

# **Silicon Software**

## **Cognex VisionPro Adapter**

### **3<sup>rd</sup> Party Interfaces**

Version 2.1

Installation and User Guide

## Imprint

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## Contents

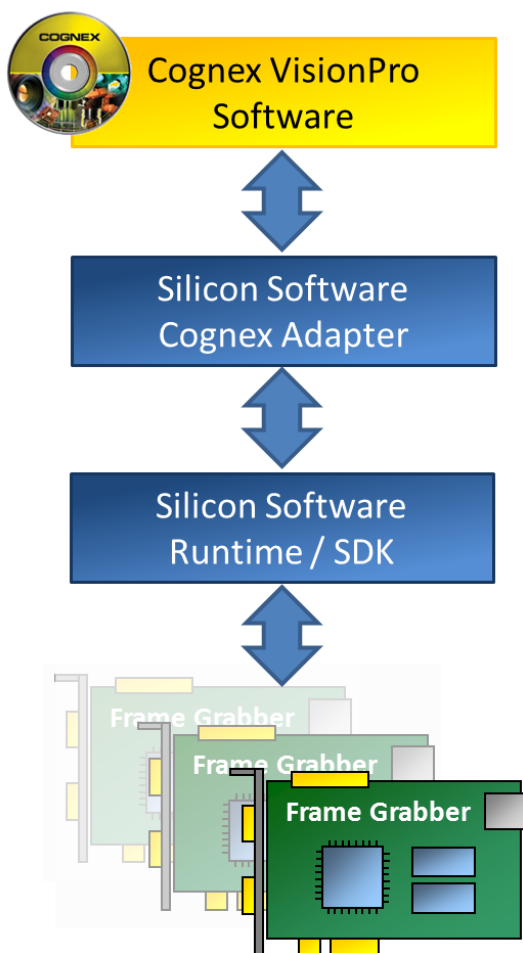
|       |  |    |
|-------|--|----|
| 1     | The Silicon Software Runtime Cognex VisionPro Adapter .....                              | 5  |
| 1.1   | Software Architecture .....  | 5  |
| 1.2   | Supported Output Formats .....   | 6  |
| 1.3   | Frame Grabber Support .....  | 8  |
| 2     | Installation .....   | 8  |
| 2.1   | Requirements .....   | 8  |
| 2.1.1 | Hardware Requirements .....  | 8  |
| 2.1.2 | Software Requirements .....  | 8  |
| 2.2   | Installing the Adapter .....   | 10 |
| 2.3   | Installing the Adapter Manually (Optional) .....   | 13 |
| 2.4   | Testing the Installation .....   | 14 |
| 3     | Usage .....  | 15 |
| 3.1   | Frame Grabber Initialization .....   | 15 |
| 3.2   | Representation of a Silicon Software Frame Grabber as VisionPro Device .....             | 16 |
| 3.2.1 | Example: Setup #1 .....  | 16 |
| 3.2.2 | Example: Setup #2 .....  | 18 |
| 3.3   | Accessing Applet Parameters .....  | 21 |
| 3.4   | Running an Image Acquisition .....   | 23 |
| 3.5   | Time-Out Handling .....  | 24 |
| 4     | Support of V-Series Frame Grabbers running VisualApplets and SmartApplets Projects ..... | 25 |
| 4.1.1 | VisualApplets Projects .....   | 25 |
| 4.1.2 | SmartApplets 3D Laser Triangulation Projects .....                                       | 26 |
| 4.1.3 | SmartApplets 3D Laser Triangulation Output Format .....                                  | 26 |
| 5     | Advanced Usage .....   | 27 |

|     |  |    |
|-----|--|----|
| 5.1 | Selecting Another Applet .....   | 27 |
| 5.2 | Using Log Files for Error Tracing.....   | 29 |
| 5.3 | Frame Grabber Initialization Using a Frame Grabber Configuration File (.mcf) ..... | 30 |
| 5.4 | Trigger Parameters.....  | 31 |

## 1 The Silicon Software Runtime Cognex VisionPro Adapter

The Silicon Software Cognex VisionPro adapter is a supporting tool for the integration of Silicon Software frame grabbers and runtime software environment into Cognex' VisionPro software package. It maps the Silicon Software runtime SDK into according interfaces which are needed for the direct integration into VisionPro.

### 1.1 Software Architecture



### The adapter allows

- loading different image processing functionalities of an acquisition applets feature set onto the frame grabber,
- accessing and modifying parameters of an applet,
- grabbing images according to the configuration and parameters of an applet,
- supporting multiple frame grabbers in a single system.

## 1.2 Supported Output Formats

The following output formats are supported:

| Cognex Name                           | Silicon Software Name | Format      |
|---------------------------------------|-----------------------|-------------|
| ck_pt_mono                            | FG_GRAY               | Gray 8bit   |
| ck_pt_mono16                          | FG_GRAY16             | Gray 16bit  |
| ck_pt_RGBplanar                       | FG_COL24              | Color 24bit |
| ck_pt_RGB48 (not supported by Cognex) | FG_COL48              | Color 48bit |

If you need a different setup and output format, please contact Silicon Software sales department or your local sales representative.

The handling of Acquisition Applets is described in section [3 Usage](#).





## Note: Image Format RGB / Frame Buffer Planar

The RGB format is converted into an RGB planar format within the Silicon Software Cognex Adapter (pixel by pixel). The data are buffered in the frame buffer separated by color channel (R,G, and B).

Data storage format with RGB24 Applet:

$$R(Px1)G(Px1)B(Px1)E(Px2)G(Px2)B(Px3)....R(Pxn*m)G(Pxn)B(Pxn)$$

Pxn: Pixel value on image position n



Data storage format in frame buffer Planar:

$$R(Px1)R(Px2)R(Px3)...R(Pxn*m)$$

$$G(Px1)G(Px2)G(Px3)...G(Pxn*m)$$

$$B(Px1)B(Px2)B(Px3)...B(Pxn*m)$$

n = Image Width

m = Image Height

The formats are handed over to VisionPro according to parameter FG\_FORMAT of the applet. With color formats, the image data get converted since currently there is no applet supporting planar formats.

## 1.3 Frame Grabber Support

- All Silicon Software microEnable IV frame grabbers are supported.
- Multiple frame grabbers in one system are supported.
- With microEnable IV A-Series, you can use the following applet types:
  - Acquisition Applets (see section [Usage](#)) and
  - Advanced Acquisition Applets (see section [Usage](#))
- With microEnable IV V-Series, you can use the following applet types:
  - Acquisition Applets,
  - Advanced Acquisition Applets,
  - VisualApplets Projects (see section [VisualApplets Projects](#)) and
  - SmartApplets (see section [SmartApplets 3D Laser Triangulation Projects](#))

## 2 Installation

### 2.1 Requirements

#### 2.1.1 Hardware Requirements

- At least one correctly installed frame grabber (supported: all available Silicon Software frame grabbers of the microEnable IV series, also use of multiple frame grabbers in one system)
- Hardware Dongle for Cognex VisionPro (available at Cognex)

#### 2.1.2 Software Requirements

- Installation of Cognex VisionPro (installer available via Cognex)
- Installation of Cognex Acquisition Integration Kit (installer available via Cognex)
- Installation of the Silicon Software Runtime package version 5.2 or higher (installer download at Silicon Software Website, see below)
- Installation of the Silicon Software Cognex Adapter (installer download at Silicon Software Website; for installation instructions, see sections [2.2](#), [2.3](#), and [2.4](#))





## Silicon Software Runtime Installation

**32 bit version versus 64 bit version:** Make sure you select the correct target operating system: If you use the Cognex VisionPro 32 bit installer, you have to install the Silicon Software Runtime 32 bit, if you use the Cognex VisionPro 64 bit installer, you have to use the Silicon Software Runtime 64 bit).

