

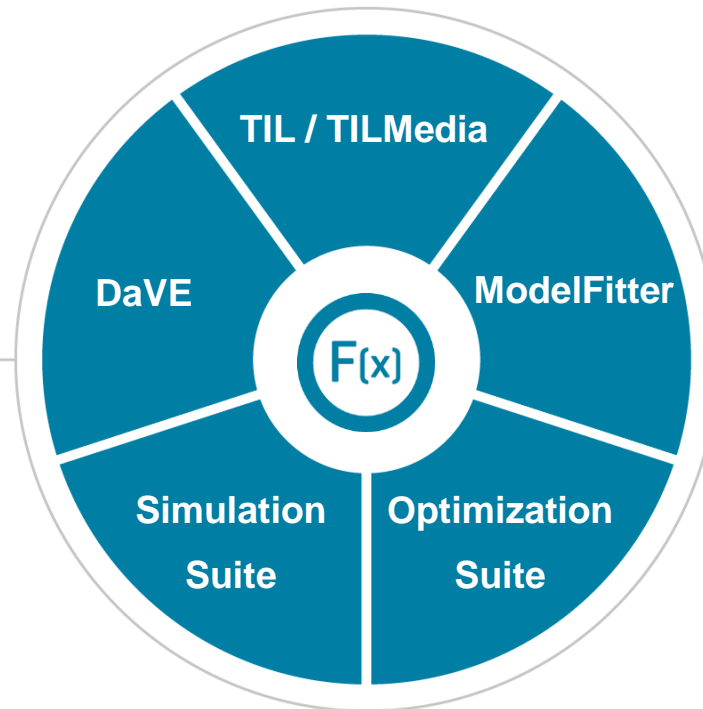


MoBA Automation

Software for script-based automation of individual workflows

MoBA Automation

Toolbox for model-based design and analysis



Standalone Software

Independent use of
TLK software products



MoBA Automation

Automated use of the
individual modules.



Scenarios for MoBA Automation

All computer-based workflows with

- a high number of tasks that can be parallelized
- complex and/or error-prone intermediate steps, previously carried out manually

Examples:

- (Batch-)Simulations and standardized evaluation
- Automated controller parameterization (e.g. gain-scheduling)
- Measurement and simulation data analysis
- Plausibility checks of models through automated comparison of simulation results with a reference
- and more...



Obstacles to automation

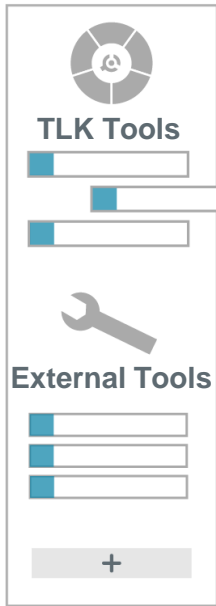
The automation of parallelizable working steps reduces the development time and the susceptibility to errors. Often found obstacles are:

- No or little programming experience
- Extensive adaptation of self-developed (Python) scripts for new purposes
- Time-consuming transfer of executable scripts to other computers
- Insufficient time savings due to scripts that are processed by only one computer

