# Introduction to Process Modeling

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Session 2/6 Notes

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VISUAL COMPONENTS

4.4

# PROCESS MODELING: INTRODUCTION

Streamlines the layout planning process with a

- visualized workflow
- quick simulation setup
- enhanced simulation performance



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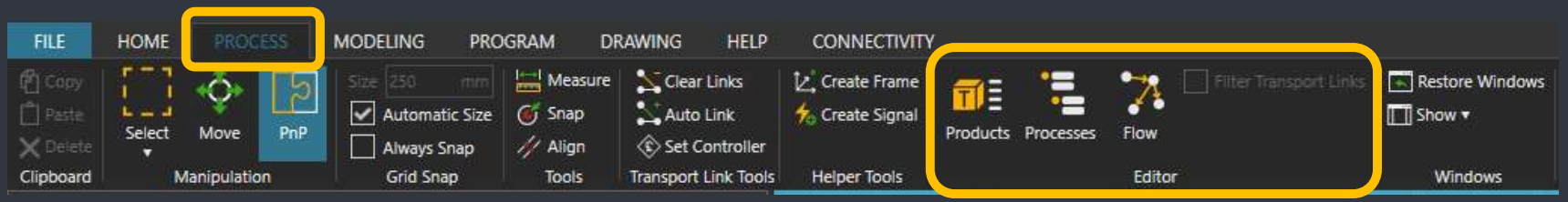
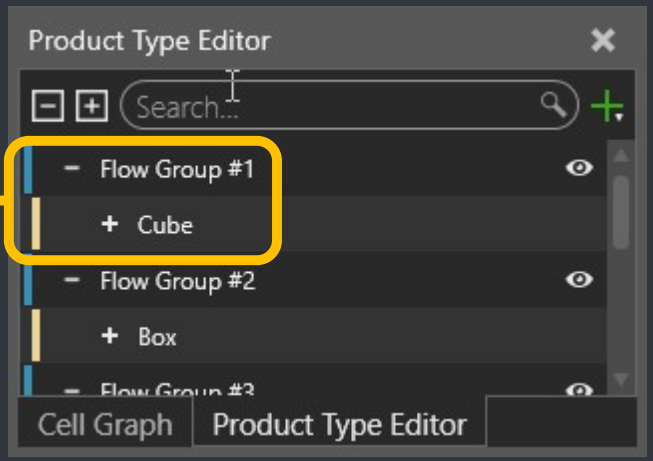
# PROCESS MODELING: PROCESS TAB

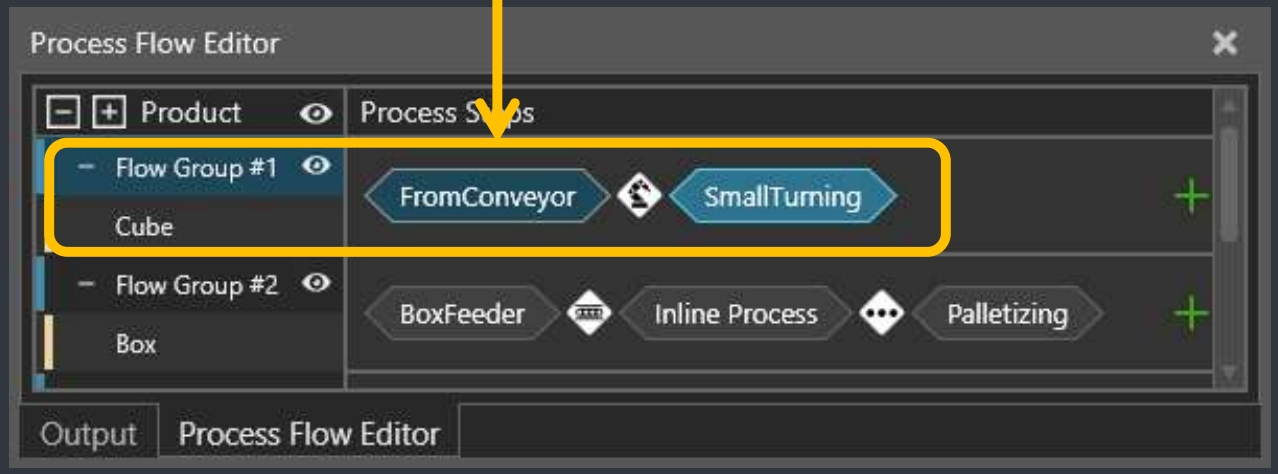
- Product: Any entity which goes through a certain process in a layout.
- Process: A set of statements which assign certain behavior to a process.
- Flow: The sequence of processes which the product follows in a layout during simulation.



