



## 4.5 and 4.6 new features and improvements

# New features

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## Connectivity for Visual Components **Premium**:

- KUKA Off-Line Programming (OLP) Solution
- ABB Robot Connectivity
- Connectivity Improvements (3D data)

## For Visual Components **Professional and Premium**:

- Boolean Modeling Operations

## Layout tools

- Drawing Improvements

## Simulation tools

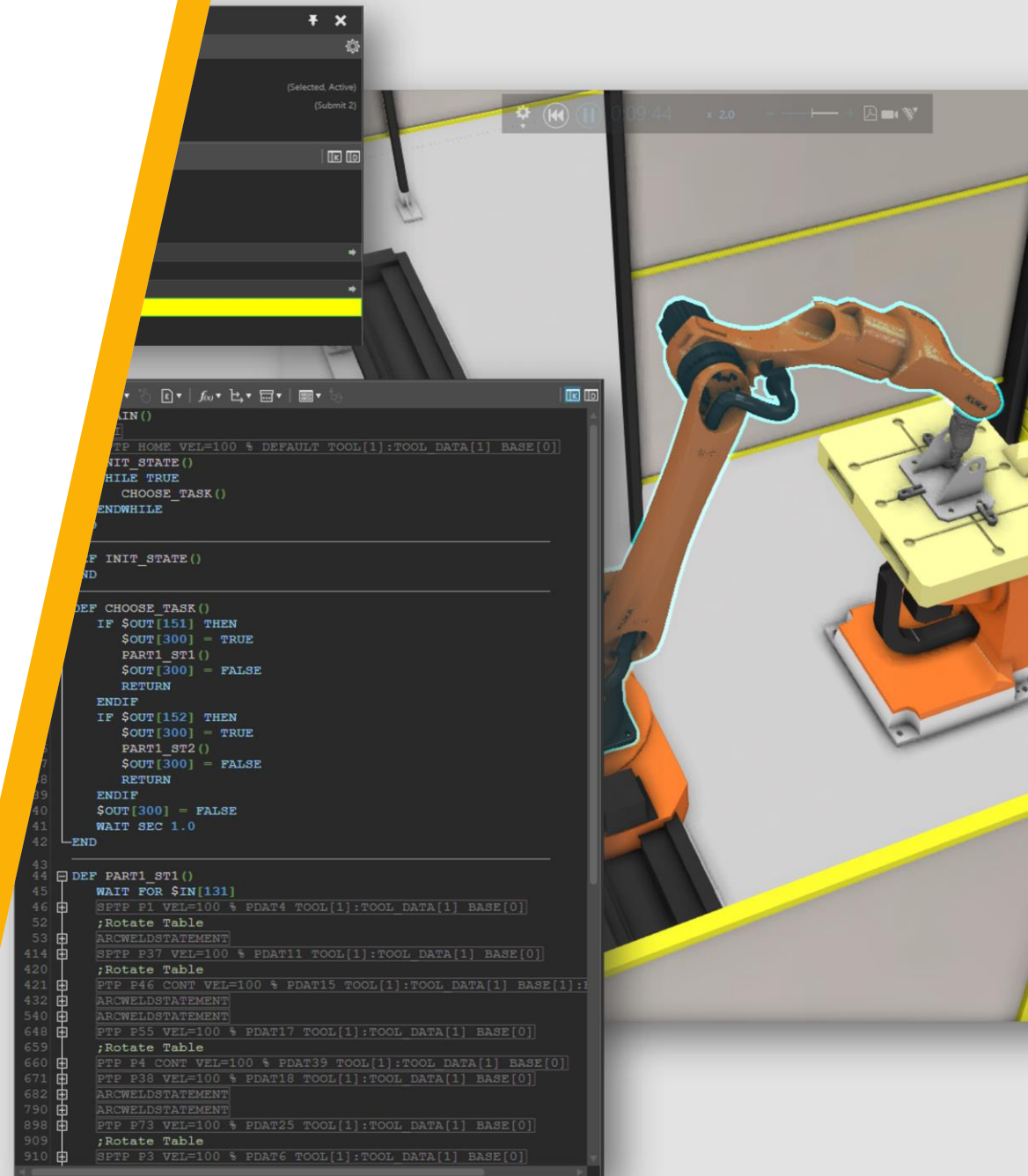
- Process Modeling Improvements

## Quality of life

- Rendering Improvements
- FBX Exporter
- Enable/Disable Statements
- Web Viewer

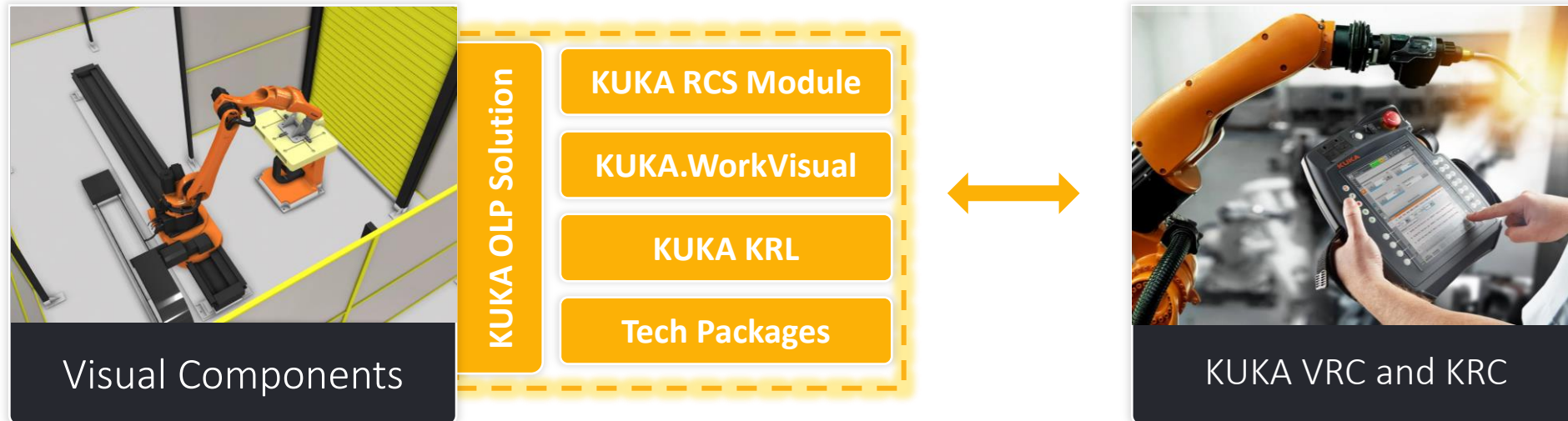
# KUKA OLP Solution

- Program KUKA Robots in KRL in Visual Components.
- Connect your Visual Components simulations to VRC - KUKA.OfficeLite as well as real KUKA controller.
- Import/Export your KUKA projects or transfer them to the controller through Visual Components.
- [Here](#) is a complete half of an hour video tutorial for that.



# Workflow for using KUKA OLP

1. Design your layouts in VC with KUKA robots
2. Program the KUKA robots in KRL directly in Visual Components
3. Simulate and ensure the functionality of your robot programs in VC
4. Connect to KUKA.OfficeLite or Physical controller together with a range of PLCs for testing and validation.
5. Transfer the projects to the controller.



# Benefits

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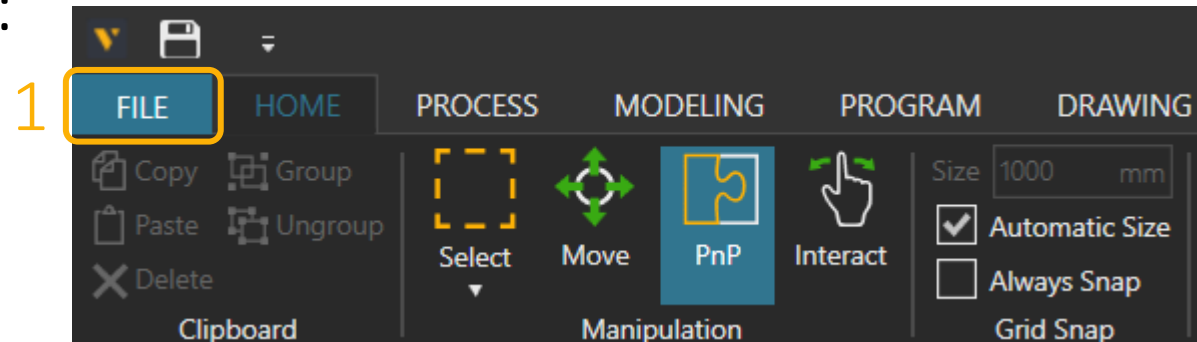
- ✓ More accurate cycle times, robot paths, collision detection
- ✓ Saves time -> one tool for layout design, robotics & virtual commissioning
- ✓ Virtual commissioning of your projects
- ✓ No need for robot program post-processing or cumbersome project import and export for any minor to major design changes
- ✓ Access to KUKA Tech or Optional Packages -> Motion Mode Eco, Path, Dynamic and ArcTech Basic

# Steps to use KUKA OLP

Make sure you have Visual Components Preimum 4.5 or 4.6

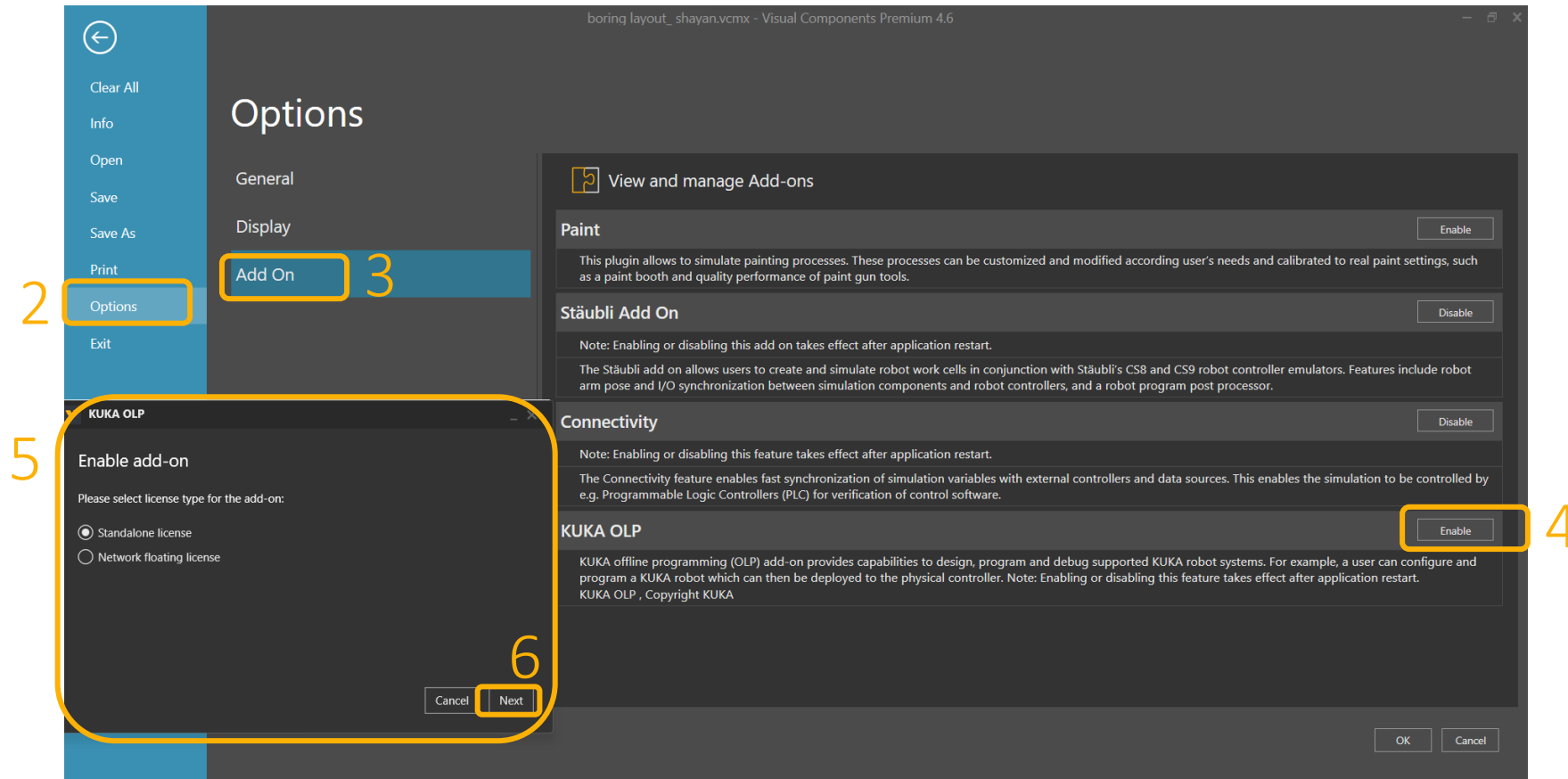
Step 1: Get the license key: The add-on requires a license key to be activated. You can request either a standalone or a network license key from [support@visualcomponents.com](mailto:support@visualcomponents.com).

