Distribution Extensions

A Distributed Property is a property of a Block or a Value Type used to apply a probability distribution to the values of the property. Specific distributions can be defined by applying a Subclass of the «DistributedProperty» stereotype to a property according to OMG SysML 1.4, E.7 Distribution Extensions.

To set a distributed property

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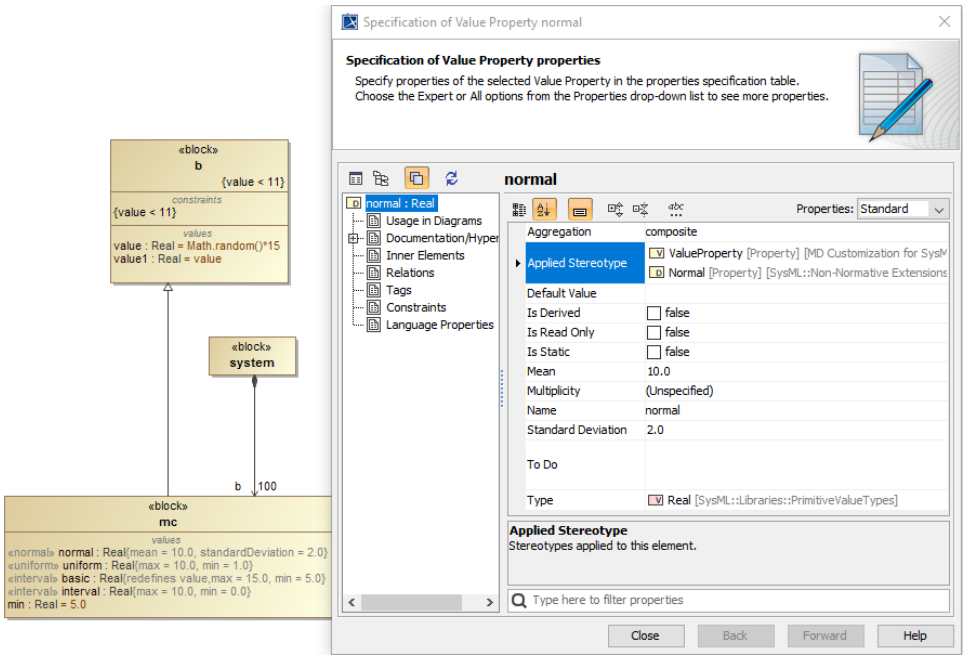
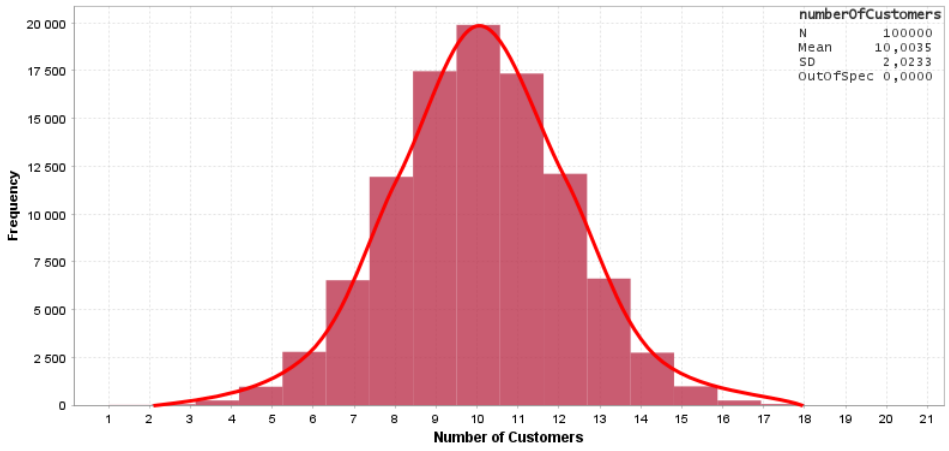
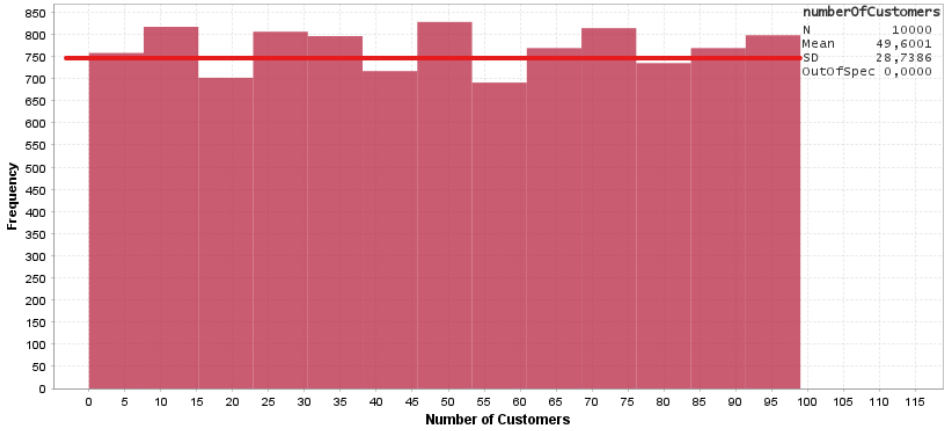
1. Select a property and double-click it to open the Specification window.
2. Select **Applied Stereotype** and click [...] to include a distribution property as needed.
3. Specify the required properties, e.g. *Mean* and *Standard Deviation (SD)* for «normal» or **Min** and **Max** for other distributed properties as shown in the figure as follows



4. Click **Close**. The distributed property will be applied.
5. Run the simulation model. Depending on the applied stereotype, the distributed properties will be initialized with a random value, e.g. normal distribution, constant distribution between min & max value. You can review sampling results by running the model with association end multiplicity, e.g. 100, and keep the result with «CSVExport» for analysis.
6. Results of the distributed property «normal» (with 100000 samples) with a Mean value of 10 and a Standard Deviation value of 2.



7. You can apply a «uniform» distributed property stereotype with Min and Max properties (e.g., 0 and 100) to plot a uniform distribution chart.



Related pages

- Supported SysML elements
- Requirements traceability from the Variables pane