Allied Vision

Vimba

Vimba

Vimba Cognex Adapter Manual

1.1.2

Legal Notice

Trademarks

Unless stated otherwise, all trademarks appearing in this document of Allied Vision Technologies are brands protected by law.

Warranty

The information provided by Allied Vision is supplied without any guarantees or warranty whatsoever, be it specific or implicit. Also excluded are all implicit warranties concerning the negotiability, the suitability for specific applications or the non-breaking of laws and patents. Even if we assume that the information supplied to us is accurate, errors and inaccuracy may still occur.

Copyright

All texts, pictures and graphics are protected by copyright and other laws protecting intellectual property. It is not permitted to copy or modify them for trade use or transfer, nor may they be used on websites.

Allied Vision Technologies GmbH 02/2016

Managing Director: Mr. Frank Grube
Tax ID: DE 184383113

Headquarters:

Taschenweg 2a
D-07646 Stadtroda, Germany
Tel.: +49 (0)36428 6770
Fax: +49 (0)36428 677-28
e-mail: info@alliedvision.com

Contents

List of Figures

1 Contacting Allied Vision

Connect with Allied Vision by function

https://www.alliedvision.com/en/meta-header/contact

Find an Allied Vision office or distributor

https://www.alliedvision.com/en/about-us/where-we-are

Email

info@alliedvision.com
support@alliedvision.com

Telephone

EMEA: +49 36428-677-0
The Americas: +1 978-225-2030
Asia-Pacific: +65 6634-9027
China: +86 (21) 64861133

Headquarters

Allied Vision Technologies GmbH
Taschenweg 2a
07646 Stadtroda
Germany

Tel: +49 (0)36428 677-0
Fax: +49 (0)36428 677-28
President/CEO: Frank Grube
Registration Office: AG Jena HRB 208962

2 Document history and conventions

This chapter includes:

2.1 Document history

Version	Date	Changes
1.0	2013-06-18	Initial version
1.1	2014-07-09	Clarified chapters Installation and Getting Started
1.1.1	2015-11-09	Added USB compatibility, renamed several Vimba components and documents ("AVT" no longer in use), links to new Allied Vision website
1.1.2	2016-Feb-29	New document layout

2.2 Conventions used in this manual

To give this manual an easily understood layout and to emphasize important information, the following typographical styles and symbols are used:

2.2.1 Styles

Style	Function	Example
Emphasis	Programs, or highlighting important things	**Emphasis**
Publication title	Publication titles	*Title*
Web reference	Links to web pages	Link
Document reference	Links to other documents	Document
Output	Outputs from software GUI	**Output**
Input	Input commands, modes	*Input*
Feature	Feature names	`Feature`

2.2.2 Symbols

Practical Tip

Safety-related instructions to avoid malfunctions
Instructions to avoid malfunctions

Further information available online

3 General aspects of the Vimba Cognex Adapter

The purpose of the Vimba Cognex Adapter is to make all Allied Vision cameras easily available in Cognex VisionPro, regardless of their physical interface. This is achieved by using the different transport layers supplied by the Vimba package. Camera features are made available as custom properties. The adapter was developed and built using the Cognex Acquisition Integration Kit (AIK) version 1.2.

This document describes how to use the Vimba Cognex Adapter. For any further information, please refer to the Cognex VisionPro documentation.

4 Requirements

- Cognex VisionPro 6.0 or higher (32-bit or 64-bit)
- Vimba SDK 1.2.0 or higher
- Windows XP (only 32-bit), Windows 7 (32-bit and 64-bit), Windows 8 (32-bit and 64-bit)
- 2 GB RAM or more
- Allied Vision GigE, USB, or 1394 cameras.

5 Installation and Troubleshooting

The adapter library is optionally installed via the Vimba setup. If you are using a camera and experiencing problems, for example the camera not being visible or VisionPro not responding, please check the following:

- Make sure that the QuickBuild application runs with administrator rights.
  1. Locate the QuickBuild link on your desktop/start menu or the `Cognex.VisionPro.QuickBuild.exe` application in the `bin` subdirectory within your VisionPro installation.
  2. Open the properties window of the file and ensure that **Run this program as an administrator** is checked.