### Download:

The latest versions of the Silicon Software Runtime package and the Silicon Software Cognex Adapter can be downloaded here:

<http://www.silicon-software.info/en/downloads.html>

[home](#) ► [downloads](#)

### Workshop Schedule

Thursday, October 23, 2014  
Tuesday, November 18, 2014  
Thursday, December 11, 2014

VisualApplets 2 Introduction  
from 09:00 until 17:00  
in Mannheim/Germany

Registration:  
[workshop@silicon-software.de](mailto:workshop@silicon-software.de)  
or +49 (0)621-789507-39

### Next Events

Nov 2014

- 04.-06.11.  
VISION 2014, leading world fair  
trade for Machine Vision,  
Stuttgart  
Hall 1, Booth 1C72
- 25.-27.11.  
SPS, IPC Drives, Nuremberg  
Hall 4, Booth 169 (at the booth  
of Xilinx)

### Documentation

- Runtime 5 - Live Documentation
- VisualApplets - Live Documentation

### VisualApplets

- VisualApplets - Introduction

### Software Interface Adapters

- Cognex VisionPro
- NI LabView
- MVTec Halcon
- Stemmer CVB

### Development Tools

- Virtual COM Ports
- Silicon Software dotNET Environment

### Runtime Installer microEnable 5

- microEnable 5 with Windows 64bit
- microEnable 5 with Windows 32bit

### Runtime Installer microEnable IV

- Windows 32bit
- Windows 64bit
- Linux 32bit
- Linux 64bit

### Runtime Installer microEnable III

- Windows 32bit
- Linux 32bit

### SmartApplets

No Subcategories

Powered by [Phoca Download](#)

For more information about the image processing features of a certain frame grabber model in combination with individual applets, please refer to the corresponding applets documentation.

## 2.2 Installing the Adapter

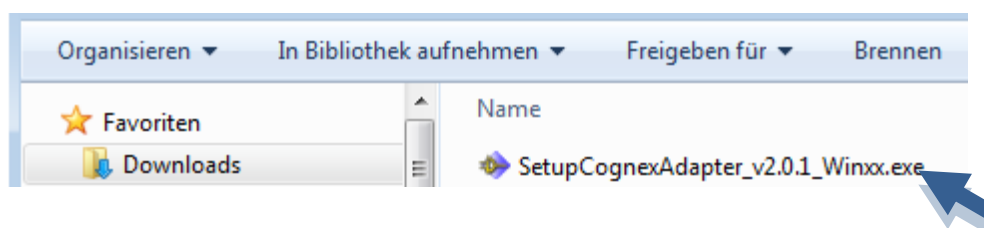
### Prerequisites

The following software needs to be installed before you start to install the adapter:

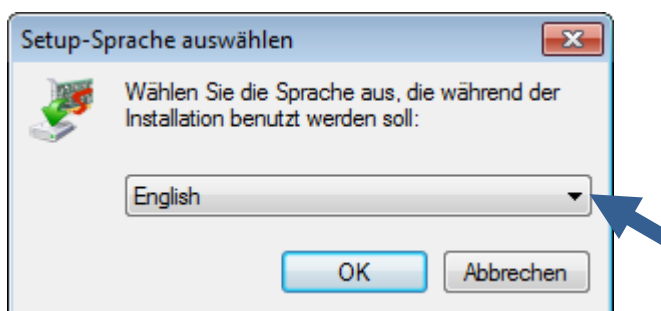
- Installation of Cognex VisionPro (installer available via Cognex)
- Installation of Cognex Acquisition Integration Kit (installer available via Cognex)
- Installation of the Silicon Software Runtime package version 5.2 or higher (installer download at Silicon Software Website, see below)

To install the Silicon Software Cognex Adapter:

1. Download the installer (32bit or 64bit version, depending on your target Windows operating system) from the Silicon Software website.
2. Start the installer via double-click:



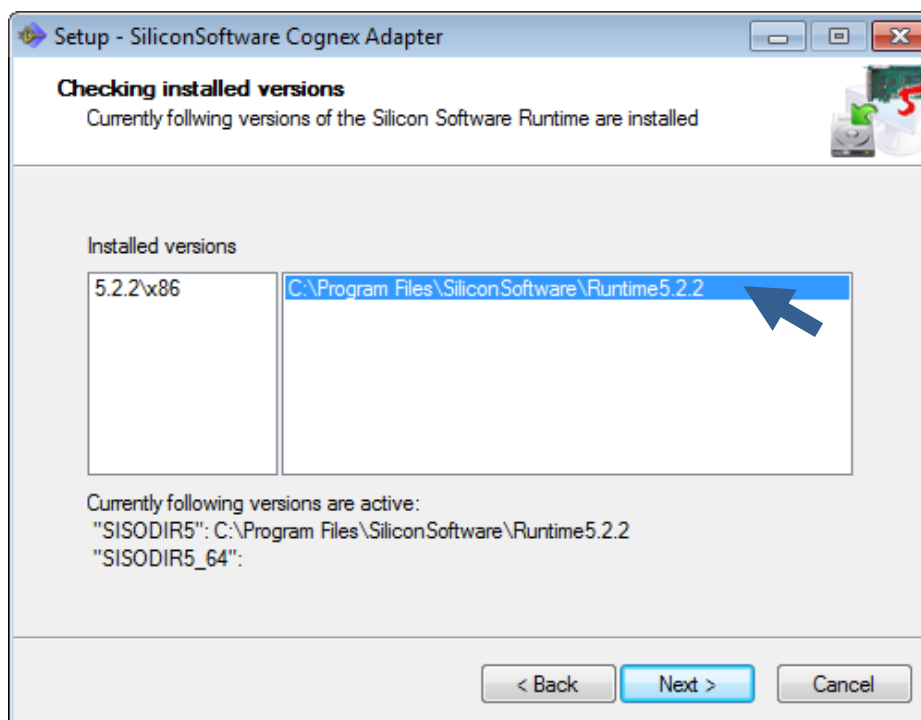
3. Select the GUI language of the installer and confirm with **OK**.



