

# Human Machine Interface

## Vijeo Look supervisory software



### Presentation

Vijeo Look is a SCADA (*Supervision Control And Data Acquisition*) supervisory software solution designed for standalone stations. It is based on open, standardized technologies.

Easy to implement, it offers all the standard functions of a graphic supervision tool. Vijeo Look is supplied with a pre-configured OFS (*OPC Factory Server*) server. It is compatible with PCs running the Windows 2000 Professional or Windows XP Professional operating system. It can be used to create applications based on a whole range of Telemecanique PLCs including Twido, Modicon TSX Micro and Modicon Premium/Atrium/Momentum/Quantum.

Vijeo Look interfaces easily with industrial software applications such as MES (*Manufacturing Execution System*) and ERP (*Enterprise Resource Planning*) systems, as well as standard office software packages.

Vijeo Look offers the ideal solution for machine manufacturers and independent production units.

Vijeo Look supervisory software can provide the following functions:

- Acquisition of PLC tags
- Visualization of these tags
- Process supervision and control
- Recording the values for PLC tags or internal process tags in a database
- Embedded software processing

Easy to use and innovative, Vijeo Look offers ideal solutions, while also facilitating the use of Monitor Pro SCADA software, once the application has been migrated.

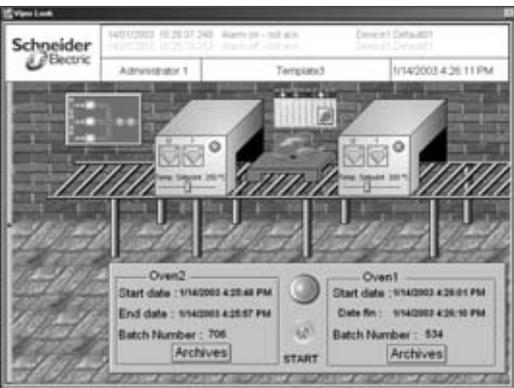


### Structure of the offer

The Vijeo Look offer includes 2 types of software license:

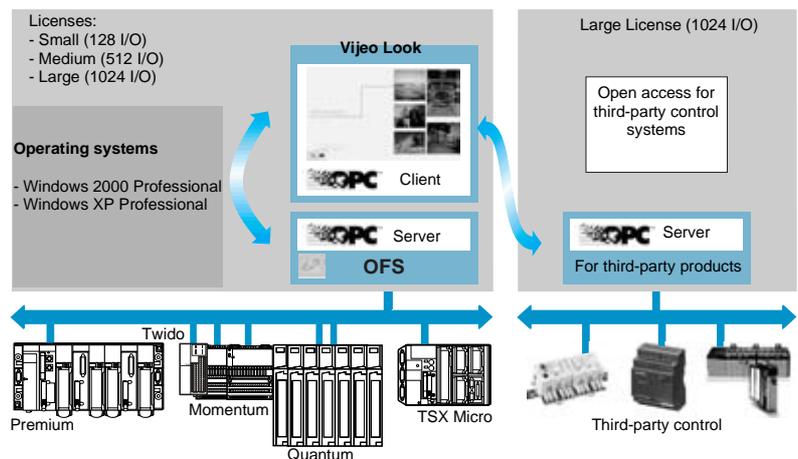
- Build Time/Run Time license (*BT/RT*) allowing the application to be built and run
  - Run Time license (*RT*) allowing the application built with the RT/BT license to run
- There are three I/O sizes offered for each license type: Small (128 I/O), Medium (512 I/O) and Large (1024 I/O).

Depending on the hardware configuration and application requirements, certain precautions need to be taken into consideration (see "Recommendations for use" page 43207/14).



**Note:** Only the tags used for visualization, embedded processing and logged tags are taken into account when calculating the number of I/O. It should be noted that for all licenses, internal tags and specific alarm-type tags used in the Alarm viewer (for visualization and acknowledgement) are not counted. Similarly, tags used for recipe management only are not counted.

In the case of the 1024 I/O license, the "log" type tags (recorded but not visualized) and the "trend" type tags (recorded) used in the Trend viewer in log mode are not counted.

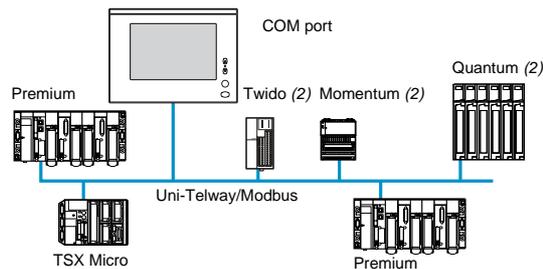


### Connection to Schneider PLCs

Vijeo Look supervisory software can be integrated in communication architectures for Schneider Electric control systems, as well as in third-party control system architectures (1).

