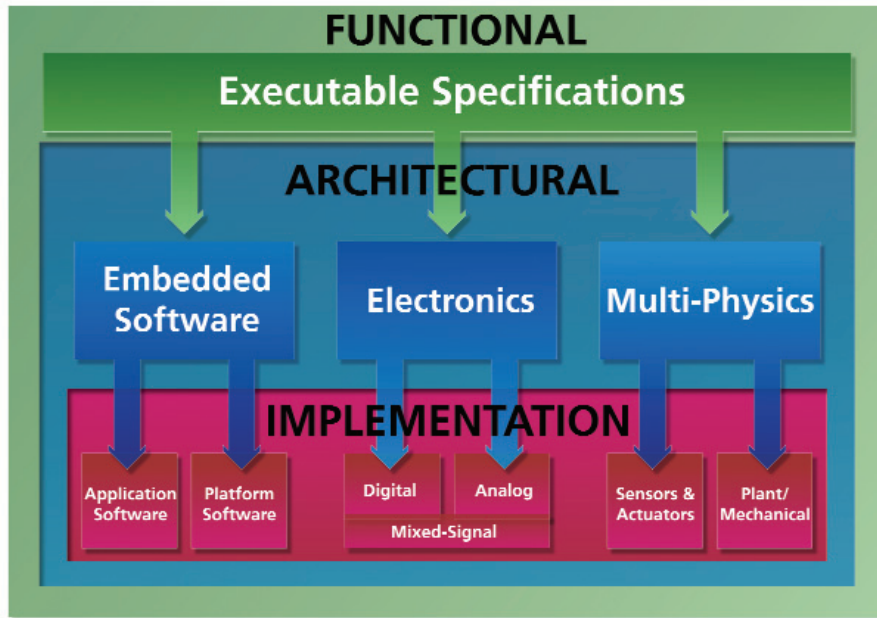


SystemVision™ for Mechatronic System Modeling

System Modeling

D A T A S H E E T



Major product features

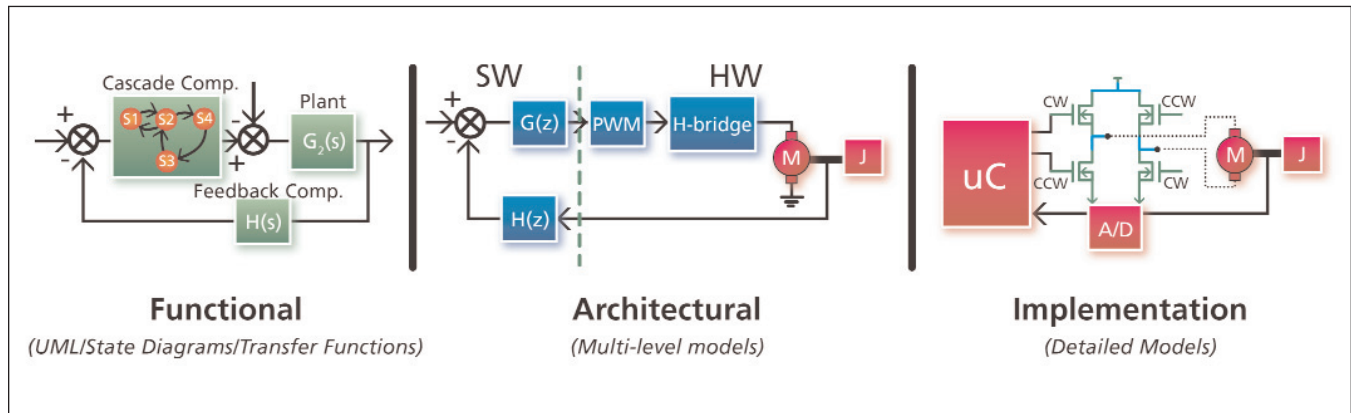
- Virtual lab for mechatronic system design and analysis.
- Industry-standard language support for VHDL-AMS, SPICE and C.
- Thousands of open source VHDL-AMS and SPICE models.
- Built-in modeling tools including data-lookup models.
- Drag-n-drop import of models and automatic symbol creation.
- Parametric sweep, Sensitivity Worst-case and Monte Carlo Analyses for robust design.
- Built-in post-processing measurements and waveform calculator.
- Optional integration with MATLAB®/Simulink®.

SystemVision is Mentor Graphics' breakthrough System Modeling solution using industry-standard models. SystemVision provides a virtual lab for design and analysis of distributed mechatronic systems.

With SystemVision you can reduce development time, simplify HW/SW integration, promote design re-use, and reduce manufacturing and warranty costs.

