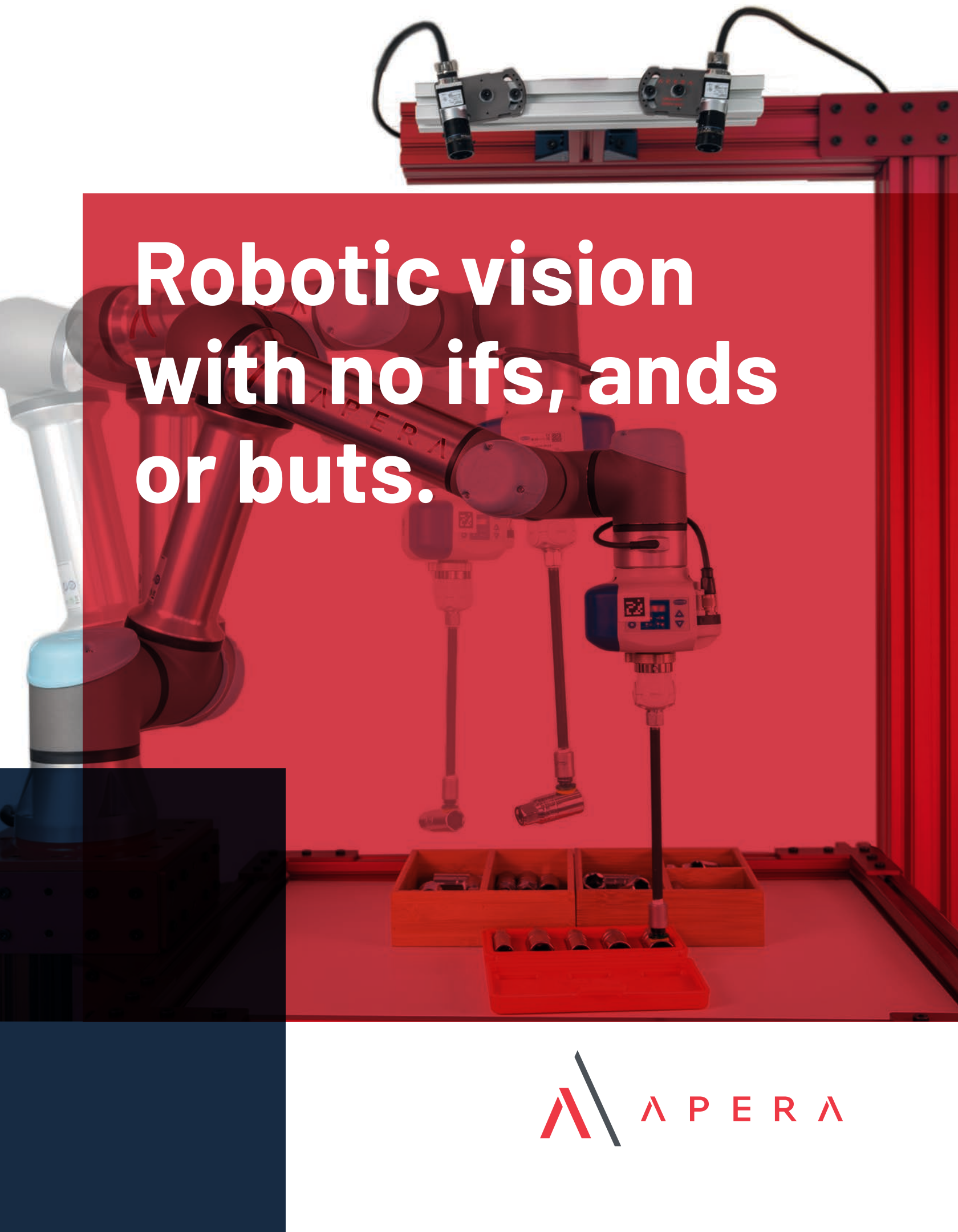


Robotic vision with no ifs, ands or buts.

APERA

Apera AI

Robotic vision with no ifs, ands or buts.

What if robots could see and handle objects with human-like capability and perception?

That's the goal of Apera AI, which will make factories more flexible and productive. We're helping our customers open new avenues for robotic automation.

Apera AI is focused on the development of artificial intelligence for robotic vision. Using AI, we can make robots faster and enable them to work with objects of all shapes and materials. And we can do it without the cost, complexity and customization of current solutions.

Key facts

4,000,000+

intelligent pick and places in the field.

Tier 1

Automotive suppliers like Magna International and Flex-N-Gate use Apera AI systems.

USD$1.8B in exits

Our management team has created significant value with prior start-ups.

Current state

Factories need more automation.

Counter high inflation

Ease labor shortages

Localize manufacturing

But robotic vision is complex and customized.

