Version 01

PickOne Software Module:

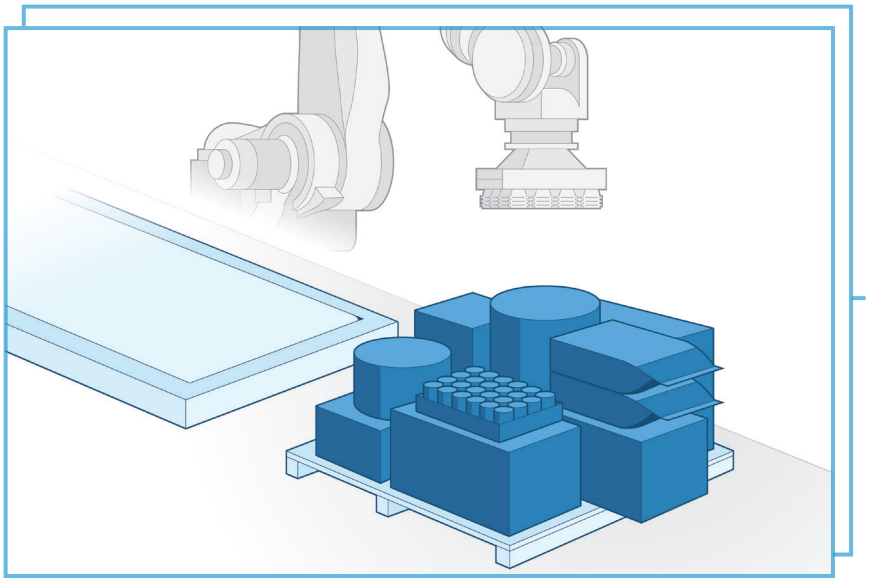
Mixed Depalletizing

About this Module

This software module extends the power of **PickOne** for applications involving picking cases, cartons, trays, and bags from mixed SKU pallets.

Benefits

- Enhance operational decision making when used with **Yonder**
- Increase operator safety eliminating repetitive stress injuries
- Reduce per unit handling cost
- Promote associates to more value-added work
- Reduce turnover by improving job satisfaction



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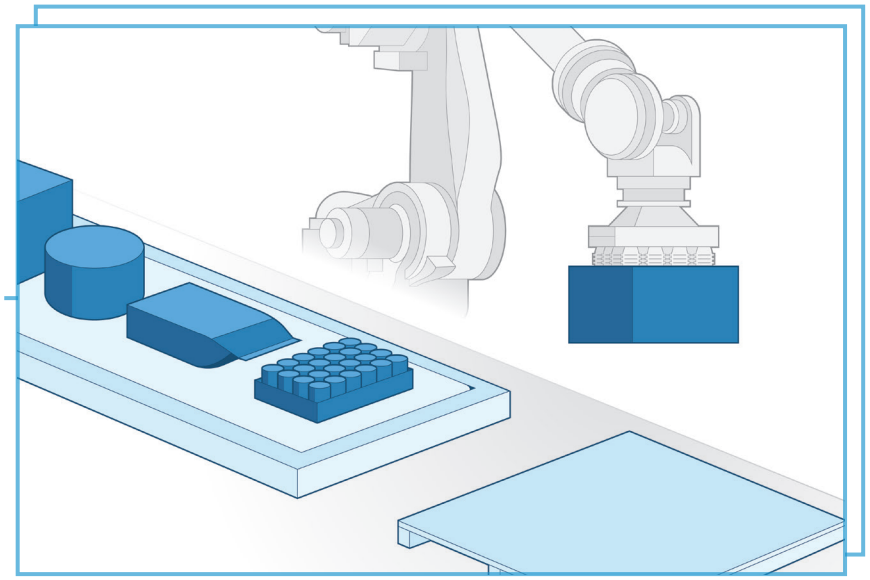

