Smac Tool

User guide

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Guide

Create New Project

Once the plugins are installed, a new project must be created to host the Smart contract model to be defined. To do this, you must click on the "*New*" tab and select the "*Project*" option:
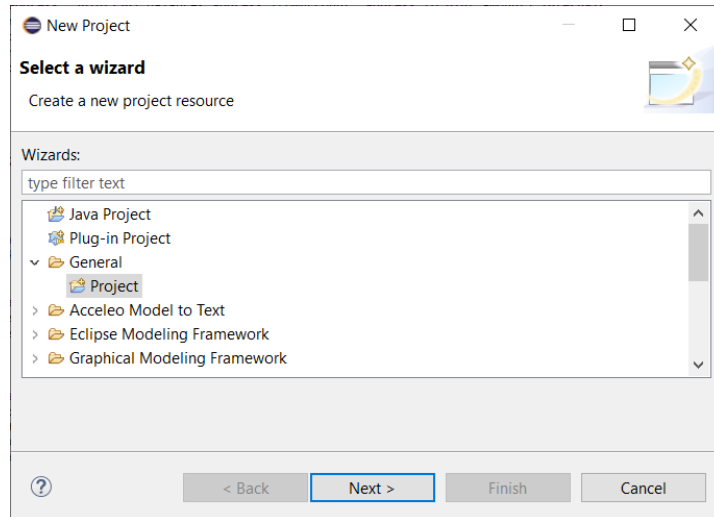

Image 1: You can choose a General Project or Xtext Project

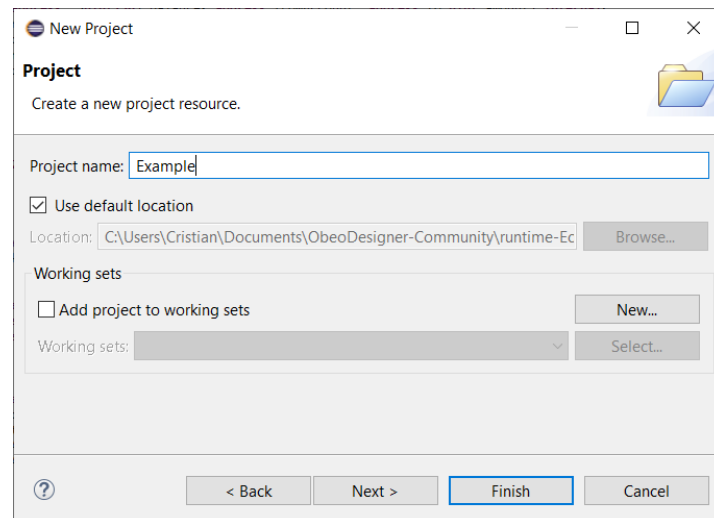Next, it will be necessary to name the Project:

Image 2: Choose a name for your project.

Once entered, click on the "*Finish*" button for the IDE to create a project with the chosen name.

Create Smac Model

On the previously created project, you must right click on it and select the "New"> "Other" option to display the Eclipse IDE wizard in order to select the SmaC model to be able to define a smart contract
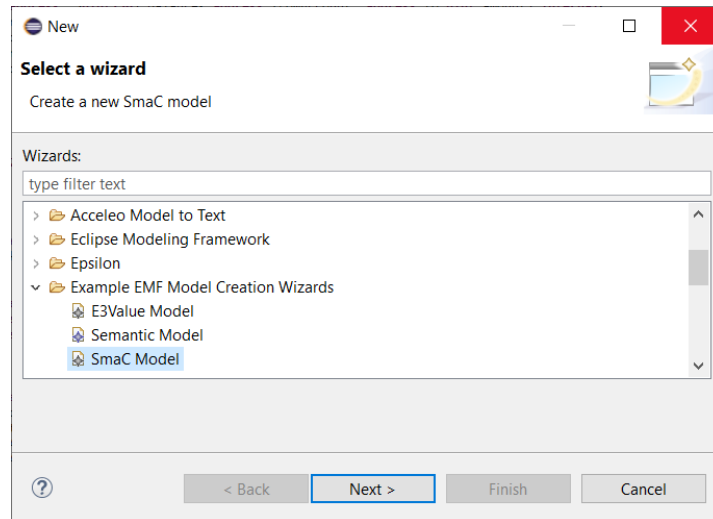

