CrySL Visual Order Editor – User Manual (Sirius/Xtext Version)

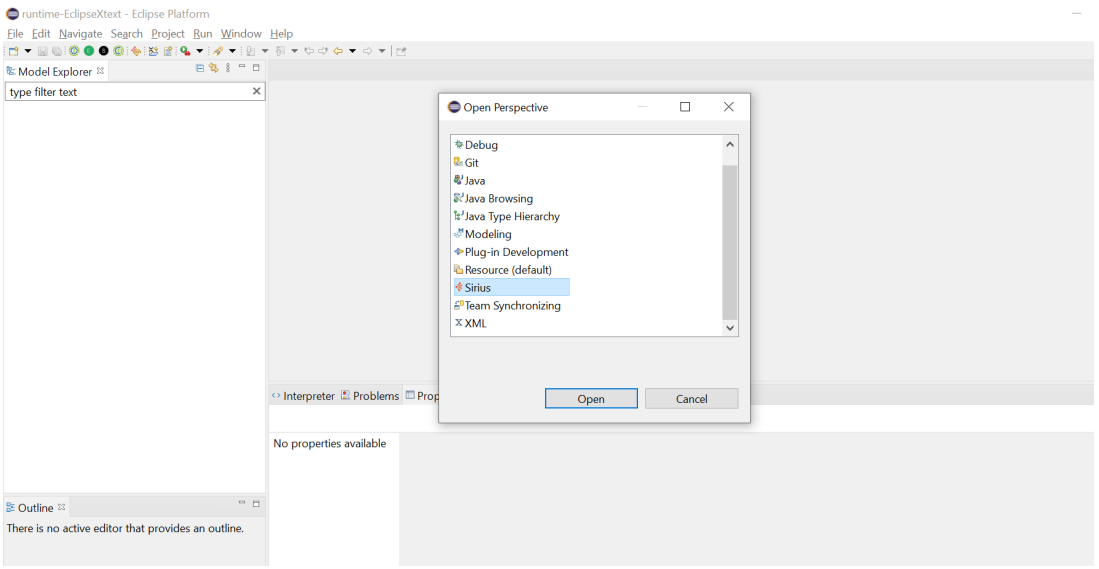
The Visual Order Editor displays the usage pattern of the class as defined in the Order expression of its CrySL rule as a state machine.

Set up

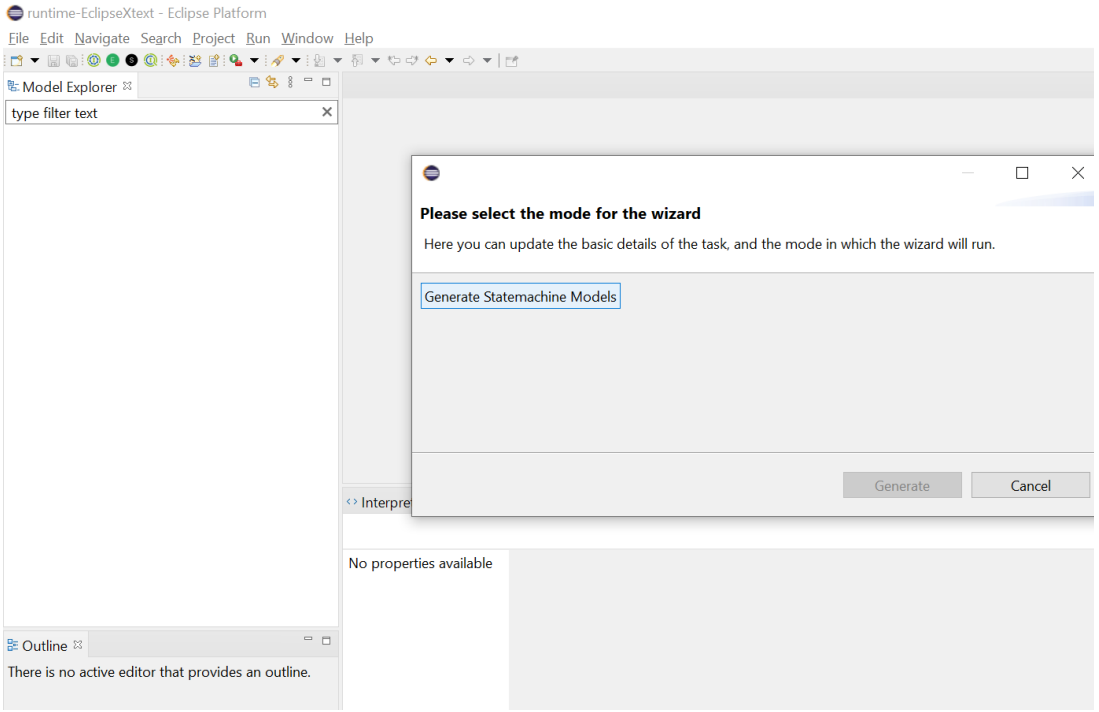
- Clone the CogniCrypt repository.
- Clone the Crypto-API-Rules repository (https://github.com/CROSSINGTUD/Crypto-API-Rules) to a folder named "git" in your home directory. This is required since the class StaxWriter which writes the configuration file needs to access this different repository and therefore accesses the paths relative to home directory by e.g. "<home-dir>\\git\\Crypto-API-Rules\\JavaCryptographicArchitecture\\src".
- Install Sirius (http://www.eclipse.org/sirius) from the Eclipse Marketplace.

