

FMI SOLUTIONS FROM MODELON

THE FUNCTIONAL MOCK-UP INTERFACE

The Functional Mock-up Interface (FMI) is an open standard for exchange of dynamic models, targeting tool interoperability and model reuse. FMI compliant models (Functional Mock-up Units (FMUs)), are self-contained compiled models which can be integrated in a wide range of applications where dynamic models are needed. Modeling IP is protected since only compiled code and interface definitions are distributed in FMUs. The FMI technology is adopted by a large number of open source and commercial tools enabling easy exchange of compiled models. Several tools support export of FMI models and more are following.

For a complete list see:
<http://www.fmi-standard.org>

The Functional Mock-up Interface is an increasingly used standard for exchange of compiled dynamic models. The standard is supported by leading simulation tools, including AMESim, Dymola and SimulationX. Modelon offers a complete range of FMI-based solutions, including integration tools, reusable software components and services.

High-fidelity physical models are key components in model-based design

processes, including design-space exploration and control systems development. Modeling languages such as Modelica are commonly used to develop accurate simulation models of systems in a wide range of domains, including mechanics, electronics, and thermodynamics. Modelon's portfolio of software supporting FMI makes integration of physical models based on FMI technology in popular environments, including C/C++, MATLAB®/Simulink®, Microsoft® Excel®, .NET and Python, easy.

THE FMI TOOLBOX FOR MATLAB®/SIMULINK

offers easy integration of FMUs in MATLAB® scripts and in Simulink models. The Toolbox is ideal for control systems development based on high-fidelity physical modeling and supports import of FMUs into MATLAB and Simulink and export of Simulink models into FMUs.

www.modelon.com/products/fmi-toolbox-for-matlab/

THE FMI EXCEL® ADD-IN brings FMI technology into Microsoft® Excel®. FMUs are conveniently configured in the spread sheet environment for steady-state computations, design-space exploration or batch simulations. Parallel architectures are exploited to speed up simulation time.

www.modelon.com/products/fmi-add-in-for-excel/

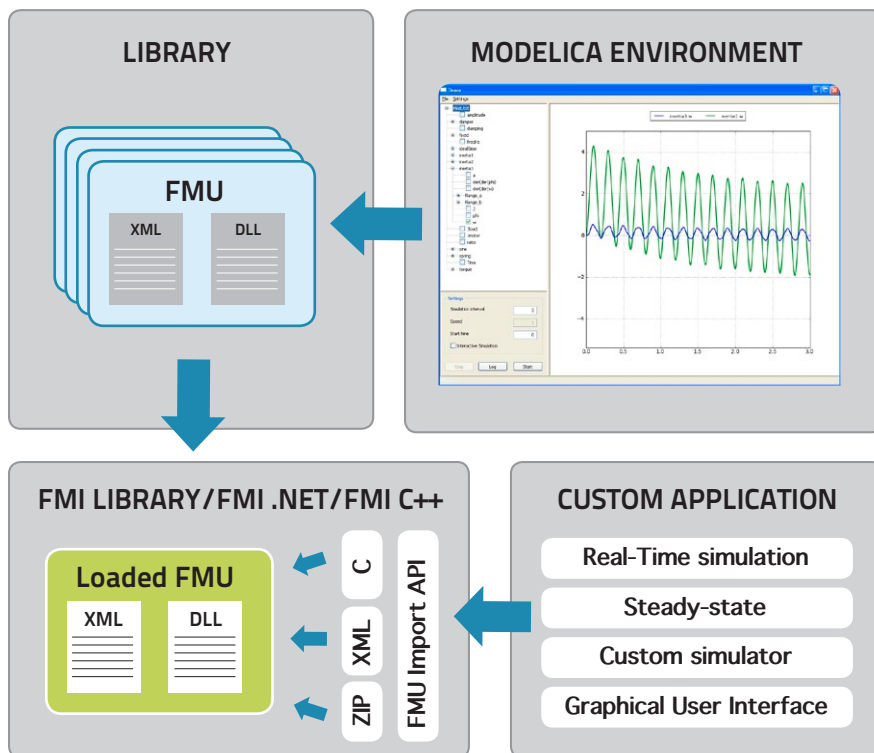
Modelon

Modelon offers engineering services based on the FMI technology. As the leading simulation tools become FMI compliant, FMI offers an opportunity to leverage the potential of high-fidelity physical models in custom applications. Examples include in-house simulation tools, web-server applications, and customized simulation applications. Modelon's offer includes software integration into existing systems,

development of custom FMI-based applications and support for customers adopting the FMI technology.

Modelon offers cost effective quality solutions based on tools and reusable software components available for different programming environments, including C/C++, Python, MATLAB/Simulink, .NET and Microsoft® Excel®.

USE CASES



Modelon's reusable software components makes integration of FMI technology into custom applications easy.

OPEN SOURCE SOFTWARE

FMI Library is a reusable C library available as open source software under the permissive BSD license. FMI Library offers a clean cut API for interacting with FMUs and makes it easy to integrate FMI technology in applications. FMI Library is the foundation of the official FMU compliance checker, which ensures quality and reliability.
<http://www.fmi-library.org>

PyFMI and **Assimulo** are open source packages that make simulation of physical models in Python easy. Python enables users to quickly develop sophisticated computational applications powered by freely available Python packages for post processing and visualization.
<http://www.pyfmi.org>
<http://www.assimulo.org>

JModelica.org is an open source platform that supports generation of FMUs, Model Exchange and C-simulation, from Modelica models. FMU generation is driven from a user friendly Python API.
<http://www.jmodelica.org>

COMMERCIAL SOFTWARE COMPONENTS

The FMI C++ Toolkit targets integration of FMI technology in custom C++ applications. The Toolkit offers native C++ classes and a comprehensive API for interacting with FMUs.

The FMI .NET Toolkit brings FMI technology into the Microsoft® .NET platform. FMUs are loaded and accessed in managed .NET code through a C# API.

The OPTIMICA Compiler Toolkit is based on components from JModelica.org and offers a complete FMI and Modelica-based tool-chain, suitable for integration in custom applications.