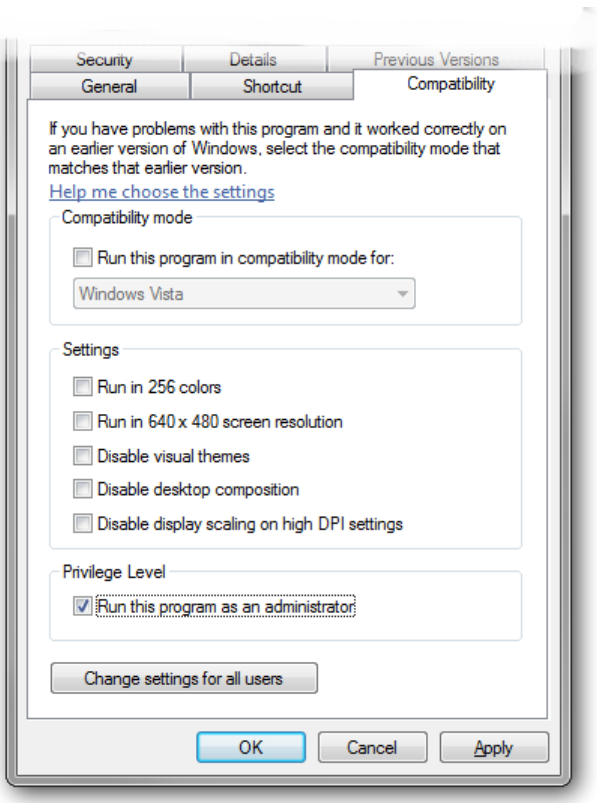

Figure 1: Setting administrator rights in the File Properties

- Make sure that the aikserver is also executed with administrator rights.
  1. Locate the `aikserver.exe` or `aikserver_x64.exe` applications in the bin subdirectory within your VisionPro installation.
  2. Open the properties window of the file and ensure that **Run this program as an administrator** is checked.

If your camera still does not show up, you might need to adjust the memory settings for the adapter library. In order to do that, modify the Windows registry:

- In the Windows Start menu, select Run
- Type `regedit` and press RETURN
- Search for the key: HKEY_LOCAL_MACHINE\SOFTWARE\cognex\AIK\AdapterVimba
- Edit the PoolSize property. By default it is set to 0x14000000 (335544320). For configurations with large image size cameras, you may have to increase this value. Change it and restart QuickBuild to verify if the new value is functional.

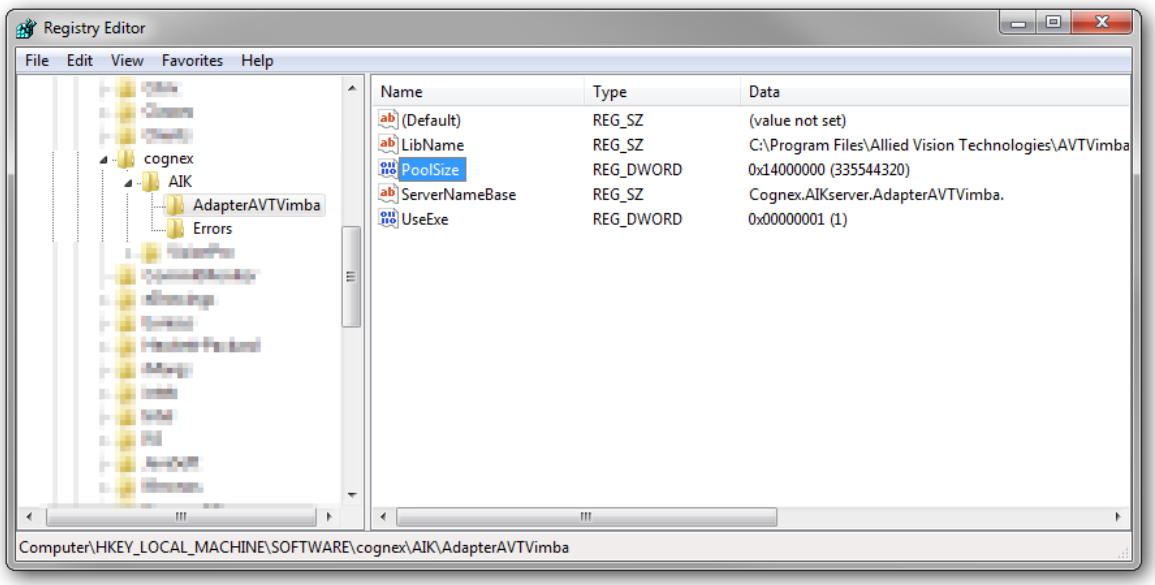

Figure 2: Advanced registry settings

6 Getting Started

Once the adapter is properly installed, all connected Allied Vision cameras appear as imaging devices in the Cognex QuickBuild application. To start using a camera, follow these basic steps:

1. Connect your camera physically and make sure it is powered.
2. Make sure no other application uses the camera.
3. Launch the QuickBuild application, open the **Image Source** dialog, and select your Allied Vision camera from the drop-down list of available cameras.
   Click the **Initialize Acquisition** button to establish a connection to the camera. The cameras listed in the drop-down list are being discovered while QuickBuild starts.