Step 2: Enable the add-on:



# Steps to use KUKA OLP (continued)

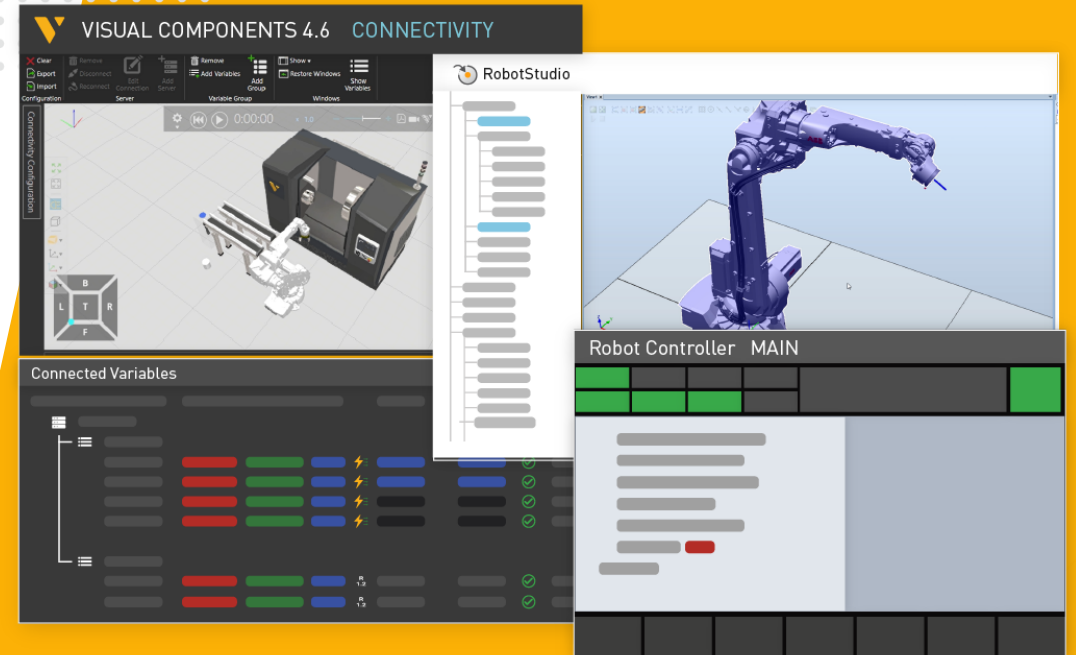
Step 2: Enable the add-on:



After pressing Next and Activate, you need to restart Visual Components to see the add-on

# ABB Robot Connectivity

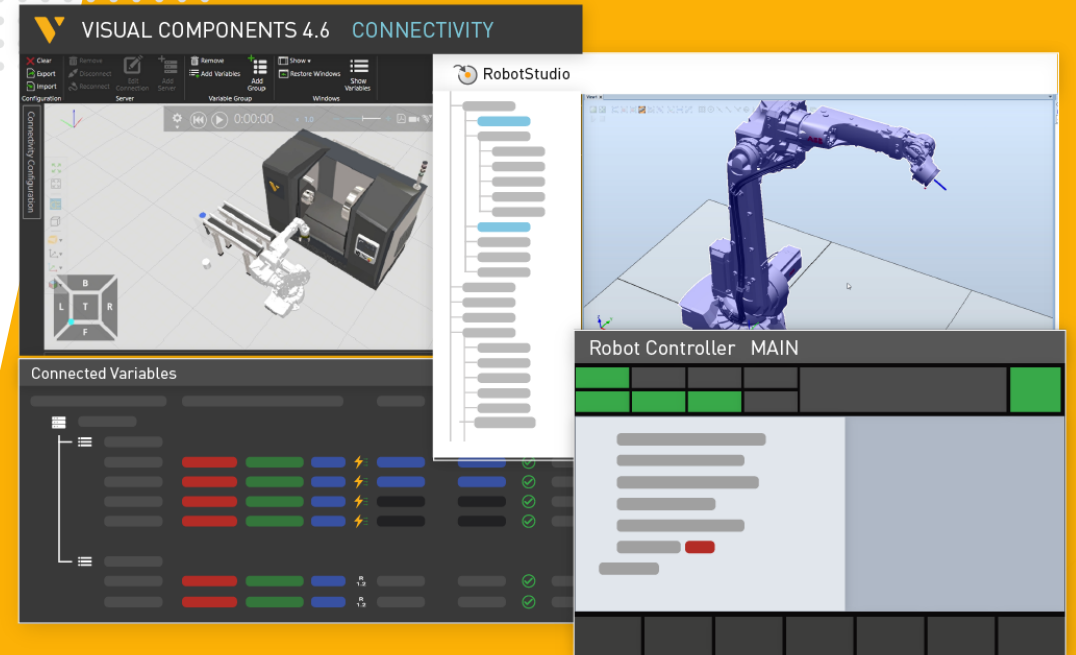
- Connection to ABB Robots through Visual Components
- Connect your simulations with ABB's virtual and physical robot controllers
- [Here](#) is a complete video tutorial





# ABB Robot Connectivity

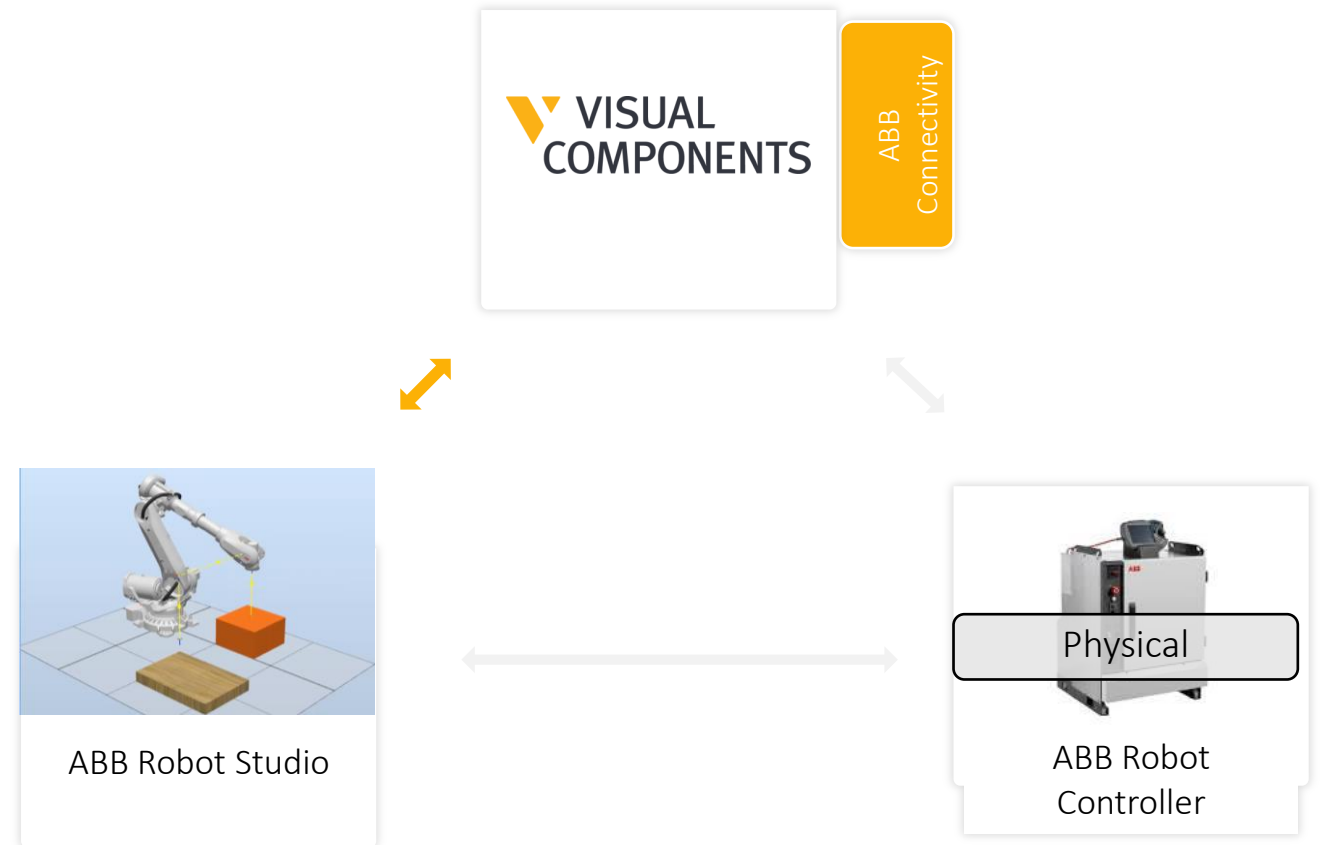
- Test and validate results in simulation without huge investment in time and effort
- More accurate motions and cycle times
- Visualize an environment with different robot types and hardware such as PLCs and vision systems
- Transfer project to controllers directly through Visual Components