### Connection to Uni-Telway/Modbus buses

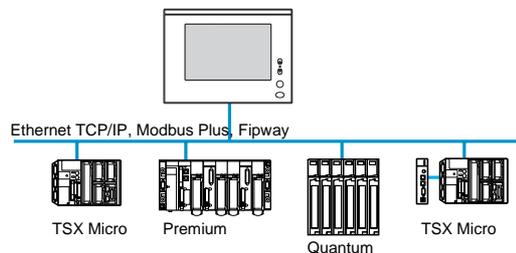
Connections to the Uni-Telway or Modbus bus are made via the RS 232 serial link interface in point-to-point mode or via RS 485 in multidrop mode (PC terminal with integrated I/O port).



### Connection to Ethernet/Modbus Plus/Fipway networks

Connections to Ethernet TCP/IP, Modbus Plus or Fipway networks are made by inserting a network card in the PC terminal:

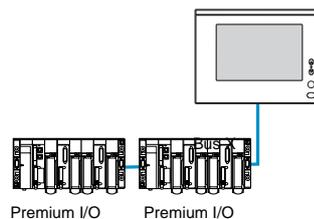
- TCC ETH01, Ethernet TCP/IP 10BASE-T/100BASE-TX network module on PCI bus (3)
- TSX ETH PC 101M, Ethernet 10BASE-T network module on ISA bus (3)
- 416 NHM 300 30, Modbus Plus network module on PCI bus
- AM SA85 030, Modbus Plus network module on ISA bus
- TSX FPC 10M, Fipway network module on ISA bus



### Connection to Premium automation platform Bus X

An Atrium coprocessor (with one of the specifications described below) must be added to the PC terminal to enable connection to the Premium platform Bus X:

- T PCX 57 203M/353M, coprocessor on ISA bus
- TSX PCI 57 204M/57 354M, coprocessor on PCI bus



### Connection to third-party PLCs

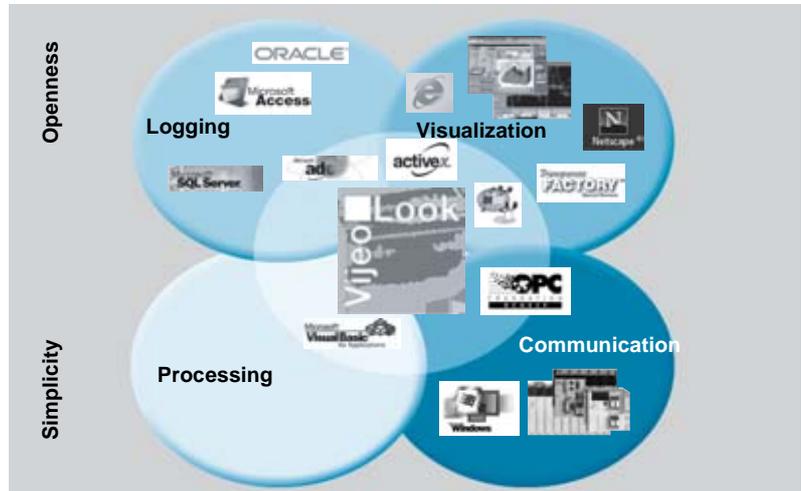
Vijeo Look is an open supervisory software. It can establish connections with the main control systems on the market using a large number of serial or network protocols (1). Please consult your Regional Sales Office for further information.

(1) Only with the Vijeo Look Large 1024 I/O offer.

(2) Only with a Modbus connection.

(3) Not required if the PC has an integrated Ethernet TCP/IP port, as is the case with Magelis iPC terminals.

### Software structure



### Communication function (1)

PLC tags are acquired exclusively by connecting to the PLCs via the OPC server, running OFS data server software included with Vijeo Look. In the case of discrete and analog I/O tags from TSX Micro/Premium/Quantum PLCs (and Advantys STB/Momentum/TBX remote I/O), the acquisition process in the Vijeo Look database takes place in an implicit, transparent manner. As an OPC server, Vijeo Look enables you to create and enhance tags, as well as make them available.

### Development and visualization functions

Tags can be visualized as:

- Values
- Animated color graphics
- Recipe management
- Historical and real-time trend curves

Process supervision and control are performed in the PLCs by:

- Updating certain PLC data
- Carrying out diagnostics
- Acknowledging alarms

### Diagnostics function

The diagnostics functions enables alarms to be visualized and acknowledged, regardless of whether they originate from the Premium platform "Diag Buffer" or are alarm-type OPC tags.

### Embedded processing function

It is possible to embed the processing operation associated with certain steps in the process using VBA (*Visual Basic for Application*) programs.

### Alarm and setpoint print function

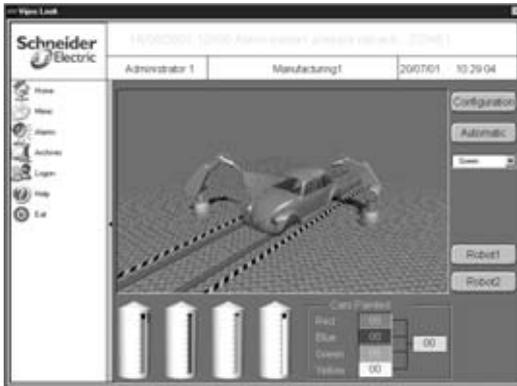
The print function enables real-time data and logs to be printed.

