Enhance production with virtual commissioning

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VALUE HACKER.™

Creates business value.

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Ville Torvinen
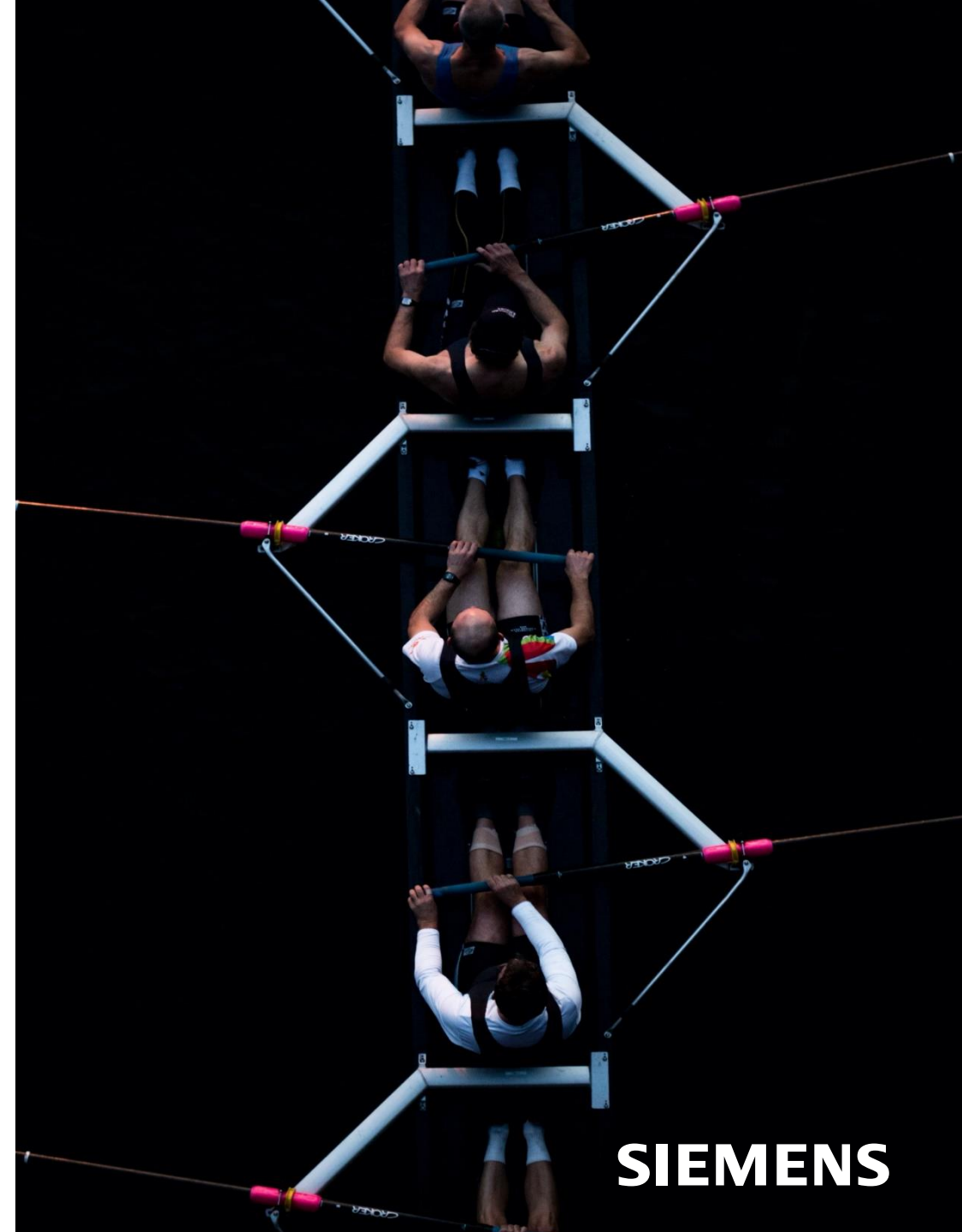Application Services Engineer

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Agenda

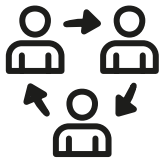**Case: Raute - Virtual commissioning of veneer patching line**

Virtual commissioning project

- Identify
- Start
- Specify

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Raute
Creating value with Value Hacker and Digital Twin

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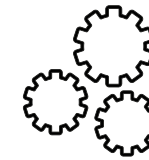
PROCESS

Get together

Identify

Solve

Super glue

Implement

Continuous improvement

Build a Cross-BU dream team for co-creation.