# ABB Robot Connectivity - Capabilities

## Visual Components connected to ABB RobotStudio.

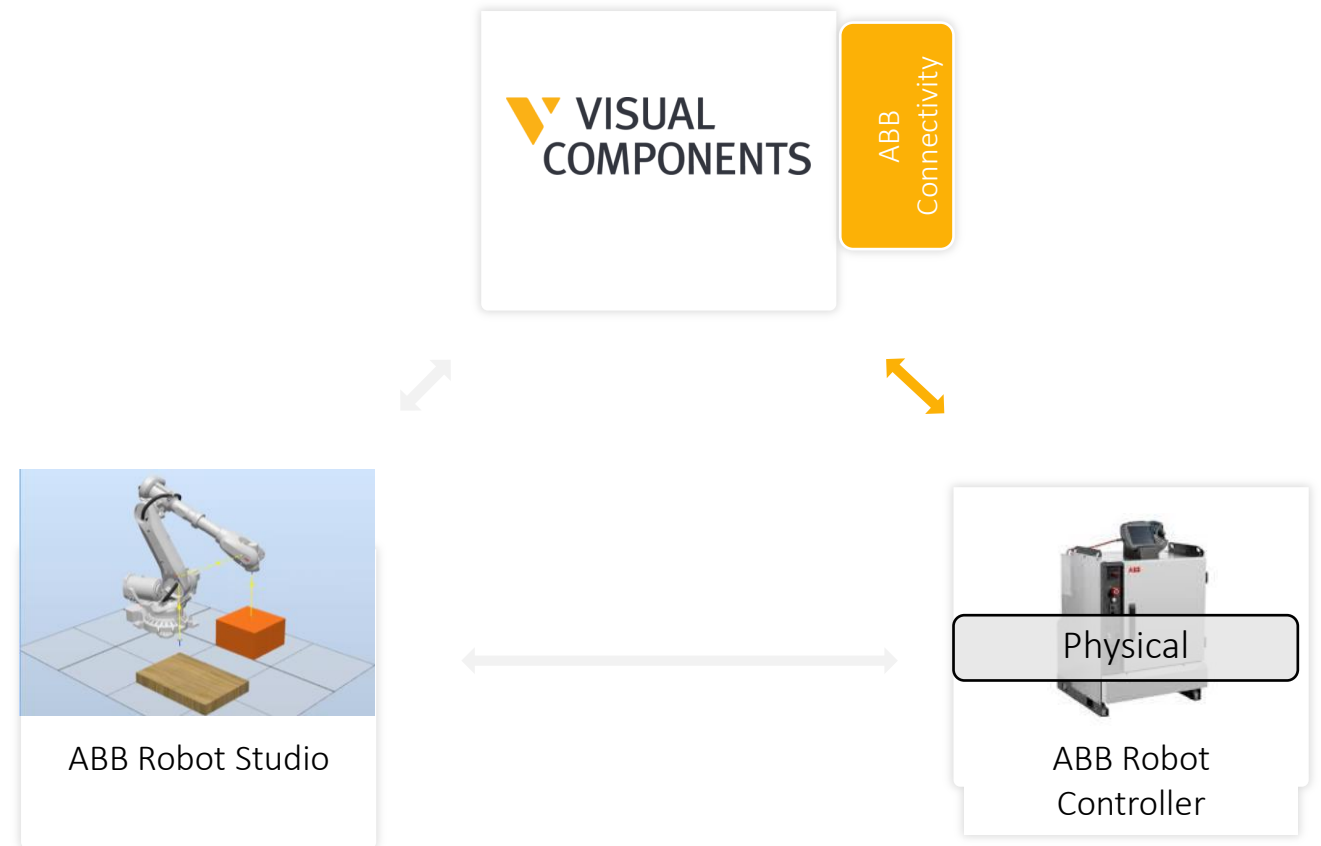
1. Build your simulations in Visual Components with ABB Robots
2. Set up the Virtual Controller in ABB RobotStudio
3. Connect to ABB RobotStudio from Visual Components Connectivity module
4. Pair the Robot Joint values
5. Export the Robot Program using Post Processor
6. Import the program to RobotStudio
7. Test and Validate your programs



# ABB Robot Connectivity - Capabilities

## Visual Components connected to a physical ABB robot controller.

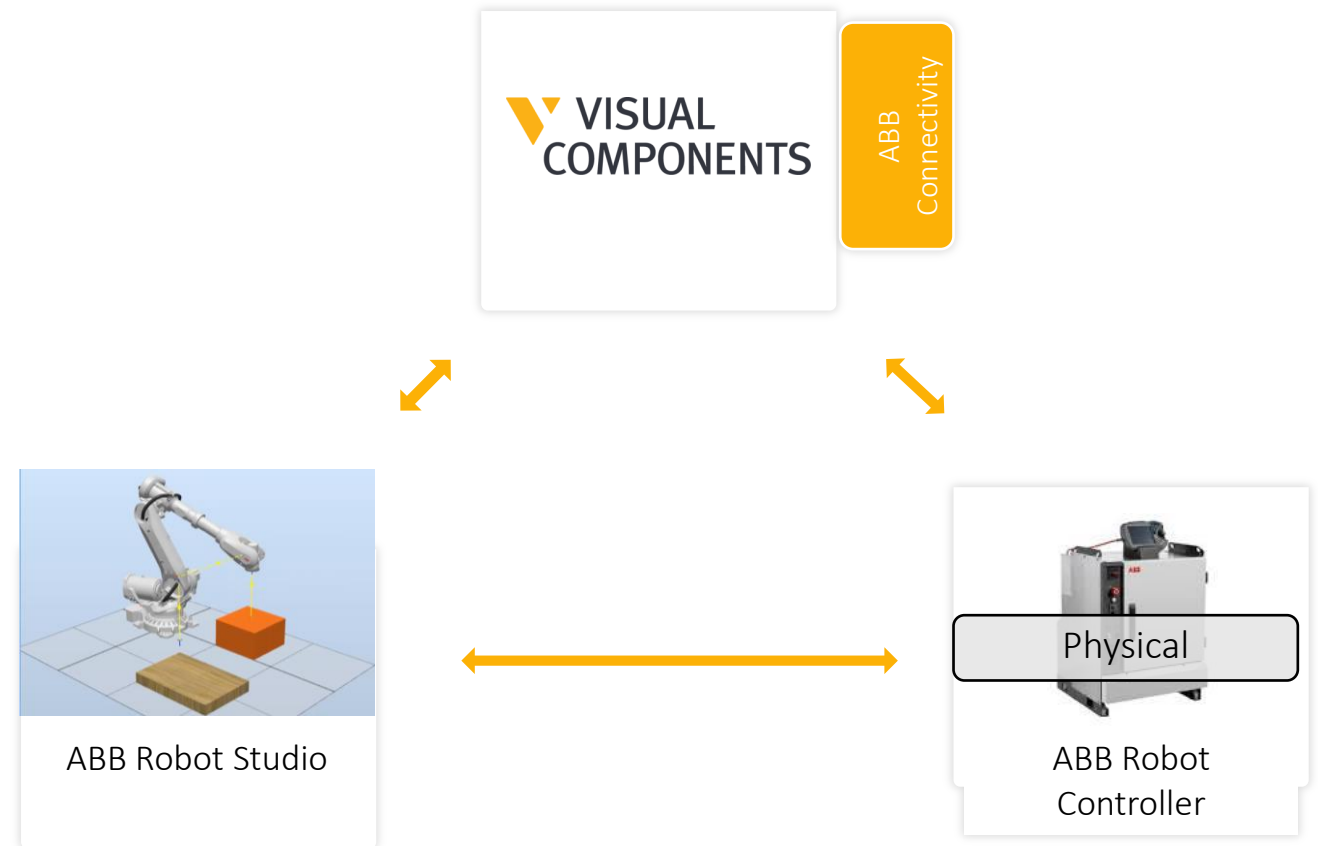
1. Build your simulations in Visual Components with ABB Robots
2. Set up the physical robot controller and teach pendant
3. Connect to physical controller from Visual Components Connectivity module
4. Pair the Robot Joint values
5. Export the Robot Program using Post Processor
6. Import the program to physical controller
7. Test and Validate your programs



