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PLOC2D 10 minute setup

Preparation

This tutorial will help you getting up and running with the PLOC2D system in less than 10 minutes. The prerequisites for this is a PLOC2D system with a known IP address available on the network of the PC used for configuration. To reach the PLOC2D web user interface, simply open up a web browser and navigate to the IP address of the camera. (The default value for a new system is http://192.168.0.1) Once the user interface has loaded, click on the 'Run' label in the top right corner and log on to the device as user level 'Service' with password: servicelevel

Workflow

Setting up a PLOC2D system consists of performing a set of steps according to the following workflow:

1. Mechanical **Installation** of camera: Aiming, focusing and setting up a good starting point for exposure parameters.
2. **Calibration** of camera.
3. **Alignment** of camera.
4. Setting up a **Job** configuration.
5. **Run** localization

These steps correspond with the menu items available to the left in the PLOC2D web user interface:
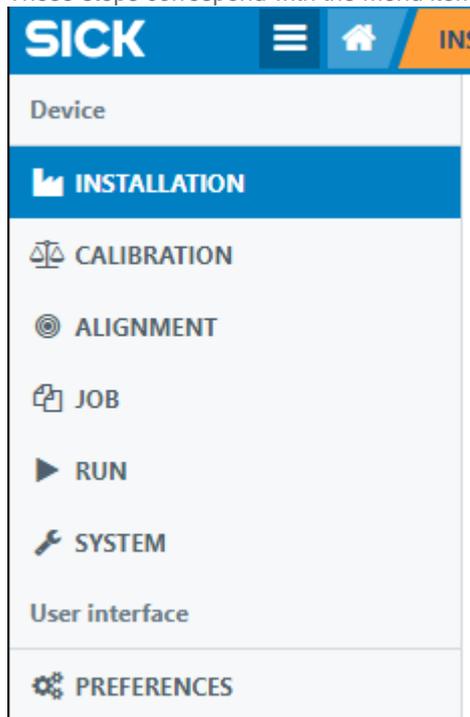

