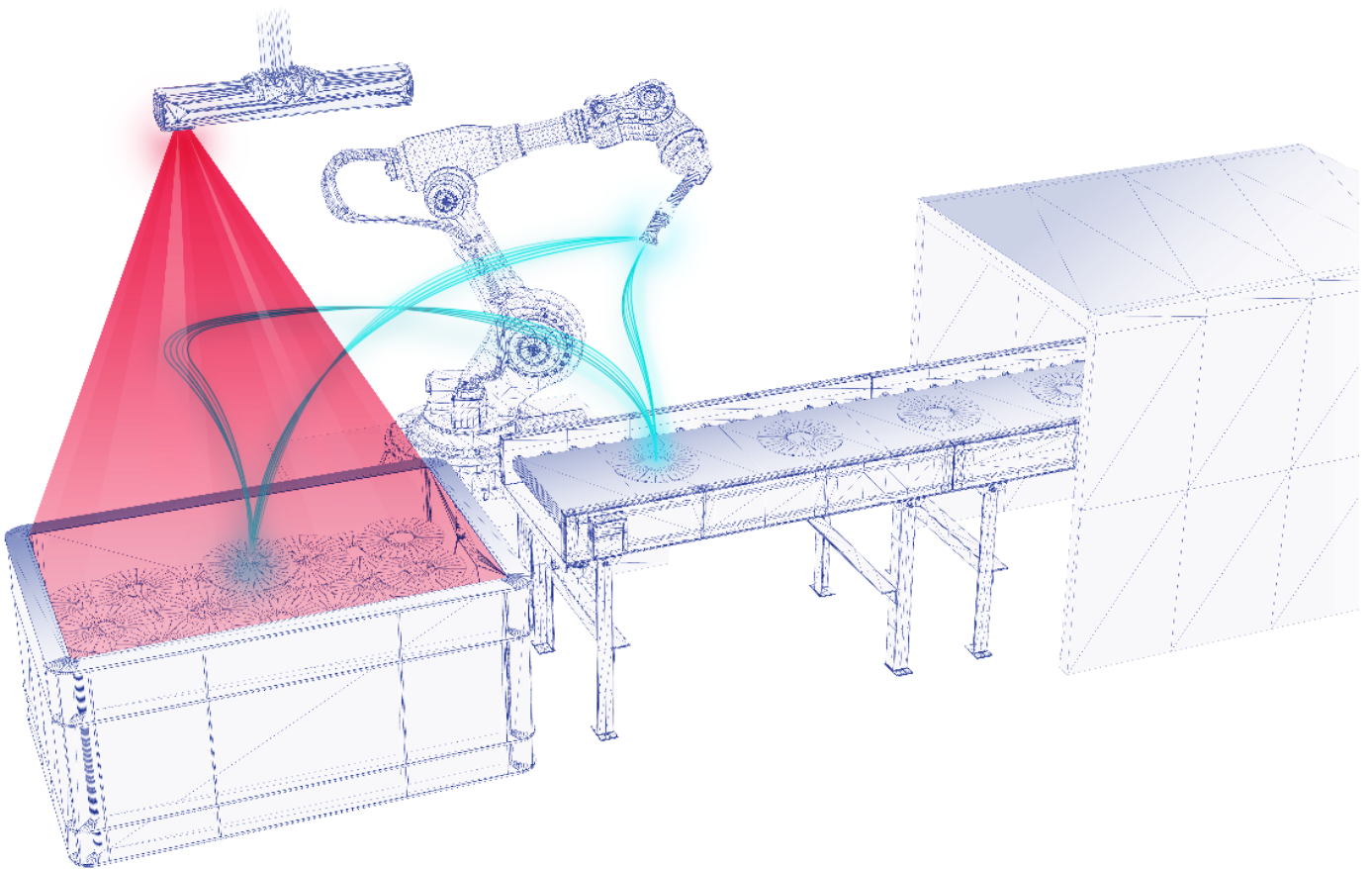# Bin Picking Studio 1.7.0

Release notes

Bratislava, Slovakia, 7 September 2022 — Photoneo releases Bin Picking Studio 1.7.0 - the new version of the company's robotic intelligence tool for bin picking powered by 3D vision. The upgrade to 1.7.0 extends bin picking possibilities and improves user experience through the following new features and enhancements:

System improvements and changes

- When set to the DHCP client option, the network interface displays the IP address assigned by the DHCP server
- When configuring a static IP address on the network interface, it is also possible to define DNS servers
- BPS can be simultaneously operated locally (Vision controller) as well as remotely (remote computer) through the BPS web server. It can be used with a static or dynamic IP address on the Network interface.

GUI improvements and changes

- Communication interfaces are now located on a single page
- Option to visualize the current state of the robot on the *Environment* page
- Improved layout of the PhoXi interface
- The ready-to-deploy solutions on the *Deployment* page are now displayed in a clear table instead of a drop-down list
- Collision objects in the *Visibility* and *Axis* widgets of the 3D visualizers are now hierarchically displayed as defined on the *Environment* page

New features

Integration of MotionCam-3D
Bin Picking Studio 1.7.0 supports the integration of MotionCam-3D!
The camera can be used in both the scanner mode and the camera mode. Each mode provides its advantages, depending on concrete application requirements.

Scanning profiles
Objects made of different materials or having different surface finishes and shapes often require different scanning parameters. Now it is possible to define a unique scanning profile - a set of scanning parameters - for each vision system.

This scanning profile is automatically applied during scan acquisition. This is especially useful when a single scanner is used for scanning different objects. The scanning profile support is available for both the PhoXi 3D Scanner and MotionCam-3D.

Complete vision system settings
The vision system is a largely independent unit that often requires unique values for different settings. Now it is possible to define a custom value for almost any setting of every vision system.

Multiple scene states
A change in the state of the robotic cell during bin picking can now be reflected in the bin picking solution by defining multiple scene states.
When using multiple scene states, it is possible to assign an object to a specific scene state so that it is present only when that scene state is active.
Switching off scene states is requested by the robot and can be done through the new *Change scene state* request introduced in the Communication protocol v1.7.0.

Calibration without the Robot State Server
The calibration of a vision system requires a functional Robot State Server that provides the state data of the robot. If the Robot State Server is not available for some reason, there is an option to input the robot state manually by rewriting the TCP data from the teach pendant of the robotic controller in the BPS web interface.
This feature is currently available for ABB, Fanuc, Kawasaki, KUKA KRC, and Universal Robots.

New localization stop conditions
Localization searches for objects until a stop condition is met. In previous BPS versions, the only stop condition was the overall timeout. Now users can stop localization after a specific number of objects has been localized or when no new object has been localized for a certain time period.

Communication protocol and robot modules

We introduce a new version of the Communication protocol - v1.7.0, which brings a new robot request: *Change scene state*. New robot modules based on this version of the communication protocol are available for:

- ABB
- Fanuc

- Kawasaki
- KUKA KRC
- Universal Robots

All robot modules based on the Communication protocol v1.6.0 remain supported. We have also added Doosan among supported robotic brands with the robot module based on the communication protocol v1.6.0.

Documentation extensions

The documentation menu has been reworked.
There are new documentation pages that cover the support of 3D sensors and Scanning profiles and the mechanism of using bin picking solution settings.
Many pages have been updated - the *Environment* page has been extended with the new *Multiple scene states* section and the *Calibration* page has been significantly improved.