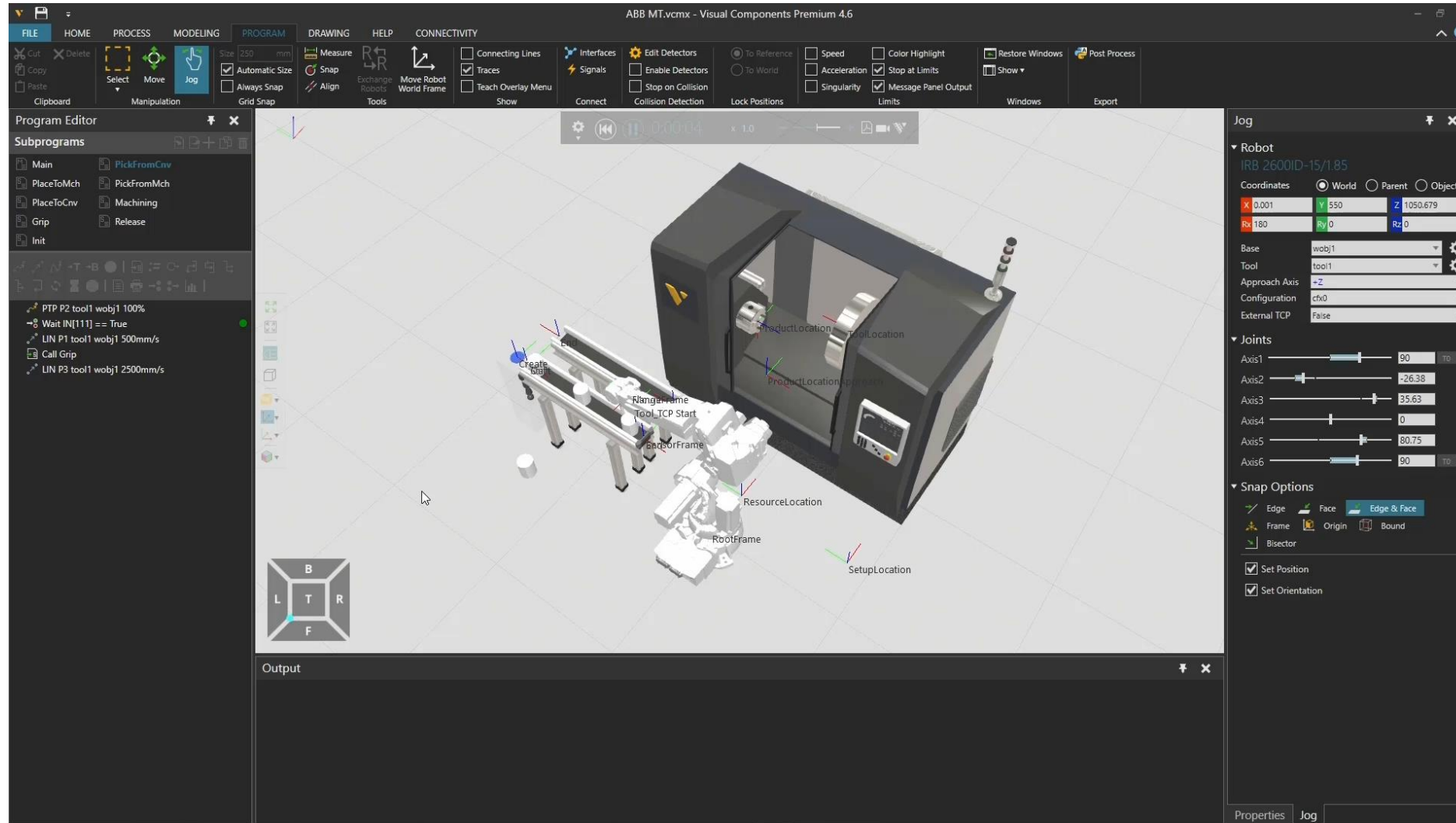
# ABB Robot Connectivity - Capabilities

**RobotStudio directly connects to the physical controller and VC connects to RobotStudio.**

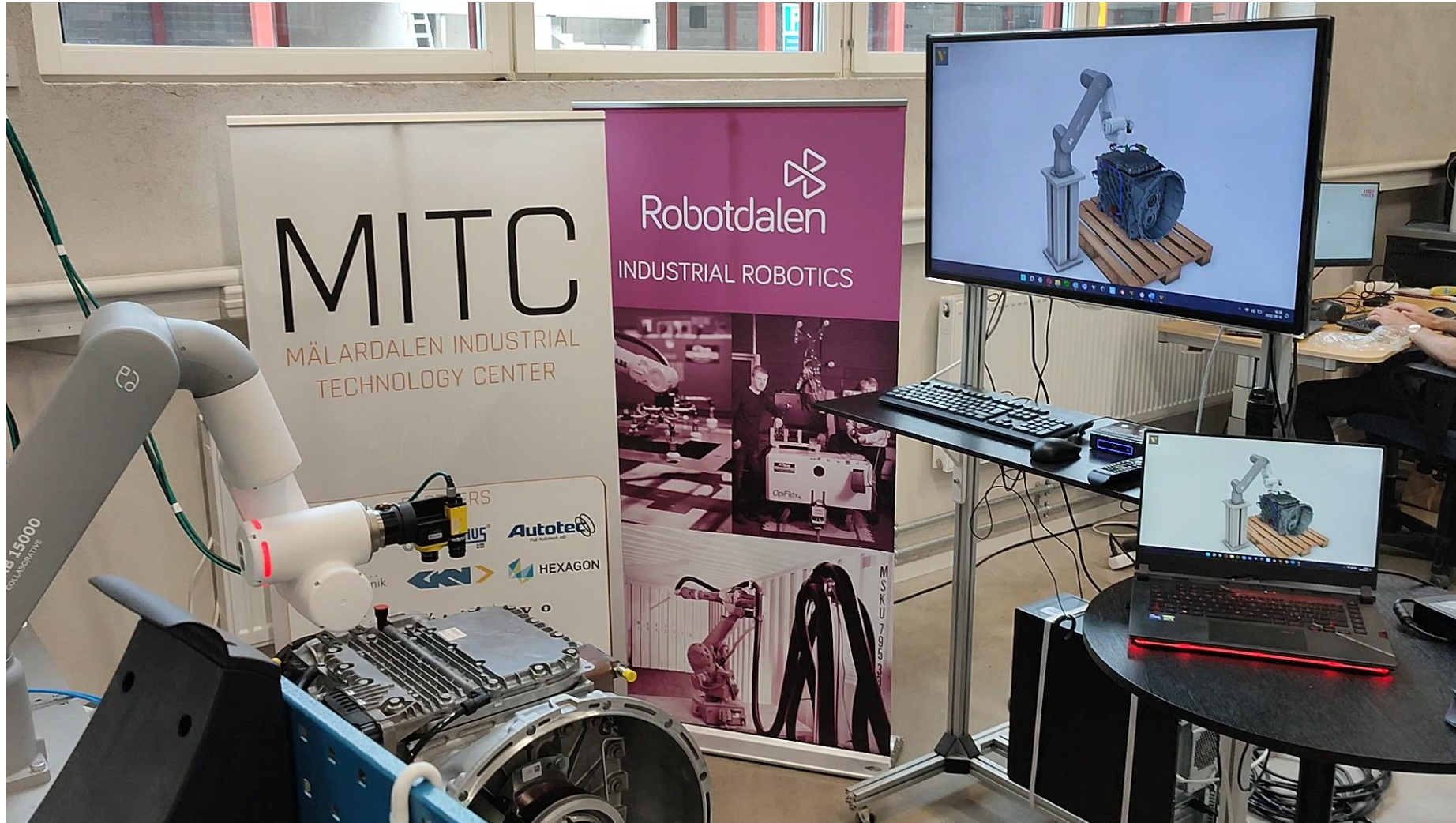
1. Build your simulations in Visual Components with ABB Robots
2. Set up the virtual robot controller in RobotStudio (with physical robot controller connected) and connect it with Visual Components
3. Connect to virtual controller from Visual Components Connectivity module
4. Pair the Robot Joint values
5. Export the Robot Program using post-processor
6. Import the program to RobotStudio
7. Test and validate your programs



# Visual Components connected to ABB RobotStudio



# Visual Components connected to physical ABB robot controller

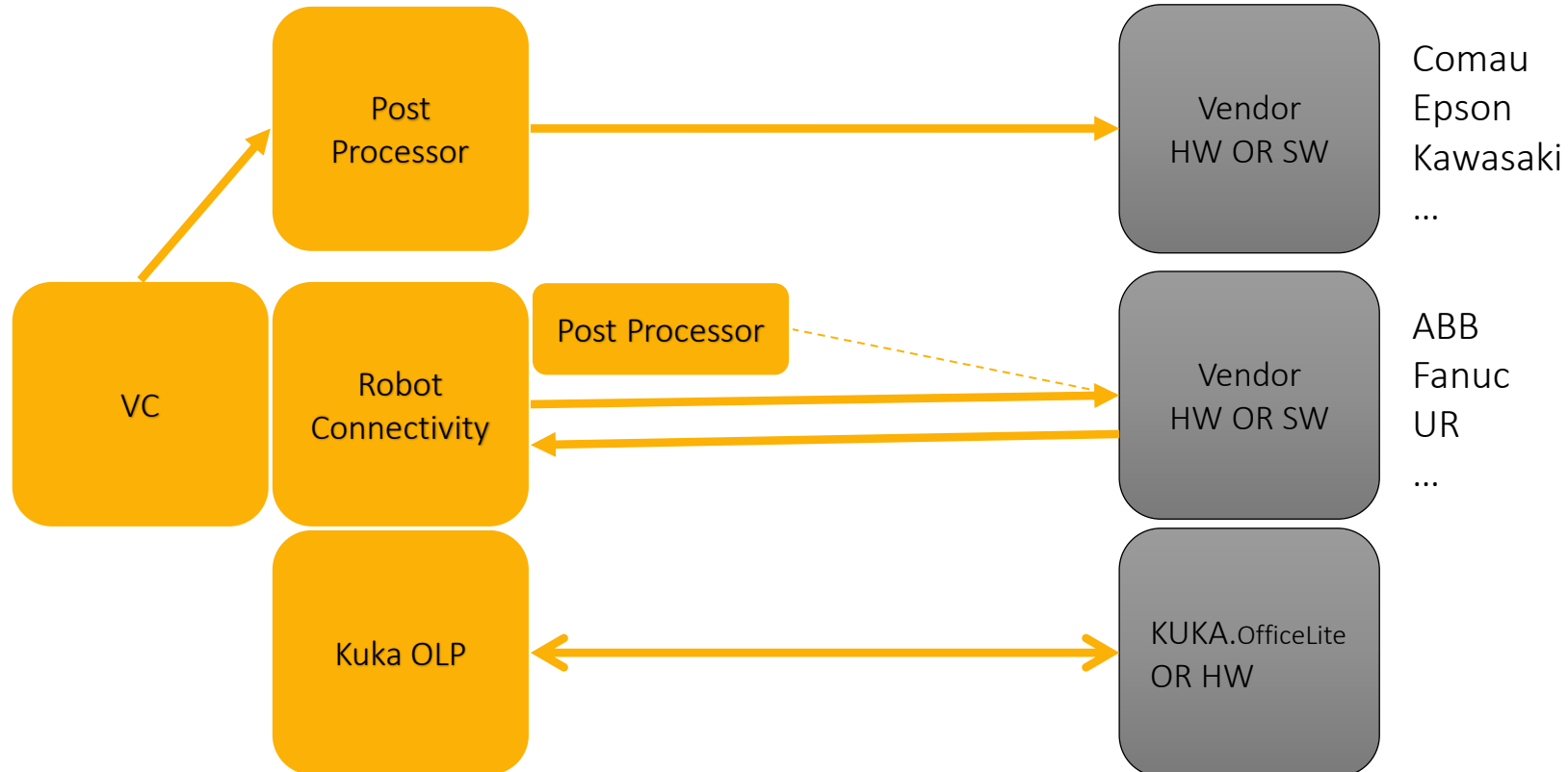


# Benefits

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- ✓ One tool for robot programming, simulating, testing, validating, and virtual commissioning
- ✓ Simulate different scenarios with accurate robot cycle times and help customers choose the optimum solution
- ✓ Save time by programming robots virtually

# Connectivity types



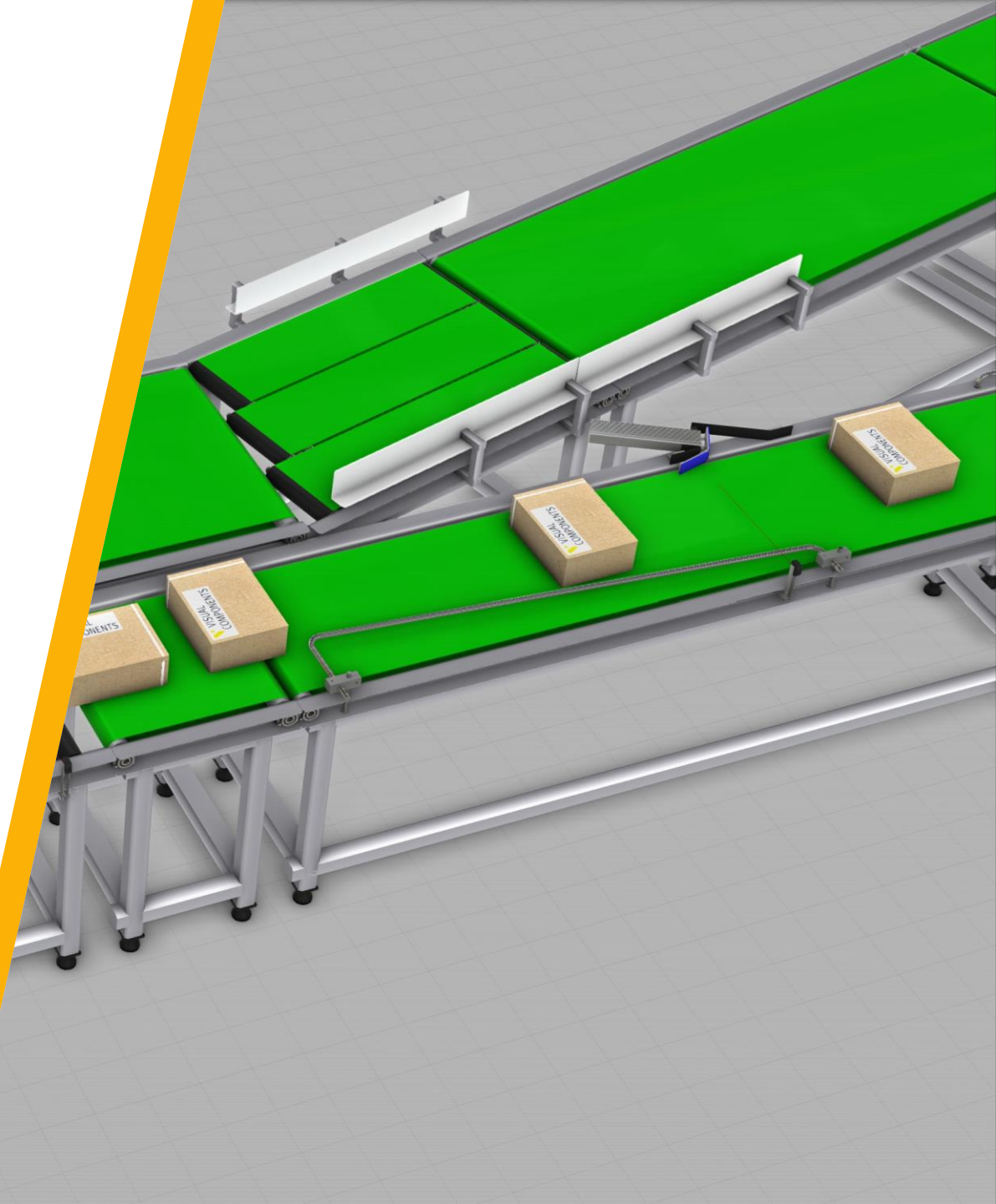
Hardware (HW)  
Software (SW)