GigE Vision cameras appear in two variants: **GigE Vision:** and **Device:**. Use the **Device:** variant to access the camera via the adapter library.

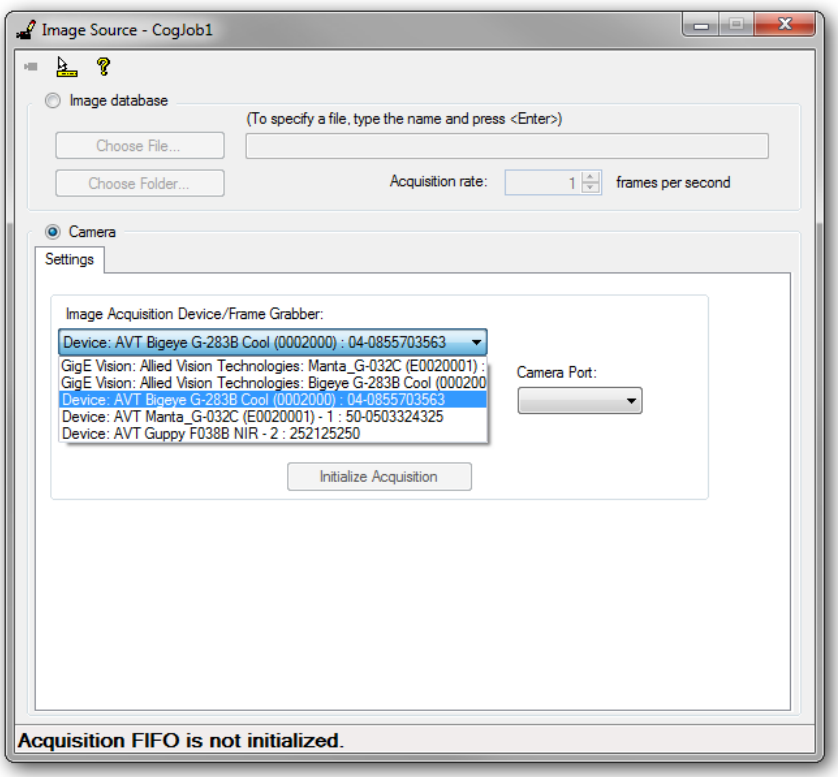

Figure 3: QuickBuild Image Source: Settings tab

4. Go to the **Strobe & Trigger** tab and select the **Free Run** mode. The **Free Run** mode is the most common trigger mode supported by all cameras. Other trigger options are not necessarily supported by every camera model. Please consider the Allied Vision camera manual for further information on trigger modes. The VisionPro trigger options are:

- **Manual**: Acquire an image manually without waiting for an external trigger signal. The image acquision is initiated when a software command is sent to the adapter.
- **Free Run**: Acquisitions start automatically as soon as the previous acquisition is completed (continuous acquisition).
- **Hardware Auto**: Image acquisition starts when a transition on an external trigger line is detected.
- **Hardware Semi-Auto**: Image acquisition is enabled via a software command and initiated by a transition on an external trigger line.
- **Trigger Lo To High**: Changes the trigger signal polarity.

5. Make sure that the **Output Pixel Format** property on the **Image Properties** tab is set to **automatic**. In order to set a specific pixel format for a camera, go to the **Custom Properties** tab and add the *PixelFormat* feature to the list. The *PixelFormat* property lists every pixel format supported by the selected camera.

   VisionPro works with the following pixel formats:

   - MONO8
   - MONO10
   - MONO10PACKED
   - MONO12
   - MONO12PACKED
   - MONO14
   - MONO16
   - RGBPLANAR8

   

   If a chosen camera pixel format is not compatible to VisionPro, the adapter library automatically converts it into the closest compatible one.