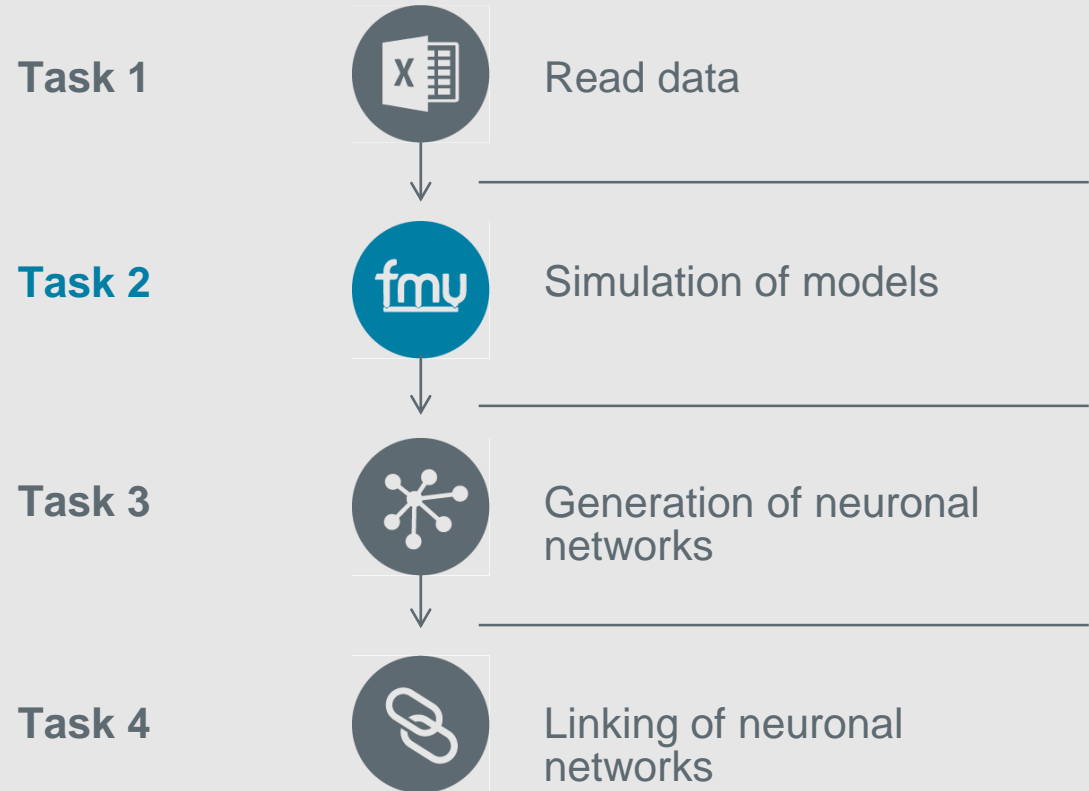
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Example: Automated generation of neural network models

Task Library



Workflow 1



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Example: Automated data analysis

Task Library

My Tools

Three horizontal bars representing tool slots.

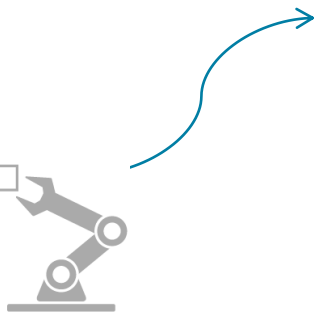
TLK Tools

Three horizontal bars representing tool slots.

External Tools

Three horizontal bars representing tool slots.

