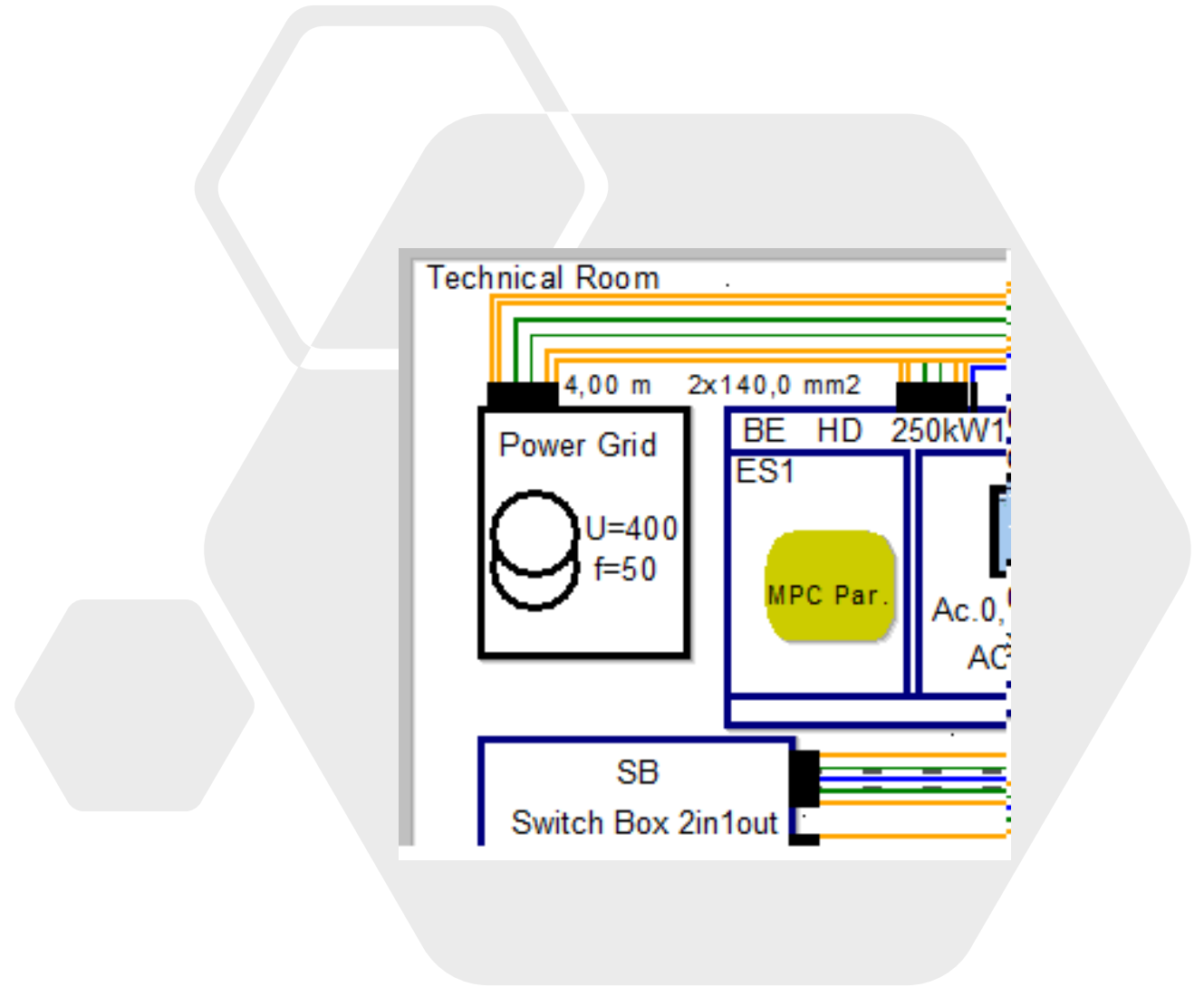


EVT Modeler

DI Martin Paczona

09.01.2022



Content

- Introduction
- Tool Installation
- Modeling Process
- User Interface
- Model Hierarchy
- Testbed Model
- Circuit Plan Model
- Software Configuration Model
- Constraint Check
- Queries
- Generator / Transformations
- Import / Export of Models and Template Models
- Model Views
- Contact / Links

Introduction

The **EVT Modeler** (EVTM) is a modeling tool for electric vehicle testbeds.