### Logging and traceability functions (1)

The values of the PLC tags selected in databases are recorded in order to meet process traceability requirements.

(1) Depending on the hardware configuration and application requirements, certain precautions need to be taken into consideration (see "Recommendations for use" page 43207/14).





### Application development and visualization

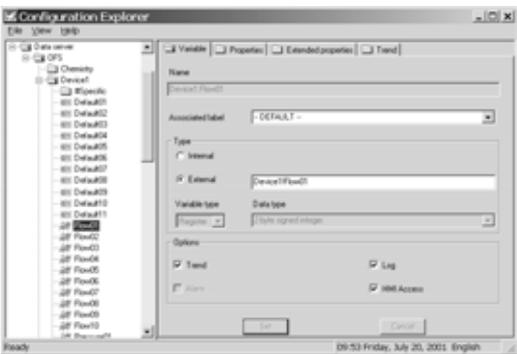
Vijeo Look provides all the elements required to develop and visualize animated mimics for PC applications.

HMI (*Human Machine Interface*)/SCADA Vijeo Look applications comprise a number of interlinked, interactive windows that provide menus, process mimics and status pages.

With the option of configuring windows on line, it is possible to make changes on the fly without the need to compile and restart the application.

A Vijeo Look supervision application is developed using the Configuration Explorer tool. The link with the PLC program is simple to establish through:

- A file containing symbols created using Unity Pro, PL7 Junior/Pro or Concept programming software
- The choice of protocol to be used for communication
- The choice of PLC address



### Configuration Explorer

A configuration screen, similar to Windows Explorer, provides a structured view of the configuration used for the Vijeo Look application.

This screen makes it possible to visualize all the tags and develop the graphic interface along with its associated functions. This easy-to-use interface always offers default selections. Some of the tasks it can be used for include:

- Enhancing tags
- Scaling tags
- Configuring additional OPC servers
- Configuring databases
- "Typing" tags for multiple selection
- Generating trend group numbers
- Defining the tag recording policy for the databases
- Managing filters

It is possible via the OPC browser to select all the tags managed by the RTDS (*Real Time Data Server*) and enhance them so that they can meet application requirements (e.g. minimum and maximum values, scale, etc.).

Selecting a tag in the Configuration Explorer introduces the concept of object-oriented configuration.

All tags (whether internal or originating from the PLC) can belong to the main types of non-exclusive tag listed below:

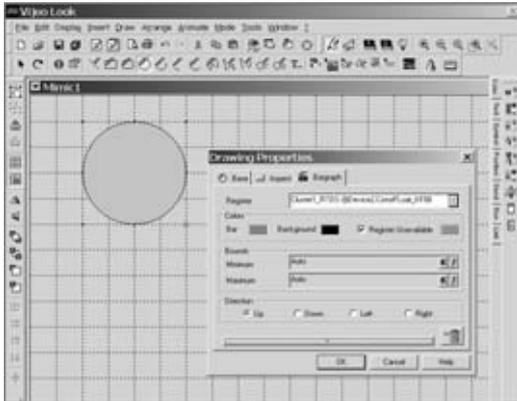
- Human Machine Interface (*HMI*)
- Diagnostics and alarms
- Embedded processing
- Recipe management
- Logging and trends

### Creating graphic objects

Using its unified configuration interface, Vijeo Look allows you to simply define the required behavior for each relevant object. Functions are programmed by selecting the possible options that can be associated with each tag.

A toolset intended for creating graphic objects comes with the software, including:

- Zoom and pan functions
- Vijeo Look native drawing elements
- Graphic object libraries
- Embedded processing
- ActiveX and Java Bean containers
- Alarm, trend and browser interfaces



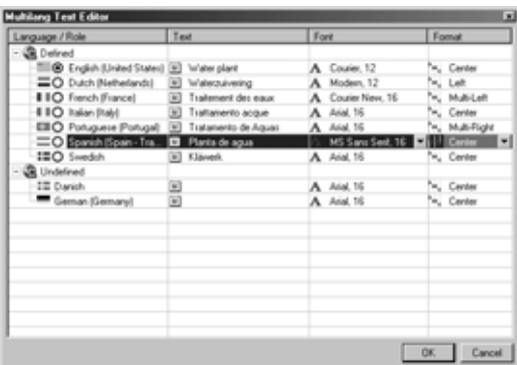
### Application development and visualization (continued)

#### Vijeo Look native drawing elements

Vijeo Look has its own graphic editor. The animations are accessible via menu. They can be used to change the color of objects, fill their shape, exchange, move, rotate and enlarge them. The following file formats can be used: BMP, WMF, animated GIF, AVI or JPG.

The graphic objects created can be reused without the need for any specific tools. Any change to an object is automatically applied to every screen that uses this object.

