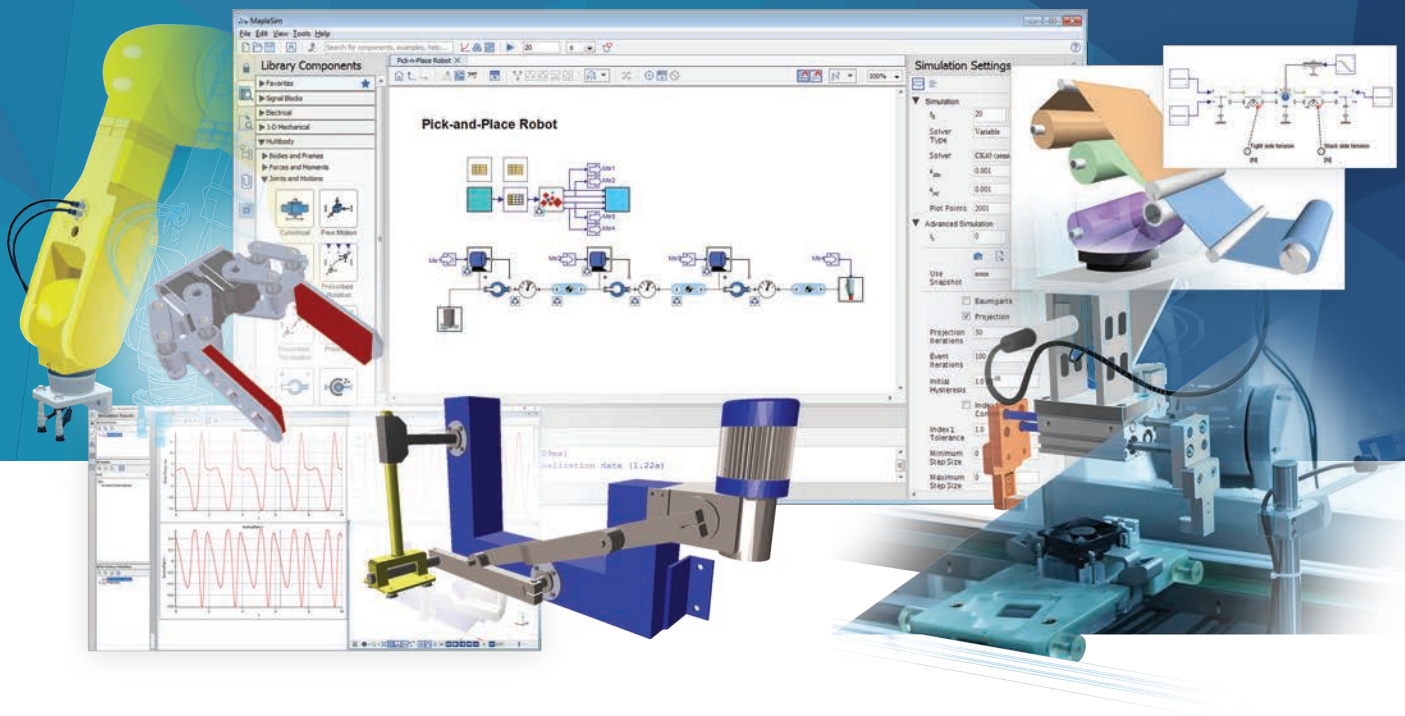
Advanced System-Level Modeling



Unlock the **POWER** of Simulation for

MACHINE DESIGN

CONTROL TESTING

DIAGNOSTICS AND OPTIMIZATION

MapleSim™

LANIKA SOLUTIONS PRIVATE LIMITED
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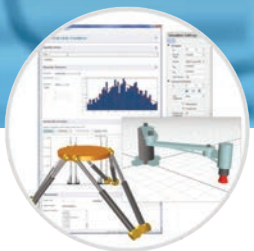
SYSTEM–LEVEL SIMULATION FOR

MACHINE DESIGN

A single environment for multidomain systems.