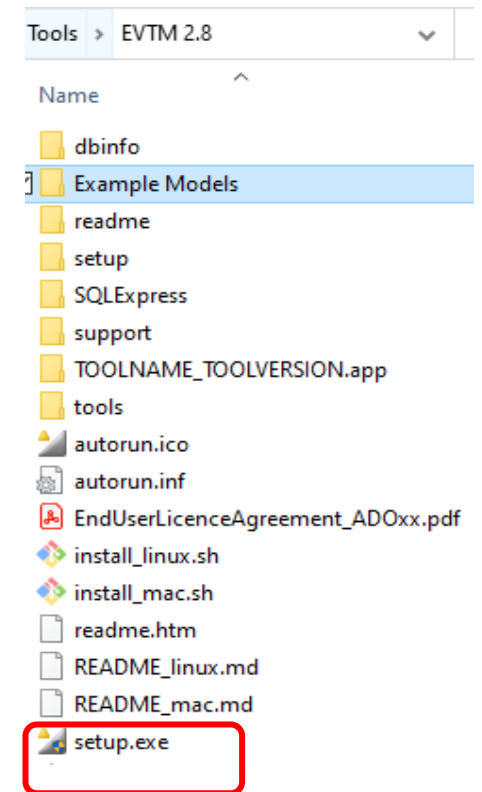
It allows to efficient describe testbeds and includes automatic checking and generator capabilities which boost the testbed development across the whole product life cycle.

Tool Installation

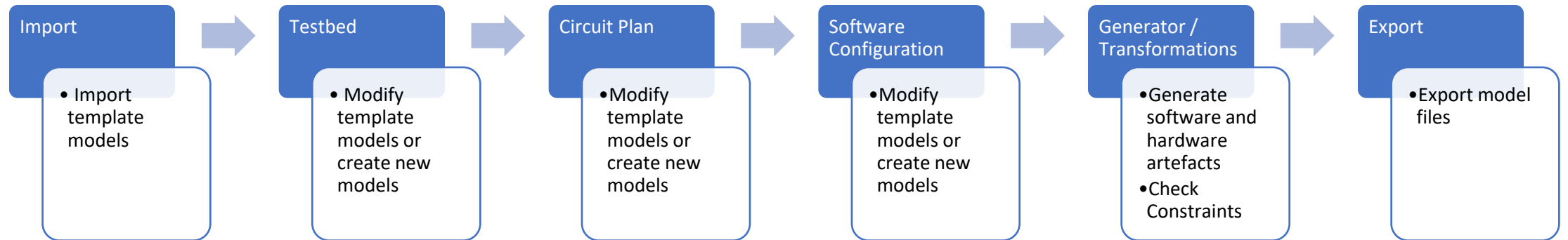
1. Download the EVTMM Tool.zip
(contact mapaczona@edu.aau to get the latest download link)

1. Unzip *EVTMM X.X.zip*
2. Run the installer (*setup.exe*)

[Video tool installation & first model](#)



