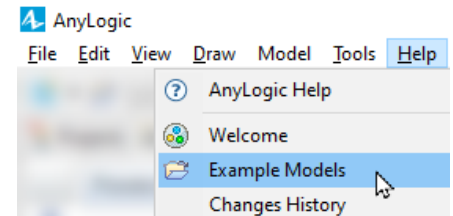


Models Shown During the Webinar

Each is available, under the name shown below, in all AnyLogic editions from Help -> Example Models.

- Convey
- ConveyorEnter
- ConveyorExit
- Pallet Packing Line
- Reversible Conveyor Buffer
- MoveByTransporter
- SeizeTransporter and ReleaseTransporter
- Transporters Moving in Free Space



Other Resources

AnyLogic Help articles on the Material Handling Library:

<https://anylogic.help/library-reference-guides/material-handling-library/index.html>

Previous webinar: “Fundamentals of the AnyLogic Material Handling Library”:

<https://www.anylogic.com/resources/educational-videos/webinar-fundamentals-of-the-anylogic-material-handling-library/>

“MHL Pocket Handbook” - a model by SimulAi:

<https://cloud.anylogic.com/model/c1a7401b-f93d-40b2-9526-67df6ab22878?mode=SETTINGS>

Q&A

- **How do you model accumulating and non-accumulating conveyors?**
 - This is a feature that is built into the library! Please refer to this [MHL webinar](#) and [documentation](#) for more information about different types of conveyors.
- **Is the use of space markup for designing the material handling flow from start to end?**
 - Yes, specifically all the physical aspects of it. You then use the logic blocks to define the flow through the system.
- **How to get the estimate of effort to build a model?**
 - That's entirely dependent on the level of detail you want to build your model in. You can build a high-level model in under an hour if you know all relevant information, or it could take many months.
- **Are there any constraints in terms of scale of a model?**
 - The constraints are primarily based on the specs of the machine that's attempting to run the model. You can scale any aspect - from the number of transporters, the physical complexities, or even different layers of abstraction/detail (e.g., GIS supply chain with physical level factories nested inside).
- **What does the percentage 60% on forklift icon mean?**

- For resource pools and transporter fleets, the percent is indicative of the mean utilization of all agents in the pool/fleet (essentially, they're in use 60% of the time)
- You can see this per agent by using the `getUtilization()` function belonging to any Transporter-typed agent. The example below uses a replicated text object to show this.

The image shows two parts of a simulation interface. On the left, a resource pool for 'AGVs' is shown with a 50% utilization bar and '1/3' agents. On the right, a 'Properties' window for a 'text33 - Text' object is shown. The 'Text' field contains the formula: `"#" + (index+1) + ": " + format(transporters.get(index).getUtilization()*100) + "%"`. Below this, the 'Position and size' field has 'Y: 960+15*Index' and the 'Replication' field has 'transporters.size()'. A red box highlights the utilization percentages: '#1: 14.651%', '#2: 70.112%', and '#3: 65.531%'. A red arrow points from this box to the text object's formula.

- **How do you determine utilization of each conveyor if all are combined in one block?**
 - Many ways - one is to have a recurring statistics object that counts the number of objects currently on a conveyor divided by the max possible. There are also callbacks you can setup for each conveyor that can increment/decrement counters or other variables.
- **Can I build model logic as addressable? As in, attributes of an agent are related to specific targets or agents in other parts system.**
 - Yes, you can create custom agent types representing an agent and within that blueprint, embed attributes that are dependent on other parts of the model (at the same level or anything else inside its containing agent). An example of this can be seen in the "MoveByTransporter" model shown in this webinar.
- **Can the AGVs be configured to work based on a battery?**
 - Yes, you can define a custom agent type to represent the AGV and, with the help of an internal statechart (or alternatively a ResourcePool block), monitor and represent its battery state. This can then be working into the logic; for example, a known-intensive task can select the AGV with the highest battery level (set wherever you attempt to seize a resource).
 - See the built-in example "Digital Watch" for a very simple statechart-based model that incorporates the idea of a battery.
- **Is there an elegant way to put the capacity of a conveyor to 1?**
 - One way is to use a dedicated [Convey block](#) to a specific set of conveyors (one or more). You can then use the RestrictedArea [[Start/End](#)] blocks around this block and [Position on conveyor](#) as stop line for moving material items. There may be other ways though depending on how your specific model is setup.