Installation

The goal of the first step is to have a well positioned and focused camera. Start by selecting the Installation view and click the button labeled 'Continuous'. This will start streaming images from the camera and provide the visual feedback needed to set up the camera. Adjust the physical aperture on the camera together with the parameters for exposure time, brightness and contrast until you have a balanced expsure in the image. To help optimizing the focus, turn on the focus assistant and try to find a local maximum of the colored graph. When ready, click the 'Continuous' button once again to stop the image streaming.
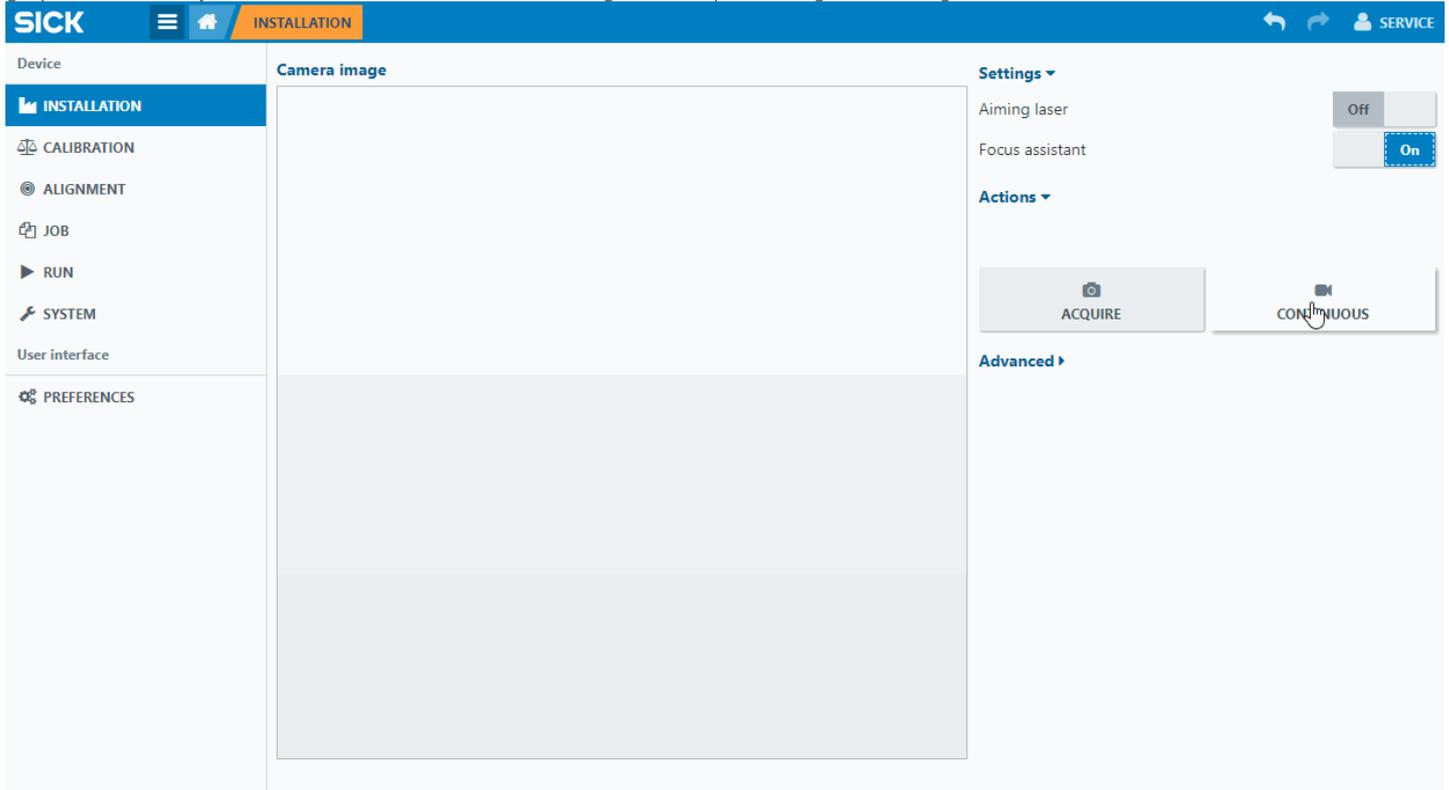
Calibration