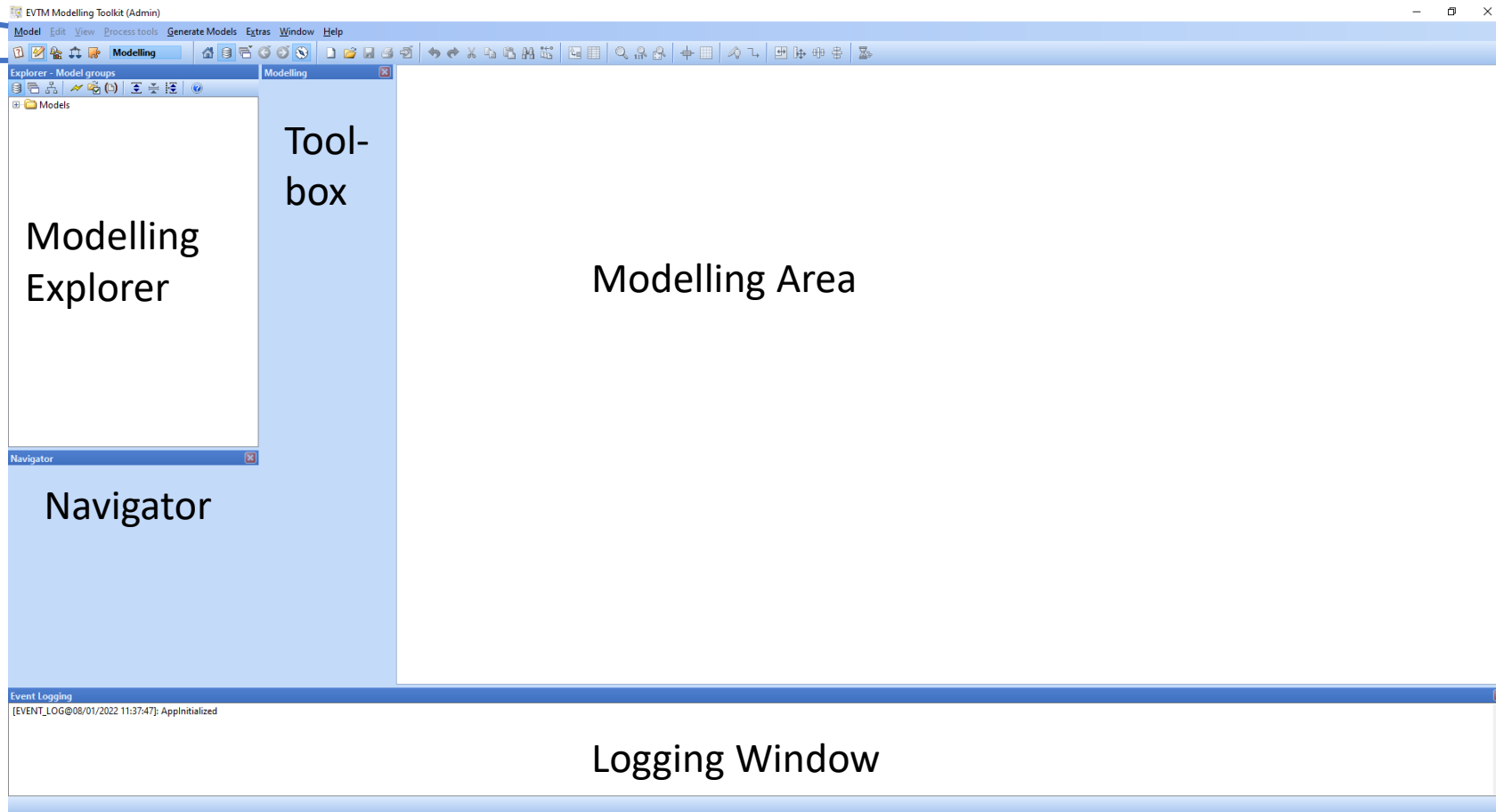
Modelling Process



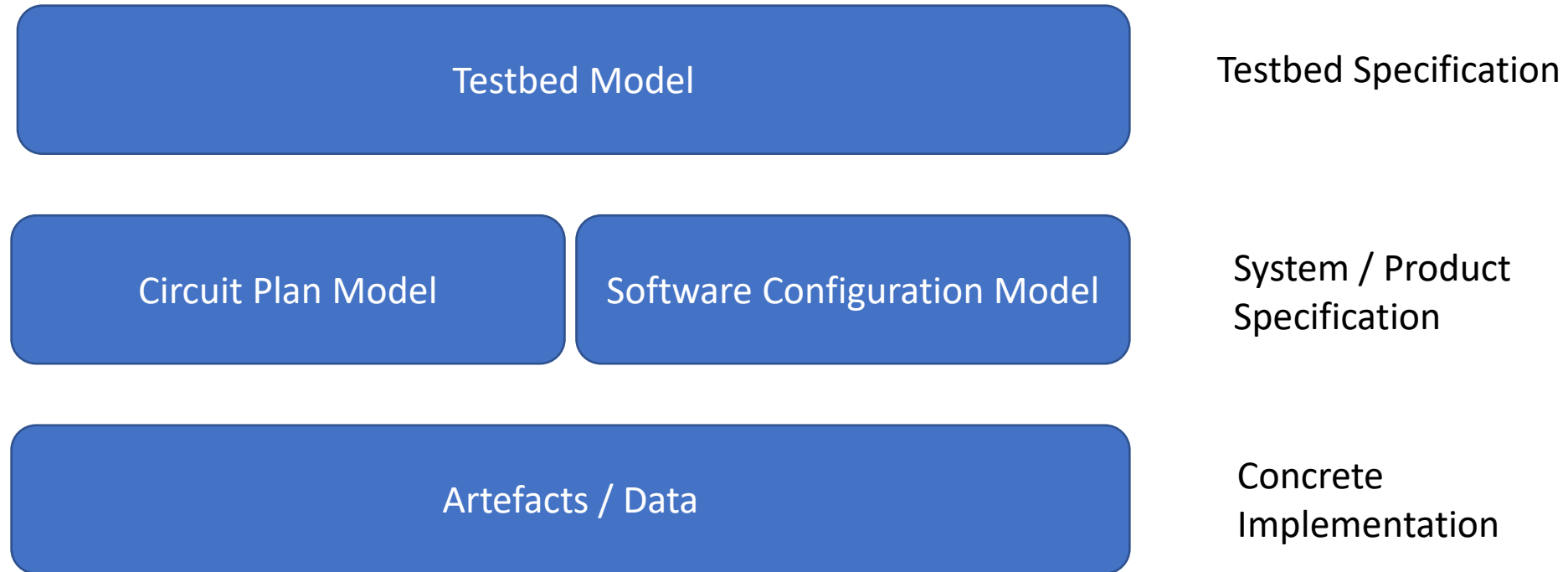
User Interface

Title bar

Menu bar



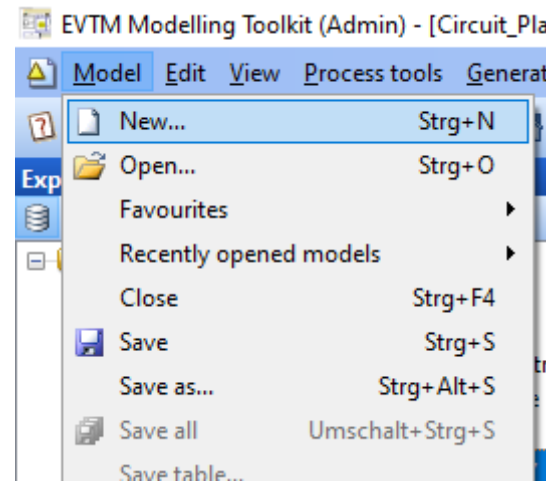
Model Hierarchy



Testbed Model

- The Testbed Model describes the basic structure of the testbed including the main testbed systems (e.g. *Supply*)
- To create a new model use the Menu *Model* -> *Create new model* or right click in the explorer area

[Example Video Fuel Cell Testbed](#)



Circuit Plan Model

- The Circuit Plan Model describes the electrical structure of the testbed systems
- The Circuit Plan Model is linked to the Testbed systems using Model references
- The Circuit Plan Model is structured using *Pages* and *Hardware Assemblies*
- Hardware elements are connected using the *Hardware Connection*

[Example Video Contactor Control](#)

