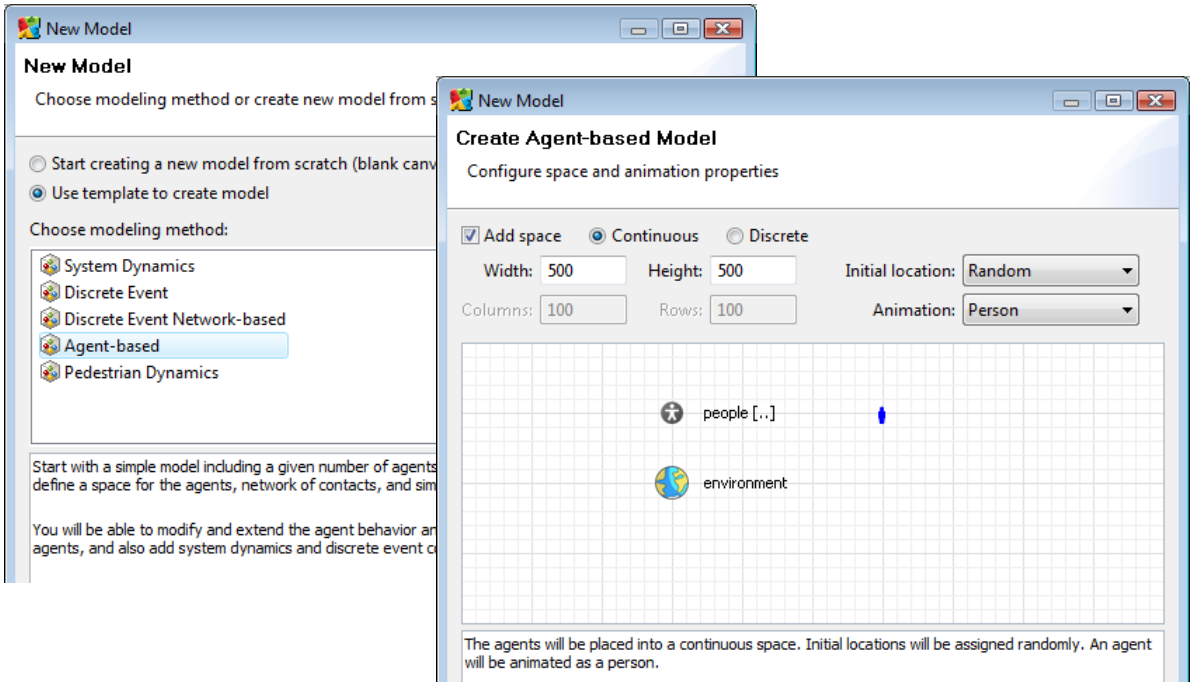
# AnyLogic 6.4 New Features





## Wizards for creating new models

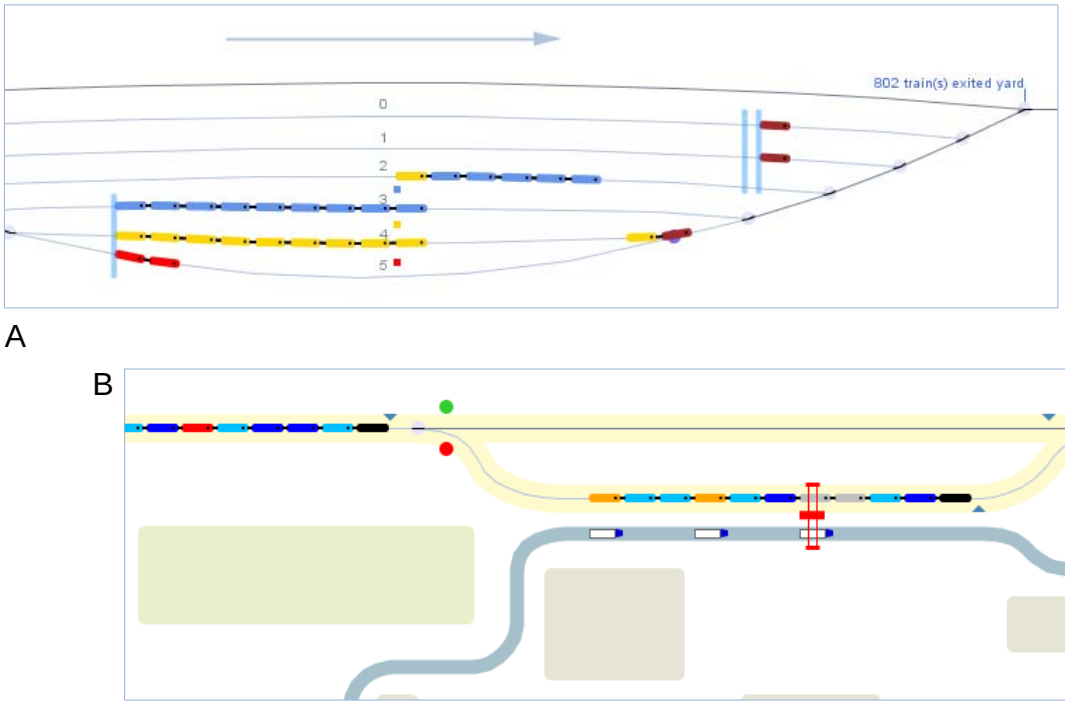
When creating a new AnyLogic model, you can now use one of AnyLogic's model templates. This will reduce the routine steps one usually makes when starting from scratch. The templates include system dynamics, discrete event (process-based), agent based, and pedestrian dynamics models. For each modeling method the New Model wizard will offer you a number of options, for example: usage of resources in discrete event models, or space and network type in agent based models. Wizards will also help novice users to understand which AnyLogic language elements are used in a particular modeling method.