# PROCESS MODELING: FLOW GROUPS

- Product Flow Group is a collection of product types that share the basic production flow sequence (=route through production).
- Product Editor in Process tab is used to do this definition.



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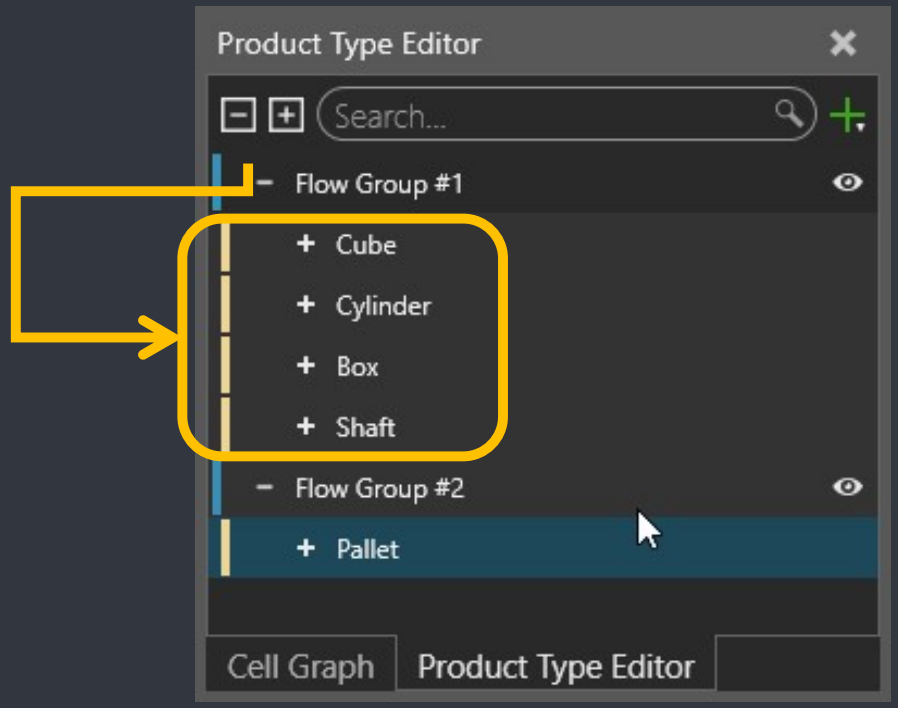
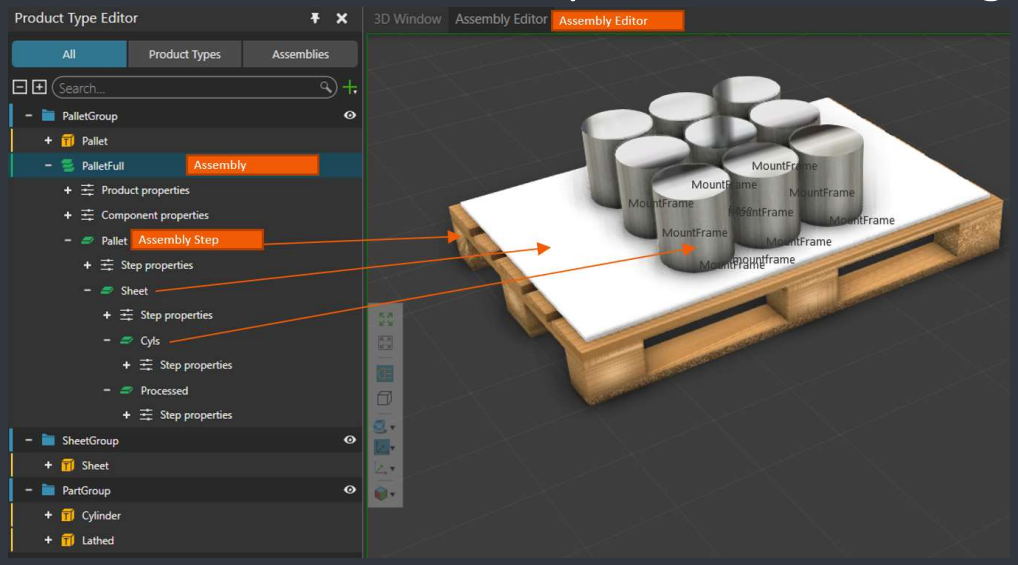
# PROCESS MODELING: PRODUCT TYPE

