

# Yonder®, Supervised Autonomy

Direct the work of many robots, from any location, and close the gap in your automation tasks. This fully encrypted, secure software is unique to Plus One Robotics.

**Keep a human-in-the-loop and move from 99% effectiveness to 99.99925%. In real world numbers, move from human intervention onsite every four minutes to less than once per hour\*.**

## Human-in-the-Loop

Designed to work alongside PickOne, Plus One Robotics' 2-D, 3-D, and AI-enabled perception solution for warehouse robots, Yonder® is a type of exception handling software.

Oftentimes, when robots pause, they are not broken, just confused. At Plus One Robotics, we add a remote human-in-the-loop, called a Crew Chief, to support the robots in maintaining consistent uptime. These Crew Chiefs have the same view as the robot, and when the robot is confused, the Crew Chief receives an alert asking for help. Within seconds the Crew Chief responds to the robot by clicking on the item to be picked, advising the robot on the correct object and/or pick location. The robot is then able to get back to work, and the system gets smarter.

You may be wondering why this happens. With AI-vision, the robot is sometimes challenged with which parcel to pick, where to pick from and/or how to deal with another type of exception like an open package or piece of debris. These challenges can happen because of lighting, package type, graphics on packages or a number of other factors. Knowing that parcel variability will always be a factor, Plus One Robotics will always keep a human in the loop.

## Additional Benefits

- Expand your labor pool through remote supervised autonomy
- Eliminate technical risk of failure due to product variation
- Increase return on investment by deploying faster
- Eliminate walk-back time for exception handling
- Improved performance over time through machine learning
- Enhanced business decision making by performance data reporting

## Features

### Smart Queue Management

One Crew Chief Can Handle Many Systems.

### Data Dashboard

The Yonder Dashboard Reveals Business-Relevant KPIs.

### Multi-Device, Multi-User Design

Human-Centered Design Allows Seamless Use for All.

### Multi-Cloud Compatibility

Avoid Dependence on a Single Vendor and Maintain Flexibility.

### User-Centric Security Standards

Fully Encrypted Cloud and OnPremise Network Available.

**Reduce the cost of exception handling by 95%.**

# How It Works

## Step 01

When items arrive in the picking area, the PickOnePerception Kit images the items.

## Step 02

Using 2-D, 3-D, and AI algorithms, PickOne identifies each pickable item in the scene and assigns it an associated confidence score.

## Step 03

When the robot encounters an unknown edge case, the system automatically generates a Yonder request, pinging a remote Crew Chief. The Crew Chief assesses the situation and provides a resolution within seconds by simply clicking the proper location for the gripper to pick.

## Step 04

In parallel, Yonder® stores the data and Crew Chief's response. This allows the system to be trained on the problem and resolution. In short, the system gets smarter. This innovative approach guarantees higher performance over time while maintaining KPIs day to day.

## Doing the Math...

On average, 95% of exceptions are handled remotely, in under 10 seconds, mitigating more \$14 million dollars in labor costs in 2023.



## Details

### TYPICAL ROUNDTRIP RESPONSE TIME: 5 SECONDS

- **Supported Clouds:** Google Cloud, AWS, Azure
- **Supported Browsers:** Chrome
- **Standard Web Traffic Port:** 443
- **Max Bandwidth Required:** 6 Mb/s
- **Max Number of Robots:** unlimited
- **Max Number of Crew Chiefs:** unlimited

### What's Included

- Support for 1 robot per 1 month subscription to Yonder®
- Plus One Robotics' remote robot management suite
- Plus One Robotics provides Crew Chief as a service (Yonder Plus Only)

*Plus One Robotics provides the fastest and most reliable parcel handling robotics platform in the world. Founded in 2016 by computer vision and robotics industry experts, Plus One's intelligent solutions combine computer vision, AI, and supervised autonomy to pick parcels for leading logistics and e-commerce organizations in the Global 100.*



# PLUS ONE ROBOTICS