AnyLogic New Model wizard: agent based modeling template

## The Rail Yard Library

The new Rail Yard Library for AnyLogic Professional allows you to efficiently model, simulate, and visualize rail yard operations of any complexity and scale. You can also naturally and easily combine the rail yard models with discrete event or agent based models of related transportation, loading and unloading, resource allocation, maintenance, business processes, etc. The Rail Yard Library produces detailed yet very high performance simulations, which is important when you use the optimizer to find the best yard management policies. Two new example models illustrate the use of the library: Classification Yard and Train Unloading.



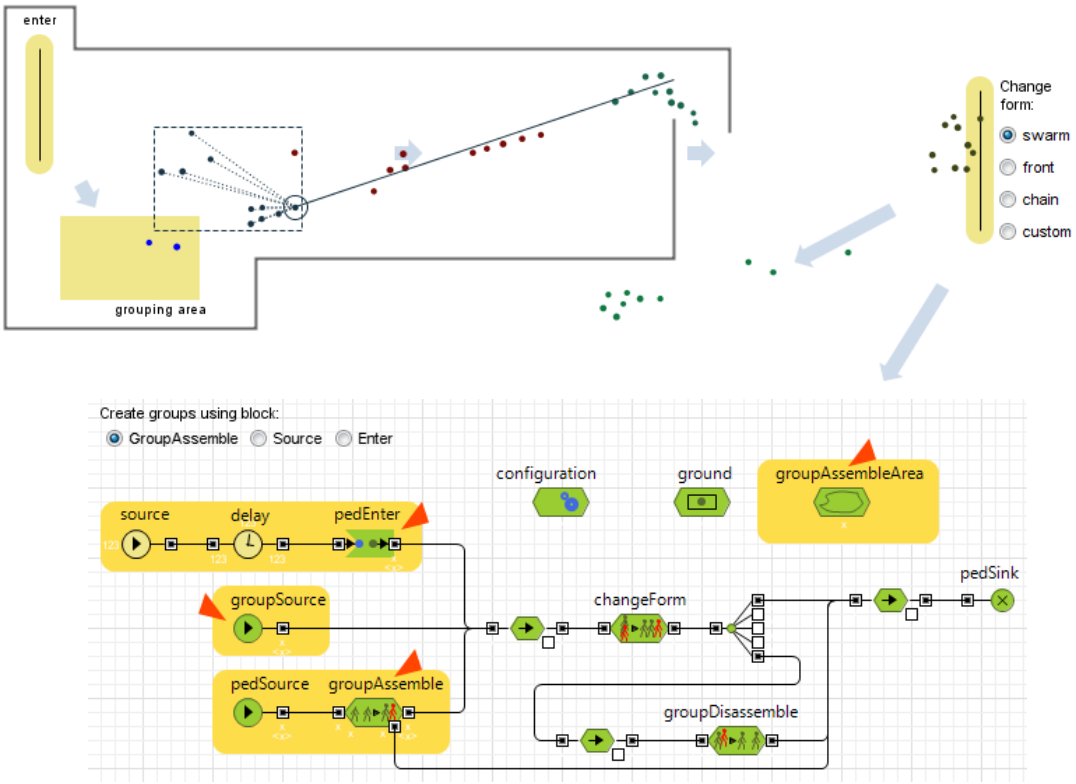

A

B

A: Classification Yard. B: Train unloading: Rail Yard component works with discrete event component

## Pedestrian Library improvements

AnyLogic Pedestrian Library (a part of AnyLogic Professional) has been significantly redesigned and new features have been added  including support for pedestrian group behavior. The running performance of models, especially ones with complex wall configurations, has been significantly improved. Other improvements include: better error indication and diagnostics, compatibility with the AnyLogic snapshot feature, ability to run multiple pedestrian applets in one browser, and bug fixes.



