## Photoneo

# Zebra Aurora™ Vision Studio Support for Photoneo 3D Sensors using GenICam

User guide on using the GenICam interface in Zebra Aurora™ Vision Studio (AVS)

### What is GenICam?

The Generic Interface for Cameras standard is the base for plug & play handling of cameras and devices. It was developed by the European Machine Vision Association (EMVA) (<u>GenICam – EMVA</u>).

#### GenICam with Photoneo devices

GenlCam support was introduced to Photoneo devices with PhoXi Control 1.8.2. The GenlCam functionality is provided via the GenTL library that works as a wrapper around the PhoXi Control C++ API. PhoXi Control has to be running in order to use the GenlCam interface.



### What is Zebra Aurora™ Vision Studio?

It is machine vision software that is based on visual data flow programming and comes with a comprehensive set of image analysis tools. Typical applications include industrial quality inspection and robot guidance, using both ruler-based and deep neural networks-based algorithms.

### GenlCam support in Zebra Aurora™ Vision Studio

The requirements to run the example with GenICam

- Zebra Aurora<sup>™</sup> Vision Studio 5.2.10.92454 or later
- PhoXi Control 1.9.4 or later

Note: A lite version of Zebra Aurora™ Vision Studio is not sufficient to use the GenICam features

#### Running the example

- Download the <u>example project</u>
- Install Zebra Aurora™ Vision Studio, then install and launch PhoXi Control

 In the *Environment Variables*, double-check if the *GENICAM\_GENTL\_PATH* variable is set correctly to the PhoXi Control *installation directory*|*API*|*bin* (default at C:\Program Files\Photoneo\PhoXiControl-1.X.X\API\bin)

S	ystem variables					
	Variable Value		^			
GENICAM_GENTL64_PATH C:\Program Files\Photoneo\PhoX		C:\Program Files\Photoneo\PhoXiControl-1.9.4\API\bin\;				

Edit environment variable				
	C:\Program Files\Photoneo\PhoXiControl-1.9.4\API\bin\	New		

- Open the downloaded example and extract it in a folder with read/write permissions
- Run the \*.avproj file

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• In PhoXi Control, find and copy the ID of the device (using CTRL + C)

🖲 PhoXi Control Photoneo							
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Name	Device details						
<ul> <li>Materian II (0) (0)</li> </ul>	Name	MotionCam-3D-DVA-048					
MotionCam-3D-DVA-048	Description	MotionCam-3D					
<ul> <li>Marca 0.1010</li> </ul>	Status	Ready					
<ul> <li>Material Directory</li> </ul>	Id	DVA-048					
<ul> <li>Match 8 6 60</li> </ul>	Adapter	N/A					

 In AVS, the *Project Explorer* tab contains a global parameter *Photoneo3DSensor* - that is the address of the camera to which the program connects. Change the **DEVICEID** to the device ID of the Photoneo 3D Sensor you operate.



Example: The device ID is *DVA-048*. The **DEVICEID** field in the AVS needs to contain the whole *PhotoneoTL\_DEV\_* prefix and the device ID - in this case, *PhotoneoTL\_DEV\_DVA-048* 

Creating Glob	al Parameter		?	$\times$		
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Module:	Photoneo_GeniCam_	Integration_1	$\sim$			
Access:	Public		$\sim$			
	Initial Value	{Photoneo;Custom;PhotoneoTL_DE.				
	VendorName	Photoneo				
	TLType	Custom				
	DeviceID	PhotoneoTL_DEV_ <mark>DVA-048</mark>	•••			
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• Run the project in Aurora Vision Studio, which automatically connects to the specified device and initiates a freerun acquisition on the device. Output can be observed on the right side of the UI.

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• Aurora Vision Studio allows observing of up to 4 output maps at the same time. Therefore, the **UseFixedDataOrdering** parameter for the device needs to be set to **false** (done automatically in the example).

	Order	Output map
UsedFixedDataOrdering set to true keeps	0	Texture or TextureRGB
the default order of the output maps even	1	PointCloud [X,Y,Z,]
if one or more are disabled. When it is set	2	NormalMap [X,Y,Z,]
to <b>false</b> , disabling any of the output maps	3	DepthMap
results in a shift of the subsequent output	4	ConfidenceMap
maps.	5	EventMap
	6	ColorCameralmage

• Example: NormalMap, ConfidenceMap, and EventMap are disabled (blue represents the visible output maps in AVS).

UseFixedDataOrdering = True					
Order	r Output map				
0	Texture or TextureRGB				
1	PointCloud [X,Y,Z,]				
2	Empty				
3	DepthMap				

UseFixedDataOrdering = False
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Order	Output map		
0	Texture or TextureRGB		
1	PointCloud [X,Y,Z,]		
2	DepthMap		
3	ColorCameralmage		

4	Empty		4	Empty
5	Empty		5	Empty
6	ColorCameraImage	_	6	Empty

Note: *EventMap a feature exclusive* to MotionCam-3D (Color) and *TextureRGB* and *ColorCameraImage* are exclusive to MotionCam-3D Color.