Customization

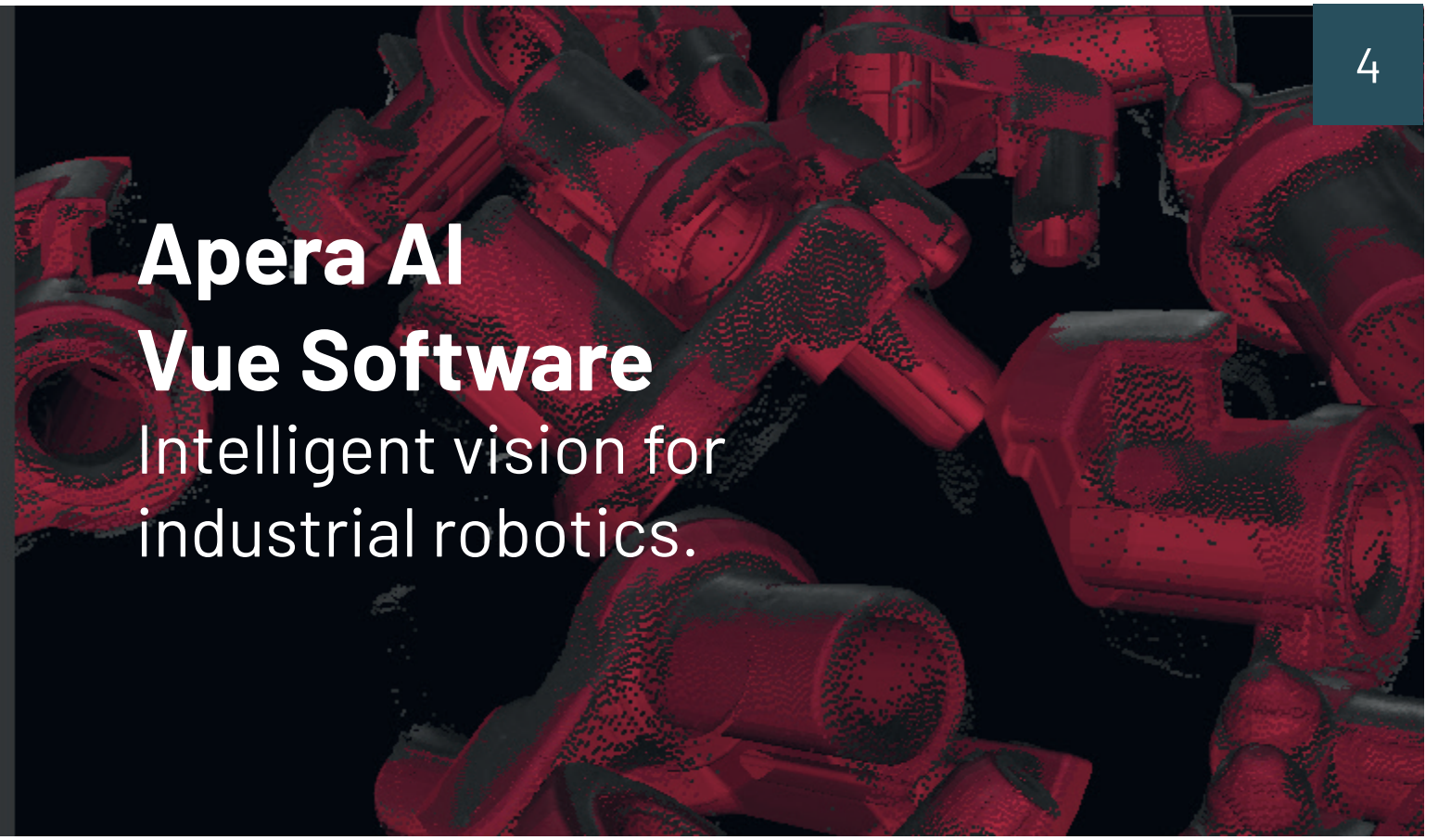
Time-consuming programming that doesn't scale and is hard to maintain without its developers.

Blind robots

Robots that require precise fixtures, timing and constant operator attention.

