

SIAM

Situation-Adaptive Multimodal Dialogue Platform

Version 1.4.0

*Extending a SiAM application with
custom models*

SiAM-dp uses a model based approach based on EMF for describing nearly everything: The world knowledge, rules for grammars and mappings, input and output interfaces and communicative functions. It is easily possible to extend the existing models with custom concepts by creating your own EMF models and derive them from the appropriate concepts of the core platform. For instance, new knowledge entities must be derived from *base:Entity*, an IO interface extends the concepts *io:InputRepresentation* or *io:OutputRepresentation*. Once defined and added to the application, the custom concepts can be used in every SiAM-dp resource specification.

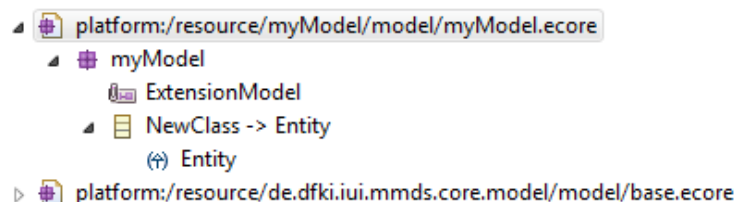
It is very helpful to acquire some basic understanding about creating EMF models and generating Java code from these models. <http://www.vogella.com/tutorials/EclipseEMF/article.html> or <http://eclipsesource.com/blogs/tutorials/emf-tutorial/> are good entry points. However, some of the described processes on this page aren't up-to-date with the newest Eclipse versions anymore. Here we present a standard procedure.

1. Create a modeling project and a new model

First you have to create a new Ecore modeling project in your Eclipse workspace. Select *File* → *New* → *Other* and choose *Ecore Modeling Project* in the *Eclipse Modeling Framework* folder. Follow the project creation wizard and specify a name for the new model project. After finishing the wizard Eclipse automatically switches to the modeling perspective. You can use a graphical editor or a treeview editor to generate the model. We will use the latter, which is opened by double-clicking on the newly generated ecore file. First we have to register the model as a SiAM model extension. For this add a new *EAnnotation* child to the model package. The source property of the annotation must be set to *http://de.dfki.iui.mmds/ExtensionModel*.

Now create a new EClass with name *NewClass*. Next, load the model resource of the base model. If the SiAM-dp SDK projects are included in the workspace: Right click somewhere in the editor → select *Load Resource...* → *Browse Workspace...* and select the *base.ecore* model in the project *de.dfki.iui.mmds.core.model*. Otherwise use: *Browse Registered Packages...* and search for *http://www.dfki.de/iui/mmds/core/model/base* and click on the *Ok* button. Now the base model is known to your actual ecore file and you can set the super type of your new class to *Entity*.

The editor should now look like this:



2. Generate model code

- a) In a next step you have to open the *<modelName>.genmodel* file, which has also been generated by the modeling project wizard. The *genmodel* will show an error with regard to loading the *io.ecore* model. For now, don't worry about this and click on the *Generator* tab on the lower left side of the view. In the *genmodel* editor, unfold *MyModel* and you will see your model and the base model that you are referencing on. A first step is to specify a reference to the *genmodel* files of the SiAM-dp core models. Right-Click on the *genmodel* file → *Reload...* → *Next* → (this might

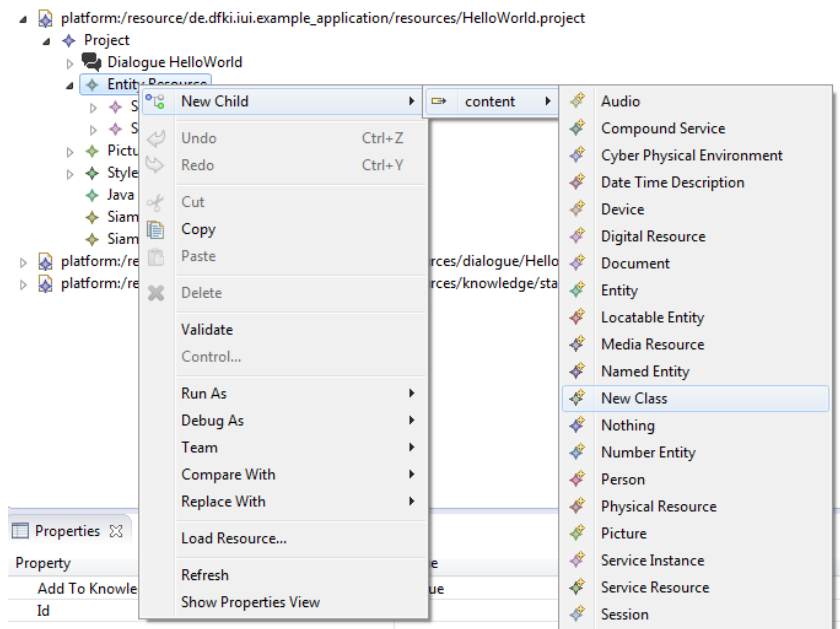
show an error) click OK → Next. In the next screen deselect *base* from the *root packages* table and select *Siam* and all of its children in the *Referenced generator models* table. Then click *Finish*.

- b) Now you can generate the Java model code and Edit code for your model: Right click on your package in the genmodel editor and select *Generate Model Code* as well as *Generate Edit Code*. The POJO classes for the model are now located in the already existing model project. The item providers for the Eclipse editors are located in a new project with the ending *.edit*.

3. Use the new model in your SiAM-dp application

In order to use your custom model in the editors of the actual running workbench you have to add it to the *Run configurations* for the Dialogue Designer. Click on *Run* → *Run Configurations* → select the *Dialogue Designer* under Eclipse Applications → click on the *Plug-ins* tab → under *Workspace* select the new *myModel* and the *myModel.edit* → Apply → Run. This will open the SiAM-dp Model Editor.

Your new class is now available in every resource, where subclasses of *Entity* are a valid content. For instance, you can add a new “New Class” entity as child of the Entity Resources.



4. Changing the model

Every time you make changes to your model you will have to repeat the step b) in the section *Generate model code*. If you want to derive from concepts in other SiAM model packages, e.g. from *InputRepresentation* or *OutputRepresentation* in the *io.ecore* file, you first have to follow the step a) in the section *Generate model code* and load the additional models from the model registry. Don't forget to reload the genmodel-file.