

Application Note

# Getting started with Cognex VisionPro

### Scope of this document

This application note provides a quick overview on how to get started with Allied Vision's Vimba Cognex Adapter. In-depth information is available in the listed documents.

V1.1.0

### Compatibility

The Vimba Cognex Adapter allows using Allied Vision GigE, USB, and 1394 cameras with Cognex VisionPro 6.0 or higher.

Allied Vision camera	VisionPro with Vimba Adapter	VisionPro without Vimba Adapter
GigE camera	Compatible	Compatible
USB camera	Compatible	Incompatible
1394 camera	Compatible with 32-bit and 64-bit OS	Compatible with 32-bit OS only

 Table 1: Compatibility - Cognex VisionPro with and without Vimba Cognex Adapter

#### Recommendations for GigE camera users

Although Cognex VisionPro is compatible with Allied Vision GigE cameras, installing Vimba and using the Vimba Cognex Adapter offers advantages:

- The Vimba GigE Filter driver enables high camera performance with low CPU load.
- Vimba Viewer eases step-by-step configuration of the GigE settings as described in our camera technical manuals (IP address, bandwidth, packet size, and more).
   If you don't install Vimba Viewer, you can configure the GigE settings with the Cognex GigE Configuration Tool, which is included in the Cognex VisionPro installation.
- With Vimba Viewer, you can easily get a first image and try out camera settings.



## Downloads

Download software:

- Vimba for Windows
   https://www.alliedvision.com/en/products/software.html
- Cognex VisionPro
   http://www.cognex.com/

Download camera documentation



#### Download camera documentation

https://www.alliedvision.com/en/support/technical-documentation.html



### Installation



#### Installation order

You can install Cognex VisionPro either before or after installing the other components.



#### Cognex driver is unnecessary

Installing the Cognex driver additionally to the drivers provided with Vimba is possible, but unnecessary.

- 1. Select, install, and configure your adapter card as described in the corresponding manual for your camera (GigE: activate jumbo frames).
- 2. Install Vimba. As a minimum, select the option **3rd Party Applications**.

		Linfo
Please select an inst	allation level and press start!	h as image libraries and adapters.
Target <u>Folder</u> Examples Target Folder	D\Program Files\Allied Vision\Vimba_1.4\ C:\Users\Public\Documents\Allied Vision\Vimba_1.4	<b>N</b> Allied Vision

Figure 1: Vimba installation



3. If you want to install Vimba Viewer additionally, click Vimba Applications and select **Camera Demonstration**.

	пĿ	~		<b>I</b> Info	Exit
Please select an	Vimba Applications	Application Development	Custom Selection		Start
Target Folder Examples Target Fold	D:\Pro	ogram Files\Allied Vision\V ers\Public\Documents\All	/imba_1.4∖ lied Vision∖Vimba 1.4		
<u> </u>			_	Allie	d Vision

Figure 2: Install Vimba Viewer

4. Make sure that Install Vimba Drivers is checkmarked before clicking Exit.

Installation finished successfully.	info
<ul> <li>✓ Show <u>Release Notes</u></li> <li>✓ Install Vimba <u>Drivers</u></li> <li>Show <u>Vimba Tour</u></li> </ul>	
	Allied Vision

Figure 3: Install Vimba Drivers



- 5. Start the Vimba Driver Installer.
- 6. Install and activate the Vimba driver for your camera (find a detailed description in the Vimba Manual, Chapter *Vimba Driver Installer*).

🖋 Vimba Driver Installer			
Eile Install driver Help	troller USB USB3 Vision Cameras		Autor
Name VirtualBox Host-Only Ethernet Adapter Intel(R) Ethernet Connection 1217-LM Intel(R) 82574L Gigabit Network Connection Intel(R) 82574L Gigabit Network Connection Intel(R) 82574L Gigabit Network Connection	Location PCI bus 0, device 25, function 0 PCI bus 13, device 0, function 0 PCI bus 14, device 0, function 0 PCI bus 15, device 0, function 0 PCI bus 16, device 0, function 0	Driver Source	Install Vimba GigE Transport Layer (1.4.0) on Intel(R) 82574L Gigabit Network Connection. Install Vimba USB Transport Layer (1.0.0) driver on adapter 'Mako U-051B' (Serial Number: 1090519043). Install Vimba 1394 Transport Layer (1.4.0) driver on adapter 'Generic OHCILyno: 1394 (intek)' (PCI bus 6, de
Ready.			