Image 3: Click over SmaC Model

Once selected, you must click on the "Next" button and proceed to give a name to the smart contract model. It is important not to change the extension, which should be ".smac".
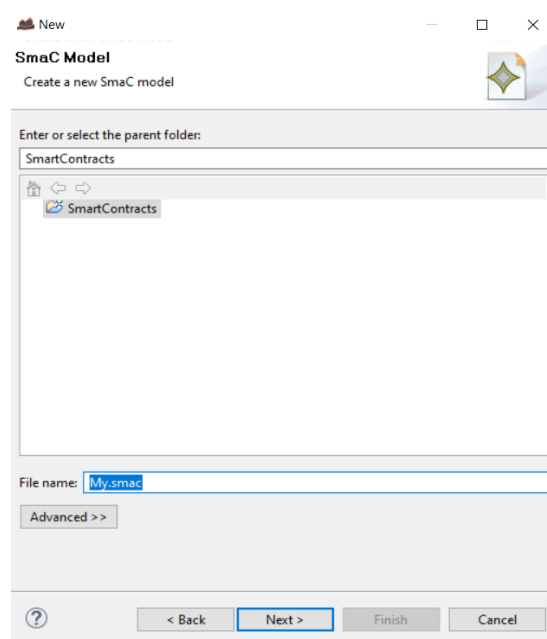

Image 4: Choose a name for your SmaC Model

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Finally, you must indicate the root of the model to be represented. In this case, the File option must be selected.
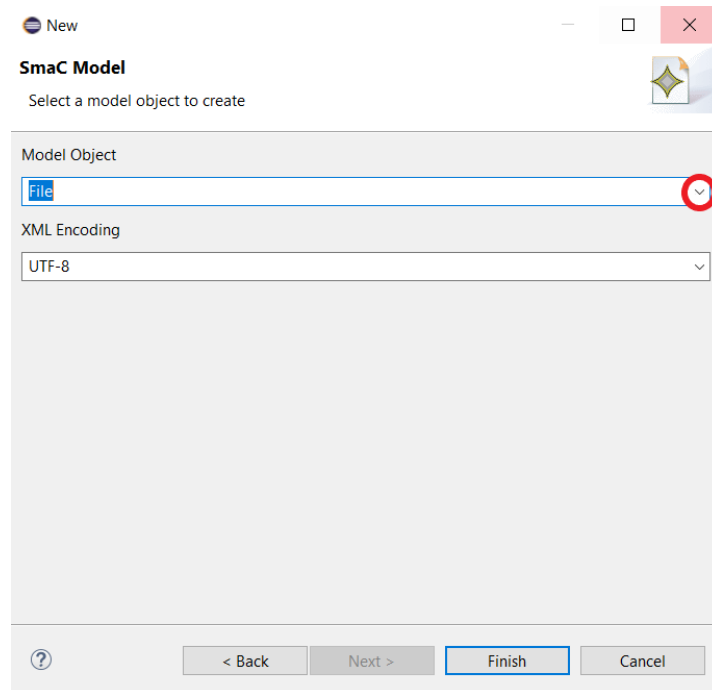

Image 5: Select "File" as the root of the Smac Model that you are going to define

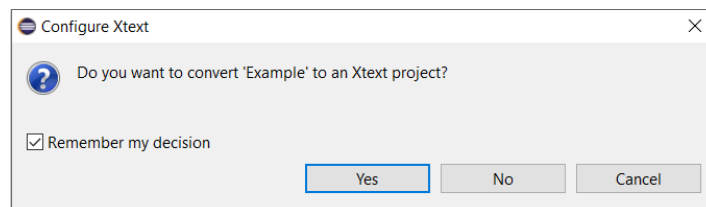If a general project was selected in step 1, the following message is likely to appear:

Image 6: Convert the Project to Xtext Project

Skip it by clicking on "Yes".