- Product Editor is used to the define product types that are used as products in manufacturing production.
- Each Product Type is part of a Flow Group.



# PROCESS MODELING: ASSEMBLIES

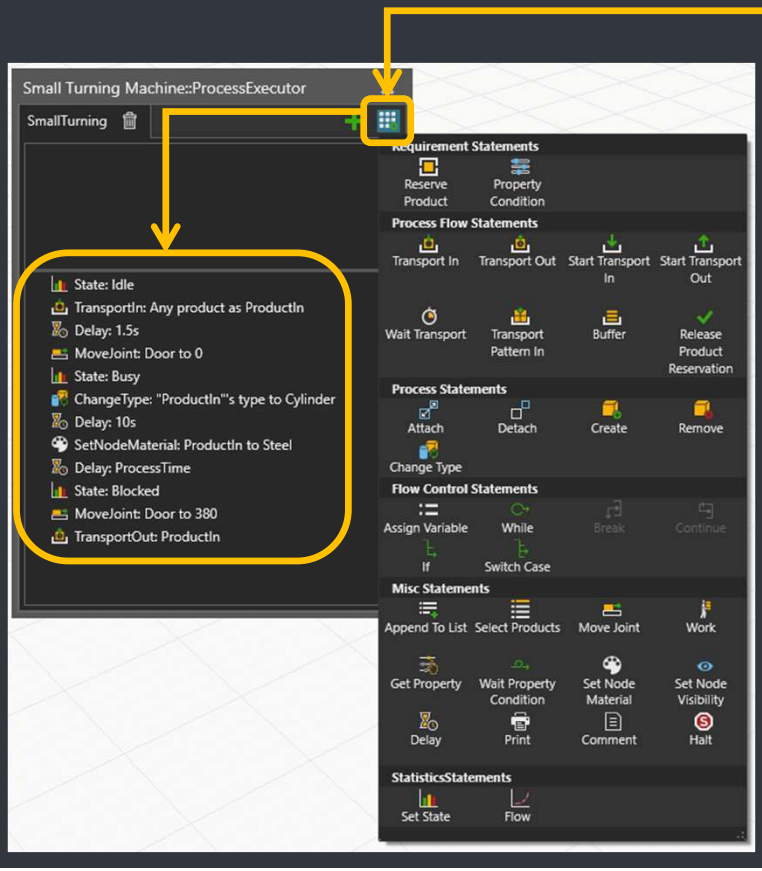
- Assemblies are hierarchical structures of assembly steps. Each assembly step has a specified location compared to its parent step.
- Each assembly step contains a pattern of slots. A slot defines the default product type and the location for that product.
- Just like product types, assemblies can be defined in the product type editor. The assembly editor can be launched from the pencil icon to the right of an assembly step.