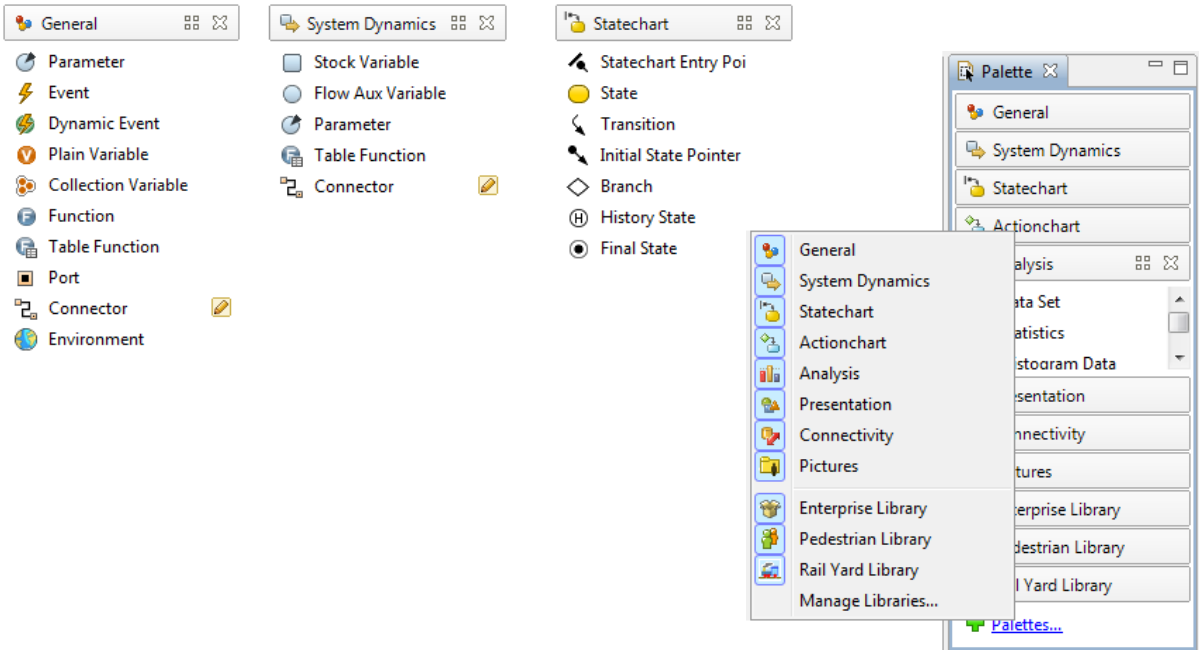

Pedestrian group behavior demo animation and the corresponding flowchart

## Libraries can be used in Advanced edition

Now libraries developed in AnyLogic Professional edition can be plugged in and used in AnyLogic Advanced (previously this could only be done in Professional). This makes packaged reusable model components available to a broader audience. For example, in a team of model developers a library developed by a Professional user can be shared by users of AnyLogic Advanced. Also, consulting companies that have in-house solutions and reuse them from one project to another can package the proprietary components (and thus hide its implementation) when delivering the model to the customer with Advanced license.

## Palette redesign

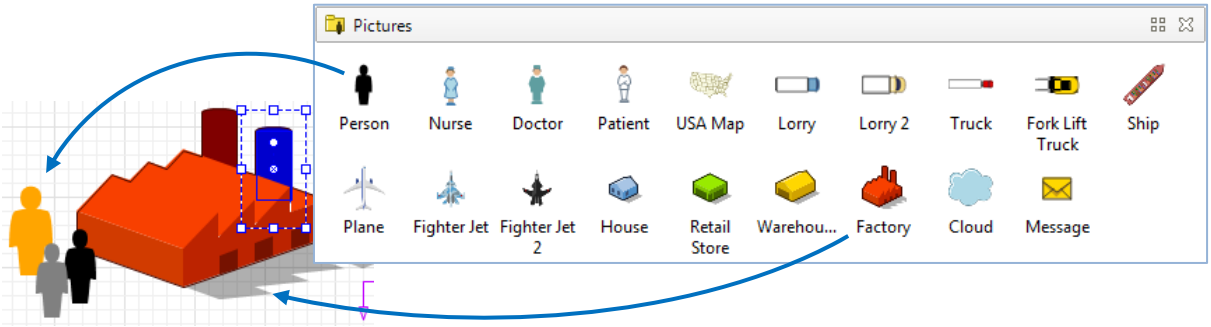
AnyLogic palettes have been reorganized to provide more structured access to the modeling language elements. The system dynamics objects and the statechart components are now located on two special palettes. You can also easily control the set of visible palettes.