Identify and prioritize the possibilities and challenges that lie in your Customers' business horizon.

Value Hacker takes full advantage of Siemens' offering and aligns it with Customers' targets.

We proceed as one team.

No valuable data is lost between different operators and phases.

Make sure that the targets are met as planned.

Digital transformation is a never-ending journey.

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Virtual Commissioning project
Warehouse

Unrestricted | © Siemens 2021 | RC-FI DI FA | 2021-10-05

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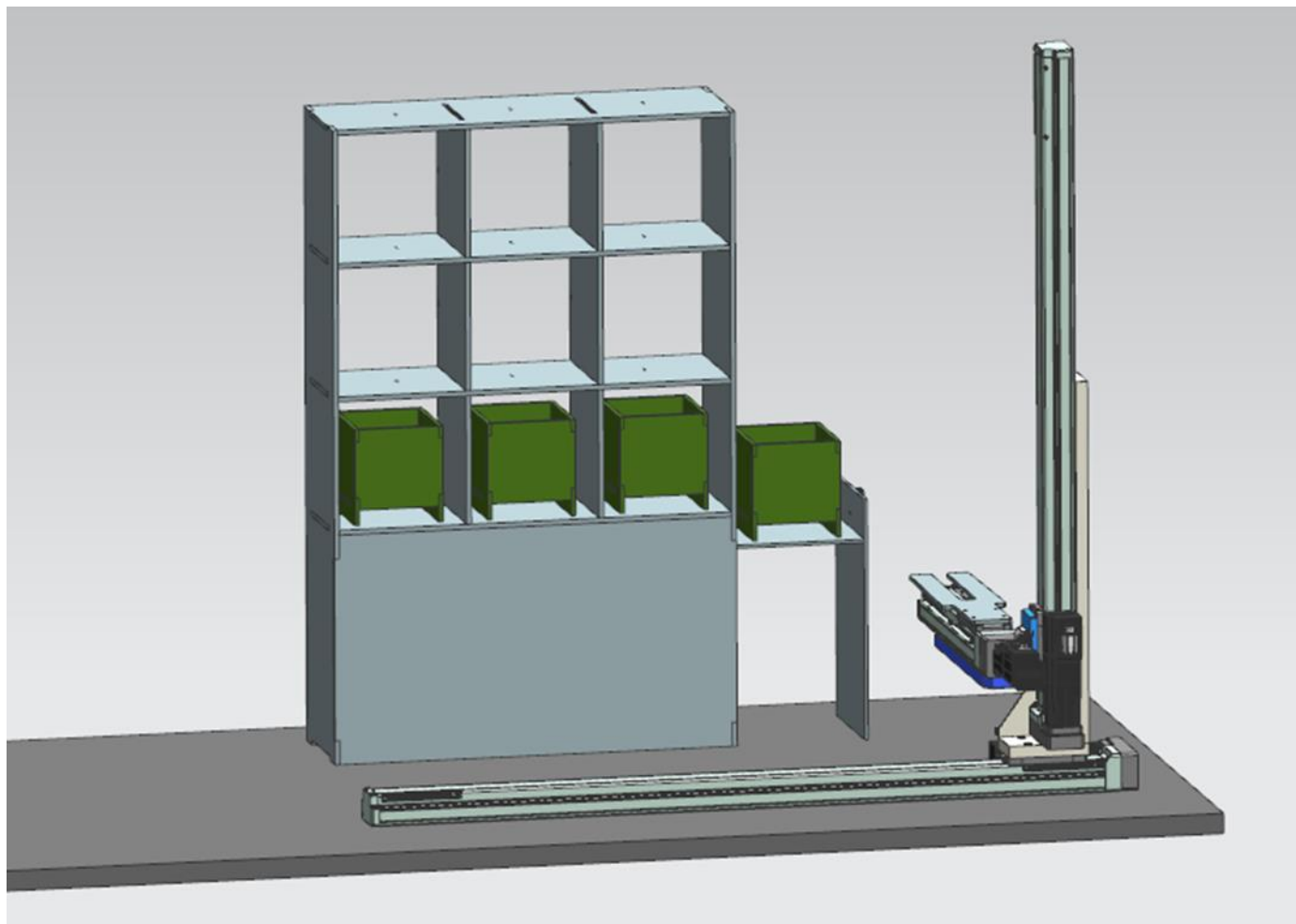
The benefits of virtual commissioning for different roles