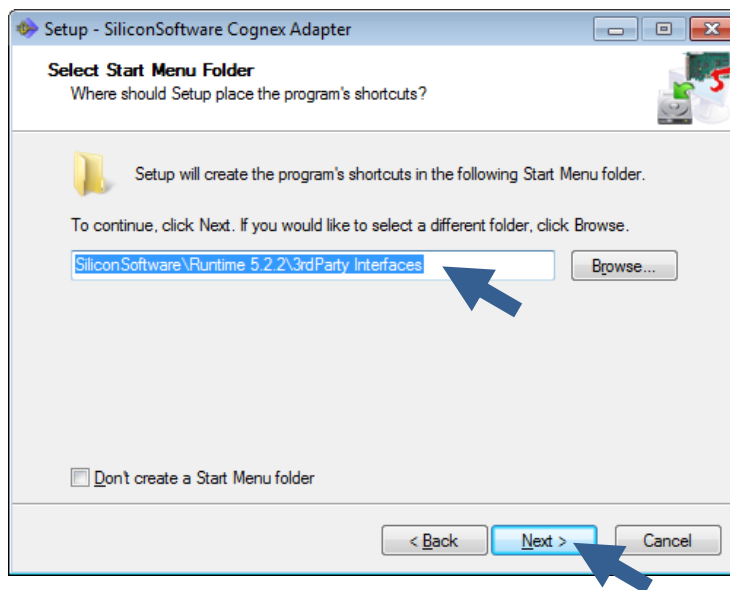
The installation starts to collect information for the procedure:



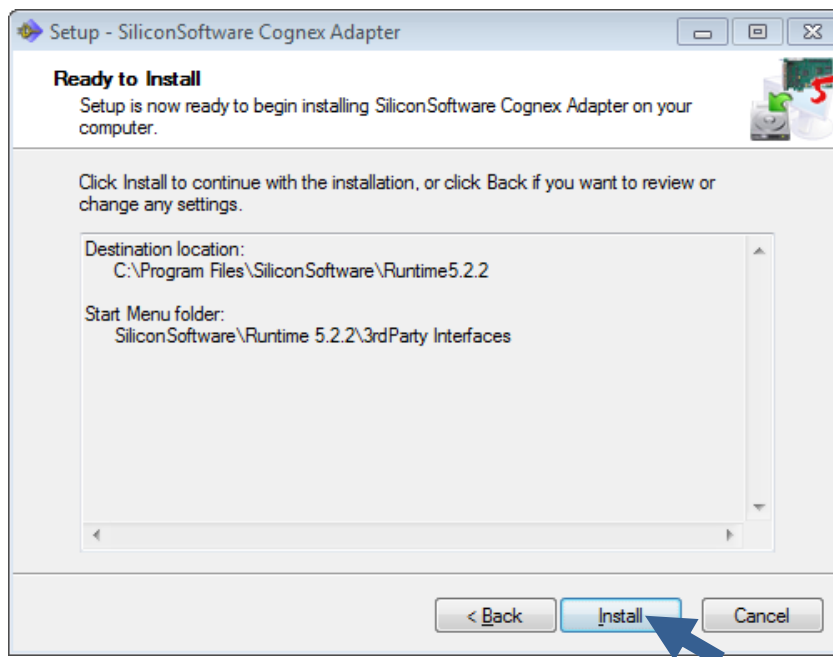
4. Click **Next**.
5. In the dialog that follows, select the Installation directory of the Silicon Software Runtime Installation you want to use together with the Silicon Software Cognex Adapter:



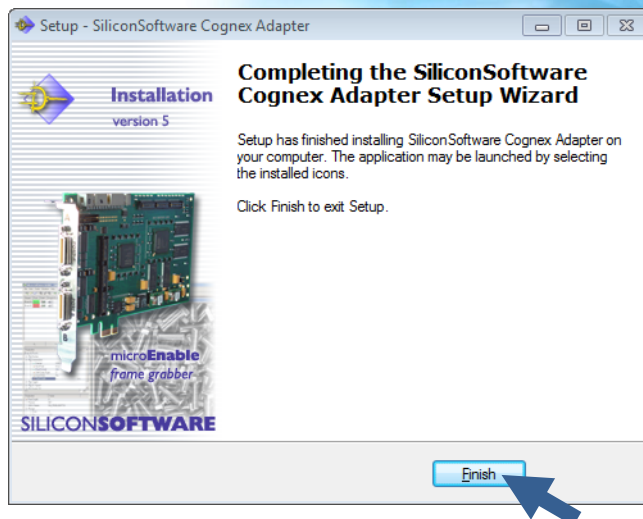
6. Click **Next**.
7. Confirm with **Next**.
8. Select the Start Menu entry (you can simply accept the default setting) and confirm with **Next**.



9. To start the installation, click **Install**.



10. Click **Finish**.



## 2.3 Installing the Adapter Manually (Optional)

To integrate the adapter for Silicon Software frame grabber support manually, take the following steps:

1. Copy the file **SiSoCognexAdapter.dll** into the subdirectory **\bin** of your Silicon Software runtime installation.
2. Open the registry editor and add the following entry:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Cognex\AIK\AdapterSiso]
```

```
"UseExe"=dword:00000001
```

```
"ServerNameBase"="Cognex.AIKserver.AdapterSiSo"
```

```
"PoolSize"=dword:04000000
```

```
"LibName"="<SISOINSTALLDIR>\bin\SiSoCognexAdapter.dll"
```

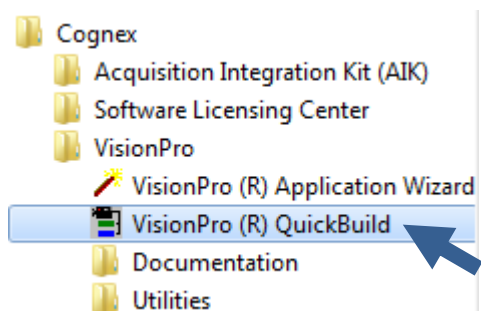
where <SISOINSTALLDIR> is your installation directory of the Silicon Software runtime software, e.g.:

```
"C:\Programme\SiliconSoftware\Runtime5.2.1\bin\SiSoCognexAdapter.dll"
```

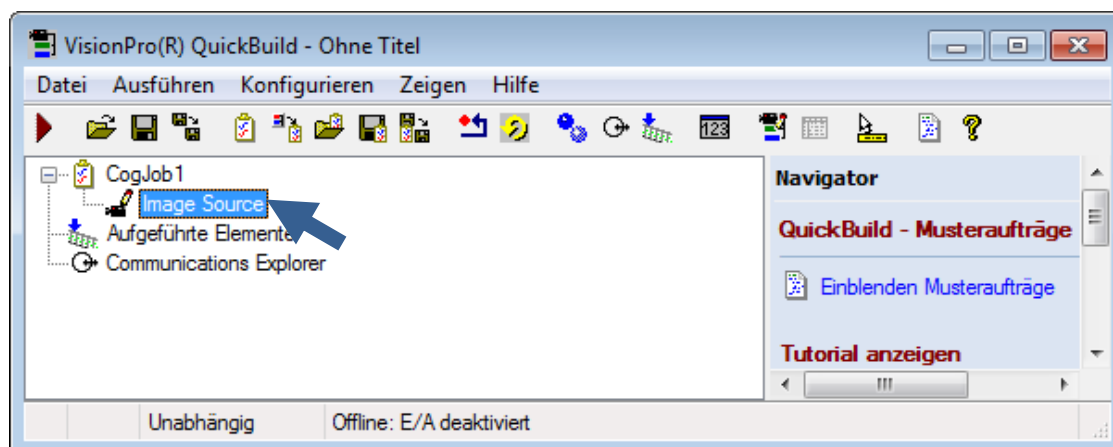


## 2.4 Testing the Installation

You can test your installation by running the program “VisionPro – QuickBuild”.



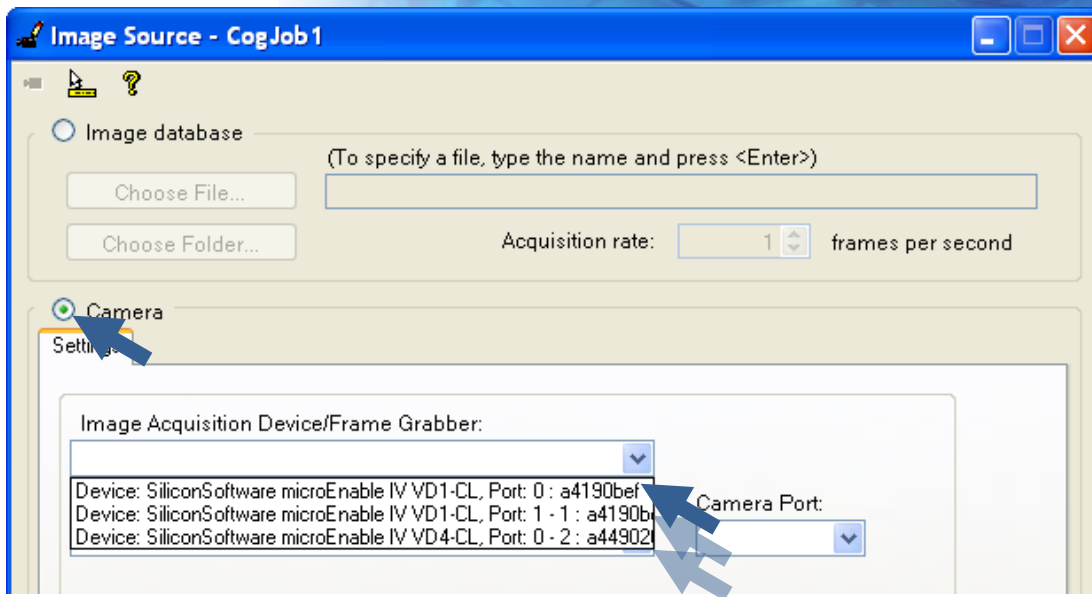
1. Start **VisionPro (R) QuickBuild**.
2. Double-click on “image source”.



3. Select **Camera**.

The Silicon Software frame grabbers are listed in the combo box **Image Acquisition Device / Frame Grabber** with their model name, port connection number and serial number:





## 3 Usage

### 3.1 Frame Grabber Initialization

To initialize the frame grabber:

1. Start the program **VisionPro (R) QuickBuild** as described above.

After starting the **VisionPro (R) QuickBuild** program, the adapter loads a frame-grabber-specific applet onto the frame grabber.

For each frame grabber model, a specific default applet is pre-configured. The following table lists the default applets for all compatible frame grabbers:

| Framer grabber model                           | Default applet       | Default camera support                                      |
|--|----------------------|---|
| microEnable IV AS1-PoCL                        | SingleAreaGray16.dll | One Camera Link Base configuration Area Scan cameras        |
| microEnable IV AD1-CL<br>microEnable IV VD1-CL | DualAreaGray16.dll   | One or two Camera Link Base configuration Area Scan cameras |

| Framer grabber model                           | Default applet             | Default camera support  |
|--|----------------------------|---|
| microEnable IV AD4-CL<br>microEnable IV VD4-CL | Acq_DualBaseAreaGray12.dll | One or two Camera Link Base configuration Area Scan cameras in 12 bit |
| microEnable IV AD4-GE<br>microEnable IV VD4-GE | QuadAreaGray8.dll          | One to four GigE Vision area scan cameras                             |

The applet can be configured individually for each frame grabber which is installed in the system (see section [3.3 Accessing Applet Parameters](#)).

If you want to select another applet, see section [5.1 Selecting Another Applet](#).

For information on how to initialize a frame grabber using a pre-defined configuration file, see section [5.3 Frame Grabber Initialization Using a Frame Grabber Configuration File \(.mcf\)](#).

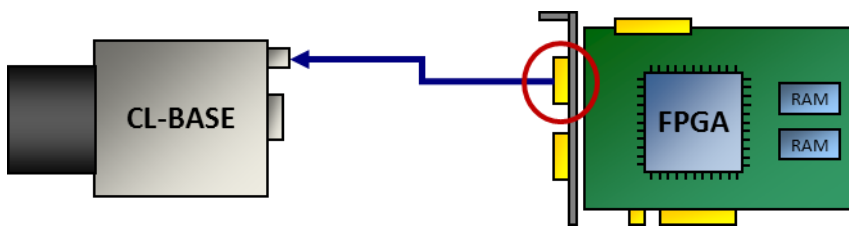
## 3.2 Representation of a Silicon Software Frame Grabber as VisionPro Device

Each combination of Silicon Software frame grabber and Camera Link camera is represented as an independent device within Cognex VisionPro software. (I.e., every device listed in VisionPro has exactly one image source.) Each port of a single frame grabber can be identified by its port number, as illustrated in the figures of the examples below.

### 3.2.1 Example: Setup #1

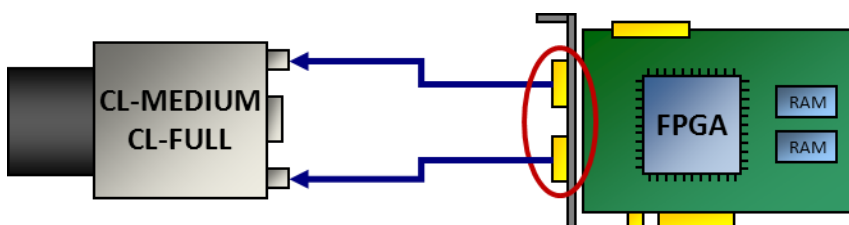
In case of **Camera Link Medium Configuration** and **Camera Link Full Configuration**, the two physical frame grabber camera ports (0, 1) are logically combined and listed as one device. In case of a single camera and a single frame grabber, using a single DMA setup for the transfer of the images, the frame grabber output (DMA video channel) is mapped to VisionPro devices according to the following table:

| VisionPro device # | Silicon Software frame grabber board index | Silicon Software frame grabber port / DMA |
|--------------------|--|---|
| 0                  | 0  | 0   |



**Figure 1: One camera (CL-BASE) connected to one port (frame grabber port/DMA 0)**

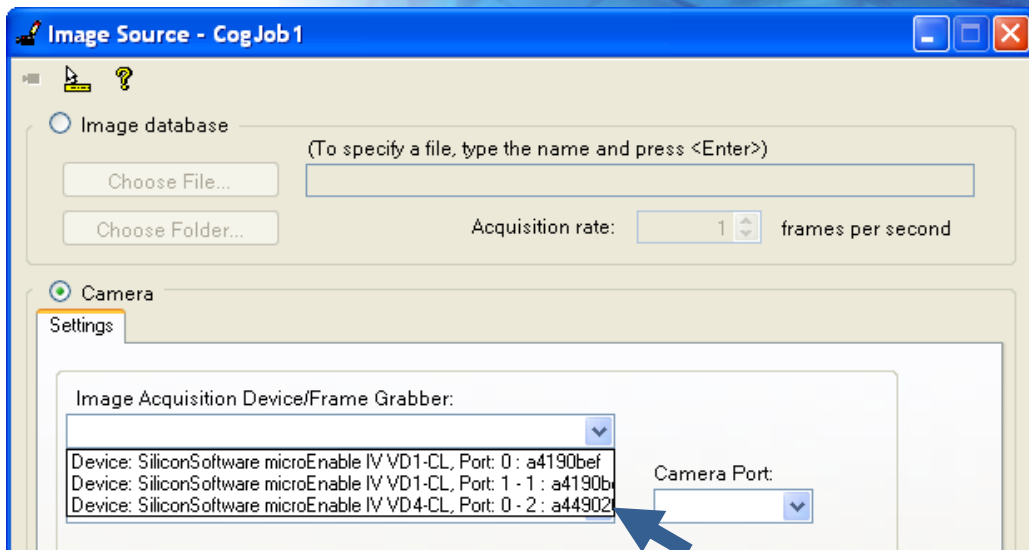
Figure 1: Setup of one camera (CL-BASE) to one port (frame grabber port/DMA 0) of a Silicon Software frame grabber (frame grabber board index 0). In Cognex VisionPro software, one device number is listed.



**Figure 2: One camera (CL-MEDIUM or CL-FULL) connected to both ports (frame grabber port/DMA 0)**

Figure 2: Setup of one camera (CL-MEDIUM or CL-FULL) to both ports (frame grabber port/DMA “0”) of a Silicon Software frame grabber (frame grabber board index “0”). In Cognex VisionPro software, one device number is listed.

