Adaptive Vision

Intuitive

Powerful

Adaptable

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Application Note

Acquiring data from SICK TriSpector devices

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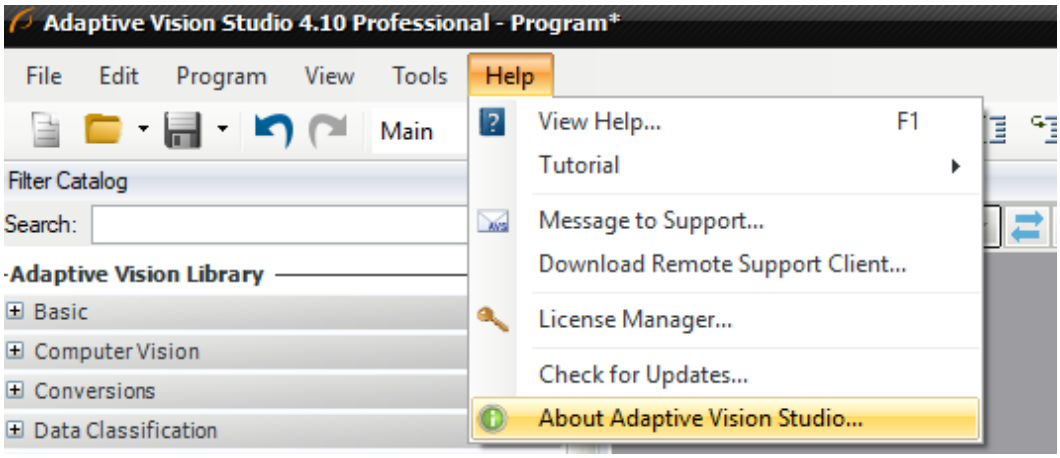
1. Introduction

The following instruction provides information on how to connect and use the TriSpector camera to receive a 3D image in the Adaptive Vision Studio. For additional information refer to the manufacturer's documentation. While working with the device keep in mind work safety and general safety regulations.

2. Preparations

First of all, check if the version of Adaptive Vision Studio is 32-bit or 64-bit. It will determine further steps. You can verify it as shown in the pictures below:

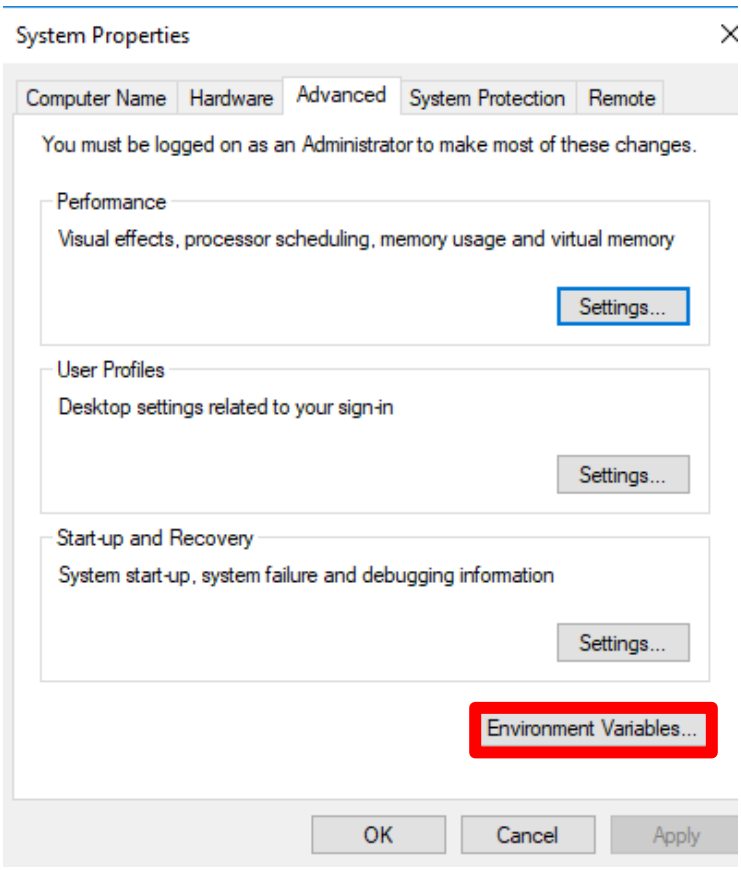


After that create a folder e.g. x64, x86 in a save location that will not be deleted easily. Save or remember the path to that folder as it will be required later.