Product manager

Utilize simulation for sales and marketing

Product development and simulation before sales

Prepare for exceptions before FAT with the customer

Automation engineer

Develop automation program in a virtual environment

Testing in advance reduces rush and troubleshooting from commissioning

Aftersales

Utilize virtual environment for trainings

Less debugs to fix during warranty period = more competitive prices

Project manager

Enhance communication with customer

OEM capabilities vs Customer expectations

Mechanical engineer

Close collaboration with automation, even remotely

Collision analysis

Virtual prototype testing

Safety engineer

Test in advance

Customer trainings

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How to start

Value Hacker

Identify customer needs and business value
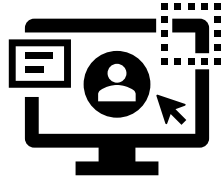
As a service

Fast track to virtual commissioning
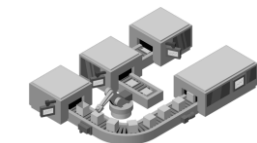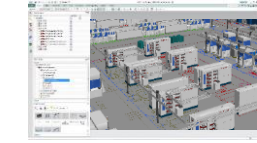
Trainings

Learn by doing

Technical support
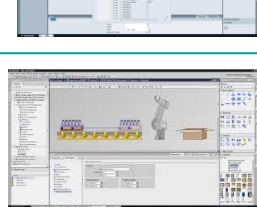
We are here to help you