Figure 4: Vimba Driver Installer

7. Start the Cognex VisionPro QuickBuild application and double-click Image Source.



Figure 5: QuickBuild -> Image Source



8. Select **Camera -> Device** (camera recognition may take a while). This choice opens the camera via the Vimba driver, whereas the other option (here: GigE Vision) opens the camera with the Cognex driver (if installed).

a Image Source - CogJob1	
- 1. 1. 2	
Image database Camera	
Camera	
Image Acquisition Device/Frame Grabber:	
Device: A/T Manta_G-031B (E0022014) : 50-050332  GigE Vision: Allied Vision Technologies: Manta_Gr031B	
Device: AVT Manta_G-031B (E0022014) : 50-050332844	
Initialize Acquisition	
Acquisition FIFO is not initialized.	

Figure 6: **Device** opens the camera with the Vimba driver

#### 9. Click Initialize Acquisition.

a Image Source - CogJob1	U	_	X
- <u>L</u> Ř ?			
Image database Camera			
Camera			
Settings			
Image Acquisition Device/Frame Grabber: Device: AVT Manta_G-031B (E0022014) - 1 : 50-050  Initialize Acquisition			

Figure 7: Initialize Acquisition



10. Tabs for setting camera and image properties are accessible. Now you can adjust the settings:

A Image Source - CogJob1
Image database Camera
Camera
Settings Strobe & Trigger Image Properties Imaging Device Custom Properties
Image Acquisition Device/Frame Grabber:
Device: AVT Manta_G-031B (E0022014) - 1 : 50-050 💌
Initialize Acquisition
Exposure: 15 🜩 m
Timeout 10000 🚔 m
Serial Number: 50-0503328442

*Figure 8: Tabs are accessible* 

11. To easily get a first image, go to the **Strobe & Trigger** tab and select Free Run.

🖌 Image Source - CogJob1	_ □	X
- <u>L</u> <u>m</u> ?		
Image database Camera		
Camera		
Settings Strobe & Trigger mage Properties Imaging Device Custom Prop	erties	
l rigger Mode		
Manual		
e Free Run		
Hardware Auto		
Hardware Semi-Auto		
✓ Trigger Low To High		

Figure 9: Select Free Run



12. In the Job Editor Window, click Run Job Continously.



Figure 10: Run Job Continuously

You can now view live images from your Allied Vision camera.



Figure 11: Live camera images



# Further readings

To learn more about using your camera with the Vimba Cognex Adapter, read the Vimba Cognex Adapter Manual, which is part of the Vimba installation.

To get to know Cognex VisionPro, read the documentation provided by Cognex, especially the Vision Pro Quick Reference, which is part of the Cognex VisionPro installation.

### Troubleshooting

- Before starting Cognex VisionPro, make sure no other application uses the camera.
- Camera recognition may take a while, especially with GigE cameras.
- Make sure that QuickBuild and the aikserver run with administrator rights or adjust the memory settings (find details in the Vimba Cognex Adapter Manual).
- Test if your camera works with the Vimba Viewer. If not, check the settings of your GigE, 1394, or USB card.
- Open the Vimba Driver Installer and make sure the Vimba drivers are in use.
- If your camera doesn't reach the maximum frame rate, check if the exposure time is short enough. Example: If the exposure time is 100 ms, the camera cannot acquire more than approximately 10 fps.
- GigE cameras: Follow the installation instructions in the technical manual of your camera.
- Follow the instructions in the Vimba Cognex Adapter Manual.

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