In this step, the system will acquire a set of calibration images in order to estimate the lens distortion parameters. Make sure that the right calibration target is selected in the drop down menu and click the 'Continuous' button. This will start streaming images from the camera with the goal to collect a set of images covering as much as possible of the image area. Start showing the calibration target in different poses in front of the camera. A beep together with a green light will signal that the camera found the target pattern in an image.
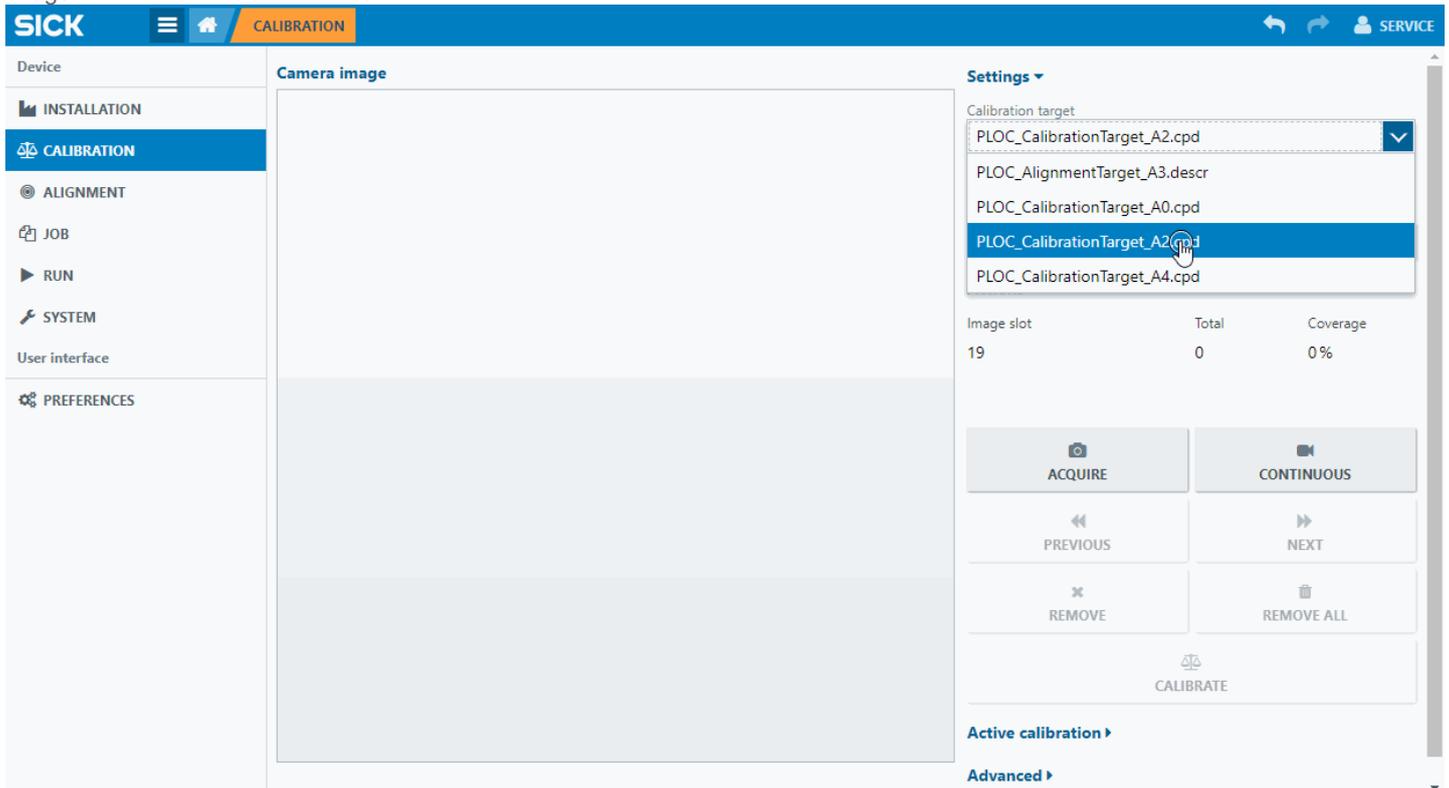
When a suitable image set is acquired, click the 'Continuous button once again to stop the image streaming. Click the calibrate button to perform the calibration. After some time, the calibration results will be presented.

Actions ▾

Image slot	Total	Coverage
6	6	72%

Calibration successful.