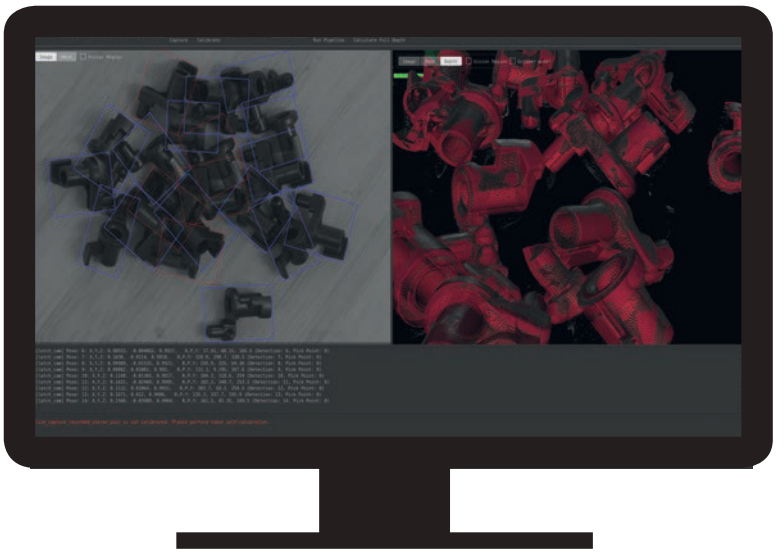
Structured light

Special lighting is needed for 3D cameras to work. Can struggle with object materials and shapes.



Apera AI Vue Software

Intelligent vision for industrial robotics.



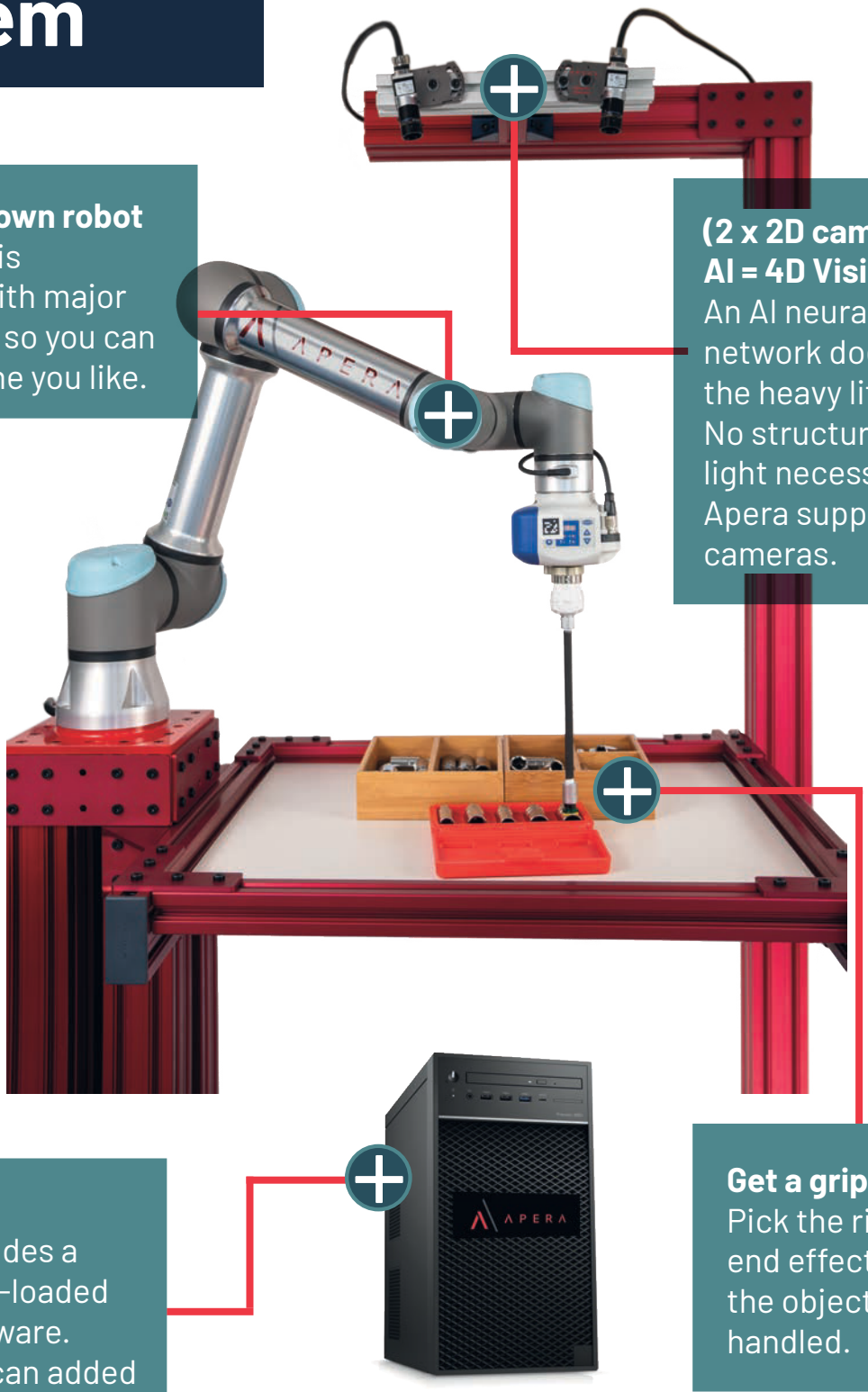
How does it work?