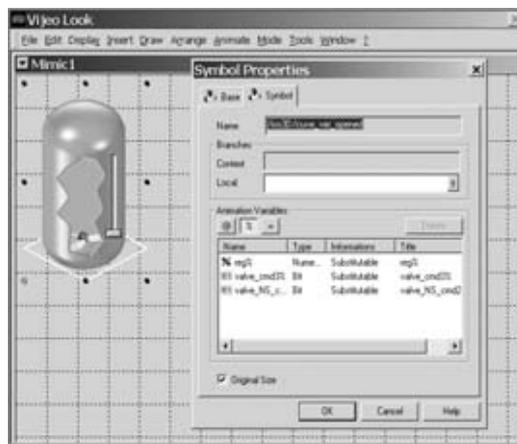
Configurable directories allow you to organize and distinguish the objects according to categories.



#### Multilanguage human machine interface

Vijeo Look has a text editor supporting multilanguage versions of the HMI (English, French, German, Spanish, Italian and Simplified Chinese). Any text and comments to be displayed on screen can be entered simultaneously in several languages. The language displayed can be selected:

- either in real-time according to the operator's choice
- or through a link to a user profile



#### Graphic object libraries

Vijeo look offers ready-to-use graphic object libraries. There are around 100 animated graphic objects available in 2D or 3D (valves, reactors, potentiometers, display units, etc.). These objects are ready to "wire" to PLC tags.

In addition to these libraries, there are also collections of more specific symbols (PID, XBT-L1000 dialog software objects, thumbnails of Schneider components, mechanical elements such as conveyors, etc.).

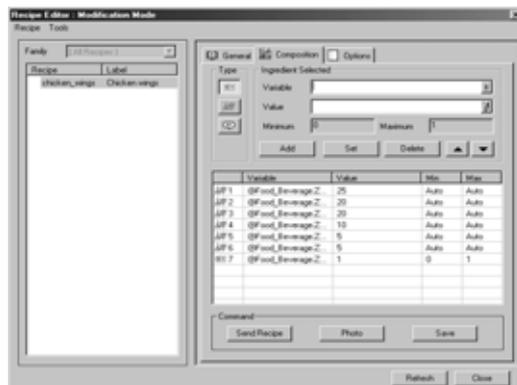
New graphic objects can be created in 2 simple steps:

- The object to be animated is selected
- The tag used for the animation is assigned

The newly created object can be used in several mimics.

Vijeo Look shares the same Java Beans library as FactoryCast.

Using the same graphic engine, Vijeo Look and Monitor Pro ensure a high degree of consistency for the supervisor's end-users.



#### Recipe management

The recipe management function enables the user to:

- Create, modify and select manufacturing recipes
- Store these recipes on hard disk
- Exchange these recipes

This flexibility in handling data also means a large degree of operational flexibility thanks to quick and simple changes to production instructions. Any recipe can be created based on operator dialog from internal data and or data from connected PLCs.

#### Functional specifications

This function can manage up to:

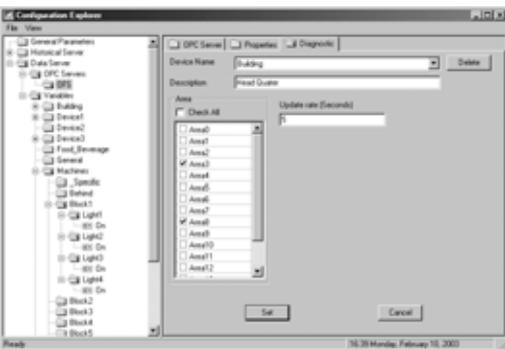
- 1000 recipes per project
- 1000 database elements for each recipe



### Diagnostics functions

Vijeo Look meets the various diagnostics requirements of PLC users by providing the alarm management and advanced diagnostics functions offered on Ethernet Transparent Ready modules (Ethernet TCP/IP network modules for TSX Micro, Premium, Quantum and Momentum automation platforms).

These options are supplemented by those offered by the Premium platform "Diag Viewer" function (1). This function enables diagnostics events and alarms generated from data stored in the "Diag Buffer" to be displayed transparently. The Premium platform "Diag Buffer" is a space in the data memory managed by this platform's diagnostics DFBs.



### Managing "Diag Buffer" alarms and internal alarms

Vijeo Look enables alarms to be visualized and acknowledged, regardless of whether they are alarms from the Premium platform "Diag Buffer" or tags defined in Vijeo Look alarms.

Vijeo Look features the same diagnostics components as those used in Schneider Electric HMI or software products such as "Diag Viewer" included in PL7 Pro, Monitor Pro V7.2, FactoryCast software or in the Magelis and CCX 17 terminals. The "Diag Viewer" tool offers the operator a consistent, standardized overview of the system status.