6. To start the image acquisition, click the **Show Live Diplay** icon:
   A live preview window is opened.

7 Features

All compatible camera features can be accessed via the **Custom Properties** tab. Furthermore, a direct register access is available on the **Imaging Device** tab. The following feature types are compatible with VisionPro:

- Bool
- Command
- Enum
- Float
- Int
- String

7.1 Custom Properties

To add a camera feature, click the **Add New** icon:
A list with all VisionPro compatible features is displayed. Click a feature to add it to the **Custom Properties** list. If a feature is changed subsequently in the list, the new value is transmitted to the camera by either pressing RETURN or clicking a different feature in the list.

To remove a custom property from the list, click the **Delete** icon:

To move a feature up or down in the list, use the corresponding icons:

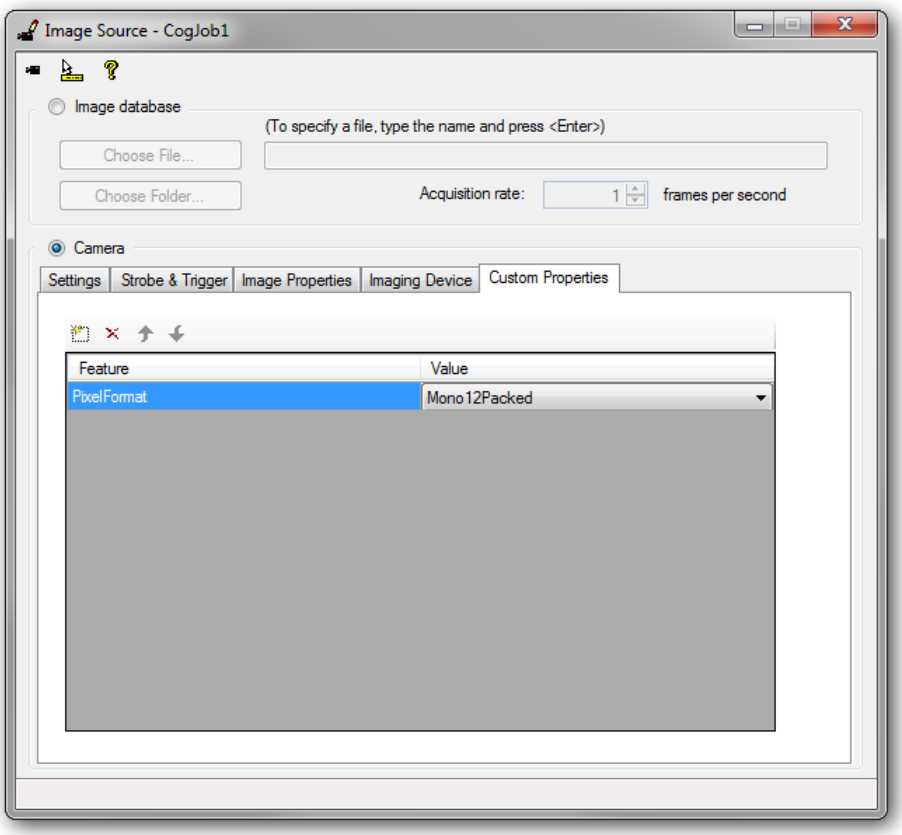

Figure 4: QuickBuild Image Source: Custom Properties tab

7.2 Direct Register Access

Camera features can also be accessed directly within the **Imaging Device** tab. Enter the feature name and click e.g. *Read* to read the current register content.