The following example shows this specific constellation. The device #2 “Device: SiliconSoftware microEnable IV VD4-CL” supports one Camera Link Full/Medium configuration or a Camera Link Single Base camera:



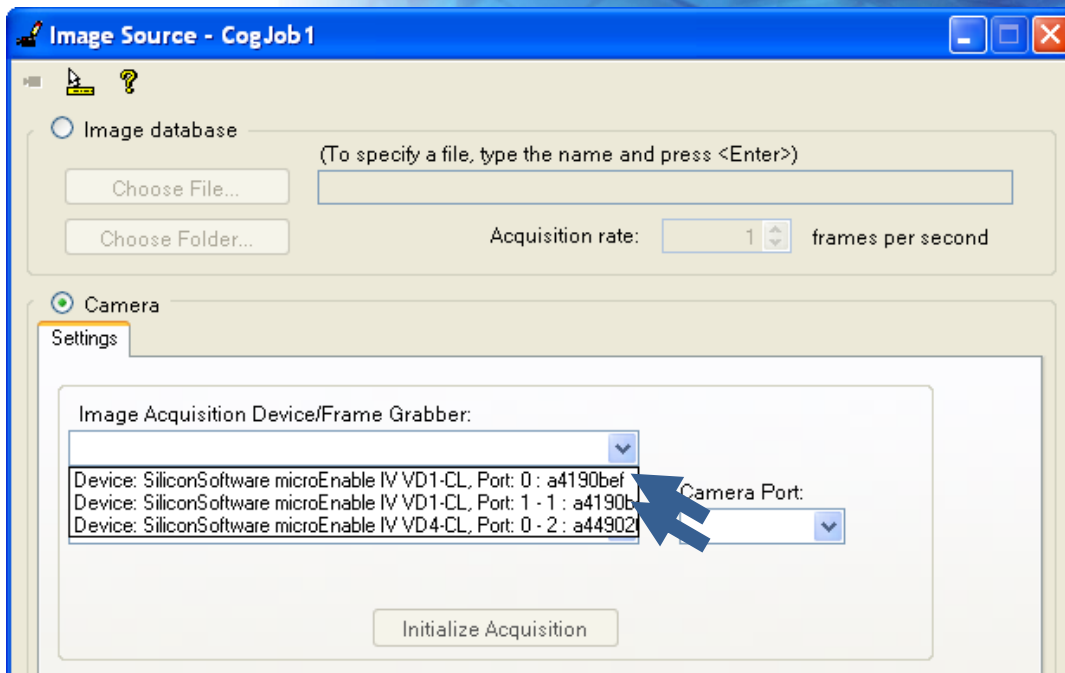
Device: SiliconSoftware microEnable IV VD1-CL, Port: 0 : a4190bef  
 Device: SiliconSoftware microEnable IV VD1-CL, Port: 1 - 1 : a4190b  
 Device: SiliconSoftware microEnable IV VD4-CL, Port: 0 - 2 : a44902

↑  
 VisionPro  
 Device numbers

### 3.2.2 Example: Setup #2

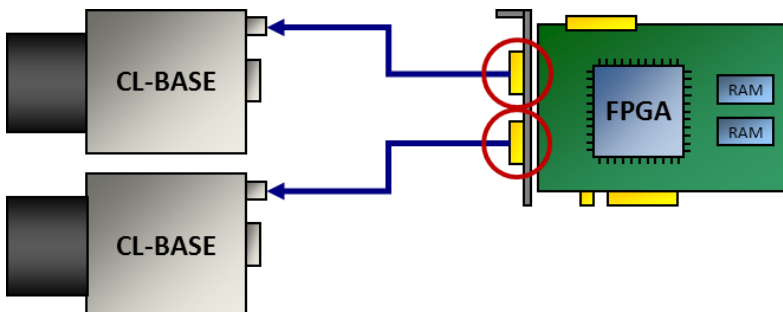
In case of the standard **Dual Camera Link Base Configuration**, the two physical frame grabber camera ports (0,1) are NOT logically combined, but two devices are established.

The following example shows this specific constellation. The device “Device: SiliconSoftware microEnable IV VD1-CL” supports two Camera Link Base configuration cameras on both frame grabber ports “0” and “1” and is therefore listed twice:



Device: SiliconSoftware microEnable IV VD1-CL, Port: 0 : a4190bef  
 Device: SiliconSoftware microEnable IV VD1-CL, Port: 1 - 1 : a4190b  
 Device: SiliconSoftware microEnable IV VD4-CL, Port: 0 - 2 : a44902

↑  
 VisionPro  
 Device numbers



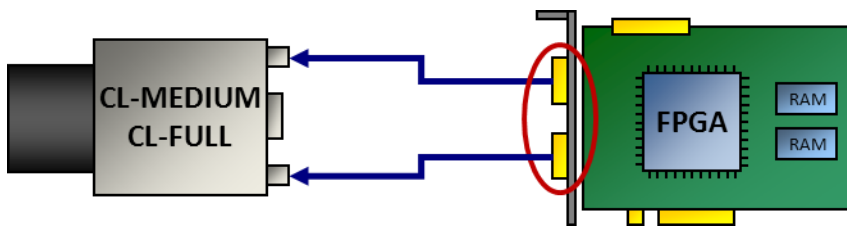
**Figure 3: Two camera Link Base cameras connected to one frame grabber**

Figure 3: VisionPro device #0 allows to acquire images from a connected Camera Link Base configuration camera on Port 0 and VisionPro device #1 allows to acquire images from a



connected Camera Link Base configuration camera on Port 1 – physically, it is the frame grabber model microEnable IV VD1-CL.

Furthermore, the example setup includes a second physical frame grabber (VisionPro device #2, see also Example Setup #1) supporting one Camera Link Full/Medium camera on the combined ports “0&1”.



The mapping of frame grabber camera ports and frame grabber outputs (DMA video channel) to VisionPro devices can be seen in the following table:

| VisionPro device # | Silicon Software frame grabber board index | Silicon Software frame grabber port / DMA |
|--------------------|--|---|
| 0                  | 0  | 0   |
| 1                  | 0  | 1   |
| 2                  | 1  | 0   |

In Cognex VisionPro software, three independent device numbers are listed.



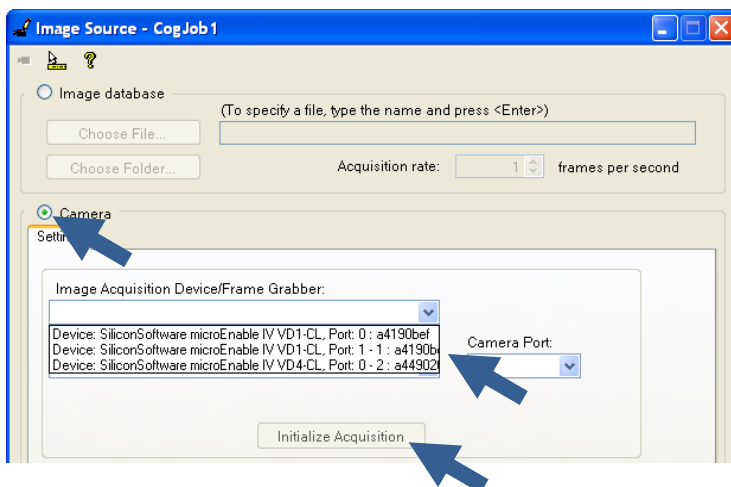
### 3.3 Accessing Applet Parameters

The parameters of an applet are mapped to the VisionPro user interface. They are represented in VisionPro as **Features** or **Characteristics**.

To read or write a parameter value:

2. Start VisionPro (R) QuickBuild.
3. Double-click on “image source”.
4. Select Camera.

The Silicon Software frame grabbers are listed in the combo box **Image Acquisition Device / Frame Grabber** with their model name, port connection number and serial number:



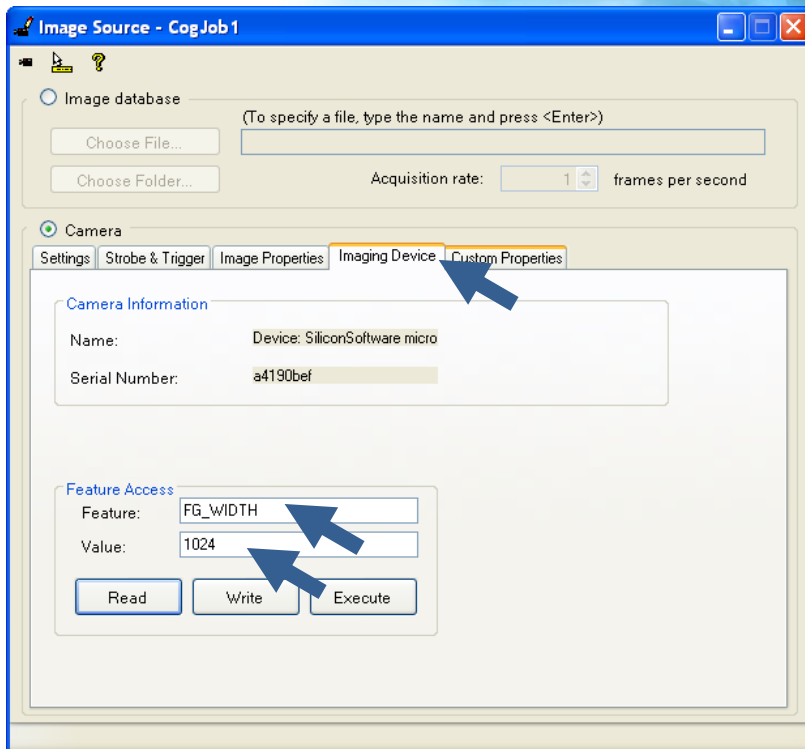
5. Select the device you want to configure.
6. Click on the **Initialize Acquisition** button.

Now, the Image Source window of VisionPro displays several tabs.

7. Go to the **Imaging Device** tab.

The applet parameters can be accessed via the VisionPro user interface entering the name (e.g., FG\_WIDTH) of a parameter and the value in case of write access. Read and write accesses are available according to the general rules of accessing applet parameters (comparable to the access rights when using the tool microDisplay).

The figure below shows how to access the parameter **FG\_WIDTH** of a loaded applet:



The names of the individual features (parameters) you get out of the Applet Documentation and/or the Silicon Software SDK documentation.

### Example: Setting FG\_WIDTH

To read the parameter FG\_WIDTH:

1. Enter FG\_WIDTH into the **Feature** field.
2. Click on the **Read** button. The currently set value for parameter FG\_WIDTH is displayed in the **Value** field.

To change the value for parameter FG\_WIDTH:

3. Enter the value you prefer into the **Value** field.
4. Click on the **Write** button.



### VisionPro “Strobe&Trigger” tab

The VisionPro “Strobe&Trigger” tab is currently not supported. Please access the corresponding frame grabber parameter by using the user interface as described above