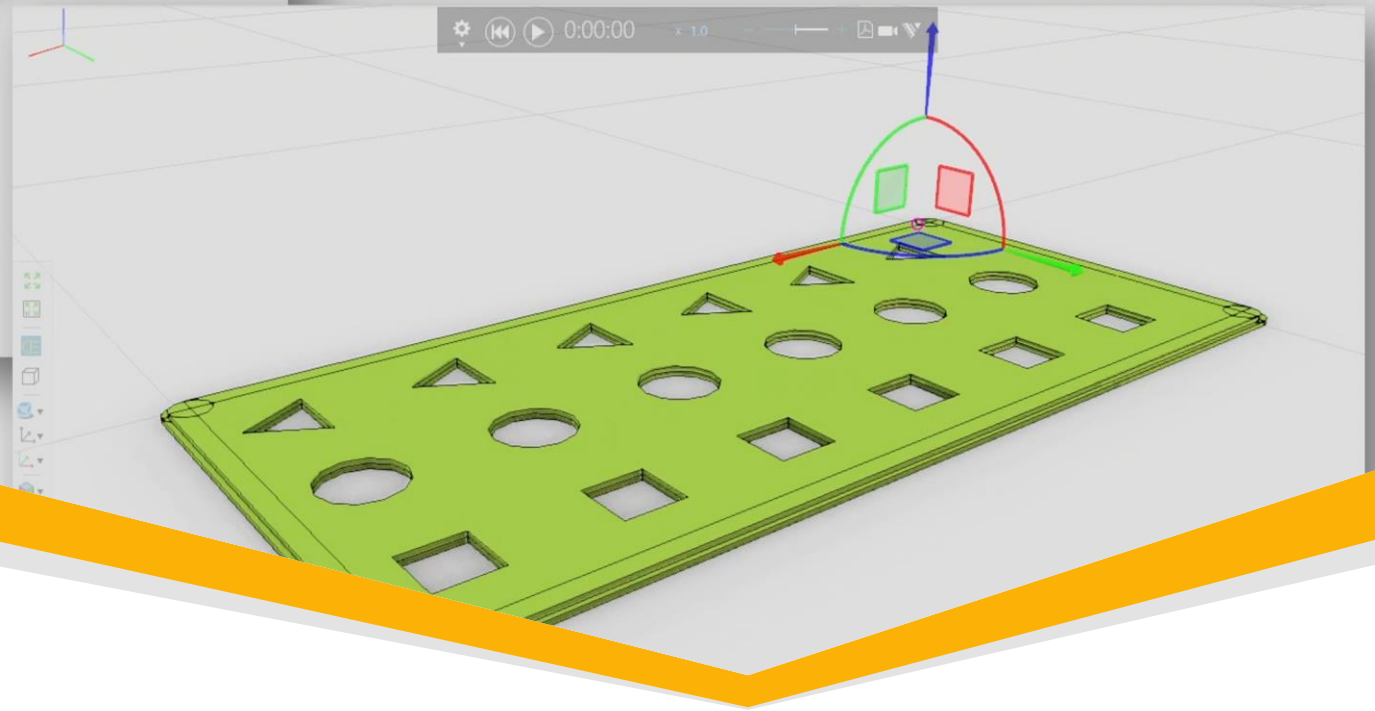
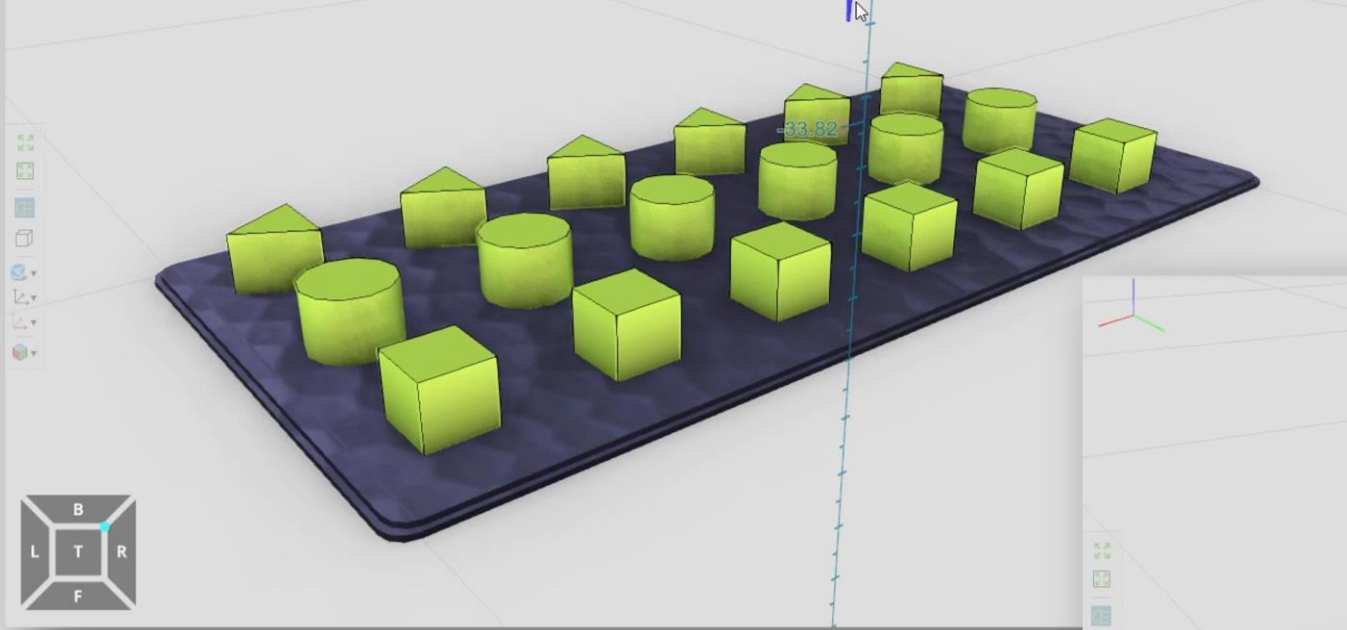


# Connectivity Improvements

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- Use simulation to exchange 3D data with OPC UA servers.
- Track location data of your assets.
- Use Cases: Monitor the location of mobile robots, track walking distance of workers, robot inertia, tool direction, etc.