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Workflow 2

Task 1



Read data

Task 2



Data analysis with Python

Task 3



Generate report in PPT

Task 4

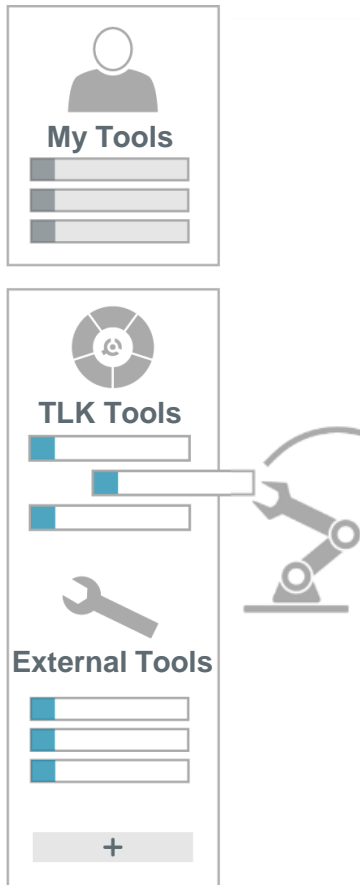


Copy data to data storage

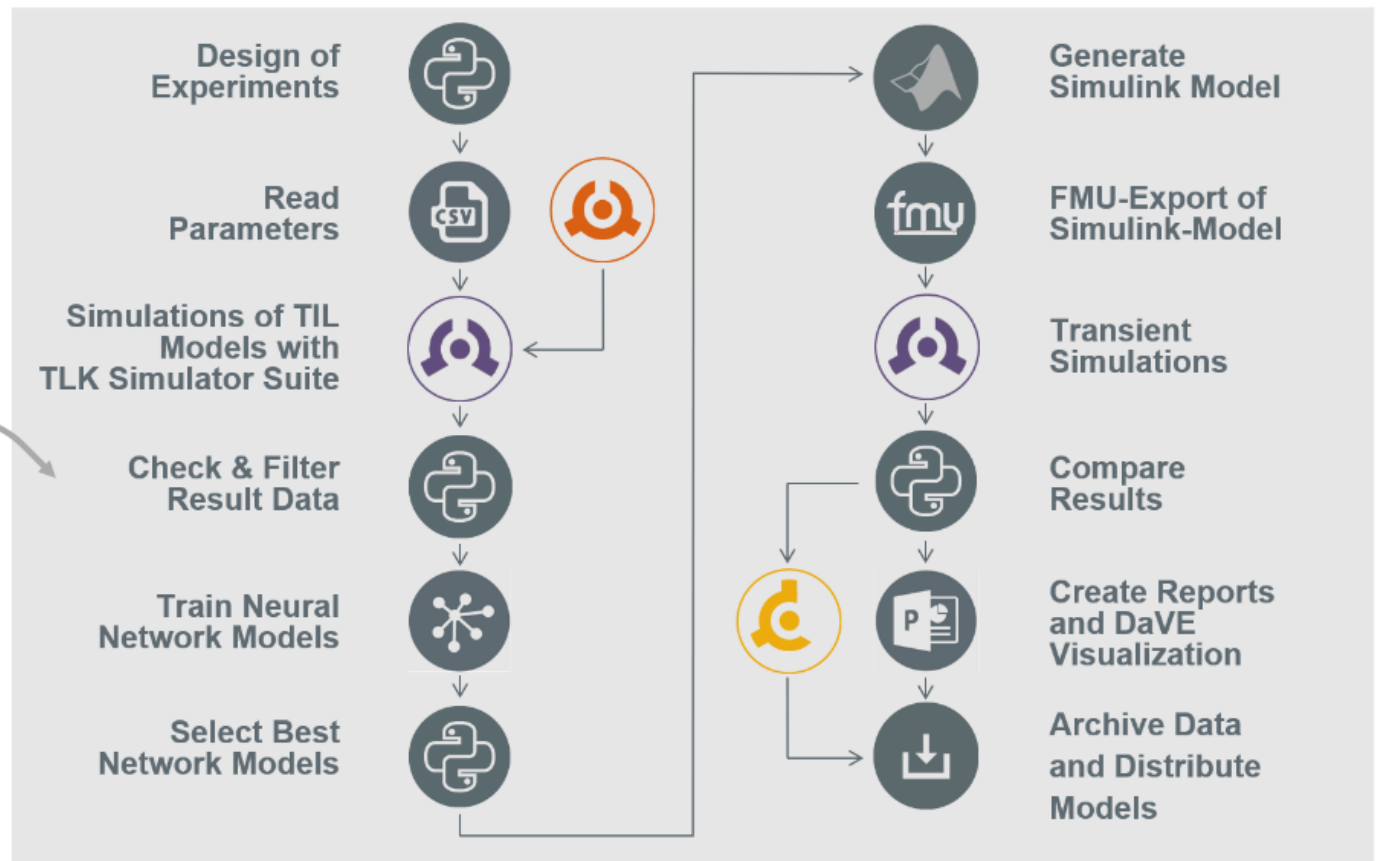
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Example: Model reduction using neural networks