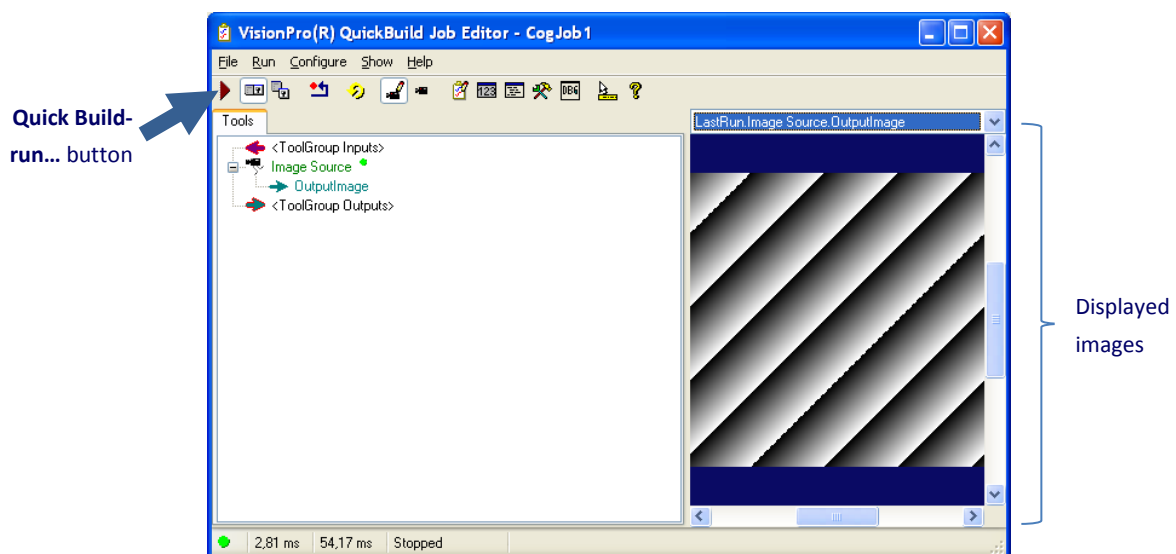
For information on how to initialize a frame grabber using a pre-defined configuration file, see section [5.3 Frame Grabber Initialization Using a Frame Grabber Configuration File \(.mcf\)](#).

## 3.4 Running an Image Acquisition

To start the image acquisition according to settings which have been previously made on the VisionPro user interface:

1. Click on the **Quick Build-run...** button.

The resulting images are displayed:

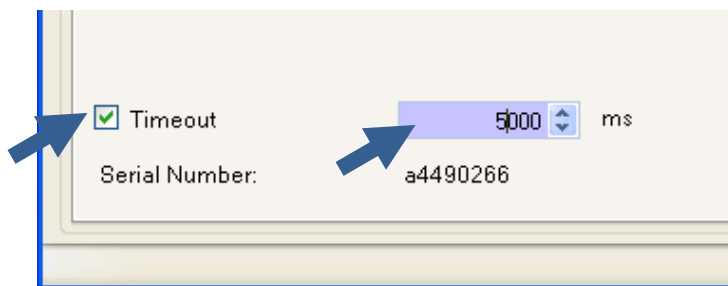
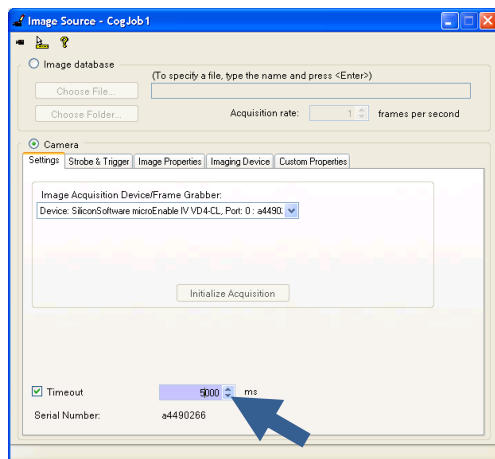


### 3.5 Time-Out Handling

The time-out handling is managed by the VisionPro software.

To set the timeout:

1. Start **VisionPro (R) QuickBuild**.
2. Double-click on **Image Source**.
3. In the CogJob window that opens, set the parameter to the desired value:



4. Close the windows CogJob Image Source and Quick Build Editor.

After a new selection of the ImageSource, your new time-out setting is activated.

If the image transfer re-starts within the specified time-out period, the system continues the image acquisition and displays the acquired images.

**Important**

If you de-select the Timeout option, the Silicon Software Cognex Adapter infinitely waits for a new image.

If the time-out period is exceeded, VisionPro shows an according error message.

## 4 Support of V-Series Frame Grabbers running VisualApplets and SmartApplets Projects

### 4.1.1 VisualApplets Projects

VisualApplets® is a graphical tool for programming FPGAs used in machine vision. VisualApplets allows to create individual applications for specific image processing tasks. The resulting applets (\*.hap files) can be easily loaded onto V-Series frame grabbers.

Using the Silicon Software Cognex Adapter, you can run V-Series frame grabbers which have loaded an applet created with VisualApplets (\*.hap files).

The following requirements must be met:

- Number of video channels (DMA from frame grabber to PC memory): 1

The supported output formats are:

- FG\_GRAY: Gray 8bit
- FG\_GRAY16: Gray 16bit
- FG\_COL24: Color 24bit
- FG\_COL48: Color 48bit

If you need a different setup and/or output format, please contact the Silicon Software Sales Department or your local sales representative.

How to select an applet for frame grabber initialization, see section [5.1 Selecting Another Applet](#).



### 4.1.2 SmartApplets 3D Laser Triangulation Projects

With the current version of the Silicon Software Cognex Adapter, it is possible to run a microEnable IV VD4-CL/-PoCL frame grabber which has loaded a SmartApplets 3D Laser Triangulation applet file (.hap format).

Please note: Before running SmartApplets projects please refer to VisionPro documentation or contact Cognex support to get information on how to handle the specific Silicon Software output format as described in section [4.1.3 SmartApplets 3D Laser Triangulation Output Format](#).

### 4.1.3 SmartApplets 3D Laser Triangulation Output Format

The triangulation series of SmartApplets uses one combined DMA video channel to transfer the image data as well as the resulting triangulation coordinates list (raw data as additional video output line). Hence, each DMA transfer contains the image data followed by the triangulation results.

The raw data of the triangulation result contains the y-coordinate of the position of the laser line in sub-pixel accuracy with a resolution of 0.39% (1/256). For each image column, four bytes are transferred, containing the coordinate. To obtain the y-coordinate, the transferred value has to be divided by 65536 ( $2^{16}$ ) for sub-pixel accuracy. If no laser line can be detected, the applet will output “zero” values for the respective columns.

Beside the output of the combined image data and resulting coordinate values, the applet is able to either output:

- Image data and laser line coordinates  
The image data will be output together with the laser line coordinates. The coordinate list is added as additional line to the image. The DMA transfer will therefore have the increased size of:  
 $FG\_WIDTH * FG\_HEIGHT + FG\_WIDTH * 4.$
- Laser line coordinates only  