Internal alarms are generated according to criteria specified in the Vijeo Look real-time server. The alarm function offers the following benefits:

- Criteria can be based on digital or analog values or messages
- User comments can be appended to an alarm and entered in the log
- Tag names, messages, reception status, duration, etc. can be visualized in the alarm screen
- The filter and sort functions are based on user criteria
- Alarms can be grouped by user-defined parameters (for instance, type, area, priority, etc.)

Alarms generated by "Diag Buffer" are logged and can be printed.



### Transparent Ready

One of the benefits of being able to view web pages in Vijeo Look mimics is that TSX Micro, Momentum, Premium and Quantum platforms can access the advanced diagnostics functions offered by Ethernet Transparent Ready modules.

### Embedded processing function

With Vijeo Look it is possible to assign an animation written in VBA (*Visual Basic for Application*) to any graphic object. This animation can take the form of a movement, rotation, resize, link with another object, etc.

Pre-programmed functions (mouse actions, external event, mimic upload, etc.) are available in the VBA editor, making it easier to use this module for making graphic objects behave dynamically.

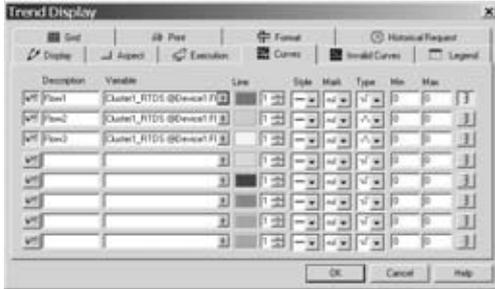
The VBA editor in Vijeo Look helps make process control more intelligent. Its advanced debug functions mean that scripts can be debugged quickly.

(1) Premium platform running PL7 Pro software.

### Printing alarms and setpoints

This function is based on the Windows print server. This means that it can support the various types of printer (ink-jet, laser or dot-matrix). It can be used to print real-time or historical data. The print function can be activated using:

- Icons in the graphic interface viewers
- VBA application



### Logging and traceability function (1)

All internal or external tags can be saved in a database. It is possible to select:

- The database type
- The database location
- The table name

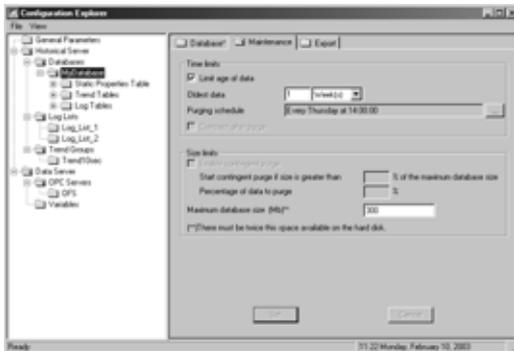
Data from the same application can be saved to different databases. This flexibility of use avoids the need to manage any data handling or transfers.

The memory space required for saving this data is minimal because of the transparent use of the relational model, i.e. the tag attributes that remain unchanged over time (descriptor, unit, etc.) are only saved once.

The log for all application events is made up of objects defined as symbols representing all data types.

Any data stored in the database can be identified in symbol form, i.e. by the names of objects such as "Valve, Pump, Flow rate, Temperature, Motor, Fault, etc.". Every change in state of a tag is monitored and flagged for processing by Vijeo Look.

Viewers are configured simply by setting the relevant parameters, without requiring any programming.



### Saving and visualizing changes

All the data transiting via the Vijeo Look real-time data server can be stored either in one of the Jet Engine (*Microsoft Access*) or MSDE (*Microsoft Desktop Engine*) databases that are supplied with Vijeo Look, or in any other database available on the market (MS SQL Server, ORACLE, SYBASE, etc.).

**Note:** Technical support is only ensured for Microsoft's Data bases.

The MSDE database is configurable in the sense that it can be limited in terms of size or time (by automatically deleting the oldest data).

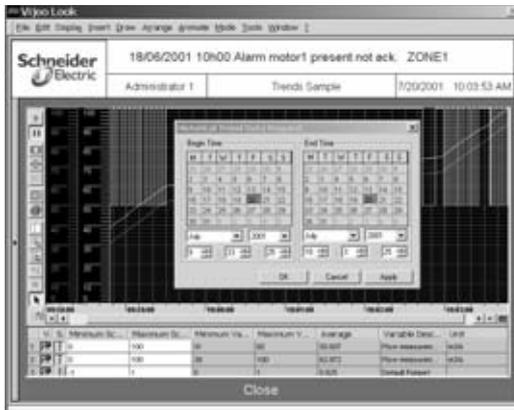
This archived data may be exported in CSV (*Comma Separated Values*), ADTG (*Advanced Data TableGram*) or XML format.

States and measurements can be stored as trends. The tag values can be saved on a change of state or at regular intervals in the form of logs.

(1) Depending on the hardware configuration and application requirements, certain precautions need to be taken into consideration (see "Recommendations for use" page 43207/14).

By integrating a Jet Engine and MS SQL database administration tool, you can ensure that:

- User rights are managed
- Remote databases are managed
- Data and tables supported by these databases are displayed and purged.