Create a diagram

- Launch a new runtime from your Eclipse. Within the runtime environment, select the Sirius perspective. This opens a model explorer in the left corner.

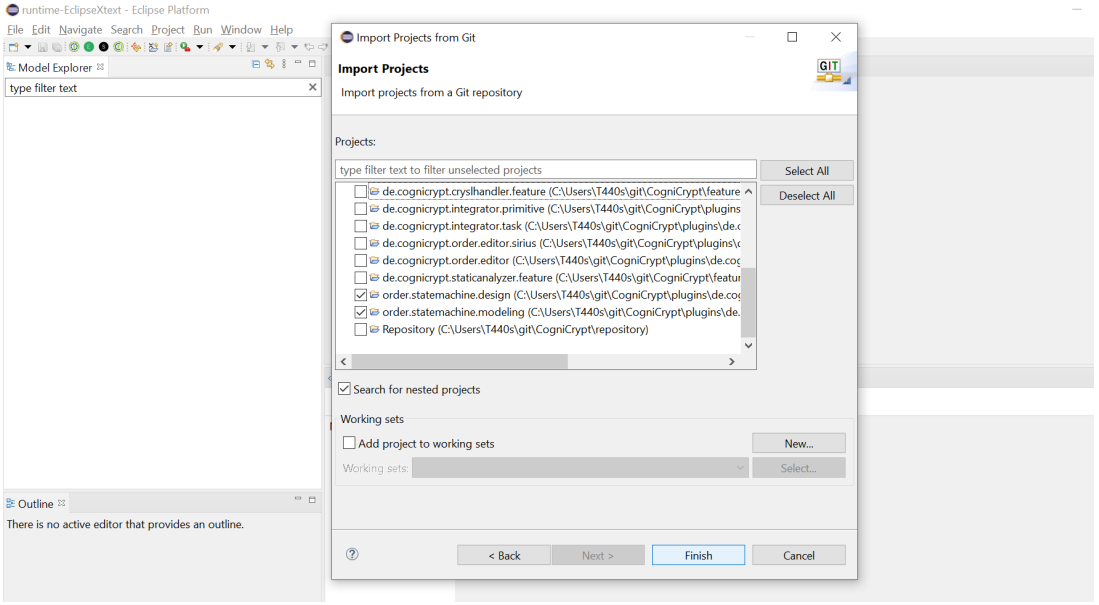


- Click on the black plugin icon "S" in the upper left corner, next to the other buttons for TaskIntegrator and CogniCrypt, then click on the button "Generate Statemachine Models", which is currently a simple button but should later be replaced by a single CrySL rule selection.