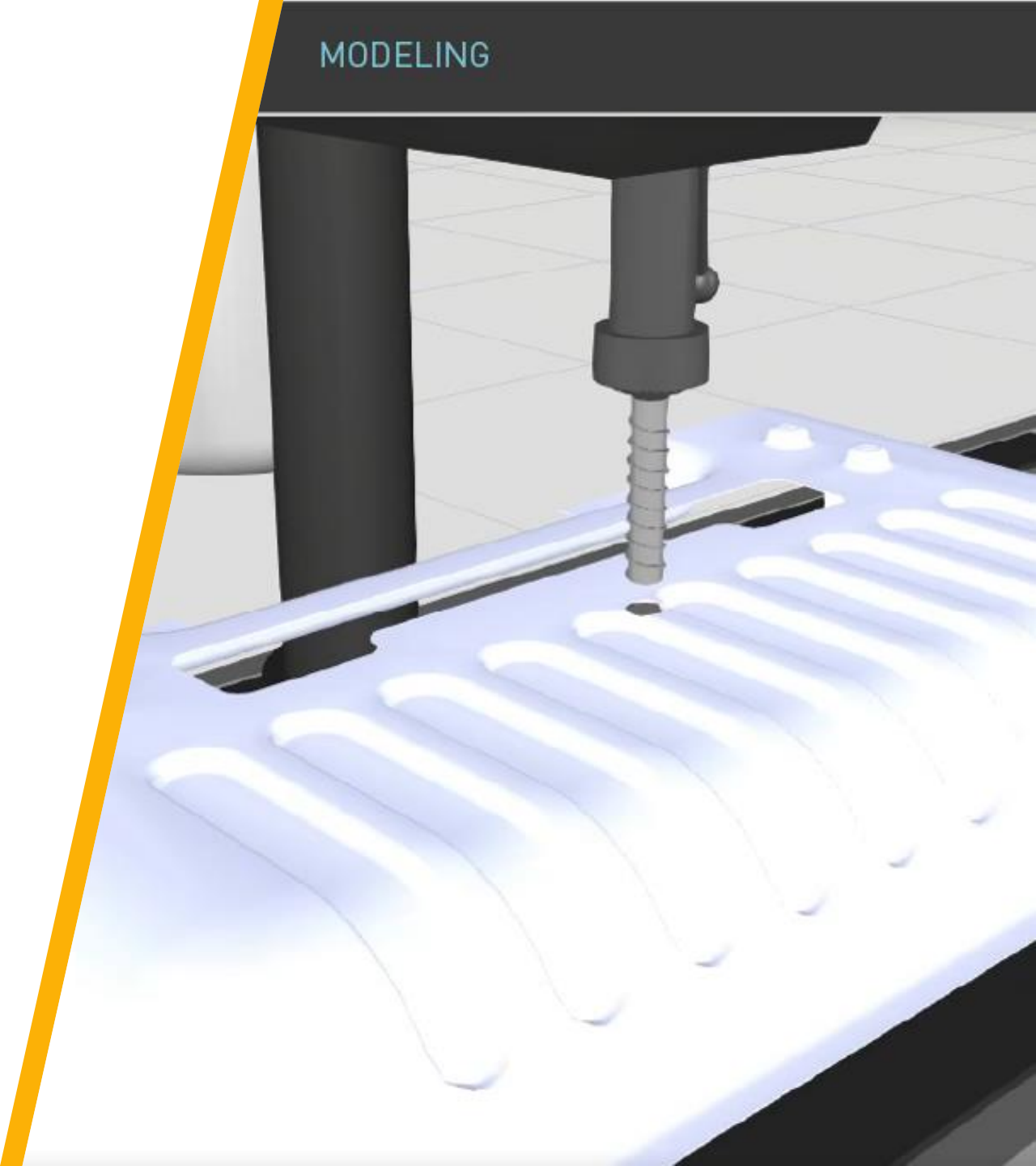
# Boolean Modeling Operations

More options to manipulate geometries – more simulation use cases

# Boolean Modeling Operations

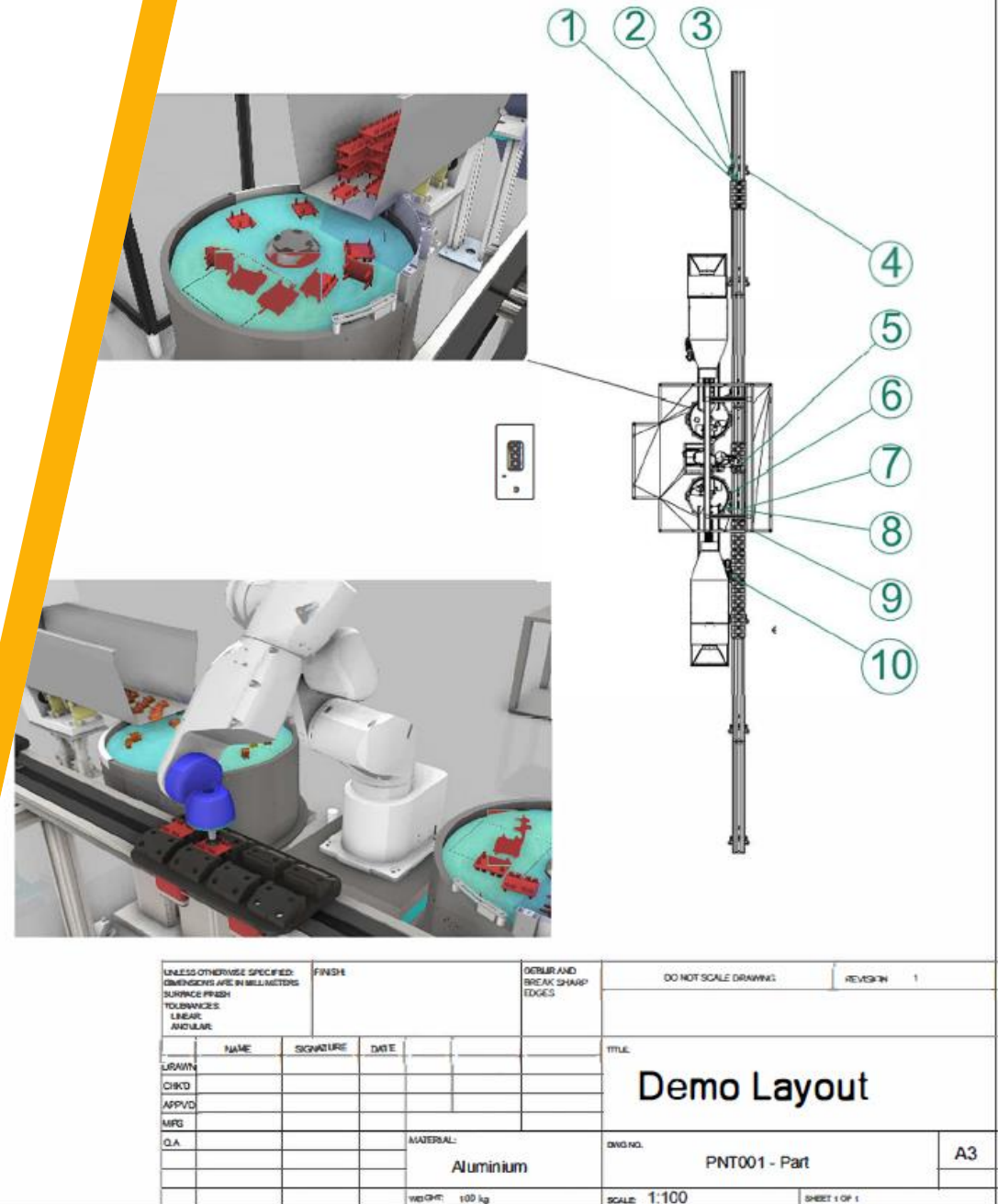
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- Join, cut, intersect models with new Boolean features.
- Simulate applications like cutting, drilling, machining, punching, and more.
- [Here](#) is a complete pdf tutorial.



# Drawing Improvements

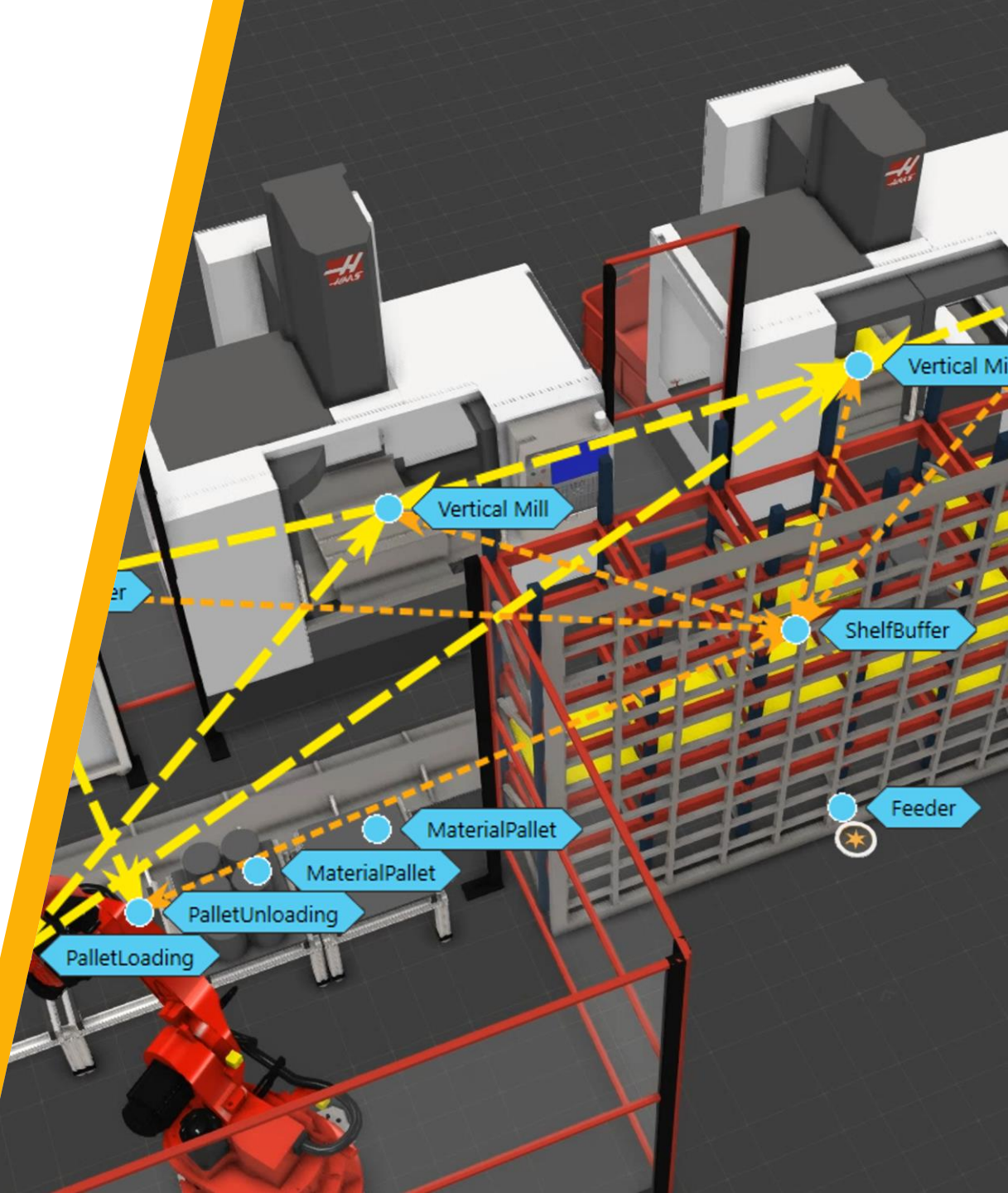
- Add annotations, images to 2D drawings.
- Improves your communication of designs and quality of sales content.
- Bitmap support to drawings is available now and a free-to-use add-on is needed to create and export drawings with images.

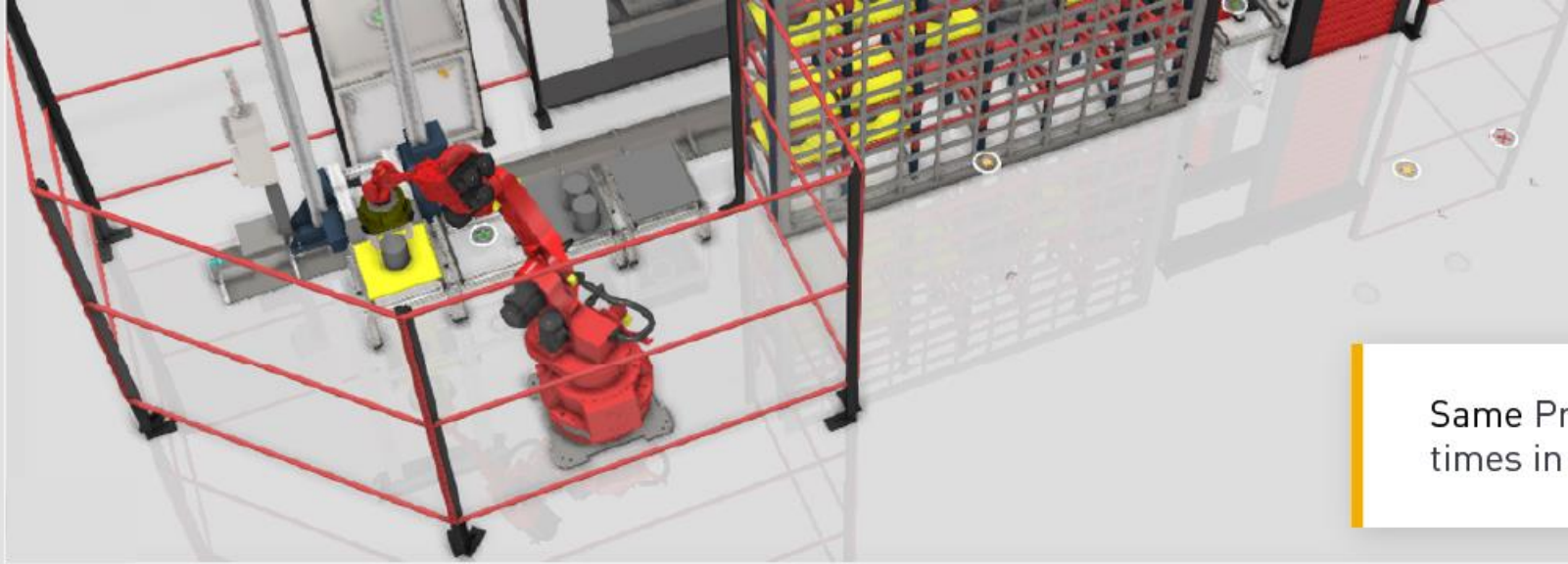


# Process Modeling Improvements

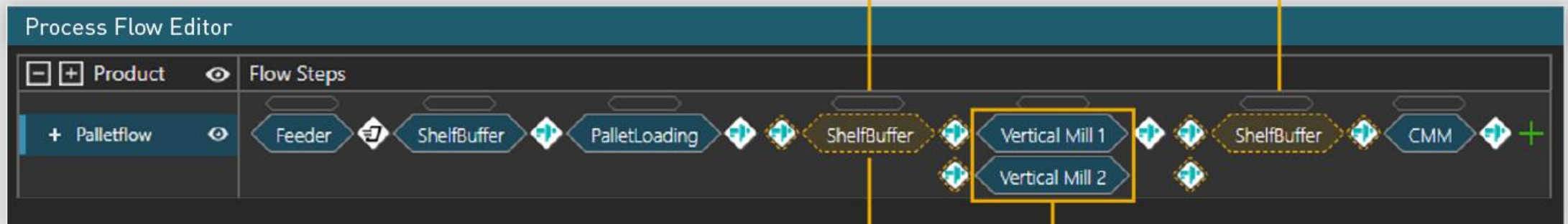
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- Define and manage more dynamic production processes in a flow.
- Improved the UI of Process Flow Editor: Easier to manipulate the process flows
- These features are available in all Visual Components products.
- [Here](#) is a complete video tutorial.