The image data will not be output. Just the laser line coordinates are transferred via DMA channel. The DMA transfer will therefore have the size:  
 $FG\_WIDTH * 4.$



- Image data only

Only the image data is output. The results of the laser triangulation are discarded. This can be useful for just monitoring the acquired images. The DMA transfer will therefore have the size:

`FG_WIDTH * FG_HEIGHT.`

The according output format can be defined with the parameter:

`FG_3D_IMAGE_OUTPUT`

Depending on the setting of the parameter “FG\_3D\_Image Output” within the VisionPro software environment, the transferred images need to be processed furthermoer, e.g. to extract the laser line coordinates from the image data.

For further information about the SmartApplets 3D Laser Triangulation, please refer to the Silicon Software SmartsApplets documentation.

## 5 Advanced Usage

### 5.1 Selecting Another Applet

If you want to use another camera/applet combination:

1. Change the according system environment setting:

`SISO_COGNEX_APPLET_<x> = <AppletFilename>`

Where

`<x>` represents the board index, e.g. “0” for the first board

`<AppletFilename>` is the filename of the applet to be used, e.g.:

`C:\Programme\SiliconSoftware\Runtime5.2.1\dll\mE4AD4-CL\Acq_FullAreaGray8.dll`

For further details regarding the enumeration of Silicon Software frame grabbers, please refer to the Silicon Software Runtime documentation.



2. Increase the pool size if necessary.

To change the pool size:

- a. Open the registry.
- b. Go to “HKEY\_LOCAL\_MACHINE – SOFTWARE – Cognex – AIK – AdapterSiso”.
- c. Change the value of key “PoolSize”.

3. Close VisionPro.

4. Shut down the AIK Server via the Windows task manager.

5. Re-start VisionPro.



### Activating a New Environment Variable

Each time you change an environment variable, you have to shut down the AIK server via the Windows task manager. Closing VisionPro is not enough since closing this program doesn't lead to a shut-down of the AIK server.

Only after restarting the VisionPro software (and thus re-starting the AIK server), your changes of system variables are activated.

The selected applet can be configured individually for each frame grabber which is installed in the system (see section [3.3 Accessing Applet Parameters](#)).

For information on how to initialize a frame grabber using a pre-defined configuration file, see section [5.2 Using Log Files for Error Tracing](#).



### Important

When using **DualBase** configuration applets, supporting **two** connected Camera Link Base configuration cameras:

Even if only **one** physical frame grabber is installed, logically **two** different devices are listed in VisionPro under *Image Acquisition Devices/Frame Grabbers* in VisionPro – one for each possible Camera Link Base configuration camera.

## 5.2 Using Log Files for Error Tracing

To look for errors, you can make the system write a log file.

To activate the log modus:

1. Enter the environment variable

SISO\_COGNEX\_LOGFILE = <path + file name>

2. Close VisionPro.
3. Shut down the AIK server using the Windows task manager.
4. Re-start VisionPro to activate the new setting.

The respective calls of the Cognex system and various statuses are entered into the specified file.



### Activating a New Environment Variable

Each time you change an environment variable, you have to shut down the AIK server via the Windows task manager. Closing VisionPro is not enough since closing this program doesn't lead to a shut-down of the AIK server.

Only after restarting the VisionPro software (and thos re-starting the AIK server), your changes of system variables are activated.



## 5.3 Frame Grabber Initialization Using a Frame Grabber Configuration File (.mcf)

The use of the GUI tool **microDisplay** allows to parameterize an applet within the Silicon Software runtime environment. Some of the features (among others) you can parameterize here are the setup of a Bayer filter array (CFA) configuration or of an on-board gamma correction. The parameterization can be stored in the so called **microEnable environmental configuration file** (.mcf format).

