheduled.

## Trend chart and consumption forecast

How much has been consumed so far? When should the next delivery be dispatched?

The trend and consumption analysis provides an overview of historical inventory data and calculates a consumption forecast on the basis of these values. In most scenarios, the system can predict quite accurately when stocks are likely to run out. When a certain limit level is reached, the user receives a delivery notification or an alarm message.



### **Dynamic web map**

Where are the customers with supply requirements and how they can be served efficiently, with as few delivery routes as possible?

The dynamic web map gives an updated overview of all tank and silo locations and their status – both regionally (with zoom function) and globally (helicopter view).

# Perfect service with all the extras



## **VEGA hosting service**

When users host their data at the VEGA data centre, they can be rest assured that availability, reliability and security have top priority. The hosting service is built on the latest technologies and security standards. Availability and redundancy are ensured by an infrastructure of multiple data centres that are monitored and managed by a team of IT experts.

The measurement data can be conveniently accessed at any time with a web browser.



## **Hosting on your own server**

This model is intended for companies that keep their data on their own business premises as a matter of principle. You manage the software installation, running of the system and host the data on your company's own server.

## **Secure data transmission**

For data transmission, VEGA Inventory System uses the latest encryption and security technologies such as e.g. HTTPS and TLS. Data transfer is possible via IP-based networks, mobile networks as well as the Internet.

## **Service and support**

VEGA service includes on-site consulting via the global service network. Qualified VEGA employees analyse how VEGA Inventory System can best be integrated in each particular case. Support also includes a special user helpdesk for users of VEGA Inventory System.

## **Training**

VEGA offers VEGA Inventory System users a customized training program that covers specific training needs in all areas of automated inventory monitoring: use of the measuring instruments, data transmission, software as well as maintenance and diagnostics.





Made in the Black Forest, tried and tested across the world – customers speak of the benefits

### **Sebastien Previtali, Ciments Calcia, France**



*Ciments Calcia has always been on the lookout for innovative services that bring customers real added value.*

*Automated inventory monitoring with VEGA Inventory System is one of those services. It provides clear visualization and a simplified representation of inventory in real time, which allows us to resupply the stocks of our customers quite reliably and efficiently.*

*Reliability, time savings and optimized inventory management are three key components and efficiency factors for our customers. It also gives us better control to meet the needs of customers, not only with regard to quantity, but also date and delivery time.*



**Ciments Calcia**  
Italcementi Group

### **KRUSE Automotive, Germany**



*VEGA Inventory System allows KRUSE Automotive to call up the level data of its AdBlue® customers automatically every day from a large number of telemetric measuring points. We get current data up to 4 times a day, which we can both visualize in VEGA Inventory System and automatically send email notifications to our customer service.*

*On the basis of daily levels, historical data and our own experience we can offer our customers a completely worry-free supply service.*

*This system gives us maximum flexibility and the option of carrying out truly optimal route planning in our own logistics department.*





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