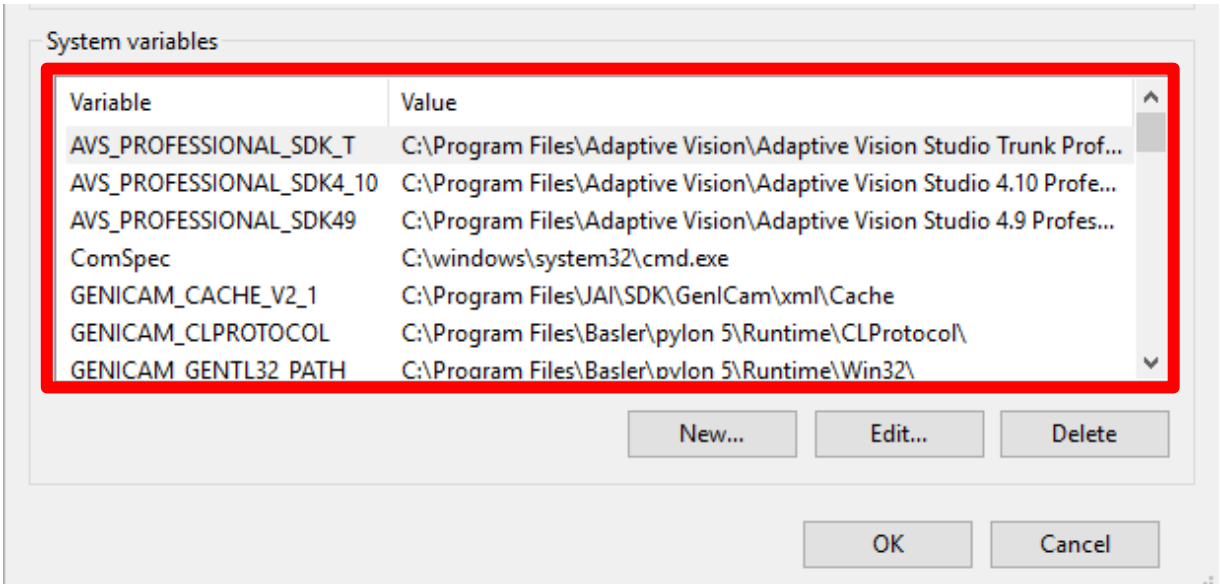
You should have received a .zip folder named eq.: SICKTrispectorTLxx_V2.4.0_1r6cwle or similar. After unzipping it you will find a .cti file. Copy the one that has the same number as the version of Adaptive Vision Studio to the earlier created folder.

3. Creating environmental variable

In advanced system settings, in the Advanced tab press “Environmental Variables”

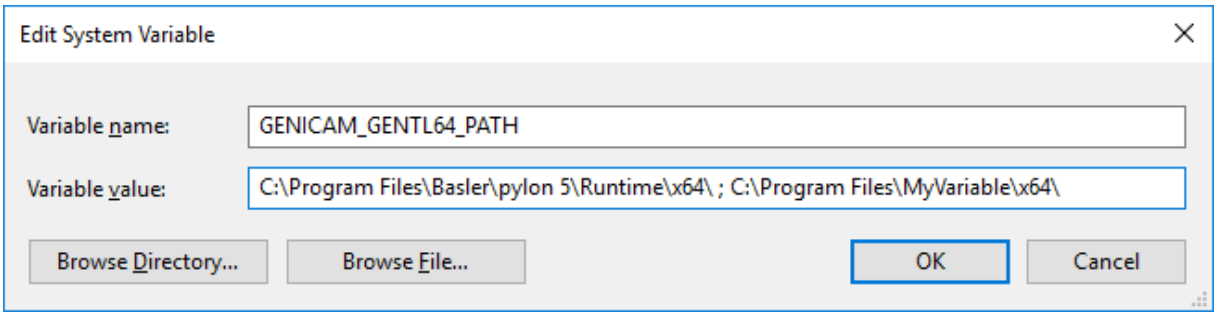


Now exist two possibilities: there may be no variable GENICAM_GENTL64_PATH (or GENICAM_GENTL32_PATH) or it may be already created. To check it browse the selected window:

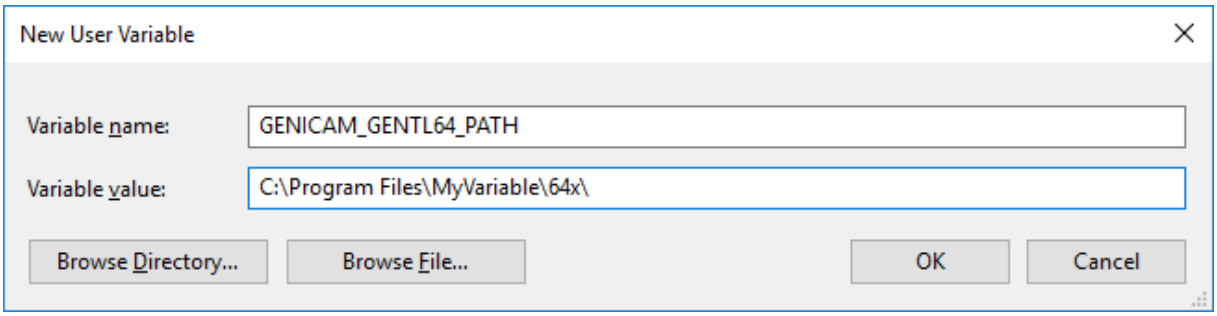


If the variable exist, you can:

- Copy the .cti file to the folder indicated in the column “Value”
- Use “Edit” option and add a new path to the existing one (use ; as a separator)



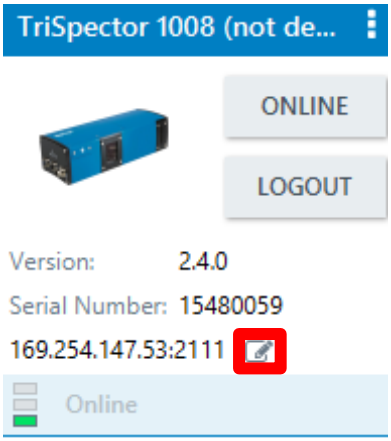
If there is no variable like that you need to create one using appropriate name (GENICAM_GENTL64_PATH / GENICAM_GENTL32_PATH) and the path to the folder that was created earlier.



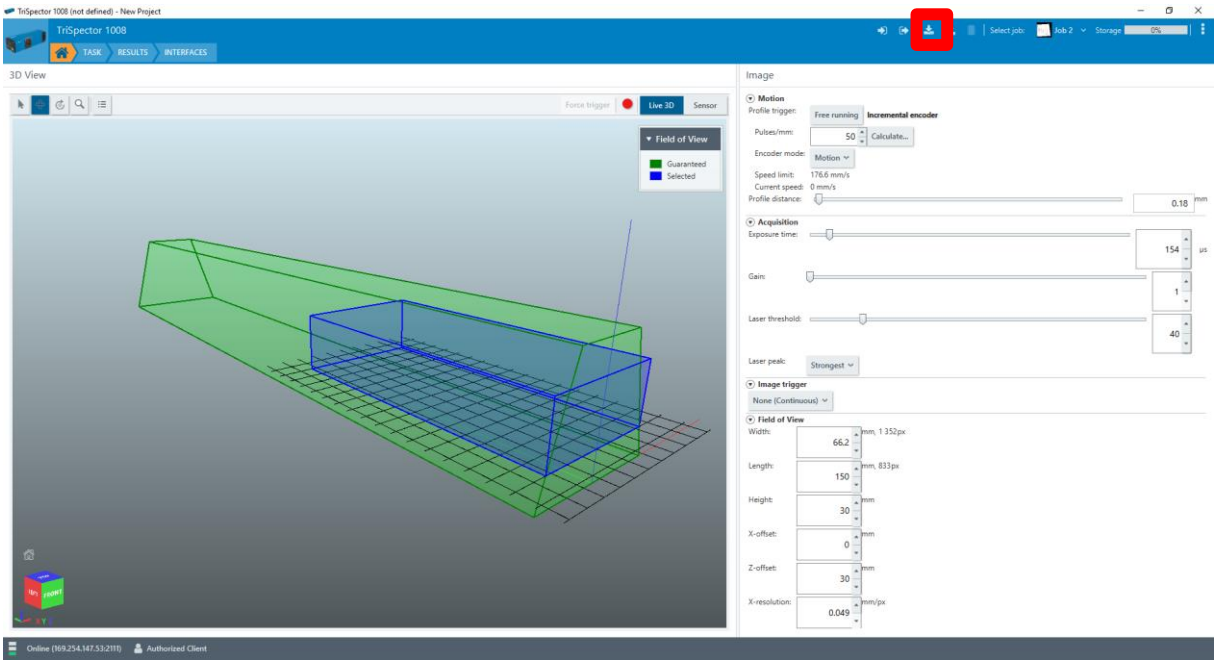
In both cases confirm by pressing OK

4. SOPAS Engineering Tool

You can download that program here. It is necessary to detect the camera in Adaptive Vision Studio later on and configure all of the parameters used by it. (SICK does not allow to modify majority of the parameters by third party software). The next step is to install the correct drivers as they are required for the device to work correctly. In the window seen below you can adjust the IP address of the camera (red box) or enter the editor (double click).