It is necessary to open the file using the SmaC Editor developed to enjoy the functionality (Highlighting syntax, autocomplete code, quickfixes ...) as follows:
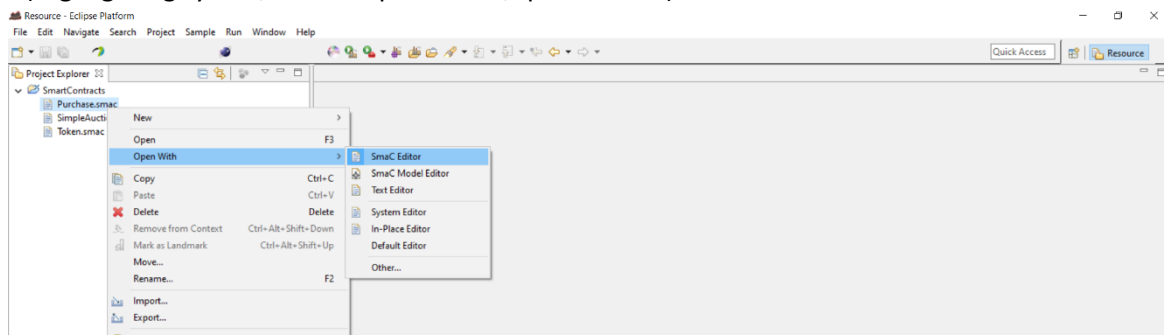

Image 7: Open file .smac with SmaC Editor

Tips to create Smac Models

Language Patterns:
1. Define compiler's version **(Obligatory).**
2. Define libraries.
3. Define import(s).
4. Define interface(s).
5. Define global variable(s).
6. Define contracts **(At least 1).**
7. Define local variable(s).
8. Define contract's constructor(s).
9. Define contract's modifier(s).
10. Define contract's event(s).
11. Define contract's function(s).

When defining a contract using the tool, it proposes code autocomplete suggestions using the CTRL + SPACE key combination

Language demands a gas restriction within the loops.

Generate EMF Models from Smac models

Next, we will proceed to explain the procedure to generate emf models from the specifications of smart contracts developed from the SmaC DSL. First, the "clean" option must be selected in the Eclipse Project tab:
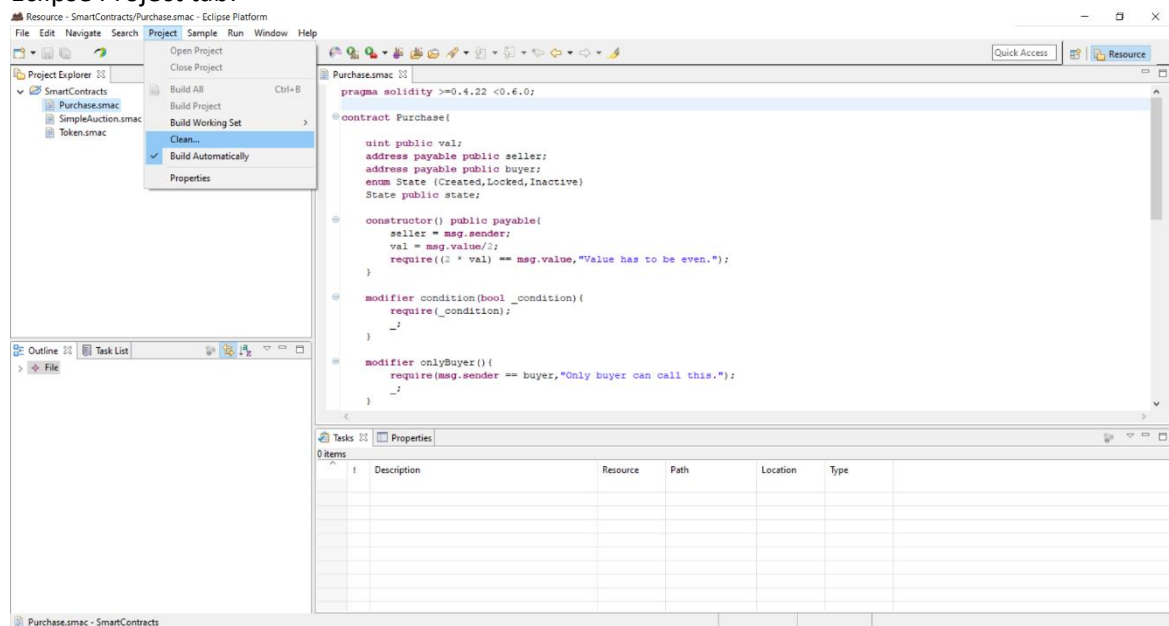