Software products

Digital Enterprise solution

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Simulation at every level

Production line / plant

Tecnomatix Plant Simulation

Robotic cell

Tecnomatix Process Simulate

Production machine / line

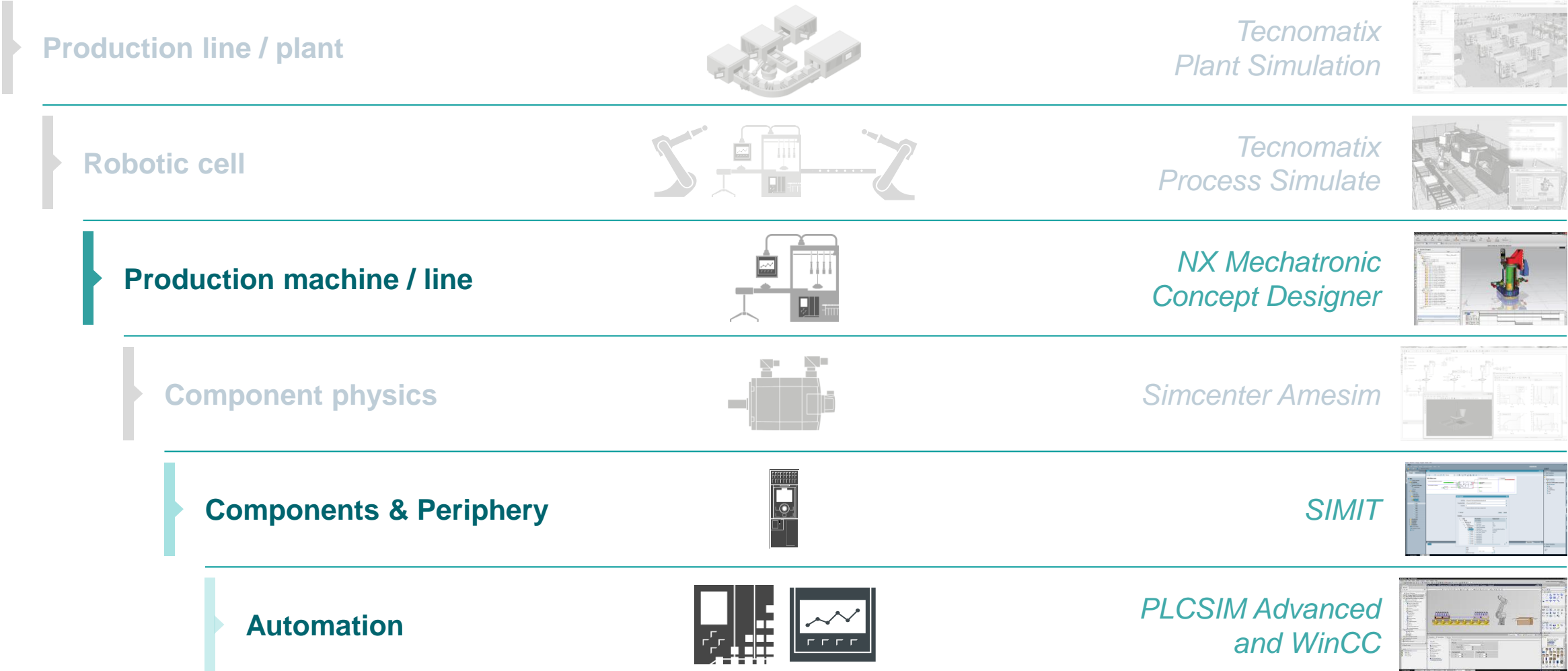*NX Mechatronic Concept Designer*

Component physics

Simcenter Amesim

Components & Periphery

SIMIT

Automation

PLCSIM Advanced and WinCC

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Simulation at every level

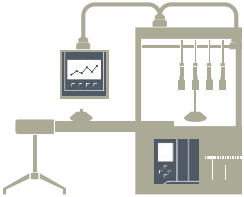| Level	Product
Production line / plant	*Tecnomatix Plant Simulation*
Robotic cell	*Tecnomatix Process Simulate*
Production machine / line	*NX Mechatronic Concept Designer*
Component physics	*Simcenter Amesim*
Components & Periphery	*SIMIT*
Automation	*PLCSIM Advanced and WinCC*

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Digital twin
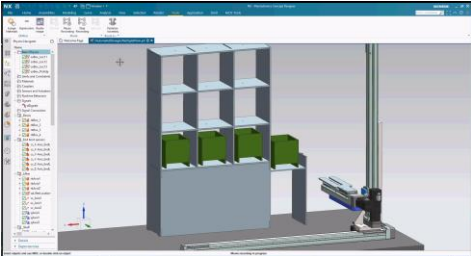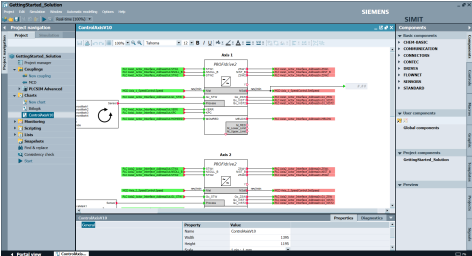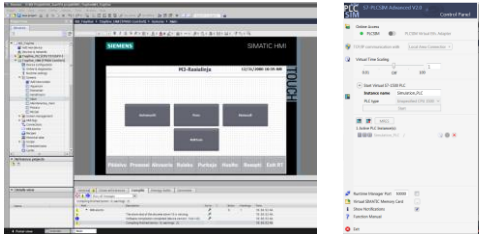## Virtual commissioning environment

= **Automation model TIA Portal + PLCSIM Advanced** **+** **Electrical and behaviour model SIMIT** **+** **Physical and kinematic model NX MCD / NX MCD Player**