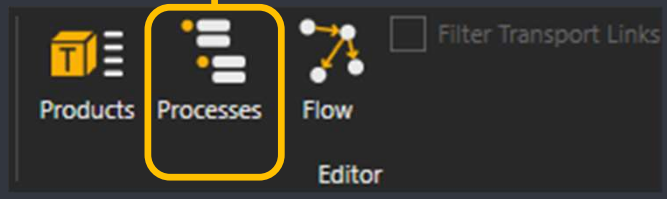


# PROCESS MODELING: PROCESS STATEMENTS

- Process statements editor to define behavior of a process.

Add new Statement



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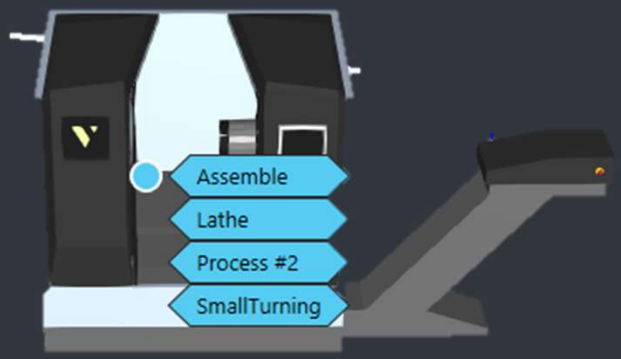
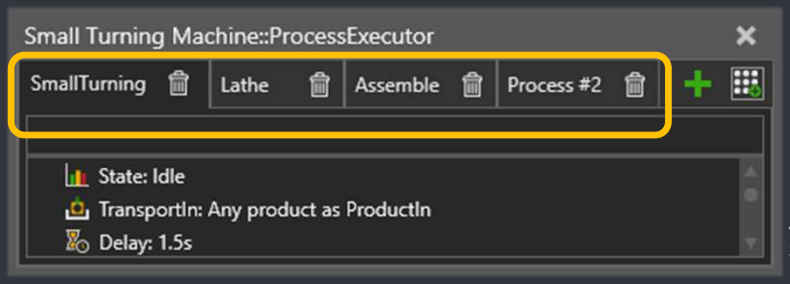
# PROCESS MODELING: PROCESS ROUTINES

- In process editor different processes (e.g. machines, buffers and workstations) are built from one or more process routines.
- Each process routine is built from statements, that define how process or machine behaves.
  - Process routines with same name represents parallel processes.