Image 8: Select option "Clean"

Now we must proceed the project where our models with extension .smac are located:
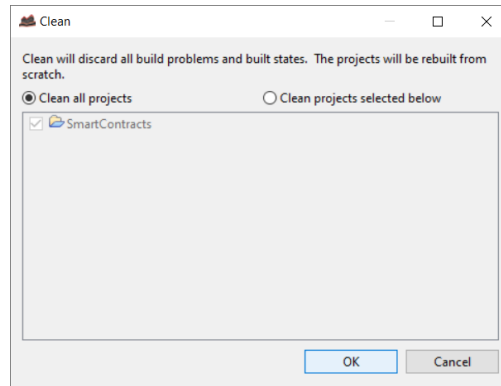
Image 9: Select Project

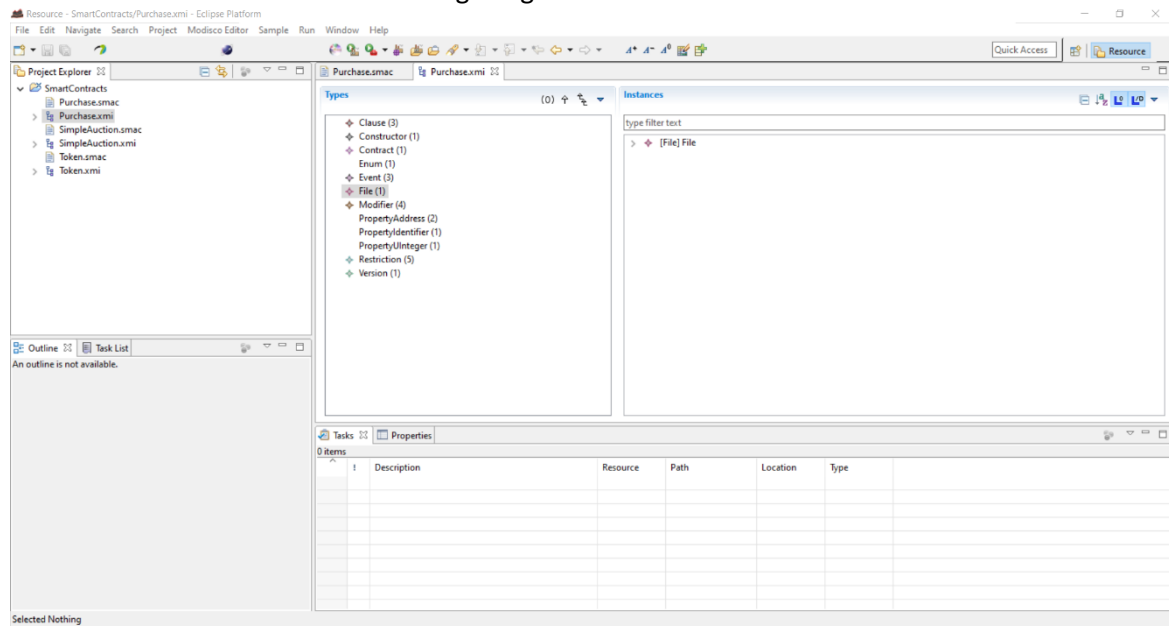Once the ok button is pressed, the IDE will generate the EMF models corresponding to the smac models as can be seen in the following image:

Image 10: Generate EMF Models from Smac Models