

INTEGRATING SIMULATIONS WITH MATLAB AND SIMULINK

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ABSTRACT

Simulink, a model-based design environment, is often used in the design, simulation, testing, and building of physical or software systems. These systems often involve a number of different, interconnected components with a high amount of complexity. To simulate these models, a number of different types of solvers can be employed, which the product characterizes as fixed-step, variable-step, continuous, discrete and discrete-event. To simulate a model with multiple solvers, co-simulation can be employed. Co-simulation and parallel simulation capabilities in Simulink, along with the visualization and analysis capabilities of MATLAB, allow one to generate a more complete simulation and better understand the results. Simulink also allows for multiple 3rd-party tool connections and hand-integration, along with co-simulation. The product can also leverage parallel techniques to scale-up and improve performance of experiments with multiple simulations. MATLAB and Simulink have developed technology and strategies for integrating simulations for these situations, which will be discussed.