The new palette structure and palette control menu

## Pictures palette

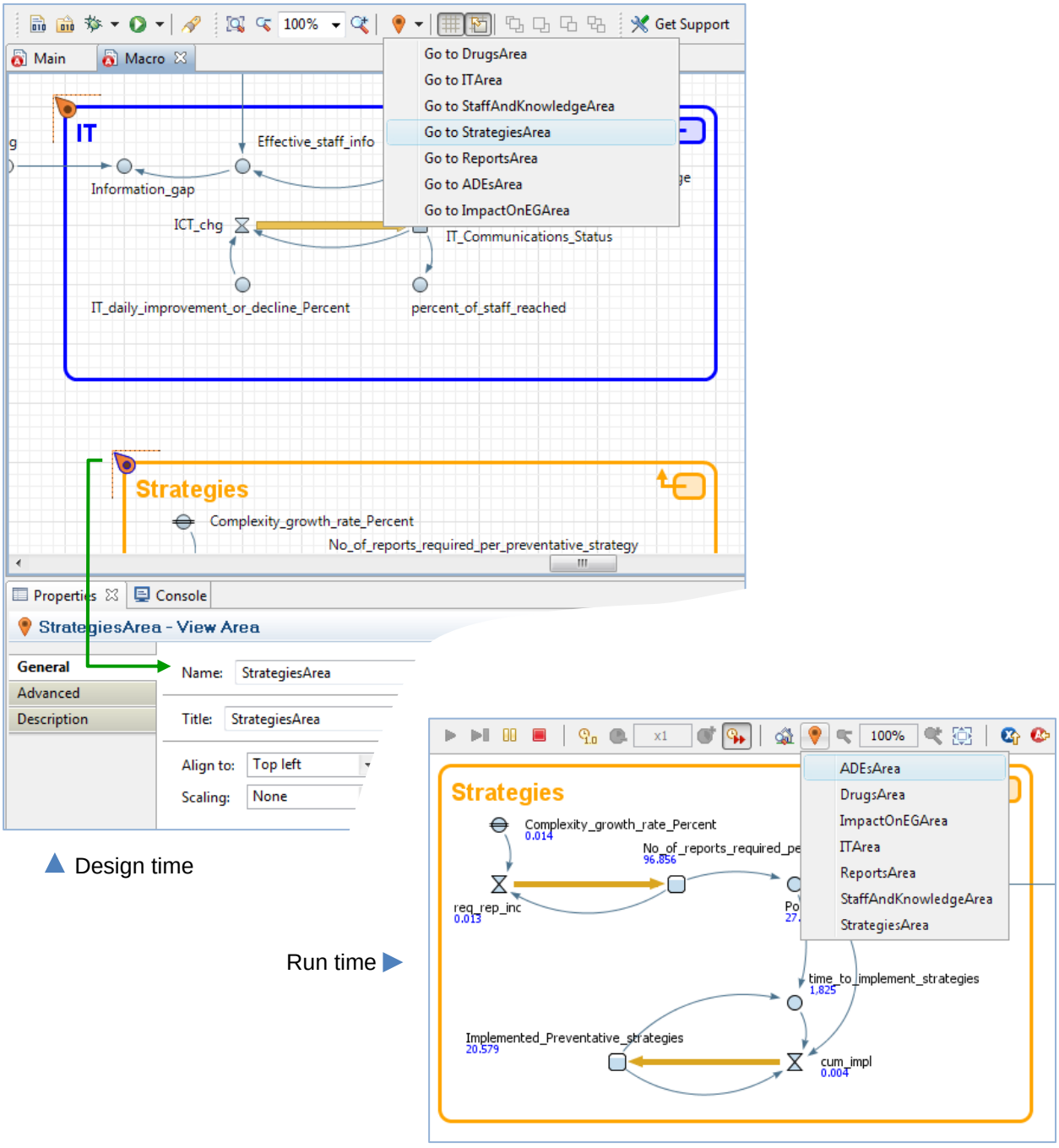
A new palette with frequently used pictures in AnyLogic scalable vector graphic format has been added. Now you do not have to draw a person, a car, or a house from scratch each time you need to add those elements to the model – you simply drag them from the Pictures palette and drop them on the canvas. The pictures are groups of AnyLogic standard shapes, and you can scale them, change colors, modify internals, ungroup, and even control them programmatically. The palette includes people, vehicles, airplanes, maps, houses, and industrial buildings.