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Automation model

TIA Portal ←→ Warehouse management system
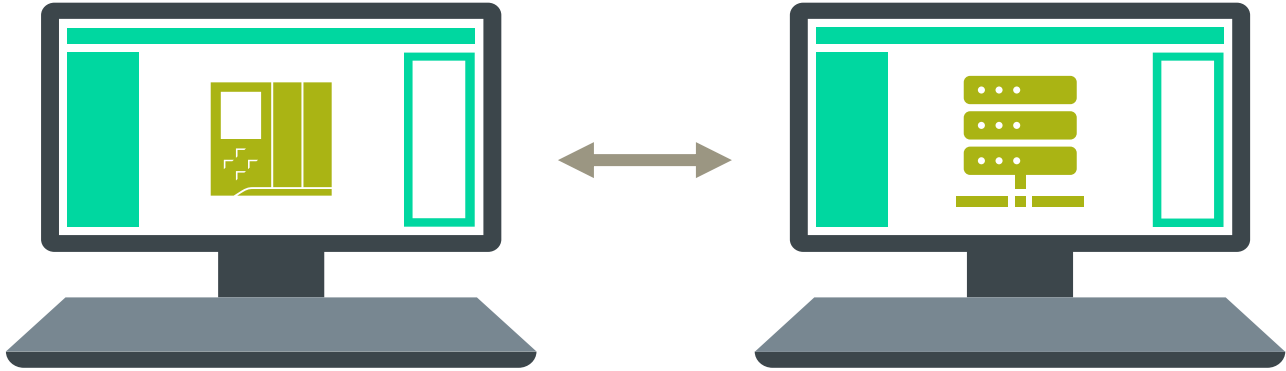
PLC 1   PLC 2   PLC 3   HMI

Communication

TIA Portal + PLCSIM Advanced

- ✓ PLC program
- ✓ Motion control
- ✓ Safety program
- ✓ Communication (e.g. warehouse management system)
- ✓ Diagnostics
- ✓ HMI

Centralized control system for all functionalities