Fast-track product development using Virtual Prototyping.



Explore your system using built-in analysis tools.

Troubleshoot operational issues.

Accelerate product development with MapleSim

MapleSim brings multiple engineering domains (mechanical, hydraulic, multibody, and more) and over 900 built-in components into a single modeling platform, allowing you to:

- **Make informed design decisions** at an earlier stage when changes are cheaper.
- **Reduce time and money** spent in physical prototyping and exploring customizations.
- **Right-size the actuator components** (hydraulic/pneumatic cylinders, motors, gears, bearings, etc.)
- **Extend the use of your virtual prototype** using *MapleSim Insight* allowing non-experts to explore, visualize, and test new scenarios.

MapleSim's physical component blocks include:

- Multibody Dynamics
- Electrical
- Thermal & Thermal Fluids
- Rotational/Translational Machines
- Magnetics
- Hydraulics
- Pneumatics

MapleSim Add-ons:

- MapleSim Battery Library
- MapleSim Driveline Library
- MapleSim Heat Transfer Library
- MapleSim Ropes and Pulleys Library
- MapleSim Tire Library
- MapleSim Web Handling Library
- MapleSim CAD Toolbox
- MapleSim Control Design Toolbox
- MapleSim Modelica Engine
- MapleSim Server
- Connectivity add-ons for B&R™, Simulink®, FMI, and more

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SYSTEM–LEVEL SIMULATION FOR

CONTROL TESTING

Reduce cycle times.

Safely test control strategies.

Test PLC code against a virtual model.

Apply Virtual Commissioning.

BECKHOFF B&R Rockwell Automation CODESYS

Improve equipment performance with MapleSim

By connecting MapleSim virtual models with your automation software tools, you can:

- **Start control software testing sooner** by running your control code tests against a virtual model of your machine.
- **Easily convert your model to an FMU (Functional Mockup Unit)** for seamless incorporation to common automation platforms including B&R Automation Studio®, Beckhoff TwinCAT® and Rockwell Studio 5000® software.
- **Fix issues and optimize existing machines** without replacing hardware.
- **Diagnose control systems and motion profiles** to reduce vibrations and safely maximize throughput.
- **Develop digital models** for Virtual Commissioning and Digital Twins.

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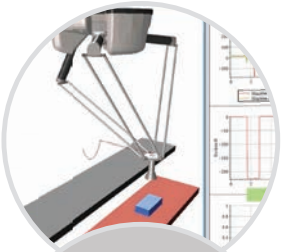
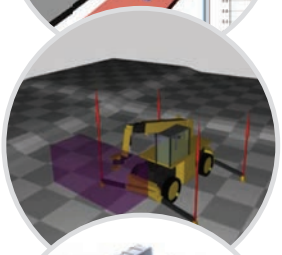
MapleSim™ is an advanced system-level modeling tool that enables innovation and reduces development risk, so you can create better products, faster.



Rapid creation and testing of initial concepts

By enabling quick prototyping and testing of design concepts, MapleSim allows you to try out more ideas in less time, getting you on track quickly and energizing the creative design process.



Flexible environment for modeling multidomain systems

With MapleSim, you model your entire system inside a single environment, so you can track down design flaws arising from unexpected interactions between different domains, and even prevent these problems from occurring in the first place.

Connect virtual models to your control toolchain

Integrating a MapleSim model of your machine with your automation software allows a safe space to develop and validate the controller code against a virtual machine, saving time and reducing PLC errors while avoiding harm to machinery and workers.

Computationally efficient models

MapleSim produces high fidelity, computationally efficient models suitable for in-the-loop simulations, controller design, and activities such as optimization, sensitivity analysis, and parameter sweeps, where many simulation cycles are required to get results.

Get started faster with your simulations and initial models with support and training from Maplesoft Engineering Solutions.

Reduce Development Risk. Build Models Faster. Create Better Products.

Visit **www.maplesim.com** to see how MapleSim models can add flexibility and speed to your product design and help develop optimization strategies.

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