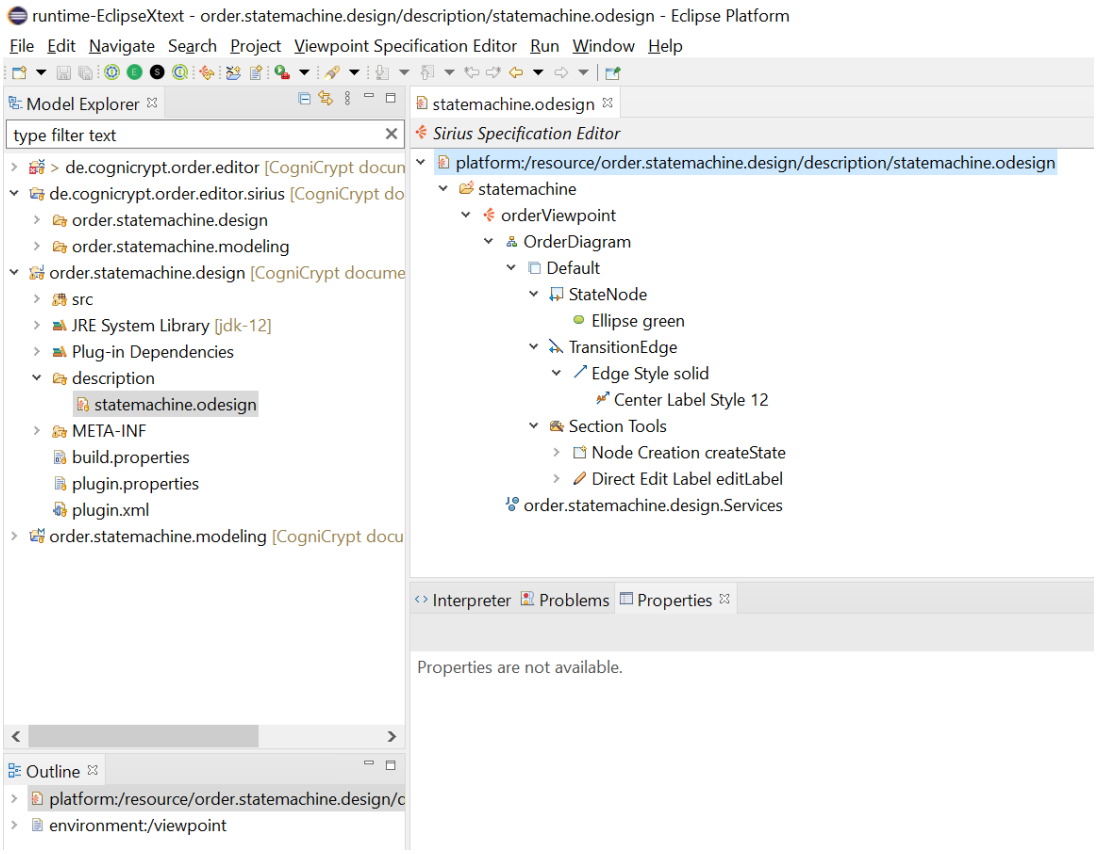


This button triggers the generation of the statemachine model resources into the output folder, i.e., "de.cognicrypt.order.editor\output".

- Import the project into the runtime environment. Make sure to only add the inner projects, otherwise the projects might have referencing issues.