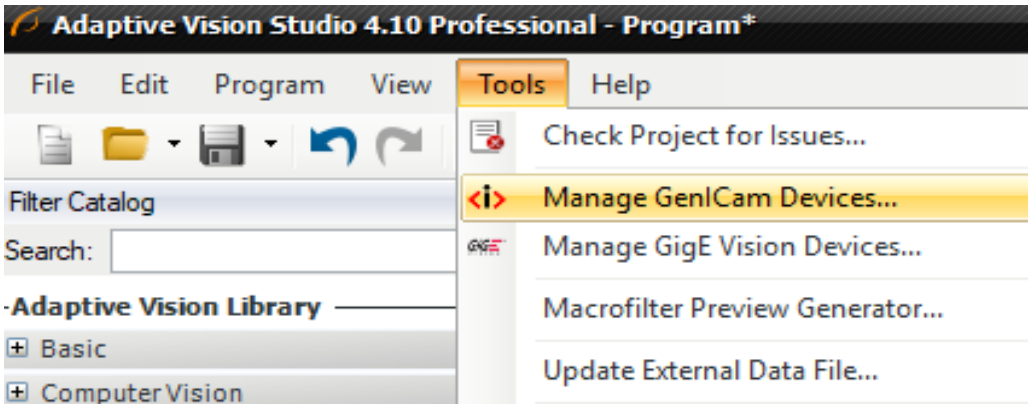


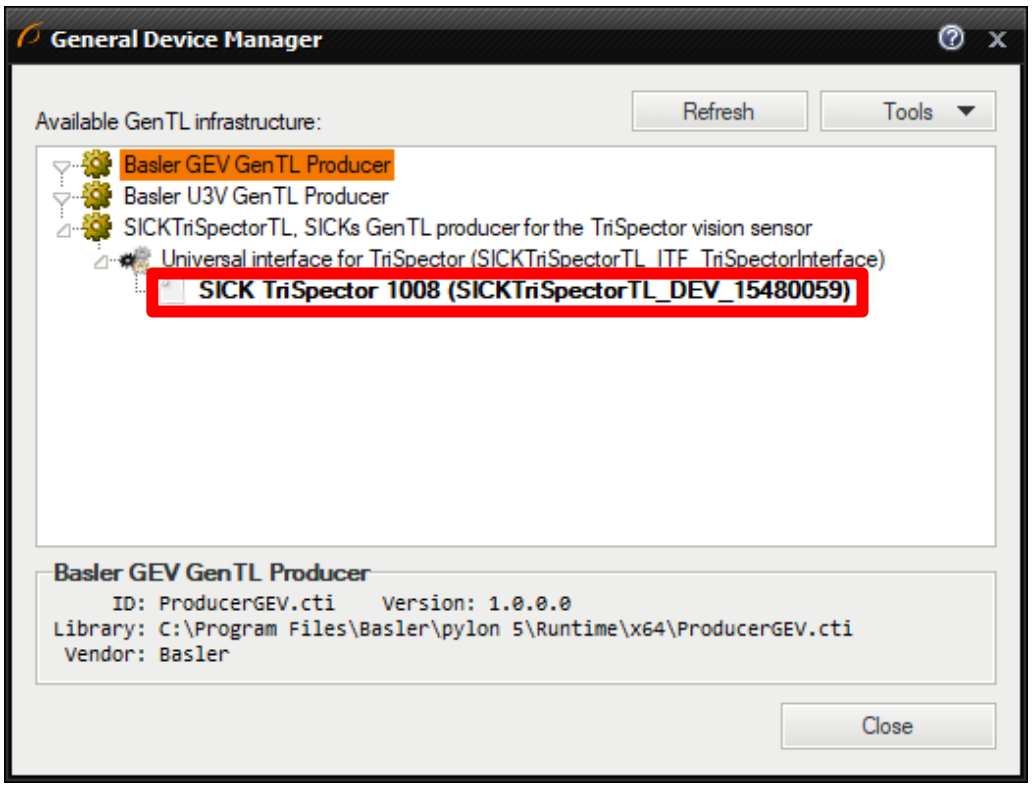
In the menu below you can adjust the settings regarding increment, image acquisition, field of vision and many more. The description of usage of that program is presented in the video tutorials provided by the producer. After that you can load the settings to the device and turn off the program.