The new Pictures palette

# View areas for better navigation in large diagrams

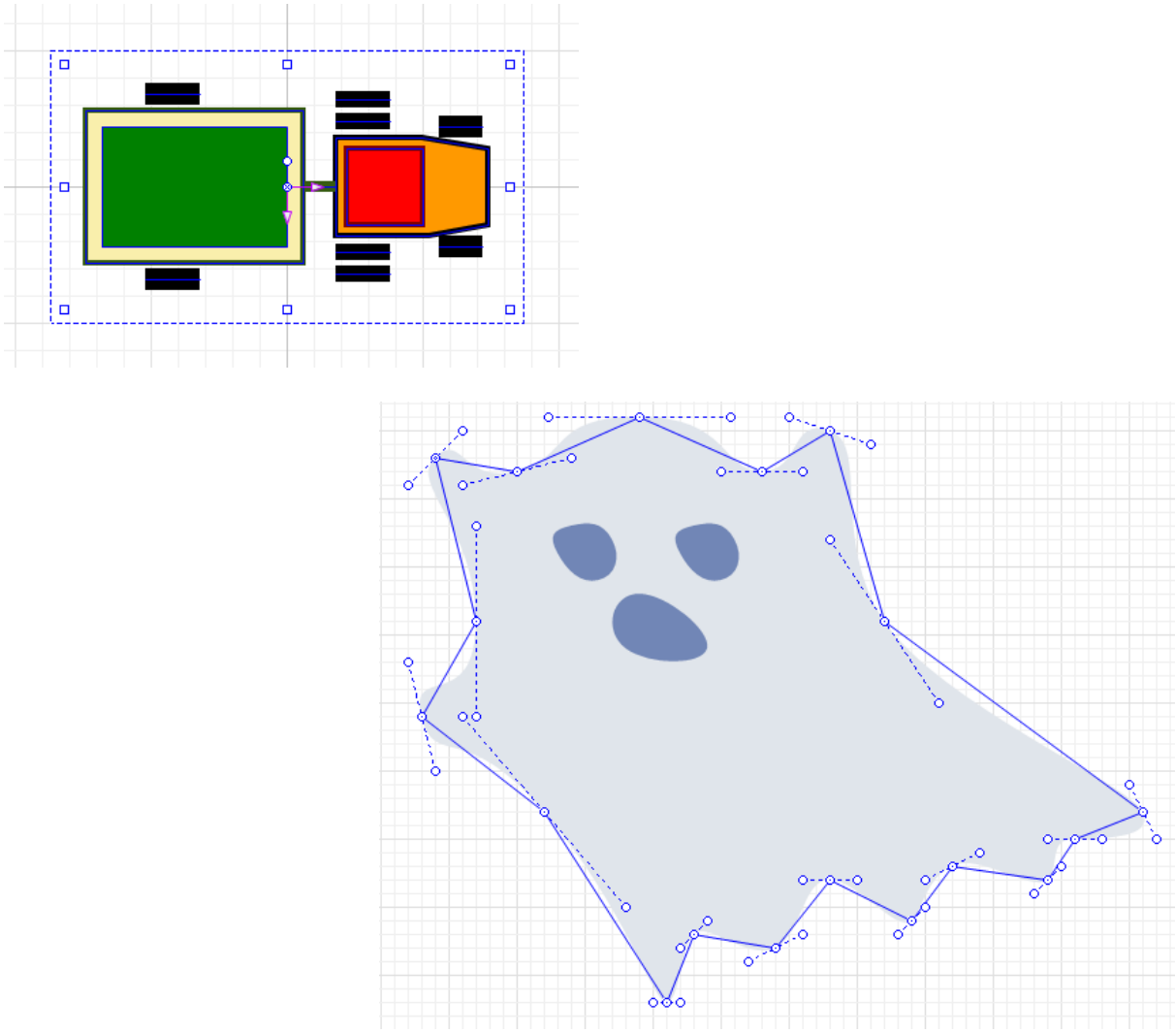
A new object “View Area” has been added to simplify navigation within large diagrams as well as within hierarchical models both in design time and run time. As long as behavior logic, animation, statistics, and control elements of an active object are located in a single 2D space, it makes a lot of sense to divide the canvas into several areas and be able to efficiently navigate between them. With the new AnyLogic View Area object you can markup the canvas and easily switch between its areas.