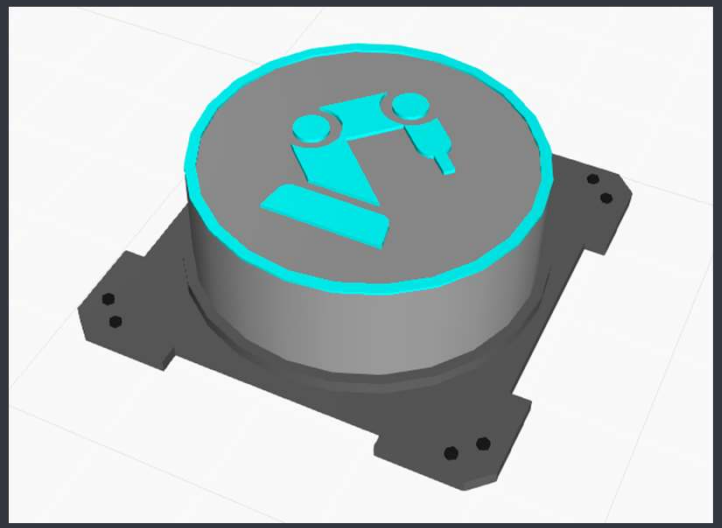
Add new Process



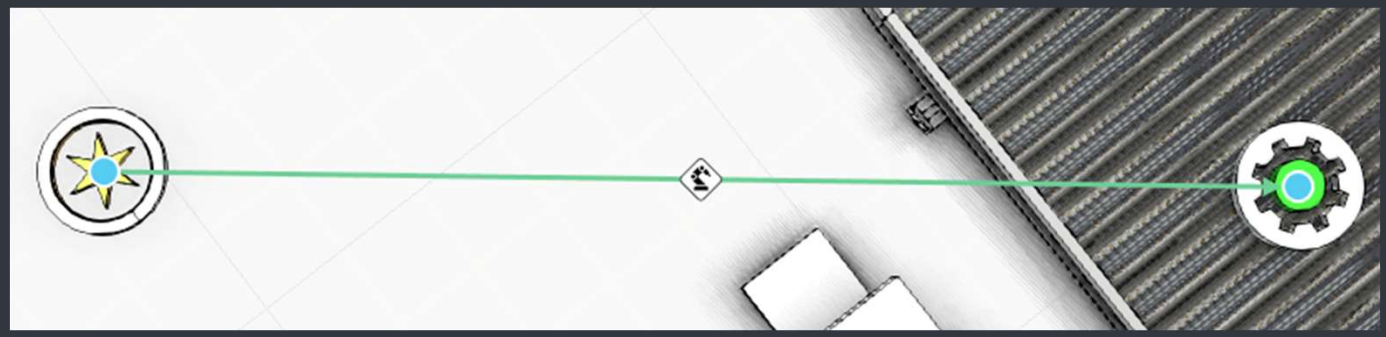
# PROCESS MODELING: RESOURCE CONTROLLERS

- Process Model Human Transport Controller is provided to have different human resources in the production
- Process Model Robot Controller is provided to have robots handling processes



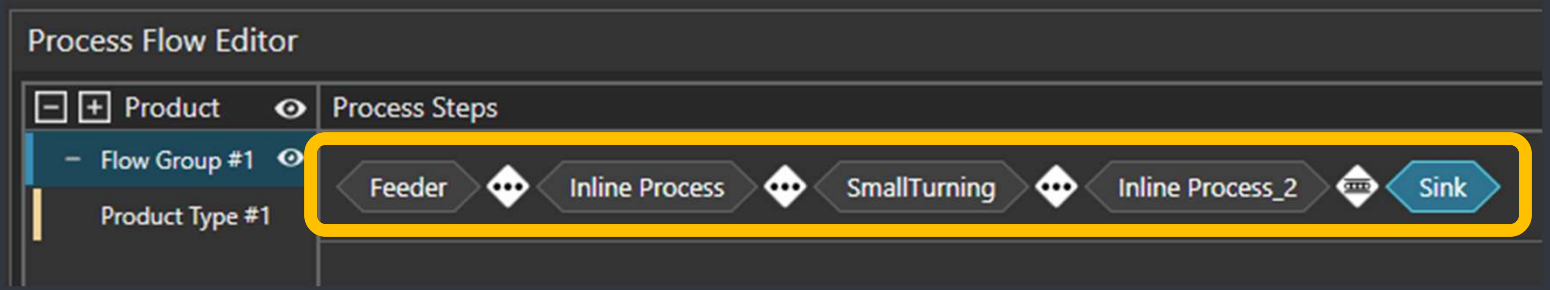
# PROCESS MODELING: TRANSPORT LINKS

- Transport Link is used to find Transport solution from requesting process to demanding one.
- Transport Link consist of Transport Link and Transport Implementer (Interpolating, Conveyor, Robot, Human, etc.)



# PROCESS MODELING: FLOW EDITOR

- Process flow sequence for each product group.
- Sequence is a list of sequential processes that product instance must go through in order to finalize its production
- Transport links between process implementations (and also between transport nodes without process).
- Transport link define how product instances are transported over that link / transition (via conveyor, using Transport Controller…)



# PROCESS MODELING: PROCESS'S SOURCE

- Note the destination of a product in process flow component when transporting out the part
- To Conveyor and From Conveyor Components use "Component Container" and Sink uses the "From Previous Process"
- When using the Process as source for process transport statement, simulation waits for next process to be free, then sends the part