

# Automated Deployment of Modelica Models in Excel via Functional Mockup Interface and Integration with modeFRONTIER

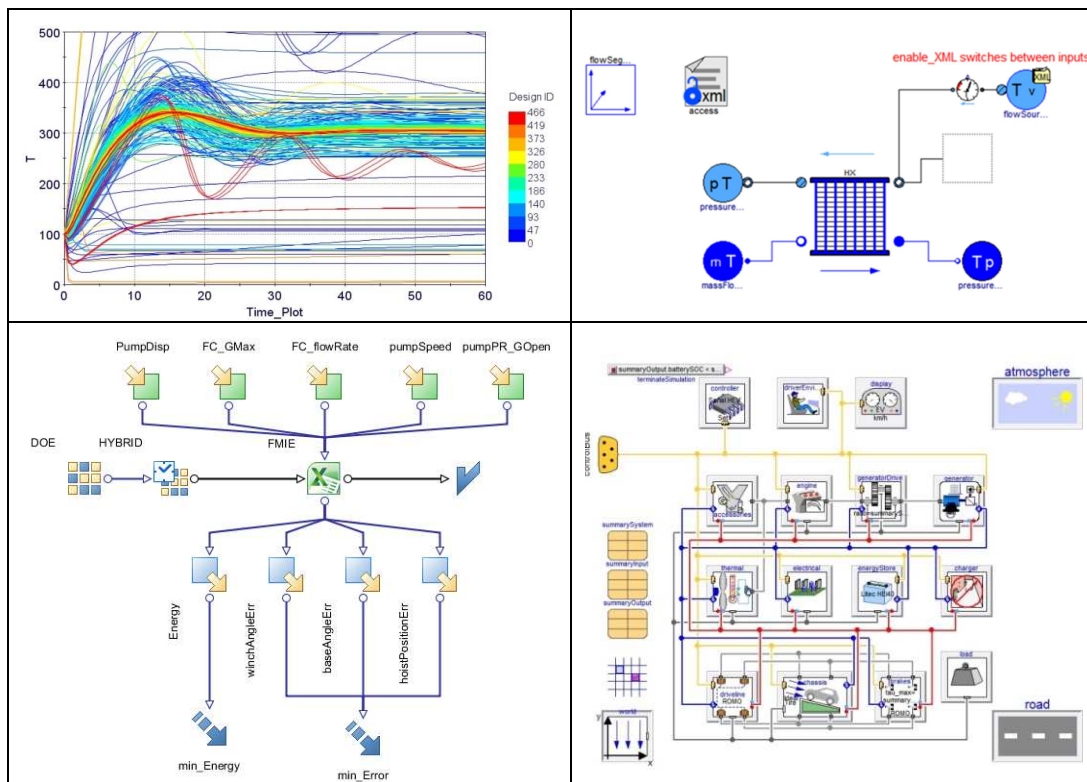
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This paper describes a method for automated deployment of Modelica models as simulators in Microsoft Excel using Functional Mockup Interface (FMI) and FMI Add-in for Excel. Using existing interfaces, integration with modeFRONTIER, a process automation and design optimization tool widely used in industry, is demonstrated and illustrated with several different example models in different physical domains to highlight the range of applications and types of analyses that can be covered with the automated toolchain. This toolchain can be applied to any FMU and streamlined with automation enabled by the supporting annotations. The sample applications include model correlation with an HIV virus dynamics model, hydraulic crane optimization, heat exchanger robust design, and hybrid vehicle electric range fleet population estimation.



## References

ESTECO SpA. modeFRONTIER 2014 Update 1, 2015. <http://www.esteco.com/>.

Modelon AB, FMI Add-in for Excel, v1.3.5, 2015. <http://www.modelon.com/products/fmi-add-in-for-excel/>.