View Areas: markup the canvas for easier navigation

# Working with shape groups and other graphical editor improvements

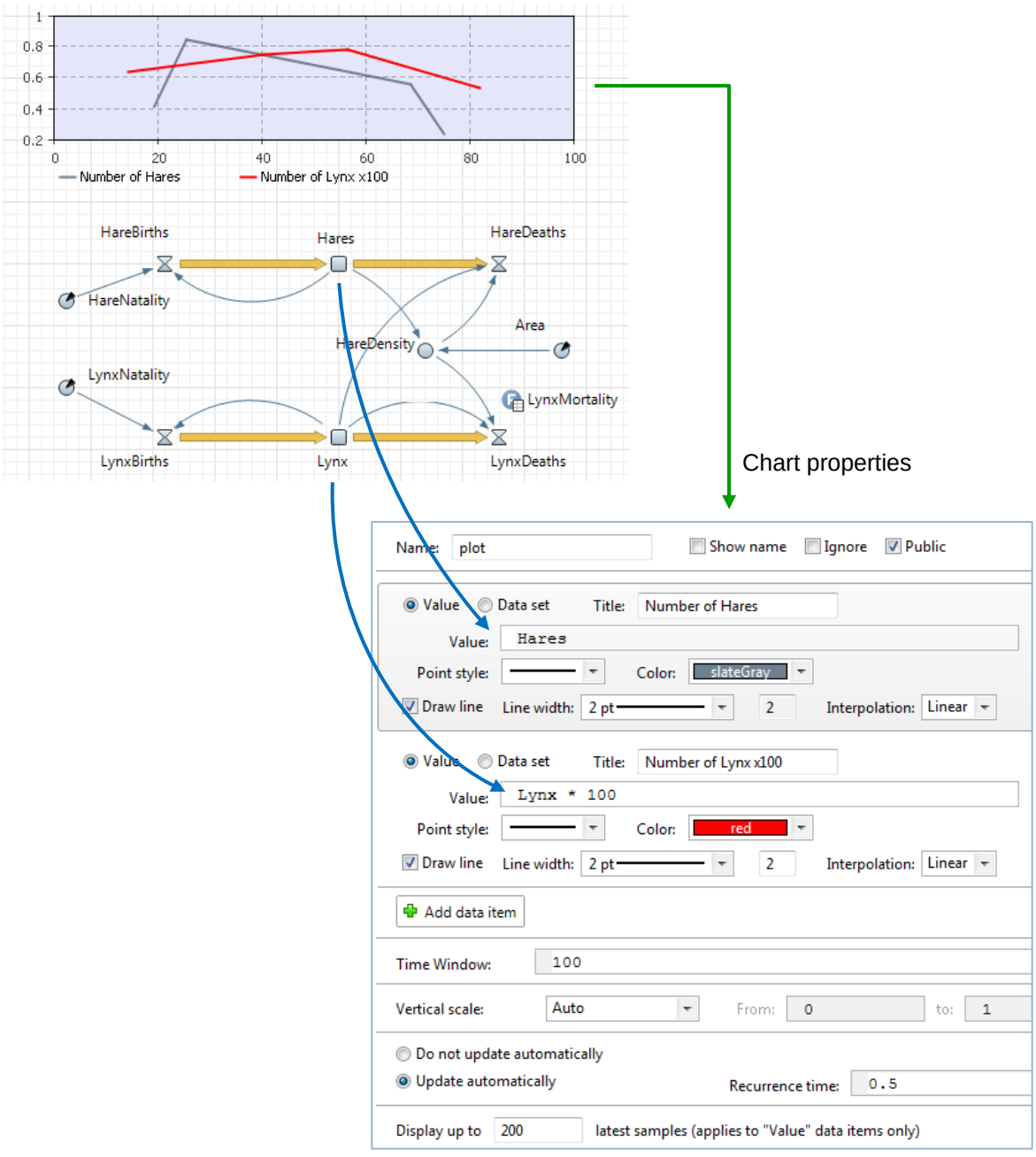
A group of shapes in the graphical editor now behaves as a single shape when selected. It is much easier now to move, resize, and rotate groups. To select an individual element in a group you should simply click on it while the group is selected. Other improvements in the graphical editor include the ability to edit control points of curves (for more accurate curve shape adjustment), ability to lock shapes to prevent them from being selected, and overall performance improvements.