### Logging and traceability function (continued)

#### Saving and visualizing trends and trend curves

The associated tags are saved in the database on a change of value or at regular intervals. Trends can be visualized in real-time or based on the data saved as one of two curve types:

- Real-time trend curves that allow you to display data from any database. The frequency with which the trend curves are updated is a configurable parameter.
- Historical trend curves that allow you to display the changes in value of a tag between two specified dates.

Furthermore, the following functions can be applied to any trend curve in run-time:

- Pan
- Zoom
- Alternation between historical and real-time mode
- Dynamic configuration

Vijeo Look can manage up to 8 separate trend curves per viewer, with their legends (automatic scale). The curves can be printed directly in BMP format from the toolbar.

If a production problem occurs the systematic logging of alarms and faults provides a simple means of diagnostics for rapid troubleshooting, thus keeping process downtime to a minimum.

Enhancing PLC data by adding specific production management parameters (e.g. a batch number, etc.) ensures that, in the event of any problem affecting the components used in the process for manufacturing the relevant product, the manufacturer can retrace the production chain.



### Security

Vijeo Look offers all the security functions necessary to ensure a suitable working environment for each user profile. The HMI security interface is based on a user and profile system. Security profiles are assigned to graphic objects.

Access security is determined by:

- Identification of the user by means of a name and password
- The user profile (including the HMI display language and Vijeo Look language)
- The object category (access and display level)

Vijeo Look only allows a single connection, which means one user at a time. The user profile should be assigned to the graphic objects (window, data entry fields, animation, etc.) that require it. Each object may have a list of authorized profiles. Objects are visible and can be modified according to the user profile. The following security categories are associated with graphic objects:

- Ergonomics, option for modifying the HMI appearance
- Drawing, option for modifying the HMI content
- Desktop, option for accessing the operating system
- Printing
- Exit, option for shutting down the application
- Zoom
- Layer, list of layers authorized for display
- Window, option for opening certain windows
- Control, option for forcing a tag value
- Production recipes

The system also offers users the option of adding additional security categories. When configuring the supervision application, it is possible to choose to use either the security system offered by Vijeo Look or the security management system offered by the station's operating system.

### Vijeo Look integrated standard components

#### ActiveX Controls

Vijeo Look can simply integrate ActiveX control components offered by independent editors. ActiveX is a standard that enables software components to interact, either on the same machine or between two remote machines connected across a network, irrespective of the language used to develop them.

It is possible to link these properties to the real-time value of the tags from an OPC server, especially a Telemecanique OFS data server.

*Website address: [www.active-x.com](http://www.active-x.com)*

#### Java Bean components

Vijeo Look can be used to run and visualize Java Bean components. The architecture of Java Bean components makes it possible to develop networked solutions for heterogenous hardware environments and operating systems.

Software components using API (*Application Programmers Interface*) Java Beans are portable. The properties of these ActiveX Java Beans are read and edit accessible.

It is possible to link these properties to the real-time value of the tags from an OPC server, especially a Telemecanique OFS data server.

*Website address: [www.jars.com](http://www.jars.com)*

#### OPC data server and interfaces

Vijeo Look is both an OPC server and client. The standardized OPC interface not only enables a SCADA application to communicate with PLCs, but also to exchange data with other software programs that are not linked in any way to industrial applications, but have an OPC interface.

For further information on OFS data server software and the OPC standard, see pages 43108/2 and 43108/5.

*Website address: [www.opcfoundation.org](http://www.opcfoundation.org)*



### Vijeo Look integrated standard components (continued)

#### Visual Basic for Application

Vijeo Look comes with Microsoft Visual Basic for Application (VBA), making it possible to adapt generic functions to user-specific requirements. It can be used to access:

- Methods
- Events
- ActiveX properties
- The project environment
- OPC tags
- Vijeo Look native drawing elements

VBA is the universal tool that can be used to access and modify all the properties of the set of graphic objects embedded in the mimics.

#### Vijeo Look and the ActiveX Data Object interface

Vijeo Look can be used to save all the tags (input, output or internal) being transferred to the database via the OPC server.

Vijeo Look is based on the ADO (*ActiveX Data Objects*) format and includes, as standard, an MSDE (*Microsoft Desktop Engine*) relational database that is accessible via the MS Access front-end (not supplied).

Vijeo Look can save its tags in any database with an ADO server. The ADO server can be used to manage:

- Relational and non-relational databases
- Electronic mail and file systems
- Text and graphics
- Customized business objects

The ADO server offers the following main features:

- Easy use
- Programmable cursor control
- Management of complex cursors (such as batch cursors, server-side and client-side cursors)
- Ability to return several sets of results for a single query
- Running synchronous, asynchronous or event-based queries
- Reuse of objects with or without modifying their properties
- Advanced management of the recordset cache memory
- Flexibility to adapt to different environments thanks to an interface that supports databases from all the major market suppliers
- Excellent error recovery
- High performance levels

### “Automation journey” project management

Vijeo Look offers a unique solution for commissioning, deploying and maintaining applications. Every Vijeo Look license type comes supplied with LapLink GOLD software developed for transferring applications and controlling them remotely.