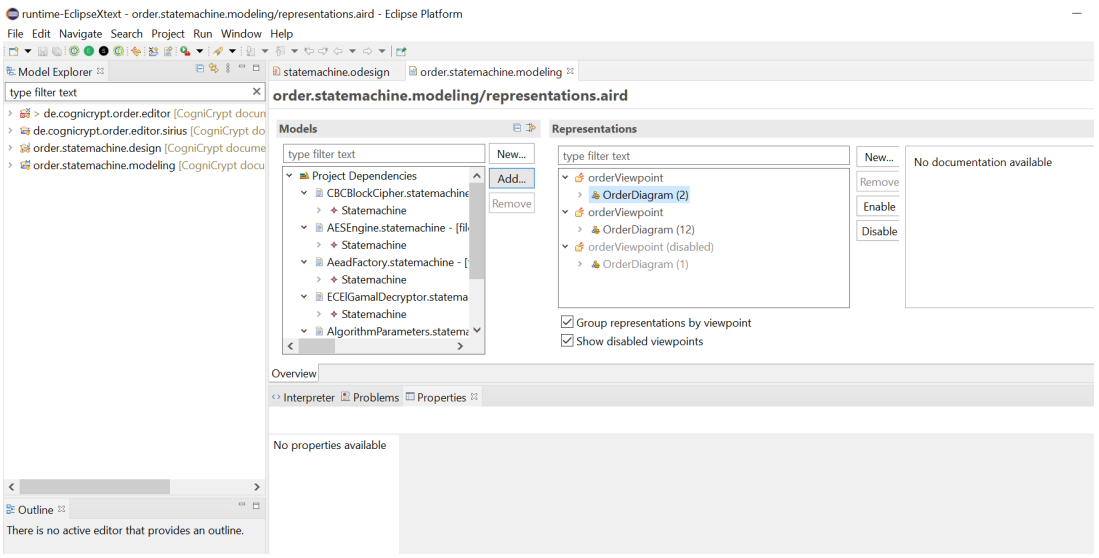


Open the folder "CogniCrypt\plugins\de.cognicrypt.order.editor\sirius", which contains the Sirius specific project files. The project folder "~\CogniCrypt\plugins\de.cognicrypt.order.editor\sirius\my.project.design" is the Viewpoint Specification Project containing the .odesign file (definition of the modeling workbench).



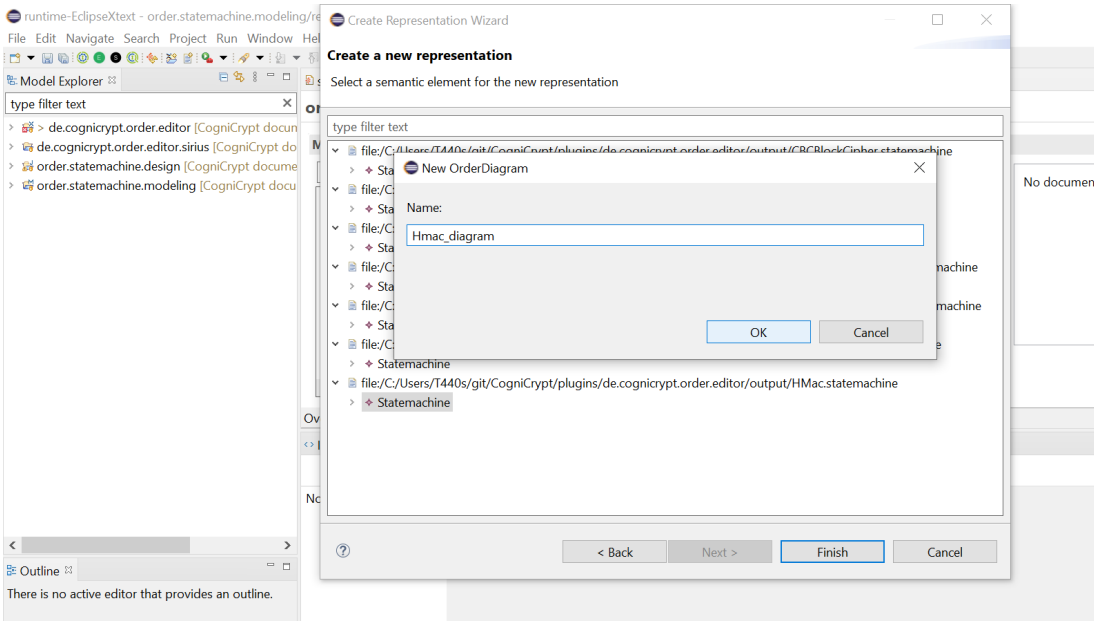
The other project folder "~\CogniCrypt\plugins\de.cognicrypt.order.editor\sirius\my.project.order.diagram.modeling" is the Modeling project containing the graphical representations created with Sirius, saved in a file representations.aird.

- To open a diagram, open the file representations.aird from the modeling project. In the left corner of the new window, named "Models", click on Add > Browse File System to select a statemachine model from the plugin-relative output folder. The model will appear in the Models window. Now double click “orderDiagram” below "orderViewpoint" in the Representations window on the right.

