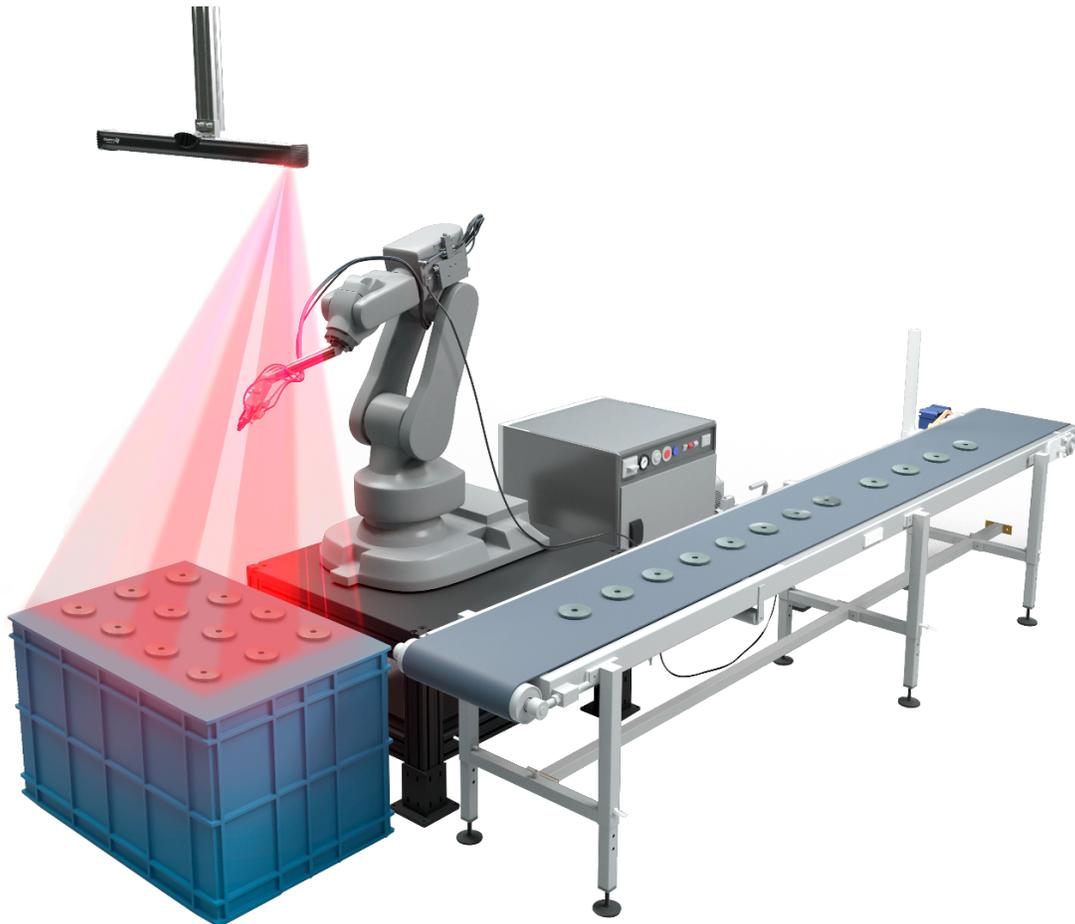


Locator Studio 1.1.0

Release notes





Bratislava, Slovakia, 20 July 2023 — Photoneo releases Locator Studio 1.1.0 - the new version of the company's 3D picking tool for fast localization and picking of oriented and semi-oriented items in collision-free environments. The upgrade to 1.1.0 brings you a number of new features and enhancements, including AI modules for Depalletization and Delaying applications:

New features

AnyPick module for Boxes - a solution for Depalletization

The AnyPick module for Boxes extends the functionality of Locator Studio with the ability to recognize unknown boxes based on a pre-trained neural network. This functionality allows you to deploy Locator Studio also for Depalletization applications.

The AnyPick module for Boxes needs to be ordered separately as an extension module. For more information and inquiries, visit <https://www.photoneo.com/depalletization/>

When Locator Studio is extended with the AnyPick module, users can create solutions of two types:

- Based on a CAD-object recognition
- Based on an AI-object recognition (boxes)

The configuration wizard in the AI-based solution guides users only through relevant configuration steps. The gripping point is chosen automatically based on the visible surface of the box. The output data provides information on the dimensions and orientation of the box to allow precise placing.

The AnyPick module for Boxes is supported (and trained) with PhoXi 3D Scanners.

LayerPick module - a solution for Delaying

The LayerPick module extends the functionality of Locator Studio with the detection of the top surface layer of any type of objects placed on a pallet. This functionality allows you to deploy Locator Studio also for Delaying applications.



The LayerPick module has to be ordered separately as an extension module. For more information and inquiries, visit <https://www.photoneo.com/delaying/>

When Locator Studio is extended with the LayerPick module, users can create solutions of two types:

- Based on a CAD-object recognition
- Based on a Layer-detection recognition

The configuration wizard in the Layer-detection solution guides users only through relevant configuration steps. The layer recognition can be configured for specific gripper abilities. The output data reports the central point of the layer.

The LayerPick module is supported by any Photoneo 3D Sensor.

Automatic robot-camera calibration

A calibration routine verified by the operator can now be repeated automatically using the new action requests in the robotic API:

- Start the automatic calibration
- Save the result of the automatic calibration
- Stop the automatic calibration

Reporting of the vision system status to the controller

Added request to the robotic API - Get vision system status - to provide information about:

- Number of localized objects
- Number of ready objects
- State of the processing pipeline (in progress/finished)

This information is especially useful in combination with multiple vision systems to prioritize picking from the most full bin or to receive early information about an almost empty bin.

Defining the coordinate space with a Marker pattern

If the user needs to use a custom coordinate space, for example with the origin starting in the corner of the pallet with a Z-direction facing towards the camera, a calibration with the



Marker pattern can be used. The vision system is calibrated with a single scan during which the marker pattern is recognized. This approach is mainly suitable for 4 and 5-axis robots often used in depalletizing or delayering applications (assuming the user is capable of transforming the marker coordinate space to the robot coordinate space).

User experience and system improvements

- Redesign of the Vision System page into three clear views:
 - Configuration
 - Setup of the 3D sensor and localization scanning settings
 - Localization and localization settings
 - Calibration type and calibration scanning settings
 - Calibration overview
 - Information about current robot-camera calibration
 - Improved manual edit of the calibration matrix
 - Option to set up automatic calibration
 - Settings - optional settings overriding global defaults
- Update of Deployment Inspector - showing the object angle and object dimensions (for AI-based localization of boxes)
- CAD localization improvements
 - Added parameter for special fine-tuning of CAD localization
 - Added option to specify when the object is considered occluded
 - Added option to enable parallel run of multiple localizations
 - Added option to block the Get objects action request until the localization is finished
 - Added option to sort localized objects based on the localization score
- General GUI improvements and bugfixes
- PhoXi Control update to version 1.10, support for all Photoneo 3D Sensors
- 3rd party applications updates:
 - Google Chrome 114
 - Meshlab 2021.05
 - CloudCompare 2.11.1

Communication protocol and robot modules

Communication protocol v1.1 adds support for the new action requests in the robotic API for performing automatic robot-camera calibration and reporting vision system status.



Updated robot modules based on this version of communication protocol are available for:

- ABB
- Doosan (new)
- Fanuc
- Kawasaki
- KUKA KRC (new)
- Universal Robots
- Yaskawa (new)

All robot modules based on previous versions of the Communication protocol remain supported.