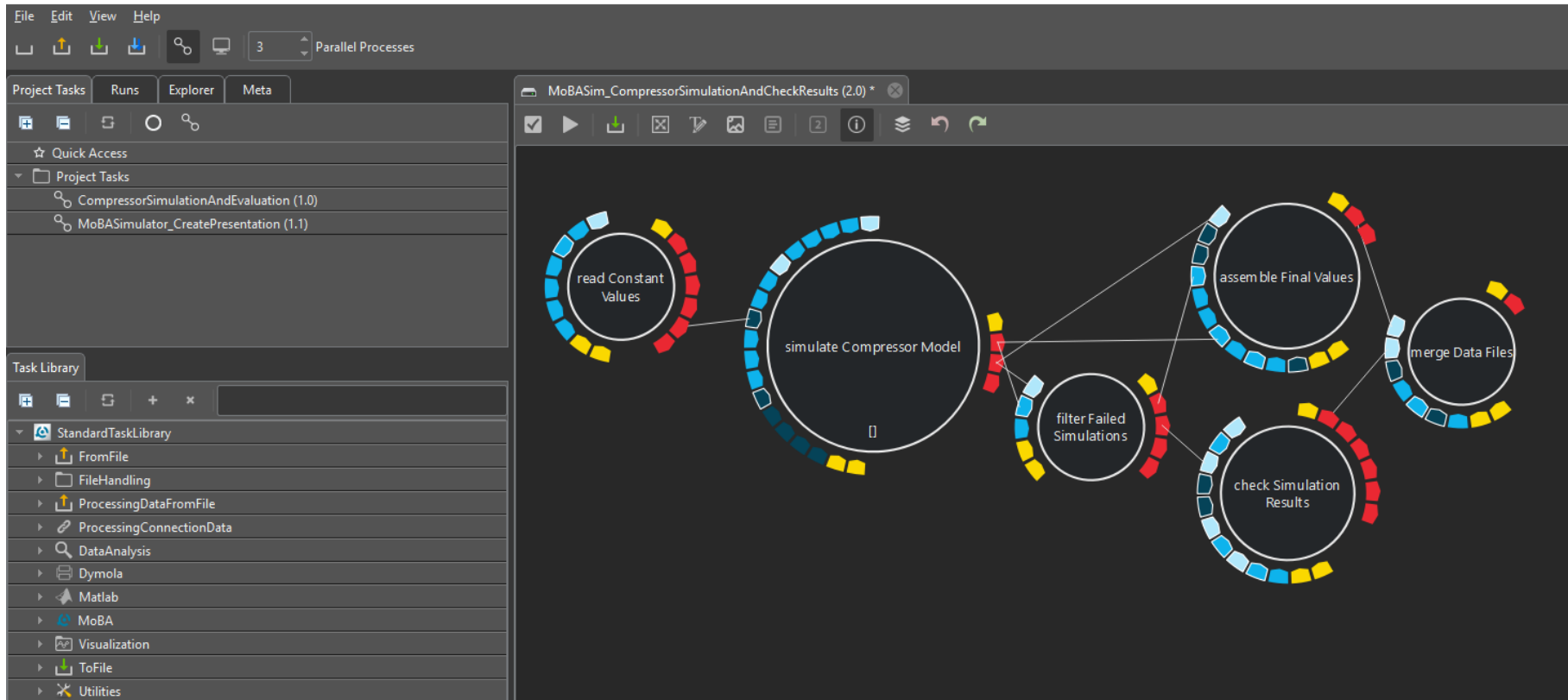
Task Library



Example: Generate single reduced model of several system models with neural networks



Screenshot of the MoBA Automation GUI



MoBA Automation

Processing options for workflows





Advantages of MoBA Automation

MoBA Automation is the framework for the automation of workflows for model-based system design and analysis. Here are the main advantages in summary:

Extensive TLK Standard Task Library

The tasks can be taken from the extensive TLK Standard Task Library and modified for individual requirements. Programming experience is not required.

Use of own scripts

Your own Python scripts can be easily adapted or newly developed for use as tasks in MoBA Automation. In this context the integration of all possible Python modules is possible. The organization in the form of libraries guarantees the reusability of all tasks.

Maximum flexibility

Any external programs, such as Dymola or Matlab, can be controlled by MoBA Automation. The extensive and powerful modules available free of charge for Python enable the convenient implementation of any project requirement.

Computer network and cloud computing

Work assignments can be processed with little effort via connected computers in the network or in the cloud. This enables significant time savings for parallel workflows such as extensive parameter studies.

Portability

The automation projects can be easily transferred to other computers. This enables documentation and archiving of the project's workflows, making them traceable and repeatable.

Thank You



If you have any questions,
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