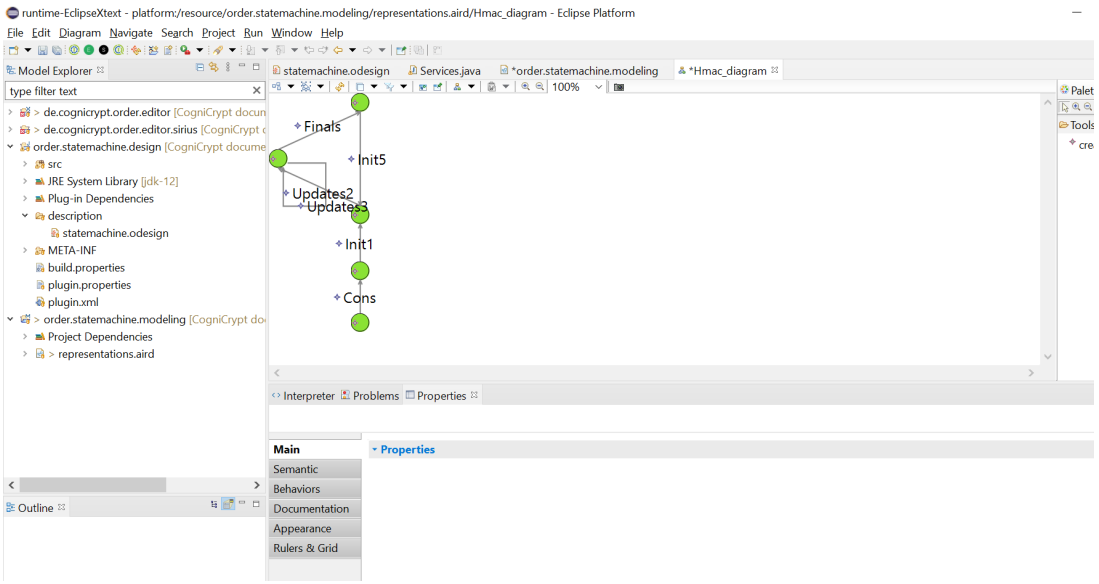


This opens a new window "Create a new representation" which allows to select a

semantic element for a new representation. Here, you can select the model you just added, click on its "Statemachine" model identifier and click on Finish. You can optionally type a custom name for the diagram.



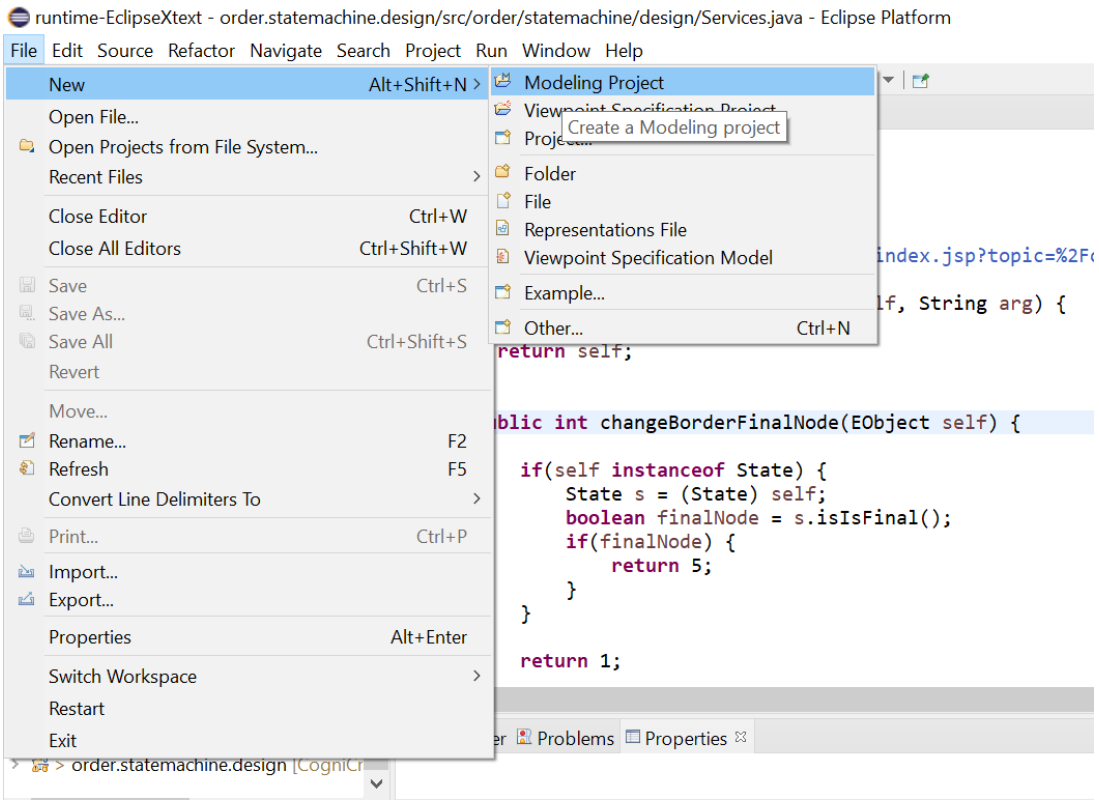
The representation is opened now and you can play around with the Sirius model editor features to enhance the representation.