### Archiving and restoring projects

This feature allows you to save the whole application (including the OPC configuration) in a single file, thus facilitating deployment of the application on run-time machines.

### LapLink GOLD software

LapLink GOLD offers advanced remote maintenance services, including:

- Full control of a remote Vijeo Look station, making it possible to solve diagnostics and remote maintenance problems
- Downloading the latest versions of Vijeo Look

This solution offers the following benefits:

- A single interface capable of transferring applications or controlling them remotely, irrespective of the media used
- Added value for machines from integrators, by allowing them to offer maintenance services for their machines
- Ensuring the long-term functionality of applications in the face of Microsoft Windows operating system developments

LapLink GOLD offers the following functions:

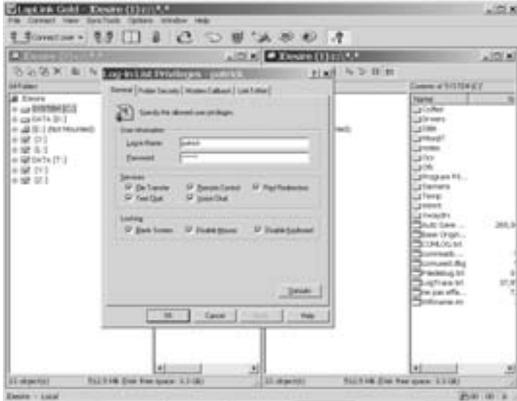
- Exchanging data between real-time databases: reports, commands, summary information, etc.
- Use of server resources (hard disk, printer, etc.)
- Transferring files between stations without using a server
- File management services (copy, delete, rename directory, type and print)
- Triggering any transfer of real-time database elements with an event (alarm, time, calculation results, etc.)

Available with any type of Vijeo Look license, LapLink GOLD is easy to implement. Communication between the two Vijeo Look stations takes place via:

- Serial, parallel or USB ports (cable ordered separately according to type of link)
- IrDA-compatible infrared port
- Modem, as LapLink GOLD manages modems transparently (based on TCP/IP or proprietary protocols)

### ▲ Recommendations for use

Vijeo Look is an open product, based on the most widely used IT standards. The choice of these technologies ensures that users of Vijeo Look will have an optimum, future-proof, open and stable solution, built from widely used software modules that are universally recognized as high-performance quality solutions. However, although the use of these technologies in Vijeo Look is totally transparent, the open access that they offer means that users need to deploy the appropriate tools and have the necessary skills to ensure trouble-free implementation. This applies to MSDE, a true deterministic relational database that Vijeo Look has and uses as the most effective means of storing and outputting logs, or VBA that enables any kind of task to be performed “virtually” in Vijeo Look.



### ▲ Recommendations for use (continued)

For example, users are responsible for using VBA to access an MSDE database using SQL queries, regardless of the tools or documentation used. This type of use lies outside the scope of the technical support provided by Schneider Electric, since the problems involved relate to database management rather than supervision.

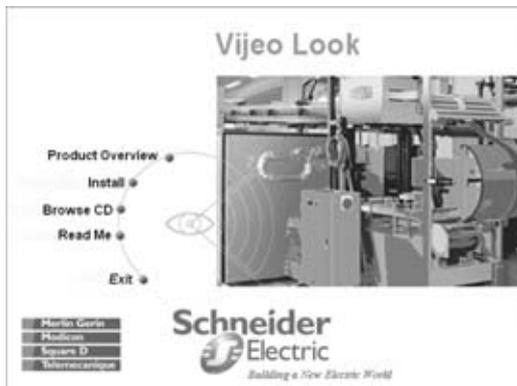
Apart from the problems associated with open access, users should be well aware of the limits of these various components to ensure that Vijeo Look is suitable for the application requirements:

■ **Choice of databases** (*behavior observed and consistent with Microsoft recommendations*). Vijeo Look offers the option of storing data in a Jet Engine (MS Access engine) or MSDE (MS SQL Server 2000 engine) database.

- The Jet Engine database is not recommended (though it is a possible option and is supported) due to its performance (limited to 800,000 records).
- The MSDE database that can have its size and record duration parameters set in Vijeo Look is recommended for data volumes up to 2 GB (approximately 5,500,000 records).
- For larger volumes of data, it is recommended that you use a professional database such as MS SQL Server 2000 (not supplied) and that you have it installed by experts.

