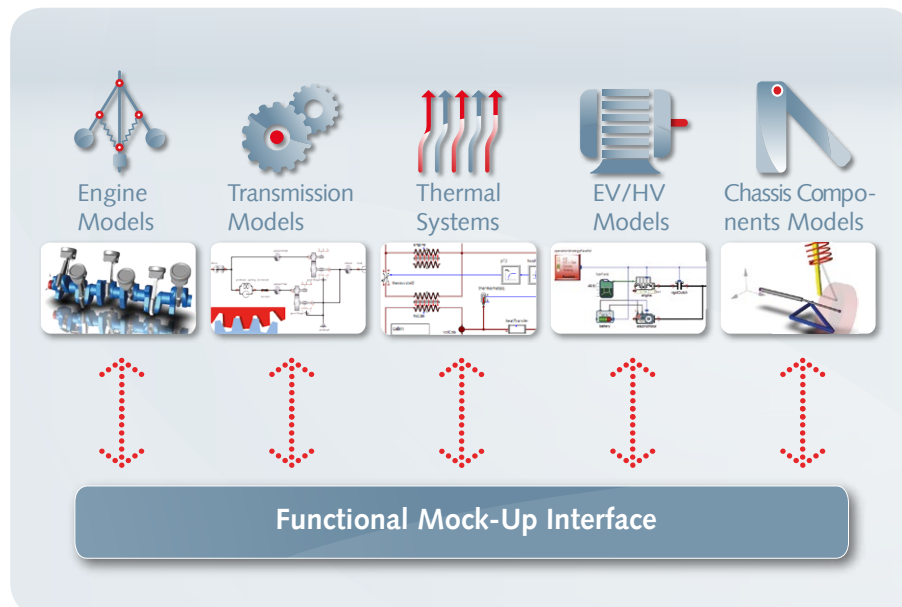


Cross-Platform Modeling with FMI Target for Simulink® Coder™

Open technology standards for an integrated product lifecycle



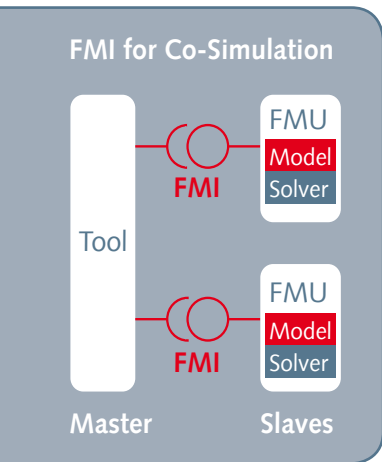
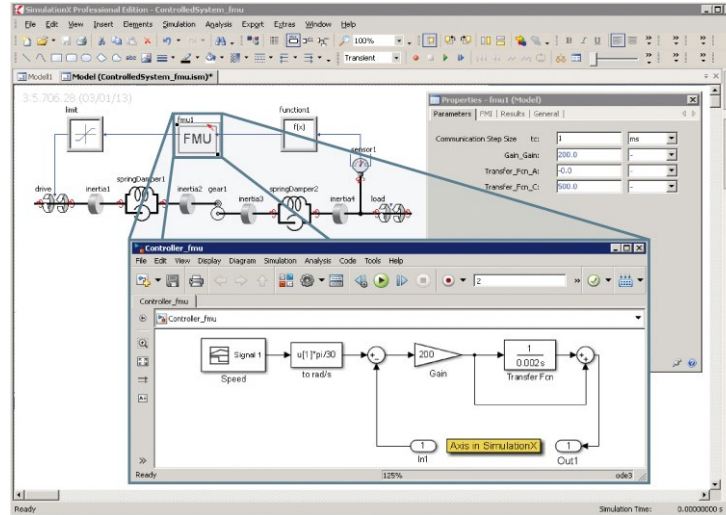
The challenge for manufacturers of complex machinery that heavily rely on components from suppliers is the seamless exchange of data and specifications during the development. The same holds true for large corporates with multiple R&D departments at various locations using several development tools due to different objectives. Those challenges include different programming languages from the various tools, the lack of standardized model interfaces and the concerns for the protection of intellectual property.

The development of the Functional Mock-up Interface (FMI) has enabled software-, model- and hardware-in-the-loop simulations with dynamic system models from different software environments. With the FMI Target for Simulink Coder, it is now possible to export models from Simulink to any platform that supports FMUs for Co-Simulation.



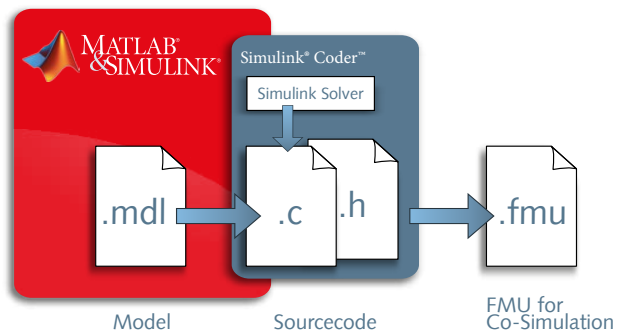
FMI for Co-Simulation

The goal is to couple two or more models with solvers in a co-simulation environment. The data exchange between subsystems is restricted to discrete communication points. The subsystems are processed independently from each other by their individual solvers during the time interval between two communication points. Master algorithms control the synchronization of all slave simulation solvers and the data exchange between the subsystems. The interface allows for both standard and advanced master algorithms, such as variable communication step sizes, signal extrapolation of higher order and error checking.



FMI Target for Simulink® Coder™

For the exchange of models across different platforms, the FMI Target for Simulink Coder enables the export of models from Simulink as FMUs for Co-Simulation. That allows for a continuous workflow in a closed toolchain throughout the entire product lifecycle. The generated FMU is fully FMI 1.0 compliant and includes the model's functionality and the Simulink solver, which enables any tool supporting FMUs for Co-Simulation to run the unit without Simulink. FMI Target for Simulink Coder is the first add-on for Matlab®/Simulink of its kind allowing for large-scale models to be used in SiL, MiL and HiL simulations with ease. The add-on is independent from SimulationX and requires a separate license.



MathWorks | Connections Program



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