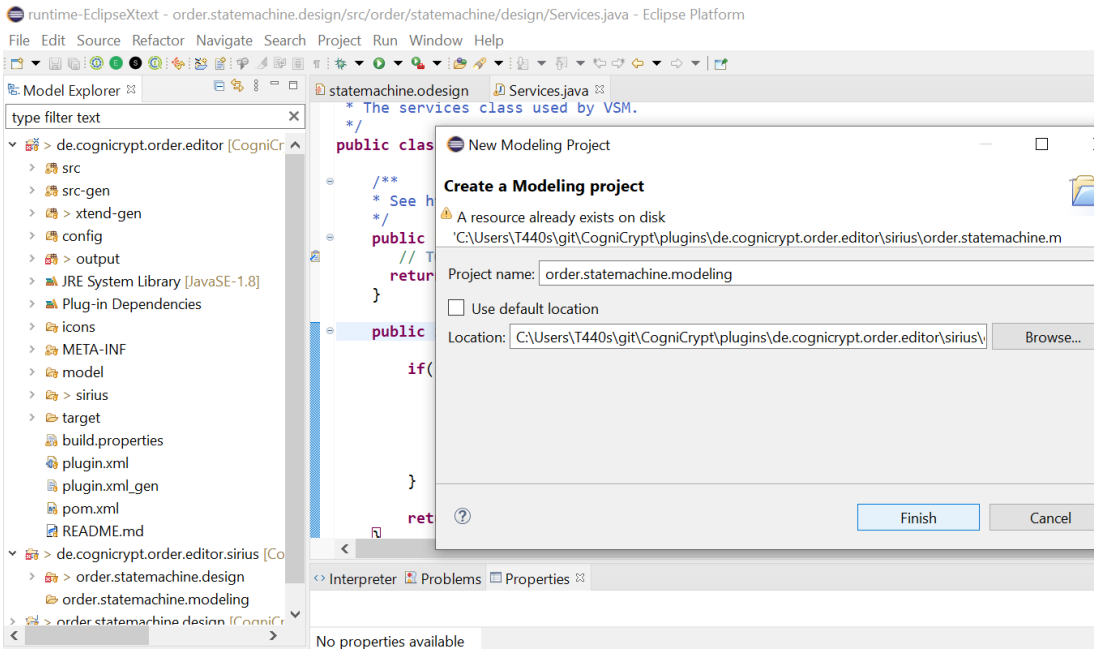


- For more information on Sirius, have a look at their tutorial (https://wiki.eclipse.org/Sirius/Tutorials/StarterTutorial).

Troubleshooting

- If anything is not working as expected, e.g. there are problems with adding a statemachine model in the representations view or the diagrams do not display the edges, this can be circumvented by deleting the current modeling project and creating a new one:





This Modeling project then contains a new representations.aird file and the steps above can be repeated.

Missing Features

- state names
- more editing tools (as described in the general manual of the entire Visual Editor, e.g. reconnect edge tool, delete element tool, style customization)

- transforming graphical edit into crysl rule edit

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