Same Process multiple times in a flow



Optional Process

Alternative Processes

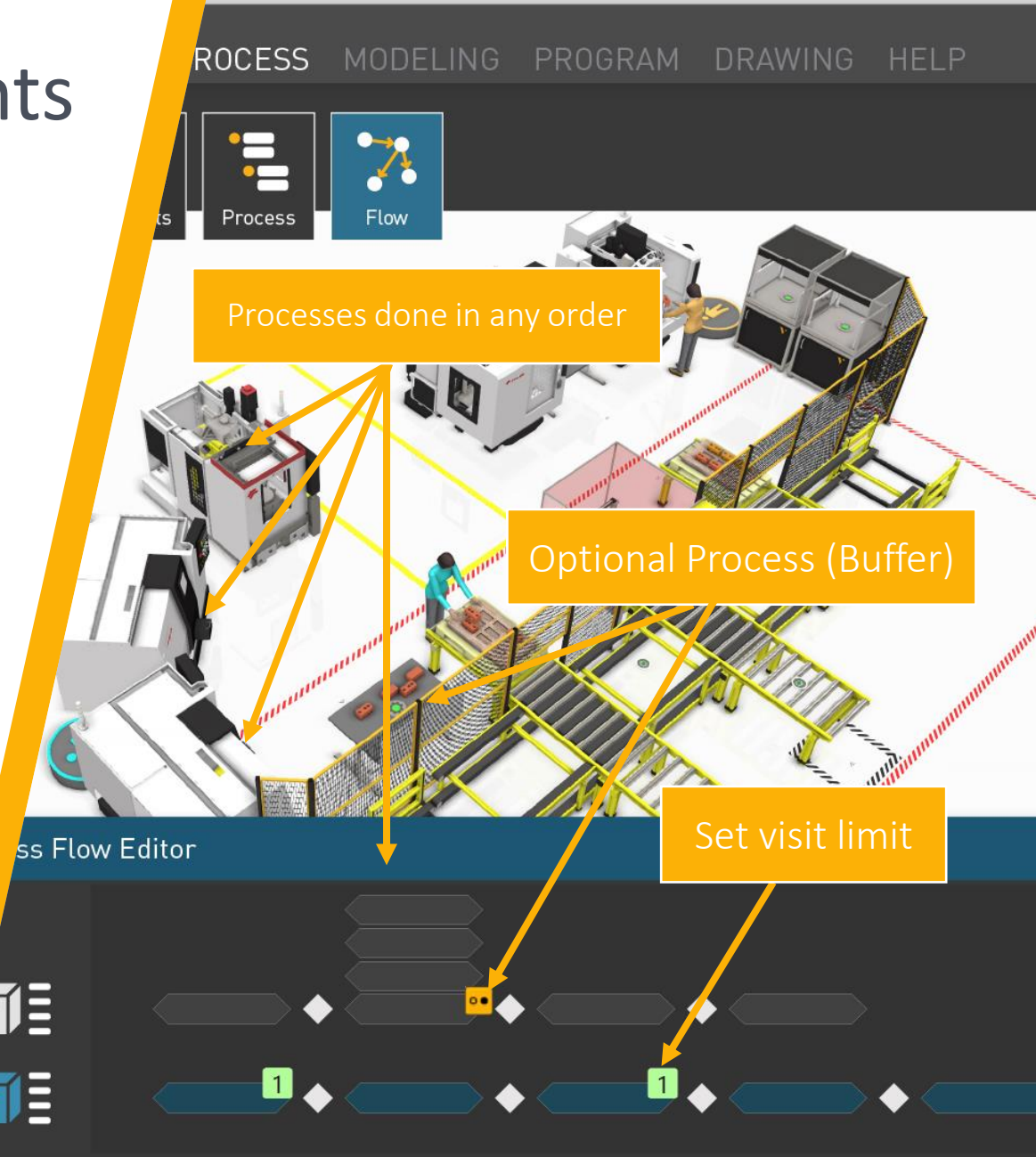
# New Features

- Optional Processes in a flow
- Alternative Processes, Prioritize one process over another
- Have same process multiple times in a flow
- Skip processes in a flow



# Process Modeling Improvements

- Streamline complex production flow through optional buffers between processes
  - Enable optional buffers among processes done in any order
- Set maximum amount of visits a product has to a process
- More control over process flows through improved UI
- Available in all Visual Components products





# Rendering Improvements

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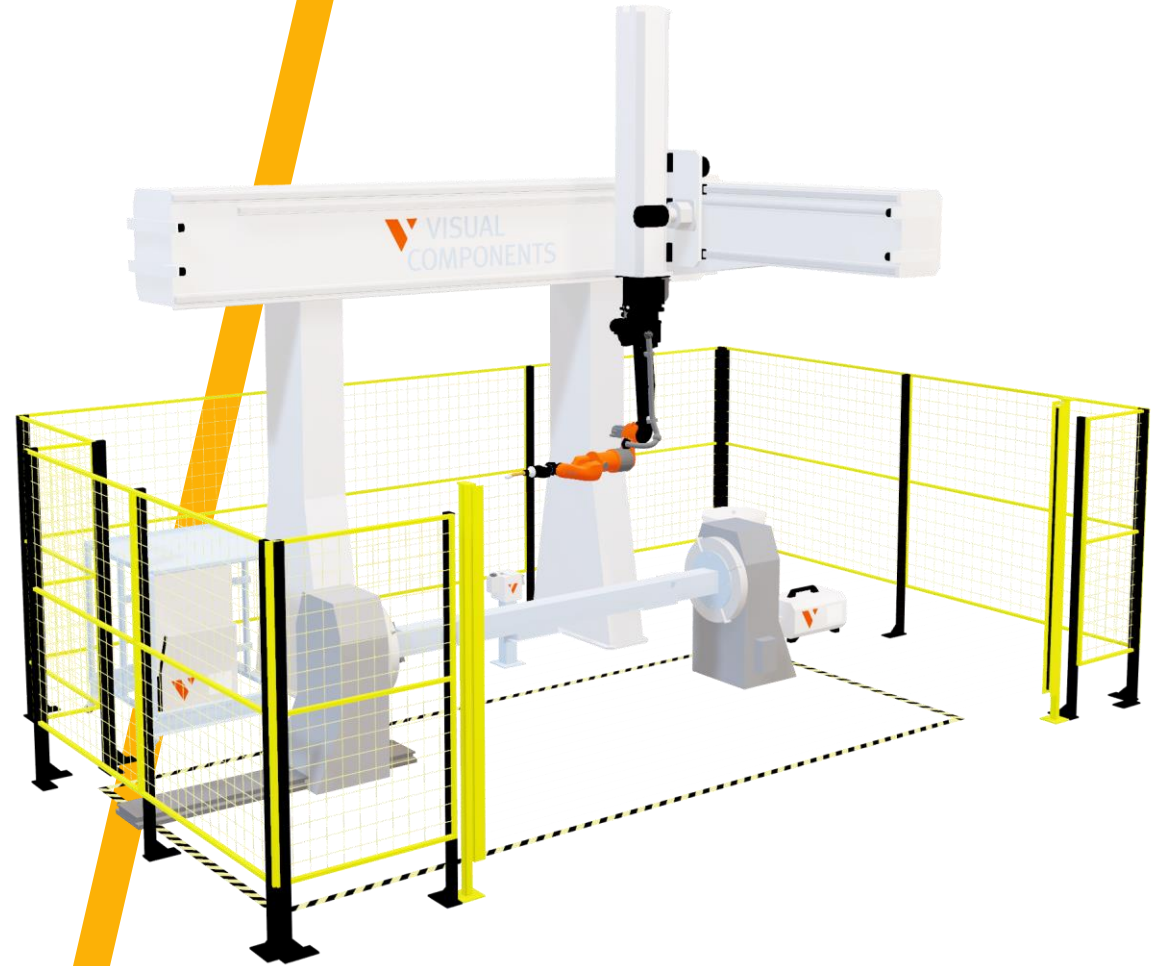
- Improved material shaders that produce higher level of rendering within VC.
- Improved quality of rendered visuals.
- Lesser need to use external renderers.



# FBX Exporter

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- Export 3D layouts or objects from Visual Components
- Export objects and layouts to third party platforms supporting the FBX format
  - Quickly create and share designs in an easily digestible format
  - Includes the ability to export skeletons and reach limits of your 3D objects
- Universal format for various 3D software
- Available in Visual Components Premium



# FBX – How to export?

- Prepare the layout you want to export as fbx
- Choose the preferred export options:

Export all: exports the whole layout

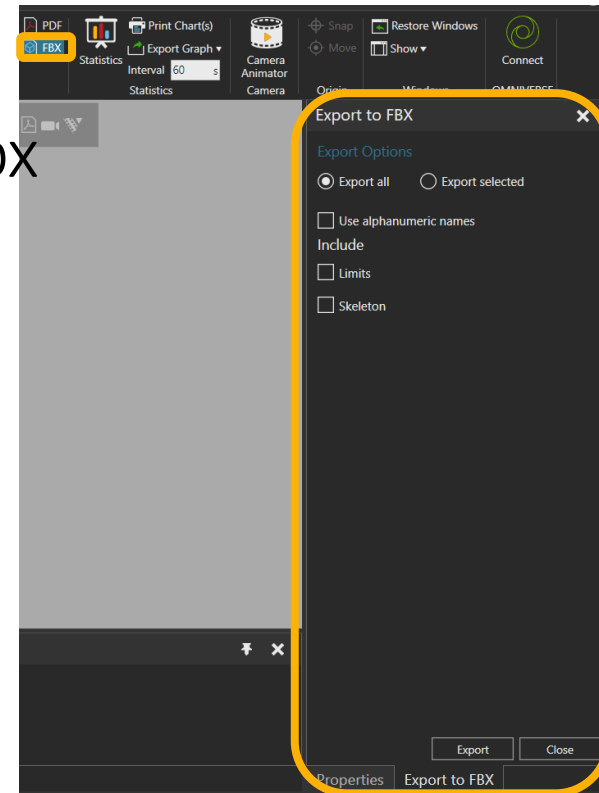
Export selected: exports only the selected items

Use alphanumeric names: This option replaces any non-alphanumeric characters with the underscore character “\_”

