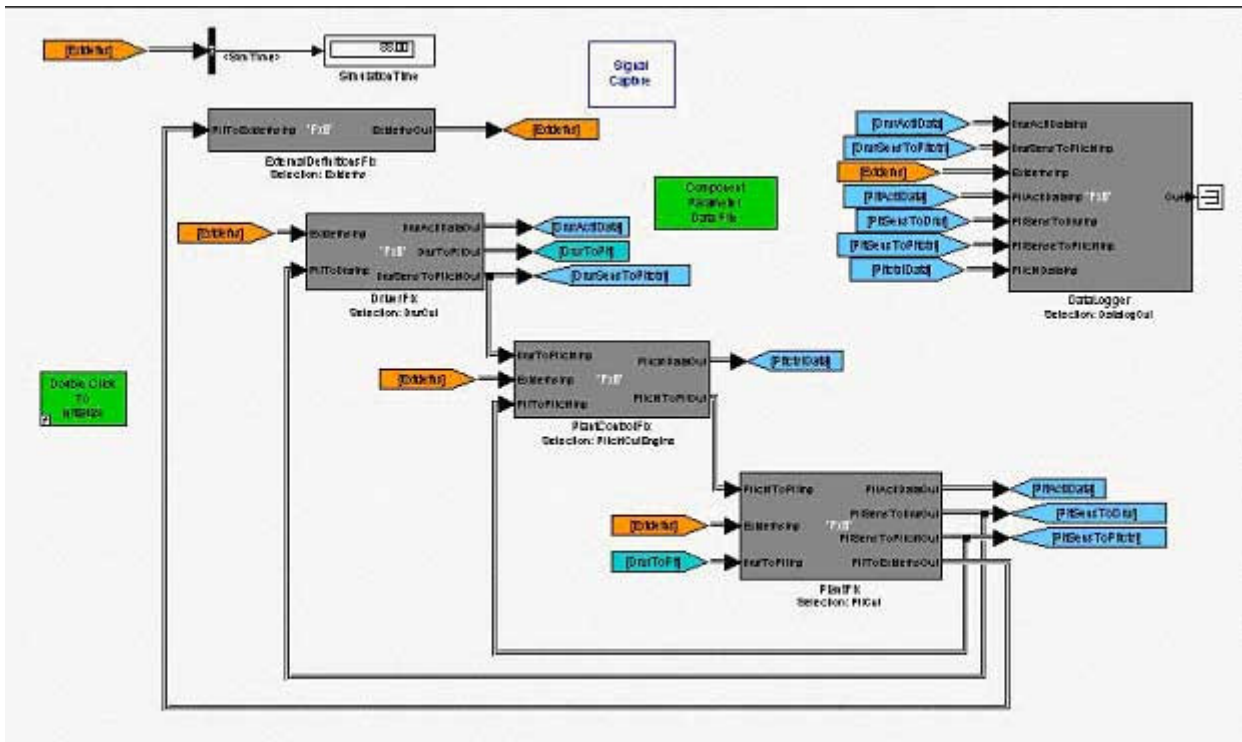


MoVE Power-train Architecture

MoVE is a flexible model architecture that can be very easily modified for various power train configurations including conventional and hybrid power trains. It is modular to such an extent that each component model can be changed at will – either because the underlying component technology has changed or the fidelity of the model has changed. Thus you can use one configuration for very quick first-cut performance simulations and a higher fidelity and detailed configuration for more accurate, if slightly slower, simulations. The architecture allows you to very easily switch between different choices for various components to study the effect on performance.



The architecture is designed to seamlessly integrate your own models or other third-party models for subsystems or components. Thus, it never becomes obsolete – it grows with your use. The base version has all the features of commercially available control oriented generic engine and transmission models.

System Requirements

Compute Platform: PC

Operating System: Microsoft Windows® 9x, NT, XP, 2000

Matlab® Version: 6.5 (R13), 6.5.1 (R13SP1), 7.0.4 (R14SP2)

Features

- Mean value engine model
- Throttle and manifold dynamics
- Fuel system dynamics
- Engine thermal model
- Exhaust system
- Actuators and Sensors
- Brake Torque Computation
- Exhaust Gas Recirculation
- Mechanical Accessories
- Electrical Accessories
- Battery
- Manual transmission
- Automatic transmission
- Torque Converter
- Clutch
- Driver model
- Tire resistance model

Model Usage Scenarios

- Sensitivity Studies
 - Evaluate impact of gear ratios on acceleration and fuel consumption
 - Investigate impact of component efficiencies on system performance
- Model based control system development
 - Enable design and verification of model based control systems for engine and transmission control
 - Real-time Simulation in a Hardware-In-Loop System (HILS)
- Performance trade-off analysis
 - System level optimization studies to determine optimal operating conditions
 - Trade-off analysis to arrive at optimal ECU strategies
- Specification flow down
 - Specify component performance
 - Specify actuator and sensor performance

Contact Emmeskay, Inc. for tool box details, licensing and pricing information by sending email to info@emmeskay.com or calling 734-207-5562/5564. In Japan, contact Emmeskay's distributor NEAT Company at www.neat21.co.jp for additional information.