Using the Cognex adapter, it is possible to initialize the frame grabber within the VisionPro software by using the **microEnable environmental configuration file** (.mcf). The frame grabber is immediately pre-configured and ready-to-run, based on a proper applets configuration.

To initialize the frame grabber using the **microEnable environmental configuration file** (.mcf):

1. Change the according system environment setting:

SISO\_COGNEX\_APPLET\_<x> = <ConfigurationFilename>

Where

<x> represents the board index, e.g. "0" for the first board, and  
<ConfigurationFilename> is the .mcf file name of the applet to be used, for example  
C:\Programme\SiliconSoftware\MyMCFs\my configuration.mcf

This can be configured individually for each frame grabber which is correctly installed in the system. For further details of enumeration of Silicon Software frame grabber, please refer to the Silicon Software runtime documentation.



### Important

When using **DualBase** configuration applets, supporting **two** connected Camera Link Base configuration cameras:

Even if only **one** physical frame grabber is installed, logically **two** different devices are listed in VisionPro under *Image Acquisition Devices/Frame Grabbers* in VisionPro – one for each possible Camera Link Base configuration camera.

## 5.4 Trigger Parameters

VisionPro offers the following trigger parameters:

- Manual Triggering
- Hardware Auto
- Hardware Semi-Auto
- Free Run

The parameter values can be changed individually for each parameter.

The VisionPro trigger moduses are mapped to the applet trigger models as follows:

### Acquisition Applets

| Cognex Name                                   | Parameter Silicon Software                 | Default Value of Silicon Software Cognex Adapter | Silicon Software Name  |
|---|--|--|--|
| Manual Triggering                             | FG_TRIGGERMODE<br>FG_EXSYNCON<br>FG_CCSELO | ASYNC_SOFTWARE_TRIGGER<br>1<br>CCEXSYNC          | Software trigger<br>(software triggers image acquisition via frame grabber)  |
| Hardware Auto<br>(setHardwareAutoTriggerMode) | FG_TRIGGERMODE<br>FG_EXSYNCON<br>FG_CCSELO | ASYNC_TRIGGER<br>1<br>CC_EXSYNC                  | External trigger   |
| Hardware Semi-Auto                            | FG_TRIGGERMODE<br>FG_EXSYNCON<br>FG_CCSELO | ASYNC_TRIGGER<br>1<br>CC_EXSYNC                  | No Silicon Software name, since Hardware auto and Hardware Semi-Auto are the same in the Silicon Software Cognex Adapter |



| Cognex Name | Parameter Silicon Software | Default Value of Silicon Software Cognex Adapter | Silicon Software Name |
|-------------|----------------------------|--|-----------------------|
| Free Run    | FG_TRIGGERMODE             | FREE_RUN   | Free run              |

### Advanced Acquisition Applets – Area Scan

| Cognex Name                                   | Parameter Silicon Software                                    | Value                                     | Silicon Software Name  |
|---|---|---|--|
| Manual Triggering                             | FG_AREATRIGGERMODE<br>FG_TRIGGERCC_SELECT0<br>FG_TRIGGERSTATE | ATM_SOFTWARE<br>CC_PULSEGEN0<br>TS_ACTIVE | Software trigger (software triggers image acquisition via frame grabber)   |
| Hardware Auto<br>(setHardwareAutoTriggerMode) | FG_AREATRIGGERMODE<br>FG_TRIGGERCC_SELECT0<br>FG_TRIGGERSTATE | ATM_EXTERNAL<br>CC_PULSEGEN0<br>TS_ACTIVE | External Trigger   |
| Hardware Semi-Auto                            | FG_AREATRIGGERMODE<br>FG_TRIGGERCC_SELECT0<br>FG_TRIGGERSTATE | ATM_EXTERNAL<br>CC_PULSEGEN0<br>TS_ACTIVE | No Silicon Software name, since Hardware auto and Hardware Semi-Auto are the same in the Silicon Software Cognex Adapter |
| Free run                                      | FG_TRIGGERSTATE   | TS_SYNC_STOP                              | Free run   |



### **Advanced Acquisition Applets – Line Scan**

For Advanced AcquisitionApplets Line Scan, trigger options are only available via the Frame Grabber Configuration File (see section [5.3 Frame Grabber Initialization Using a Frame Grabber Configuration File \(.mcf\)](#)).

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