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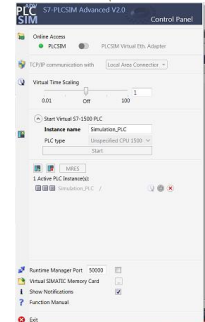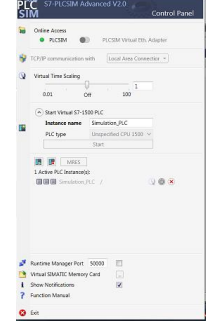
Electrical and behaviour model

SIMIT

- ✓ I/O simulation
- ✓ Safety Simulation
- ✓ Components
- ✓ Hydraulics
- ✓ Drives with safety
- ✓ Automatic drive model generation
- ✓ Ready made libraries (sios)
- ✓ Buttons
- ✓ Linking the variables between automation and NX MCD

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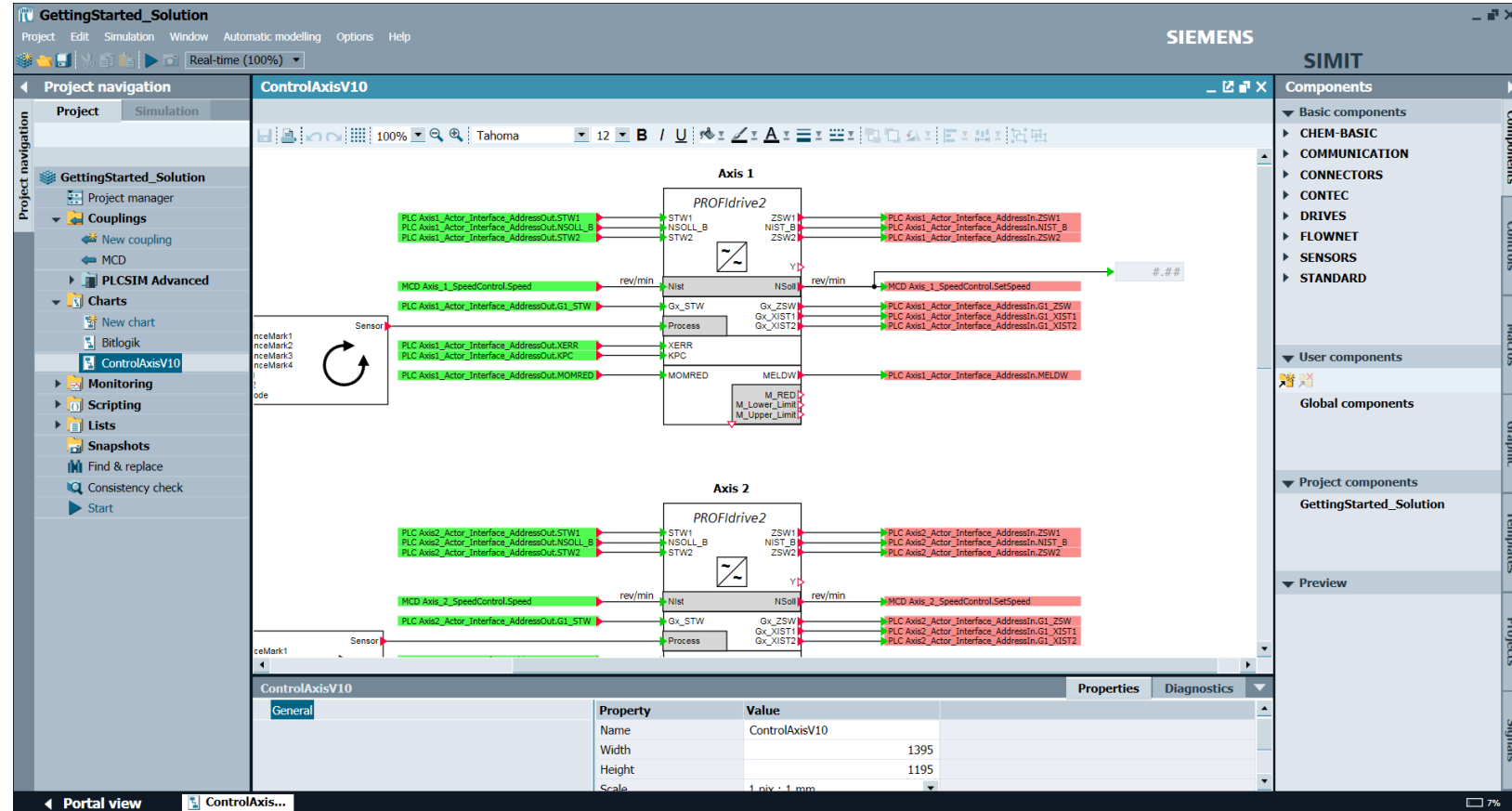
Physical and kinematic model