📷 **ACQUIRE**	🎥 **CONTINUOUS**
◀◀ **PREVIOUS**	▶▶ **NEXT**
✖ **REMOVE**	🗑 **REMOVE ALL**

⚖ **CALIBRATE**

Active calibration ▾

Reprojection error	Coverage	Quality
0.44 pixels	72%	0.82

| Estimated focal length	Optical image center
16.2 mm	X: 1038.3 Y: 1023.7

⬇ **DOWNLOAD CALIBRATION DATA**

Alignment

In this step, the system will establish the pose of the camera in relation to the robot coordinate system. Simply present the alignment target in front of the camera, make sure the right alignment target is selected in the drop down menu, and click 'Align'. Please note that for the alignment to succeed the entire alignment target needs to be visible in the image.
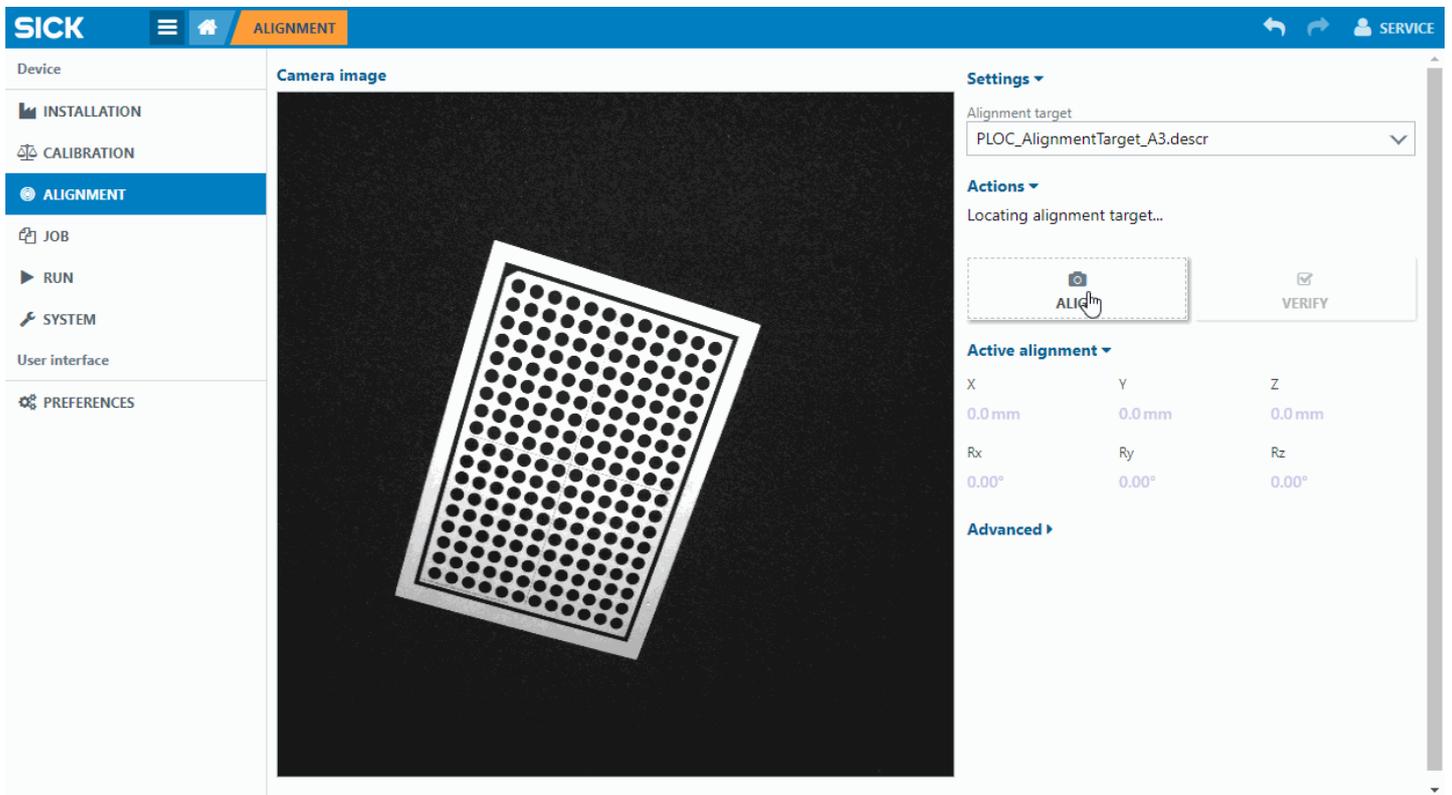
Job