Working with groups of shapes. Curve editing

# Easy way to plot variables and expressions

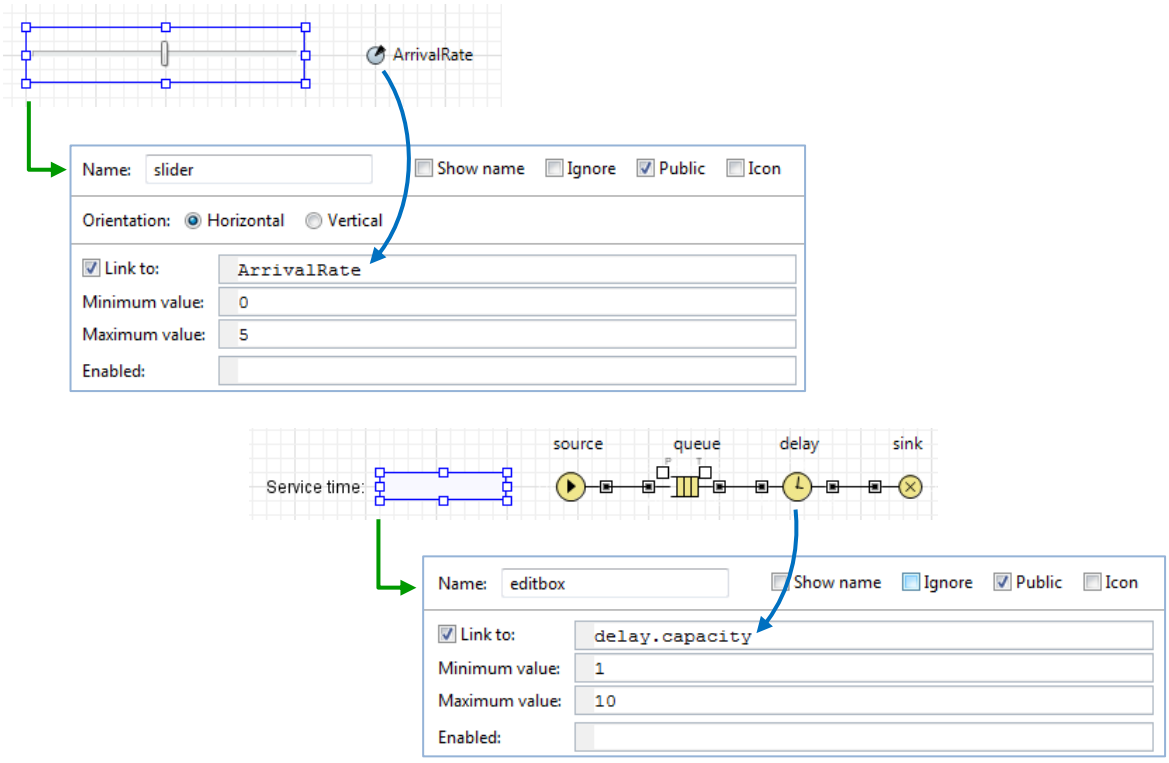
It is now a lot easier to plot variable and expression values in time charts, XY charts, time stack and time color charts. While previously one had to define a dataset as an intermediate element between a variable and a chart, now all you need to do is to specify variable or expression directly in the chart properties – the dataset holding the value history will automatically be created. The dataset size and update frequency is also defined in the chart properties.




Adding variables and expressions to charts is a lot easier now

# Linking controls to variables and parameters

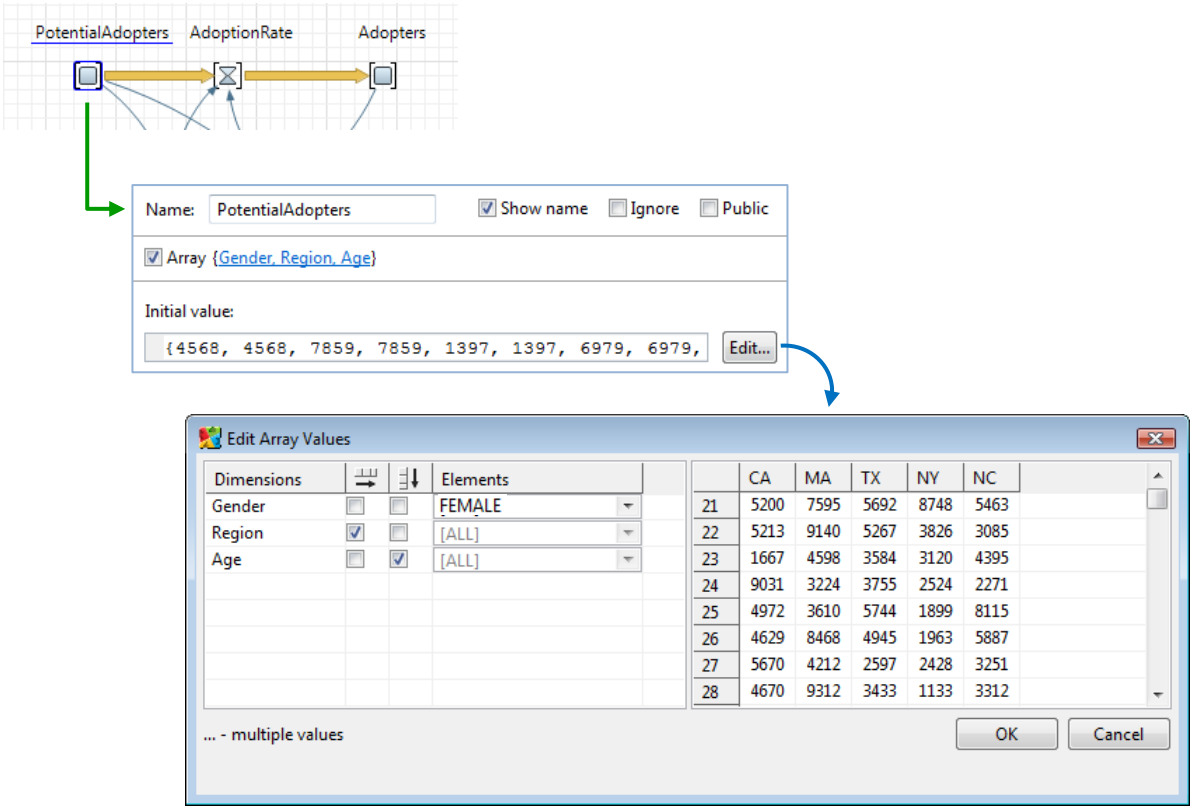
The frequent use case of when a slider, an edit box, a radio button, etc., is directly linked to a variable or a parameter is now explicitly supported by AnyLogic. You do not have to write the control element action code that would assign a new value to the variable – all you need to do is specify the variable in the Linked to field of the control. AnyLogic will then take care of the user input validation, value range check, and the type conversion. In the case of a parameter, its set() method will be called.




