

# Maplesoft's Virtual Prototyping Solution

Using simulation to design better machines

## CHALLENGE

A major supplier of custom packaging automation systems with a large overlapping range of products was looking to optimize the capabilities of their existing machines, and to redesign the hardware with fewer components, to simplify inventory and support, and to speed up the lengthy presales qualification process.

## APPROACH

The Maplesoft engineering team worked with the customer to build initial system-level models and tune them using operational data via the integration between MapleSim and Studio 5000® Simulation Interface™. The design team created virtual prototypes of the robotic arm hardware and optimized the control strategy to deliver the same performance with fewer sensors and simpler actuators. A visualization app was also developed to help the customer presale team quickly assess End-User requirements.

## SOLUTION

- Maplesoft MapleSim Automation Bundle Software
- Rockwell Automation Allen-Bradley® ControlLogix®
- Rockwell Automation Studio 5000® Logix Emulate™
- Rockwell Automation Studio 5000® Simulation Interface™
- Rockwell Automation Studio 5000 Logix Designer®

## RESULTS

Optimized design - The redesigned robotic arms used **50% fewer components and sensors**, cutting the build cost and time to source parts.



Do More With Less - The customer **reduced the number of models in their 2022 line-up by 34%** from 2020, lowering inventory, support and marketing effort.



Faster Sales Qualifications - Using the simpler simulation workflow reduced the quoting time **from an average of 5 days down to 2 days**.



## ABOUT MAPLESOFT

- Maplesoft provides modeling and simulation tools used by OEMs to analyze and optimize new designs or existing systems at the machine level.
- Supports simulation of dynamic interactions and motion profiles for complex or multi-domain machines.
- Generates virtual control code test data for use in Studio 5000® and virtual commissioning.