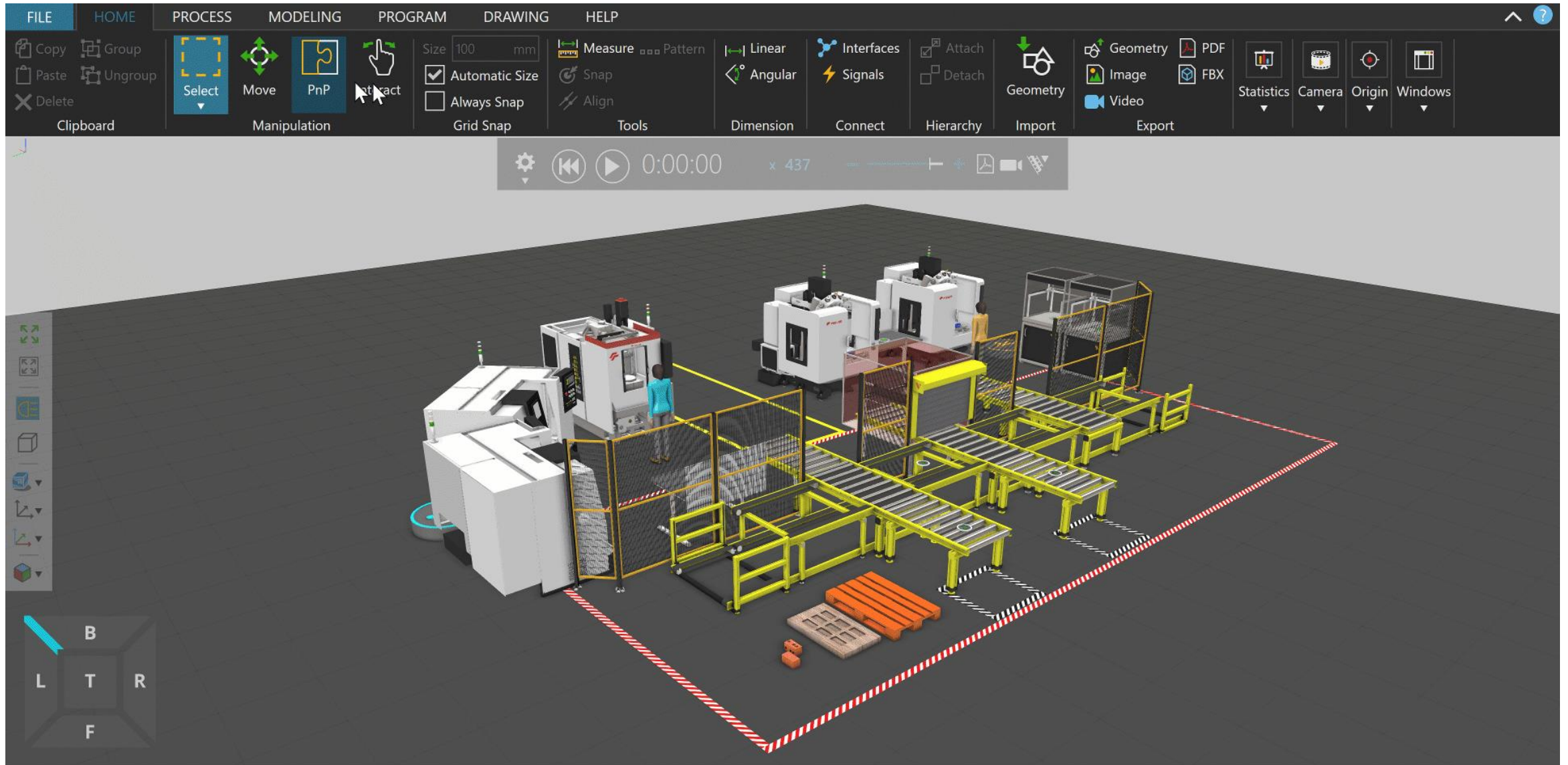
Limits: includes the limits of the joints

Skeleton: includes the skeletal model of the components with non-fixed joints

- Finally test the fbx file in any application that supports fbx



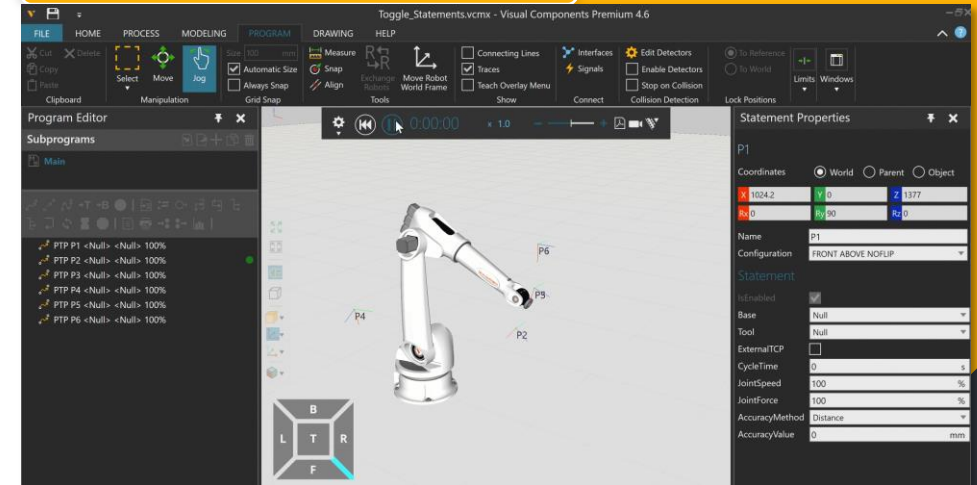
# FBX – How to export?



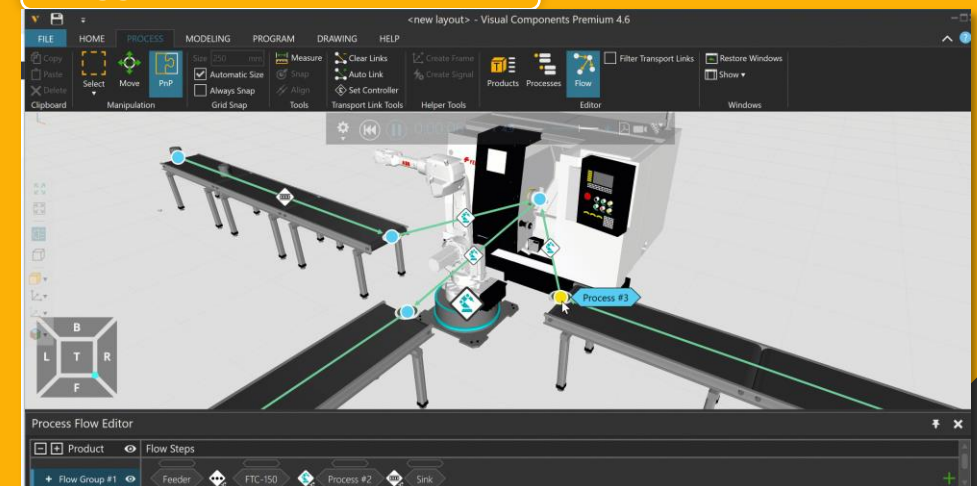
# Enable/Disable Statements

- Enable or disable robot or process statements directly from UI
- Visualize different scenarios quickly
- Improved user experience and workflow
- Available in all Visual Components products

## Toggle Robot Statements



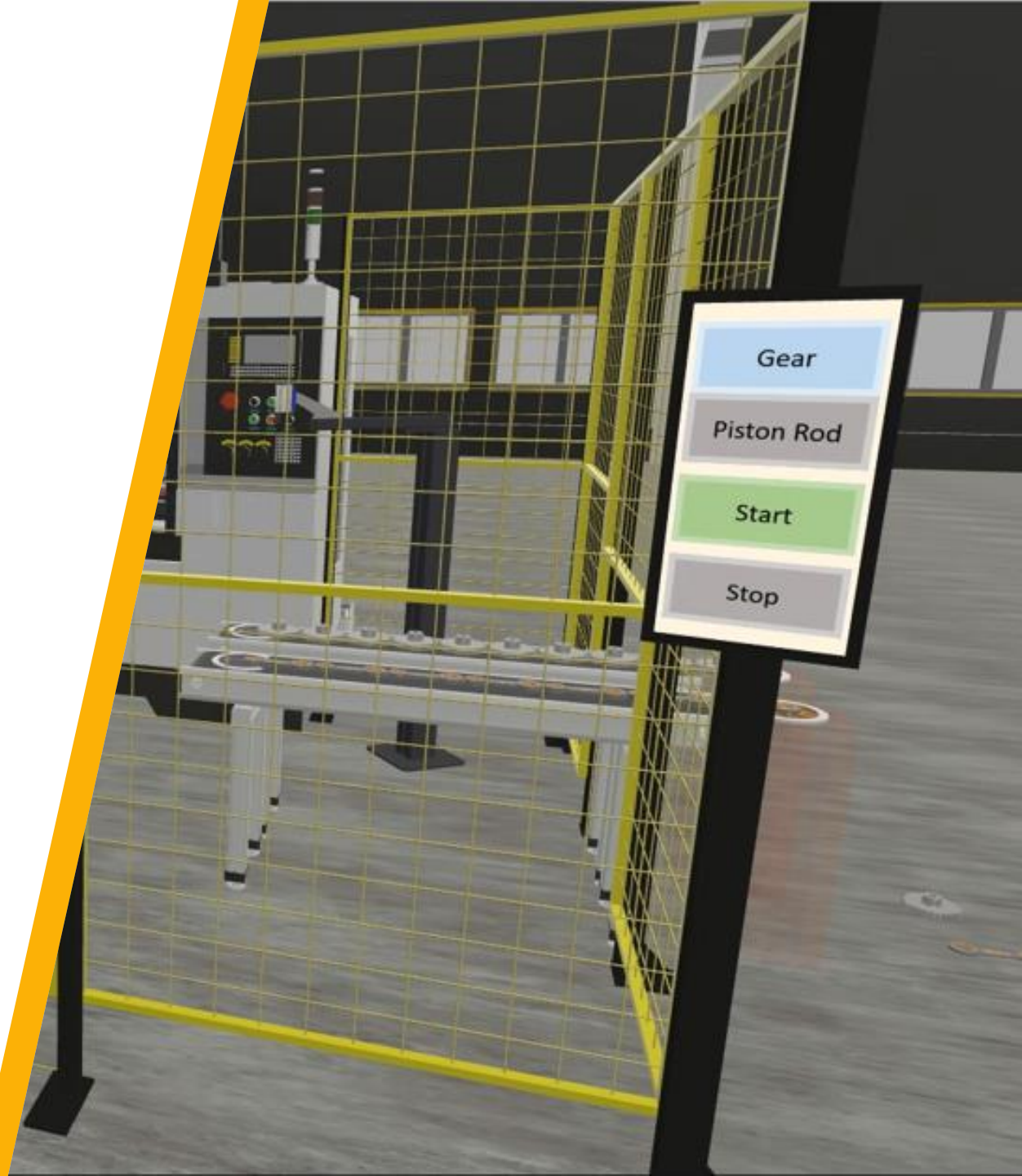
## Toggle Process Statements



## Web Viewer – Custom HMIs

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- Use Web Viewer to set up custom HMIs in 3D workspace and interact with them in VC experience.
- Personalize your simulations and make them more interactive.
- Improve customer experience and communication by sharing ideas/plans using HMIs.
- [Here](#) is a complete pdf tutorial





**Thank you**

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COMPONENTS**