■ **Limitation relating to the frequency of data acquisition.** Vijeo Look is an entry-level SCADA software application for standalone machines, which means that data acquisition, display and archiving take place on the same machine. You must therefore have reasonable expectations in terms of:

- data acquisition frequencies
- the number of tags that you want to store in the database
- the number of alarms you want the application to process



### Reference

The Vijeo Look software package comes with an application CD-ROM, an X-Way driver CD-ROM and a software installation and getting started guide. The application CD-ROM contains:

- Vijeo Look V2.5 software
- OFS V3.0 data server software
- LapLink GOLD software
- User guide in CHM format
- Demo application and multimedia self-learning tool

In terms of the drivers required by the OPC communication server and in order to ensure a standard version for each of them, a set of X-way drivers is supplied on CD-ROM with reference TLX CD DRV 20M. It contains PC drivers for Uni-Telway, Modbus, Fipway, Fipio, Ethway, ISAWay, PCLway, XIP and USB buses and networks.

The Vijeo Look Human Machine Interface (*HMI*) and documentation are available in 6 languages (English, French, German, Spanish, Italian and Simplified Chinese). When installing the software you can select 2 of the 6 languages available. The software allows you to switch languages at any time.

Vijeo Look includes software protection that allows you to:

- Freely transfer the license from one PC to another via a USB key, floppy disk or network
- Perform a functional upgrade of the Vijeo Look license (e.g. an upgrade from the Small license to the Large license) without the need to re-install the software

In keeping with the standard procedure for registering Schneider Electric software, the Vijeo Look license must be registered within 21 days via the Internet, e-mail, fax or telephone.

# Human Machine Interface

## Vijeo Look supervisory software

### References (continued)

#### PC platforms supported

Vijeo Look can run on different types of PC platform and is capable of handling their diverse and specific features. Some of the particular functions it offers include:

- A software keyboard (for terminals without keyboards). The layout of this keyboard is particularly suitable for 12" and 15" touch screens.
- Keyboard shortcuts (accelerator keys) intended for terminals without any pointing device
- Transparent management of touch screens with a feature for configuring icon sizes

#### Minimum and recommended PC configuration

Vijeo Look can be installed on PC workstations running the Windows 2000 Professional or Windows XP Professional operating system.

The table below shows the recommended typical and minimum configurations.

Configuration	Minimum	Recommended typical
Processor	350 MHz	500 MHz...1.8 GHz
RAM	128 MB	256 MB...1024 MB
Screen		
Resolution	800 x 600	1024 x 768
Colors	256	True color
Disk space		
System disk	200 MB	500 MB
Available for installation	50 MB	100 MB
Target disk	600 MB	4 GB

Description	Type and I/O size	Reference	Weight kg
<b>Vijeo Look software license (version V2.5)</b>			
<b>Build Time/Run Time (BT/RT)</b>	Small, 128 I/O	<b>VJL SMD BTS V25M</b>	–
	Medium, 512 I/O	<b>VJL SMD BTM V25M</b>	–
	Large, 1024 I/O	<b>VJL SMD BTL V25M</b>	–
<b>Run Time (RT)</b>	Small, 128 I/O	<b>VJL SMD RTS V25M</b>	–
	Medium, 512 I/O	<b>VJL SMD RTM V25M</b>	–
	Large, 1024 I/O	<b>VJL SMD RTL V25M</b>	–
<b>Vijeo Look upgrade (version V2.5)</b>			
<b>Build Time/Run Time (BT/RT)</b>	Small to Medium	<b>VJL UPG BTS2M V25M</b>	–
	Small to Large	<b>VJL UPG BTS2L V25M</b>	–
	Medium to Large	<b>VJL UPG BTM2L V25M</b>	–
<b>Run Time (RT)</b>	Small to Medium	<b>VJL UPG RTS2M V25M</b>	–
	Small to Large	<b>VJL UPG RTS2L V25M</b>	–
	Medium to Large	<b>VJL UPG RTM2L V25M</b>	–
<b>Run Time (RT) to Build Time/Run Time (BT/RT)</b>	Large, 1024 I/O	<b>VJL UPG RT2BT V25M</b>	–
<b>Vijeo Look update (version V1/V2 to V2.5)</b>			
<b>Build Time/Run Time (BT/RT)</b>	Small, 128 I/O	<b>VJL UPD BTS V25M</b>	–
	Medium, 512 I/O	<b>VJL UPD BTM V25M</b>	–
	Large, 1024 I/O	<b>VJL UPD BTL V25M</b>	–
<b>Run Time (RT)</b>	Small, 128 I/O	<b>VJL UPD RTS V25M</b>	–
	Medium, 512 I/O	<b>VJL UPD RTM V25M</b>	–
	Large, 1024 I/O	<b>VJL UPD RTL V25M</b>	–

#### Connection cables

**VJL XCA** connection cables can be used to transfer HMI/SCADA applications between two Vijeo Look stations using the LapLink software.

Description	Operating System	Description	Reference	Weight kg
<b>Serial link cable</b> (blue)	Windows 2000, Windows XP	4 x 9 and 25-pin female SUB-D connectors 2 m long	<b>VJL XCAS</b>	–
<b>USB link cable</b> (gold)	Windows 98, Windows 2000 or Windows XP	2 USB connectors 1.6 m long	<b>VJL XCAU</b>	–