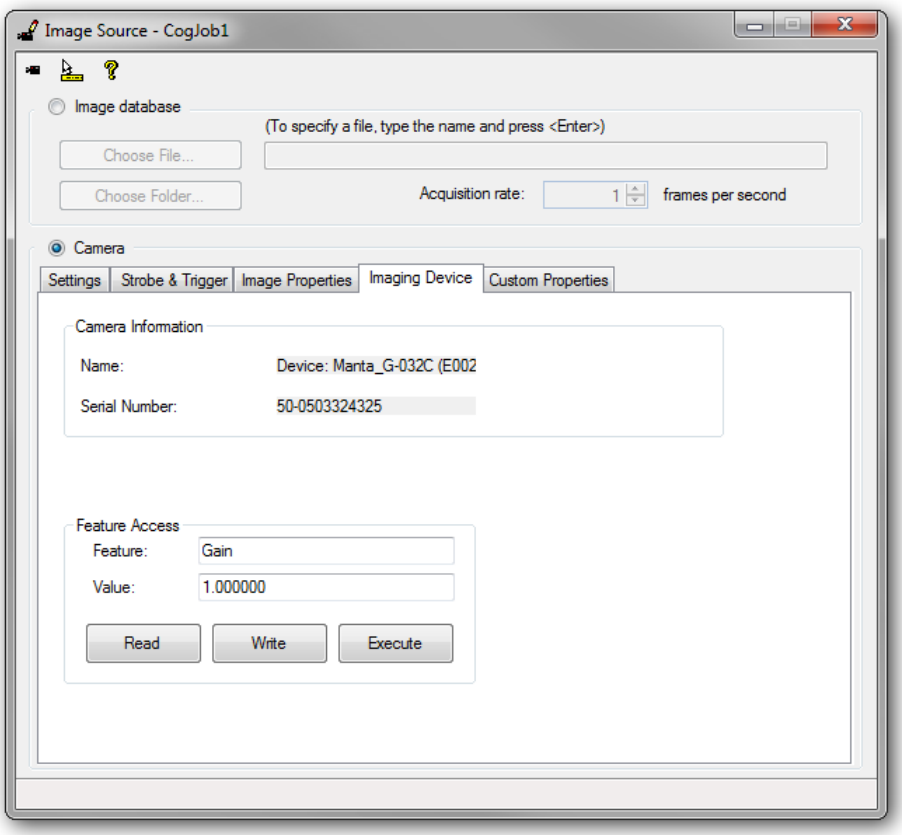

Figure 5: QuickBuild Image Source: Imaging Device tab

7.3 Region Of Interest (ROI)

On the *Image Properties* tab, a (hardware) region of interest can be specified. The parameters set here are transferred to the camera. Most cameras reach a higher speed when a smaller ROI is applied.

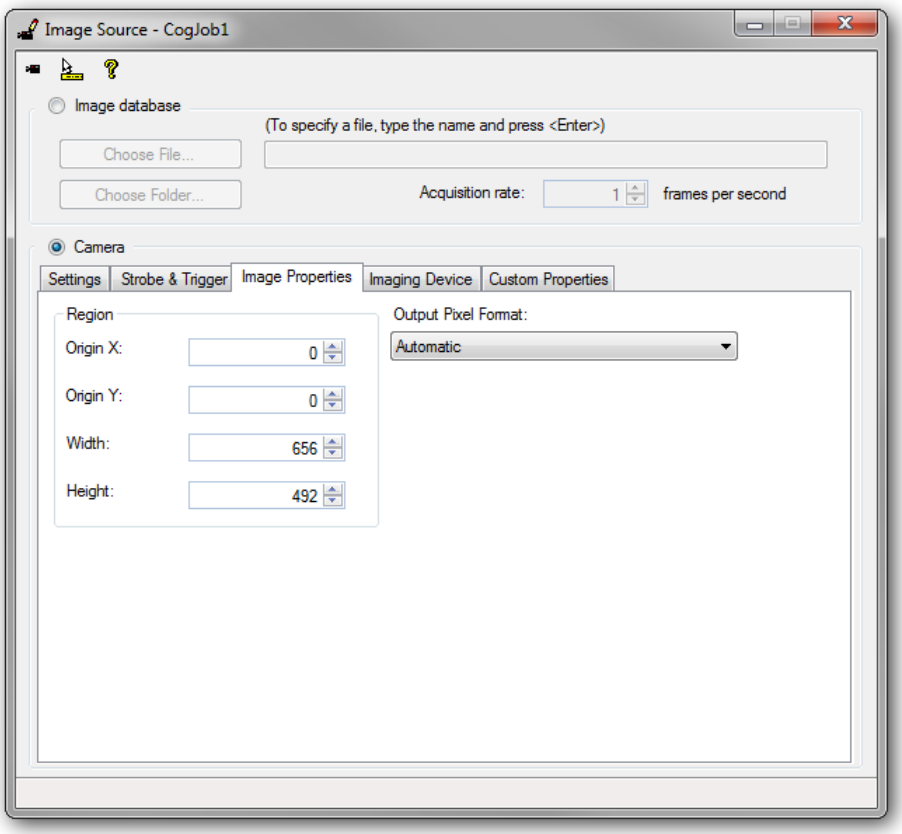

Figure 6: QuickBuild Image Source: Image Properties tab