LMS Imagine.Lab AMESim

Off-Highway Industry Solutions

LMS Imagine.Lab AMESim offers a complete 1D simulation platform to model and analyze off-highway intelligent systems and to predict their multi-disciplinary performance. An extensive set of specific solutions combines strong simulation capabilities, effective interfaces with leading CAE solutions and advanced tools to study the static/dynamic functional behavior of any component or system in a graphical, user-friendly environment.

LMS Imagine.Lab AMESim provides the unique possibility to integrate subsystems for an efficient evaluation of their interactions, at all the steps of the design process, from energetic approach for multisystem architecture, to design of systems and components, system integration, and control strategies validation.

With LMS Imagine.Lab Off-Highway solutions, suppliers simulate and validate components early in the design cycle, and also provide models for their customer with IP protection. OEMs simulate the integration of all suppliers' components in order to match the vehicle functions specifications and validate design choice.

LMS Imagine.Lab AMESim has been adopted as the preferred 1D system simulation platform by major OEMs and suppliers in the off-highway industry worldwide. The reference list includes companies like Daewoo Heavy Industries, Hitachi Construction Machinery, Hyundai Heavy Industries, JCB, Kawasaki Heavy Industries, Komatsu, Liebherr, Bosch Rexroth, Hydac, Hytos, Innas, Poclain-Hydraulics, Sauer-Danfoss, Thomas-Magnete...

- Mobile Hydraulic Actuation Systems
- Powertrain Transmission
- Internal Combustion Engine
- Internal Combustion Engine Related Hydraulics
- Vehicle Thermal Management
- Vehicle System Dynamics
- Electromechanical

LMS®
ENGINEERING INNOVATION

Mobile Hydraulics Actuation Systems

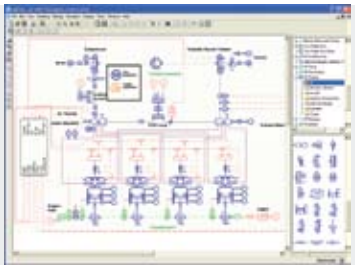
The Mobile Hydraulic Actuation Systems solution enables the design of fluid power actuation systems for crane, crawler, earthmoving & mining equipments, etc. The solution delivers the required insights to improve product quality, robustness and reliability (stability), to reduce power generation (variable displacement pumps, load-sensing), and to develop new functions (self-leveling, control strategies, etc.).

Powertrain Transmission

The Powertrain Transmission solutions provide a generic platform for analyzing and designing optimal transmission systems. The Powertrain Transmission solutions give access to driveline, engine and transmission models & components, and focus on comfort, performance & losses and NVH (Noise-Vibration-Harshness) issues.

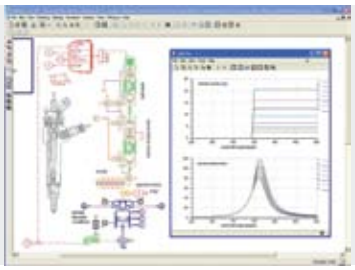
Internal Combustion Engine

The Internal Combustion Engine solutions allow users to model and design comprehensive engine systems, from air management and combustion up to engine control. The solutions provide a cutting-edge, flexible environment for designing and optimizing “virtual” engine subsystem concepts. Users get the ability to study the couplings with subsystems for fuel injection, thermal management, powertrain and any other component.



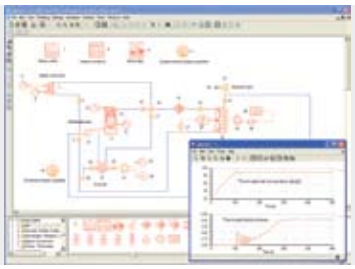
Internal Combustion Engine Related Hydraulics

The Internal Combustion Engine Related Hydraulics solution enables the design and optimization of fuel systems & components from the tank to the injector, as well as the design of valve actuation systems in relation with the engine cylinder. The LMS Imagine division totalizes a strong 20 years expertise in the fluids systems domain, thus enabling to deliver a comprehensive development platform with cutting-edge physical models and components.



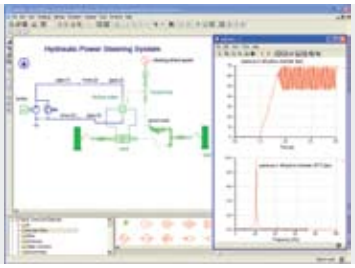
Vehicle Thermal Management

The Vehicle Thermal Management solutions give engineers access to detailed models of subsystems in vehicle thermal management systems (engine cooling systems, air-conditioning, lubrication system, etc.). This enables them to accurately define and size components, and to study the overall system integration and the interactions between subsystems.



Vehicle System Dynamics

The Vehicle System Dynamics solutions offer dedicated capabilities to design individual chassis system components (brakes, suspension, steering, and the vehicle itself) and to integrate them in a single system model to simulate and validate global chassis control strategies. The solutions offer a unique platform to model and simulate the actuators and the vehicle with different levels of model details, and provide an easy integration with software-in-the-loop or hardware-in-the-loop validation processes.



Electromechanical

The LMS Imagine.Lab Electromechanical Systems solutions help engineers throughout the design process of electrical or electromechanical systems. The solutions simulate electromechanical components like linear actuators and electric motors, from the specification to the design and validation of control strategies. In addition, the solutions allow different level of analysis of electrical systems such as power consumption estimation, transient response evaluation or thermal effects.

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