5. TriSpector in Adaptive Vision Studio

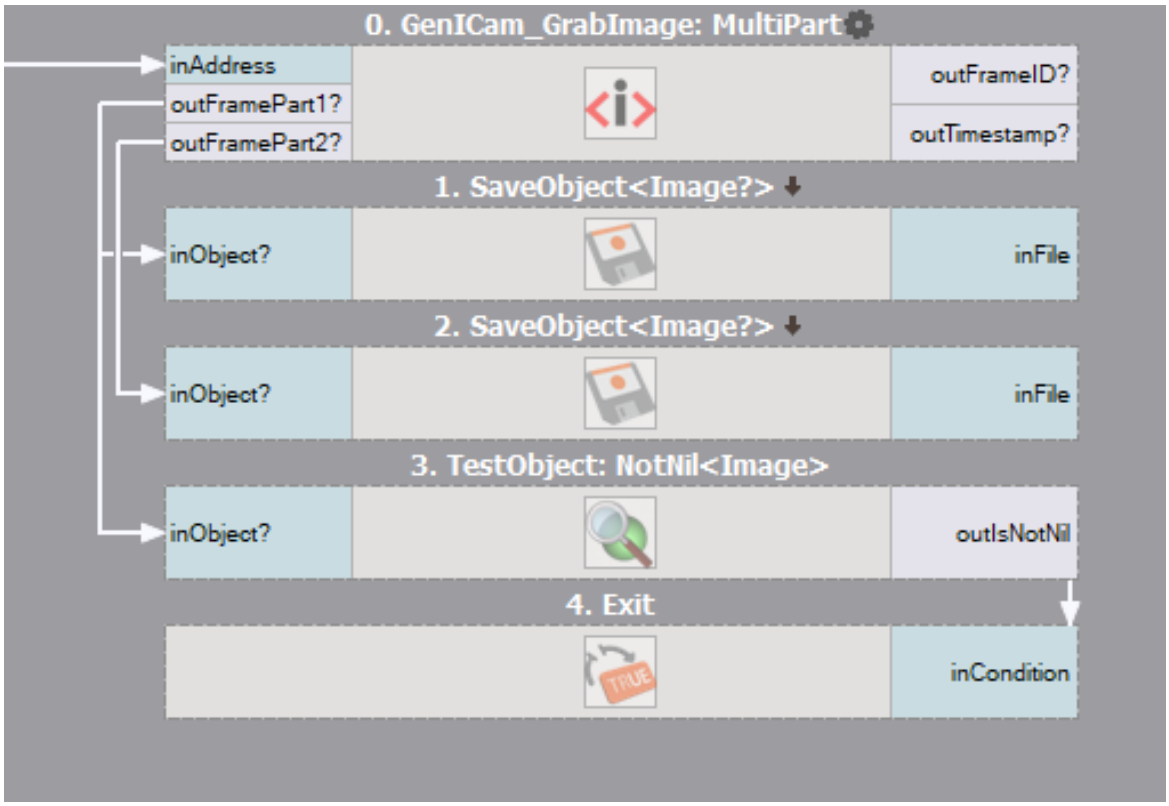
After all the previous steps restart or turn on Adaptive Vision Studio. To ensure yourself that TriSpector is connected, proceed with the steps shown below.