This step defines the shape that the system will look for. To define a shape, first click 'Acquire' and make sure the object is suitably exposed in the image. Click the 'Brush' button and paint the region that should define the object shape. Use the mouse scroll wheel to change brush size and the 'Eraser' tool to take away unwanted regions. All changes are saved on the go, so there is no need to explicitly save the job; once the job definition is performed the system can run the job.
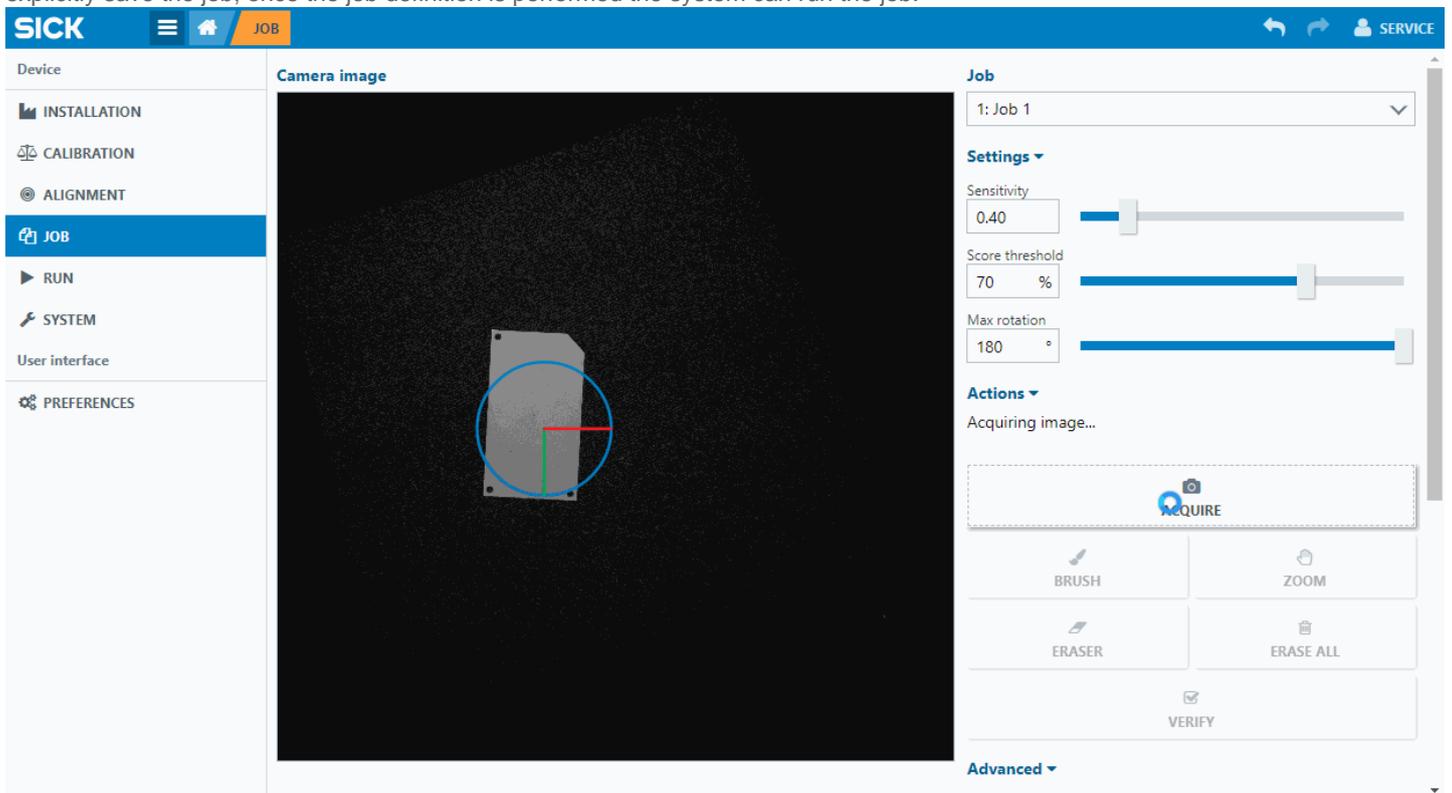
Run

Test the job by clicking on the 'Run' button. The pose offset of the part in relation to the pose in the job definition is reported in the 'Results' section to the right. Multiple results can be browsed through the 'Previous' and 'Next' buttons.

Device

📊 INSTALLATION

⚖️ CALIBRATION

◎ ALIGNMENT

📑 JOB

▶ RUN

🔧 SYSTEM

User interface

⚙️ PREFERENCES

Camera image

Settings ▾

| 1: Job 1 | ⌄ |

☑ *Select All*

| 🖐 **1: Job 1** |

	Job
	1
	Description
	Job 1
	Exposure settings
	1

0	0 ms	0 %
X	Y	Rz
0.0 mm	0.0 mm	0.00°

History ▾

| Job | X | Y | Rz |

✖ CLEAR   ⌄ SHOW MORE

Advanced ▸