NX MCD

- ✓ Kinematics
- ✓ Collision bodies
- ✓ Physics (gravity, friction, etc)
- ✓ Sensors
- ✓ Mechanical simulation
- ✓ Material flow

Virtual commissioning with the use of 3D model

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Summary

Virtual commissioning projects

- The reason to start the project?

- How to define the scope?

- How to start?
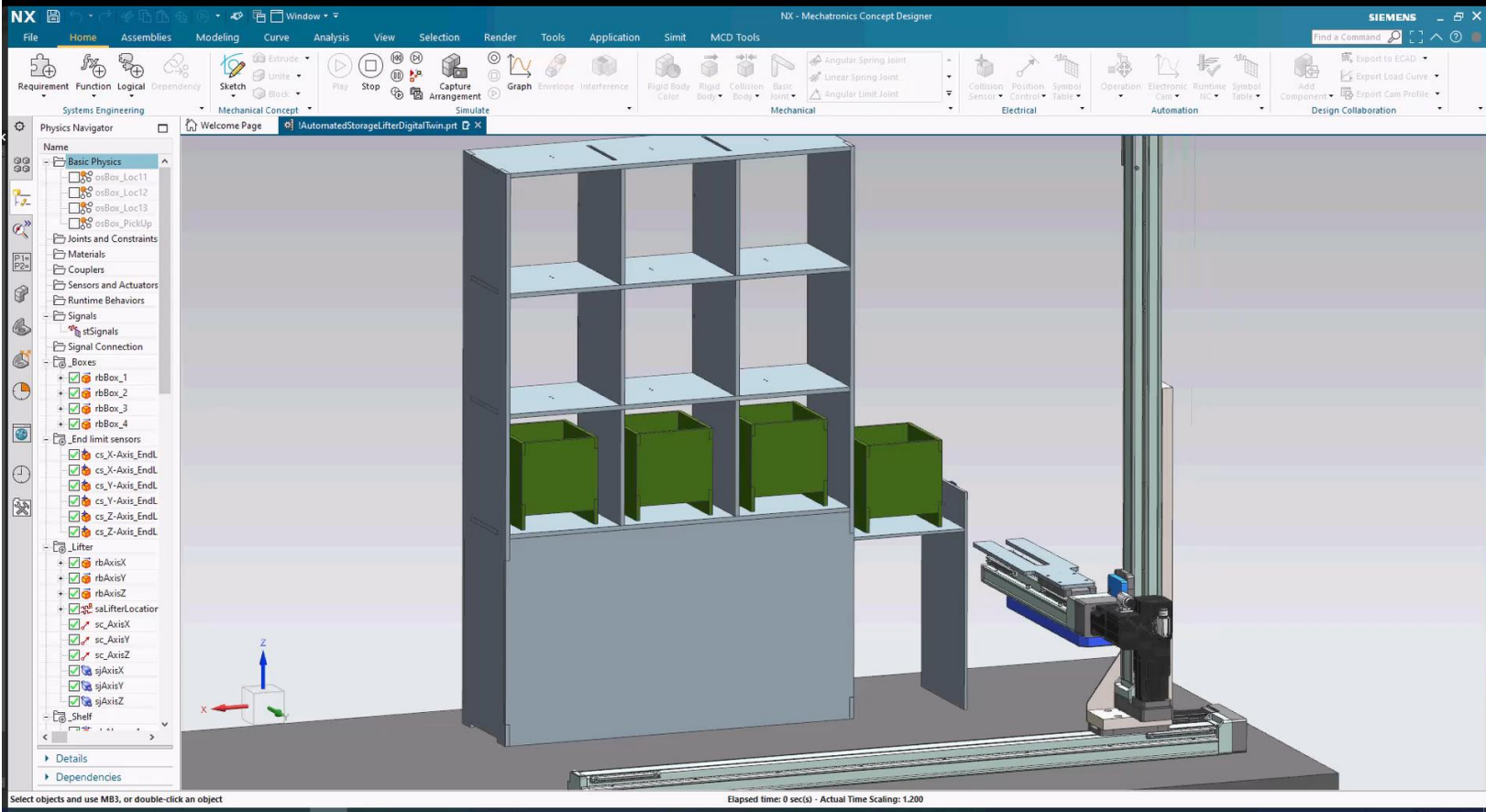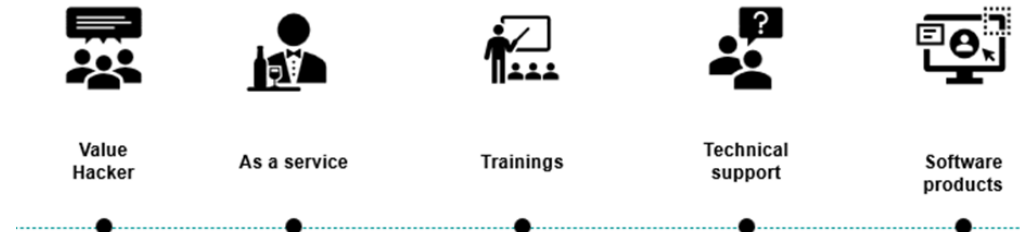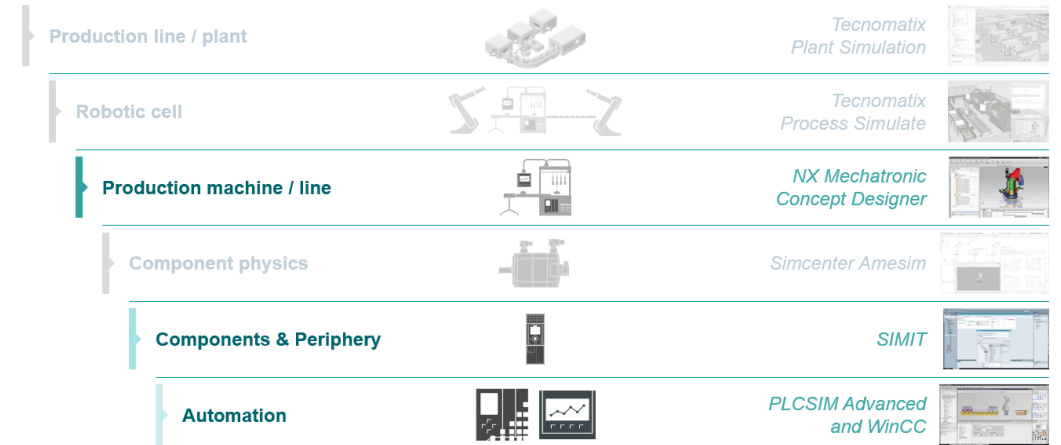

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Value Hacker — As a service — Trainings — Technical support — Software products

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Contact details

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