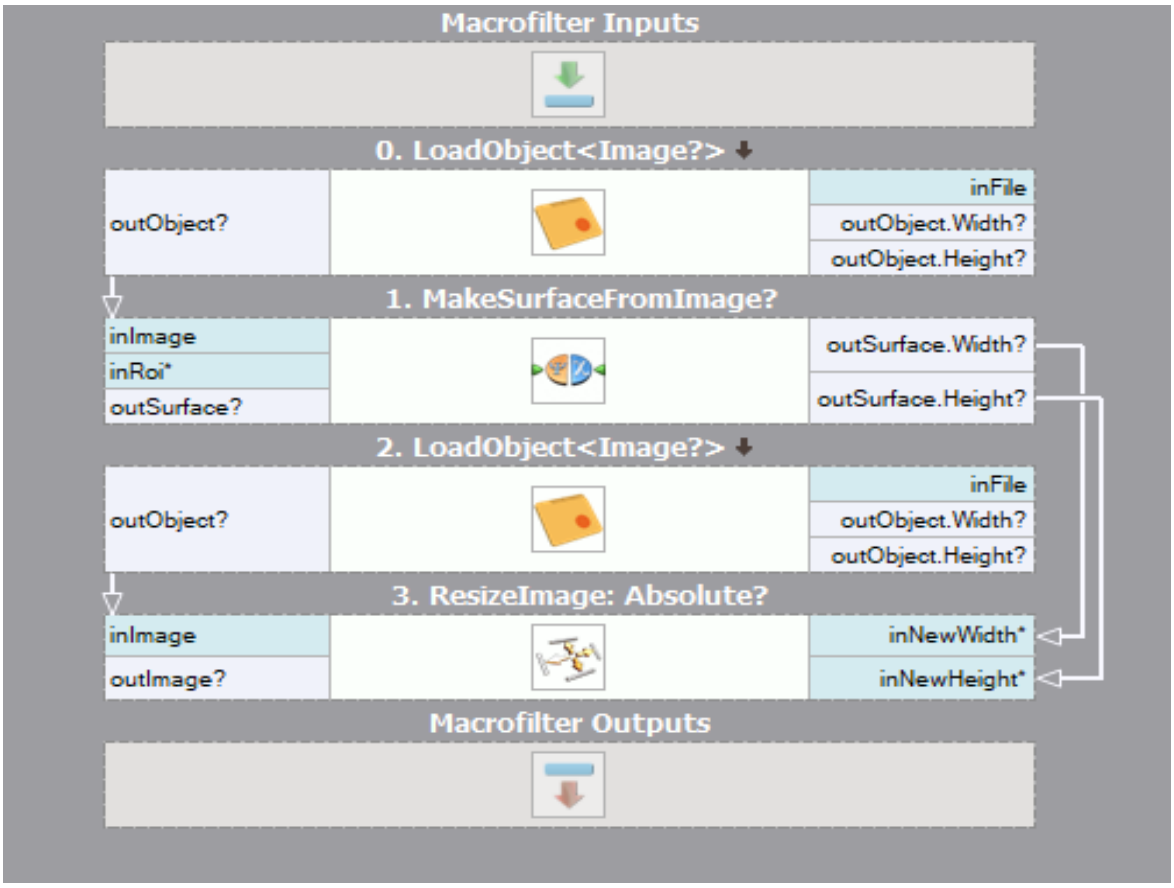




You can acquire data from the camera using GenICam_GrabImage:MultiPart filter. By doing so you acquire two objects – a point grid and a 2D picture. A simple program that stops when the full image form the camera is acquired is presented on the first image below. The second image is the program that loads the acquired objects, rsizes them properly and allows further analysis of the image. Parameters used in MakeSufraceFromImage filter are as follows:

- inXScale – parameter X-resolurion used during TriSpector configuration
- inYScale – parameter Profile Distance used during TriSpector configuration
- inZScale – number form 0,0025 to 0,005 depending on the distance to the study object


0. GenICam_GrabImage: MultiPart
inAddress
outFramePart1?
outFramePart2?
outFrameID?
outTimestamp?
1. SaveObject<Image?>
inObject?
inFile
2. SaveObject<Image?>
inObject?
inFile
3. TestObject: NotNil<Image>
inObject?
outIsNotNil
4. Exit
inCondition


Macrofilter Inputs
0. LoadObject<Image?>
outObject?
inFile
outObject.Width?
outObject.Height?
1. MakeSurfaceFromImage?
inImage
inRoi*
outSurface?
outSurface.Width?
outSurface.Height?
2. LoadObject<Image?>
outObject?
inFile
outObject.Width?
outObject.Height?
3. ResizeImage: Absolute?
inImage
outImage?
inNewWidth*
inNewHeight*
Macrofilter Outputs

6. Notes

- To receive proper readings from the camera, ensure that it is properly connected and coupled with a moving platform.
- Program SOPAS engineering Tool requires Intel Graphics card to run properly. If it is not detected in your system, it should be turned on in the BIOS menu.
- If the camera is still not detected, close all the programs and open again as administrator. The camera's network access request prompt window should be displayed. After confirming the access, the camera will be detected by the Adaptive Vision Studio