Linking a parameter to a slider. Linking an edit box to a parameter of an embedded object

# System dynamics array values editor. Array parameters

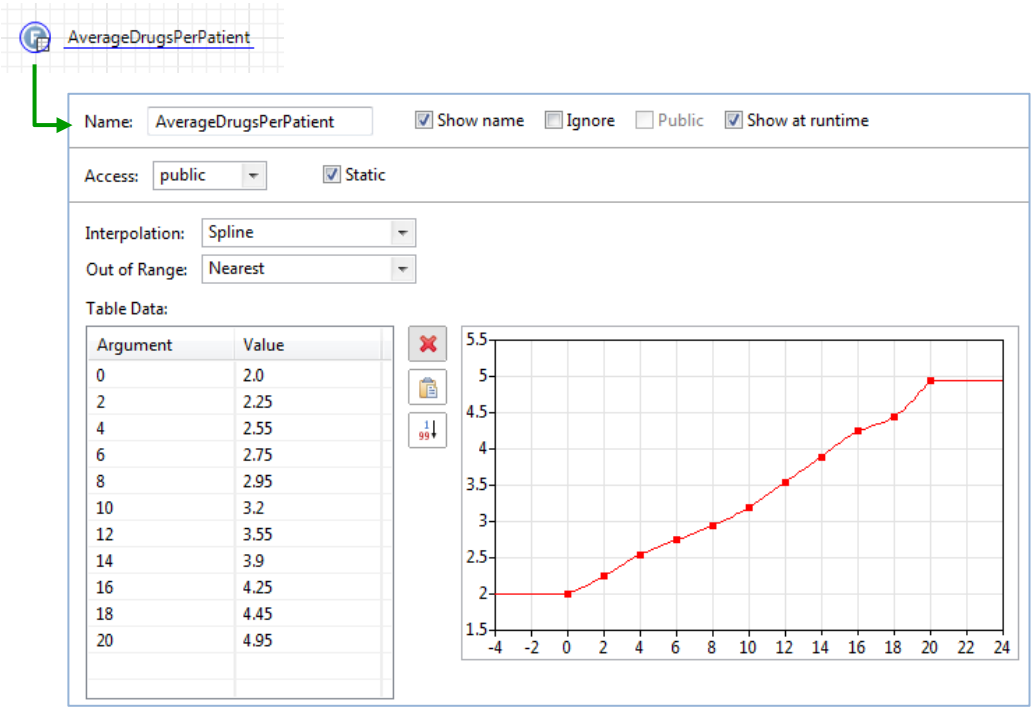
An easy-to-use editor has been added for system dynamics array values. The initial values of array-type stocks, constants, and parameters can now be edited in a table, and you can choose the dimensions for rows and columns. The textual notation for array values can still be used if desired. Another important improvement for system dynamics modelers is the ability to define array-type parameters the same way you define array stocks and flows.




Editing values of a 3-dimensional array

## Visual chart for table functions

You can now see the chart of the table function in its properties. The chart is synchronized with the argument-value table and shows the currently chosen interpolation and extrapolation options.




Properties of a table function with a chart showing inter- and extrapolation

## USB Dongle to share AnyLogic Professional license

Users of AnyLogic Professional edition can now share a license between multiple modelers with the help of USB dongle. The USB dongle is a small piece of hardware that contains an encrypted Anylogic activation key. When AnyLogic starts, it checks the dongle and, if it is plugged in, unlocks the application. Should you decide to use AnyLogic on a different computer within the same organization, you simply remove the dongle and plug it into another machine. This is a kind of floating license convenient for teams of modelers where AnyLogic is used by different people at different times. The Lean solution allows you to only pay for software you are using, not just installing.

AnyLogic USB dongle

## Vote for new features directly from AnyLogic

The users will now be able to send us the feedback and to vote for most desirable new features and improvements in future AnyLogic versions directly from the modeling environment. The feature list for voting will be composed on the basis of the users' feedback and XJ Technologies team plans. The voting results will be published on our website. Now AnyLogic users will be better involved in the development process.