Software Configuration Model

- The Software Configuration Model describes the software of the testbed systems
- The Software Configuration Model is linked to the software elements of the Testbed Model (*Firmware, Configuration, Application*) using Model References
- The Software Configuration Model is structures using *Software Assemblies*

[Example Video Generate Model](#)

Constraint Check

- The Testbed Model can be checked against over 30 domain-specific constraints. The results are represented in a pop-up window, in the event logging and the affected elements are highlighted red in the model.
- To perform the check use the menu *Process tools -> Constraint-Check Testbed*

[Example Video Constraint Check Inverter Testbed](#)

Queries

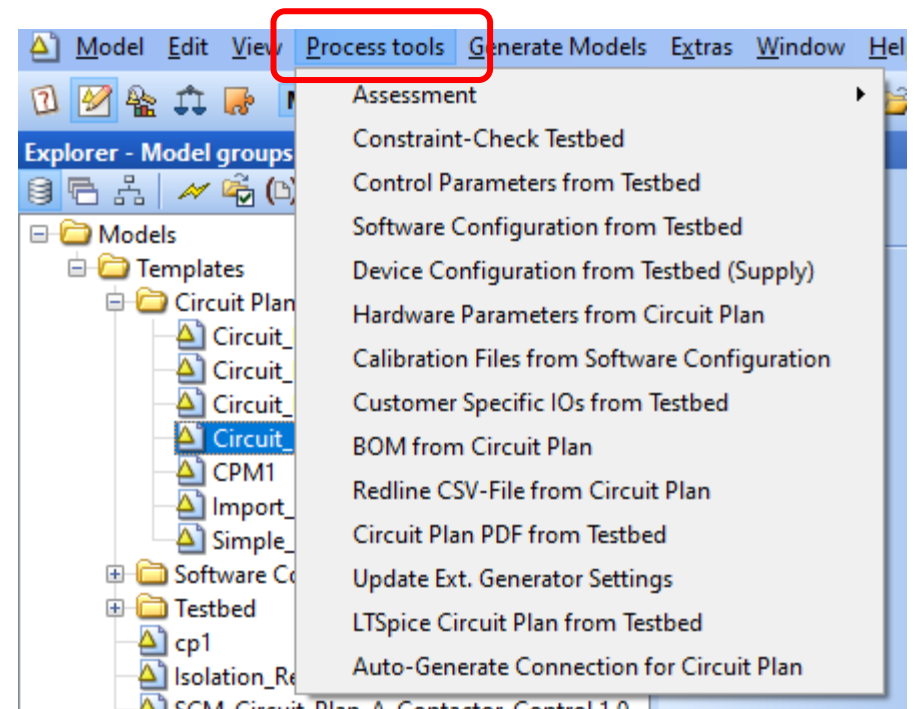
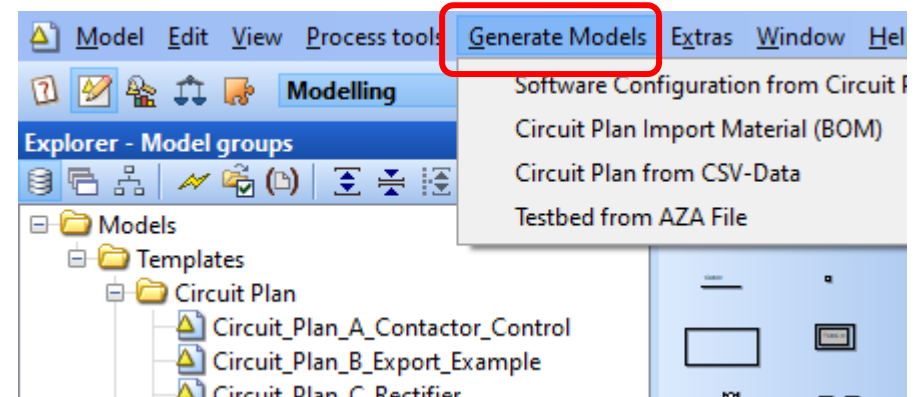
- Queries are possible on models and model content using the in ADOxx inbuilt query functionality
- To perform queries switch in the *menu bar* to *Analysis* and press on the element *Queries/Reports*