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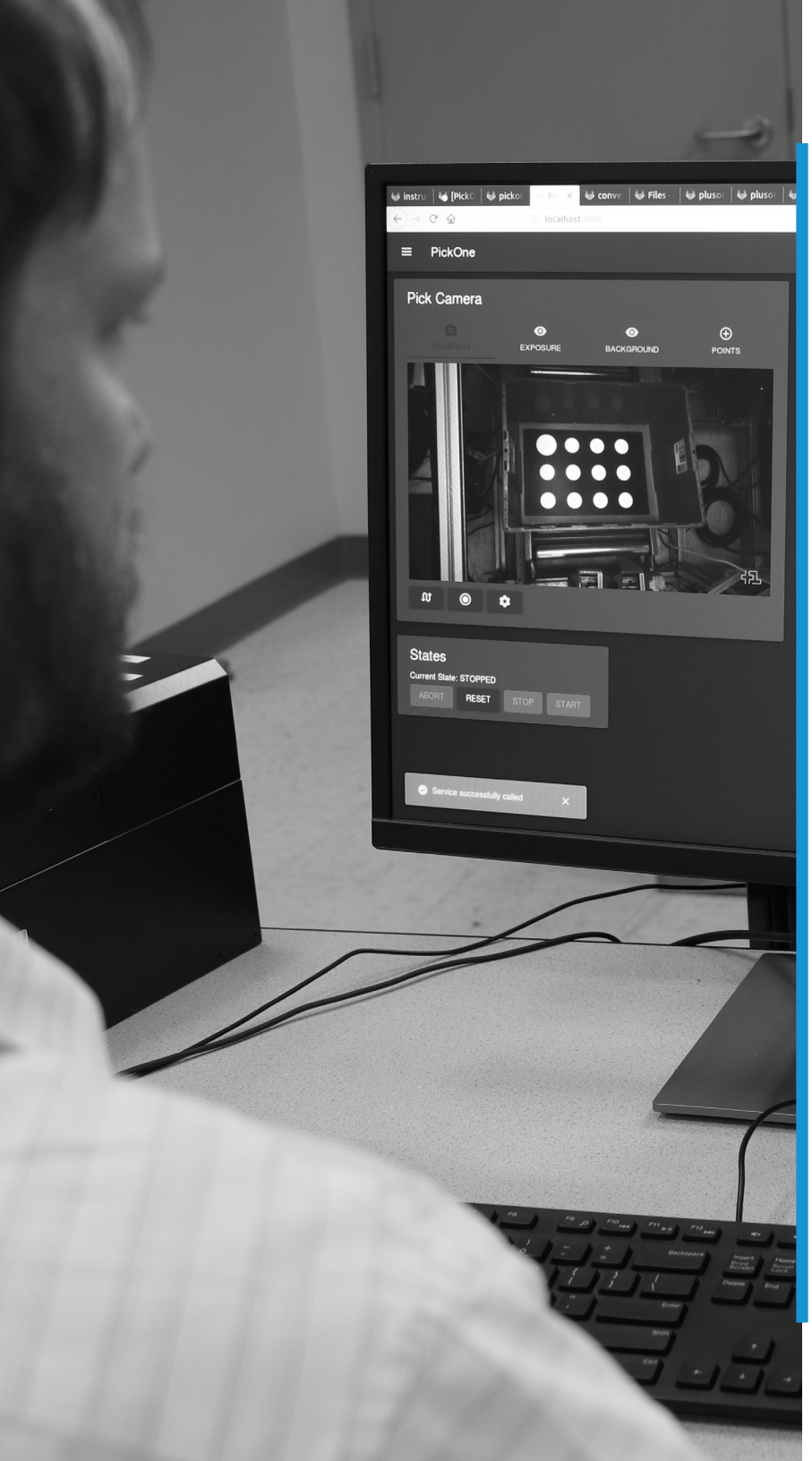


How it works

Step 01

When items are presented to the robot picking station in a pallet, the **PickOne Perception Kit** images the pallet.

Step 02

The **PickOne** software analyses the 2-D, 3-D, and AI data to identify each pickable item in the scene and assigns each one an associated confidence level.

Step 03

PickOne sends the robot controller an array of pick locations and poses for each pickable item via the **PickOne API**.

If no items in the scene have a high enough confidence, **PickOne** generates a **Yonder** request so that a Crew Chief can handle this exception by simply selecting an item in the scene to be picked.

In seconds, **Yonder** updates **PickOne**, and **PickOne** sends the data to the robot.

Step 04

In parallel, **Yonder** stores the Crew Chief's responses allowing the machine-learning algorithms to make the system smarter as it works. This ensures even higher performance over time.

Details

Mixed Depalletizing

Features

- **Layer-by-Layer Picking —** Fully depopulates the top layer of the pallet before going to the next layer, which prevents toppling.
- **Item Classification —** Classifies items by package type to dynamically adjust grip strategy, acceleration/deceleration, speed, and change path or end effector.
- **Empty Pallet Detection —** Confirms an empty pallet so that the system can replace the empty pallet with a full one.
- **Slip Sheet Detection —** Detects the presence of a slip sheet and signals the robot to remove it.
- **Dual-Pallet Picking —** Supports a single robot picking from two pick locations.
- **Place Verification —** Images the place zone to confirm that only a single case was placed to prevent double induction.
- **Offset Picking —** If the item to be picked is smaller than the robot end effector, an offset is automatically calculated for the pick to prevent damage to adjacent items on the pallet.
- **PackML State Machine —** PackML is the industry standard for measuring the performance of a system.
- **Base AI Model —** PickOne has developed AI models to speed up the deployment of systems. Based on the product mix, the appropriate AI model will be selected for the application.

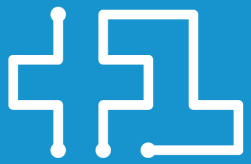
Specifications

- Supported item types: boxes, overwrapped trays, cartons, and bags
- Supported edge cases:
  - Homogeneous layers of flat, black cases
  - Cases with alternating color on the flaps
  - Banded cases
  - Cases with highly reflective tape
  - Cases with gaps
- Industry leading pick command processing speeds: 250ms - 500ms typical
- Typical pick rates of 350 - 650 cases per hour single pick and 700 - 1000 cases per hour multi-pick
- Supports millions of SKUs
- Supported Sensors: Intel RealRense D415 & L515 and Zivid
- Supported Robot Controllers: Fanuc*, Yaskawa*, ABB, Universal Robot, Kuka, Kawasaki, Denso, Festo, Rockwell Automation (Allen-Bradley)

What's Included

PickOne Software Module for Mixed Depalletizing, Perpetual License (P/N 1002-001-0007-01)

- PickOne Software Module for Mixed Depalletizing
- PickOne Base AI Model
- PickOne PackML State Machine for Designated Robot Controller
- Sample PickOne Depalletizing Program for Designated Robot Controller



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