1. A 3D CAD drawing or scan of an object is securely uploaded to Apera AI's servers.
2. In 24-48 hours, an AI neural network is trained to understand the object.
3. The trained AI neural network is packaged into a digital asset and downloaded by the Apera Vue software running at your site.
4. Apera Vue software is configured to use the new digital asset. You're handling the real thing in a couple hours.

4D Vision™ System

Choose your own robot
Our software is compatible with major robot brands, so you can choose the one you like.

(2 x 2D cameras) + AI = 4D Vision
An AI neural network does the heavy lifting. No structured light necessary. Apera supplies the cameras.



Fully loaded
Apera AI provides a computer pre-loaded with Vue software. New objects can added remotely or through an internal network.

Get a grip
Pick the right end effector for the objects being handled.

Applications

Making more and better automation possible.

- Bin / belt picking
- Assembly
- Sorting
- Packaging
- Palletizing
- Kitting

What Apera 4D Vision does best:

Speed

Total vision cycle time as low as 0.3 seconds. Achieve 2,000 picks per hour / 1.8s total robot cycle time.

Difficult objects

Shiny, clear or dimensionally similar objects. Disordered and random objects too.

Accuracy

Submillimeter precision and accuracy in handling objects of any complex geometry.

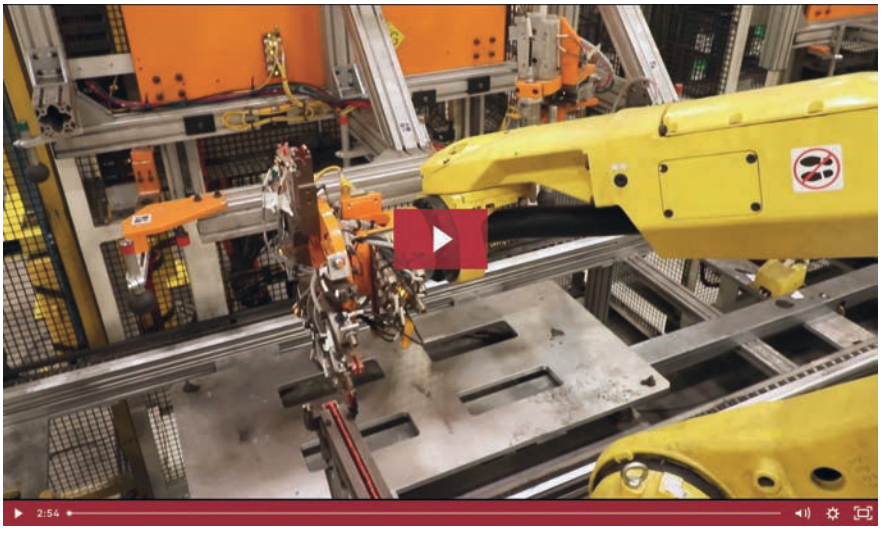
In-progress for 2022

Faster set-up

We are reducing the AI training time and automating asset deployment.

Large objects

AI and camera configurations to cover larger fields of view to handle objects of 2 meters or more.



Flex-N-Gate used Apera AI's 4D Vision solution with a Fanuc robot to improve quality in a clip placing assembly workcell. See the video >>

New paths for automation

Let's take a walk.

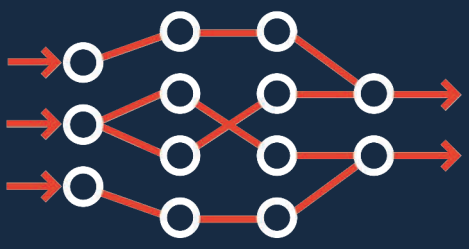
Specifically, a *gemba walk*, a lean manufacturing activity where team walks through the factory to identify areas for improvement.

We can find new applications for robotic automation together—made possible by Apera Vue's ability to see objects and carry out complex operations.

Apera Vue can rapidly identify and handle clear objects. This example uses an ABB robot.

See the video >>

4D Vision™



2D Vision + AI = 4D Vision. By applying AI using 2D cameras, Apera Vue software provides capabilities beyond what is possible using 3D vision.

Apera AI's core technology is connected computing nodes called neural networks. The configuration of the nodes resembles the neural connections in the human brain.

A neural network is taught object recognition, perception and robotic control for the objects they handle using 3D models. Pairs of 2D cameras feeds Apera Vue software the information it needs for human-like perception of the visual environment.

Robots guided by Apera Vue take optimal paths to pick up and handle objects, and avoid collisions.

Neural networks can recognize both the geometry and texture of objects faster than 3D cameras, and without the point clouds and structured light of 3D technologies.

Take the next step

Let's talk about how Apera AI can make your factory more flexible and productive.

Get in touch

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Headquartered in Vancouver, Canada with international Certified System Integrators.

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