[Video Query Circuit Plan Model](#)



Generator / Transformations

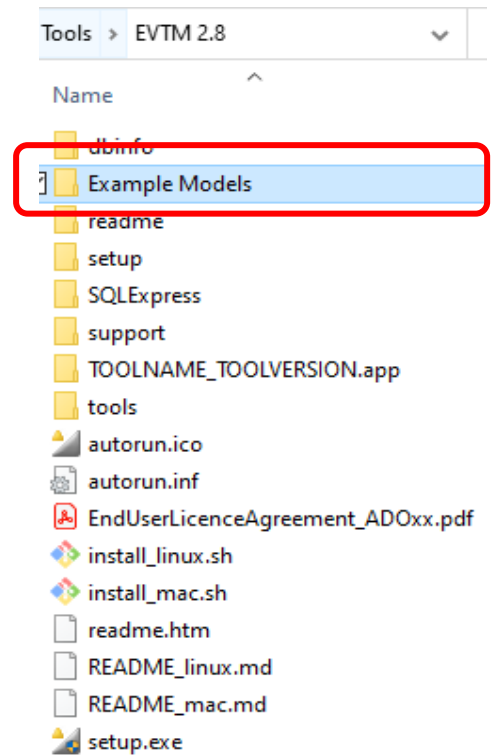
- The inbuilt generator functions allow to generate software and hardware artefacts
- The transformations allow to create models from domain-specific files
- To trigger generators/transformations switch in the *menu bar* to *Modeling* and select the required task

[Video generate Control Parameters](#)



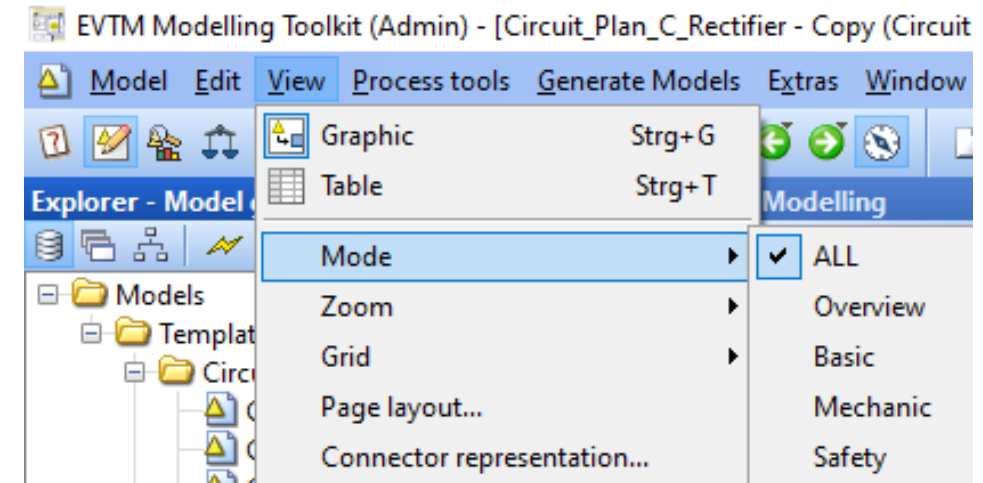
Import / Export and Template Models

- To trigger the import/export switch in the *menu bar* to *Import/Export* and select the on of the options form the menu bar
- (e.g. ADL export  / ADL import )
- Template Models are shipped with the installation data and can be found in EVTMM X.X.zip in folder *Example Models*



Model Views

- The view defines the elements shown in the modelling toolbox and the elements shown on the modelling area
- Switching views can be done in the menu *View -> Mode*



[Video switch model views testbed model](#)

Contact/Links

Contact:

DI Martin Paczona

mapaczona@edu.aau.at

[LinkedIn Martin Paczona](#)

Links:

[YouTube Video Tutorial](#)

[Meta-Modelling Platform ADOxx](#)