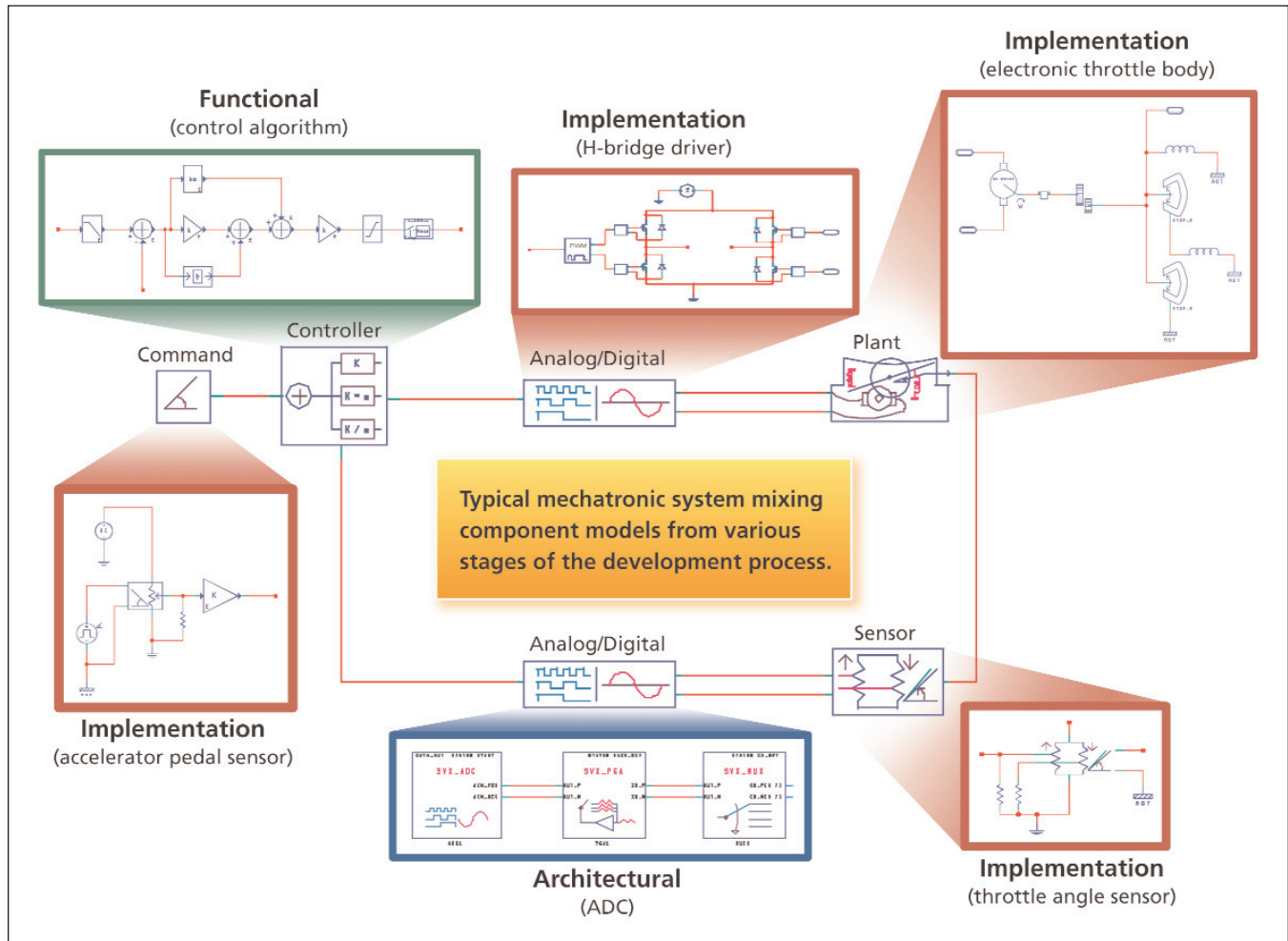
Mechatronic System Modeling

SystemVision provides modeling, design, and analysis throughout successive development stages. From the Functional stage, where an executable specification can be defined and tested; through the Architectural stage, where functions are partitioned; to the Implementation stage, where the final system SW/HW is integrated and tested on a virtual target platform.



What is SystemVision?

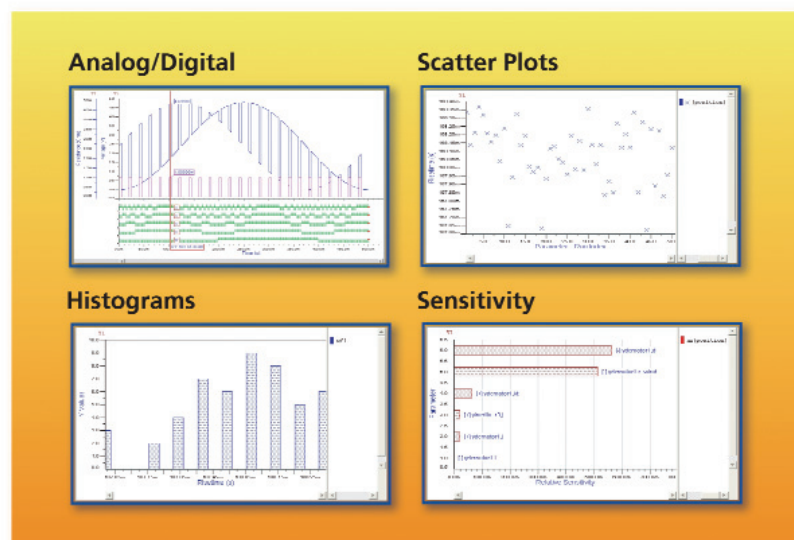
SystemVision, an intuitive virtual-prototyping environment, integrates models of mixed analog/digital circuits; thermal, mechanical and hydraulic systems; and continuous and sampled-data control systems. This environment provides for the fluent, multi-level model integration required for true mechatronic systems design and analysis. Combining high-level behavioral models with lower-level device models in a multi-disciplined environment allows for rapid examination of design tradeoffs.



SystemVision Waveform Viewer

SystemVision includes a versatile waveform viewer containing a built-in measurement tool and waveform calculator.

These features allow sophisticated post-processing of simulation results so designers can turn simulation data into useful information.



Leveraging Standards for Powerful Mechatronic System Modeling

Mechatronic system designs are growing more complex each year. These designs often consist of a mix of analog and digital electronics, as well as mechanical, magnetic, and other “multi-physics” components. Additionally, engineers are increasingly using embedded software to control such systems.

SystemVision was specifically designed to allow fluent design and simulation of these complex systems—all in one simulation environment. This gives the engineer unparalleled capability to focus on the significant interactions between these dynamic hardware and software system components. Using SystemVision, engineers enjoy a modeling environment that can simultaneously handle all aspects of mechatronic system design.

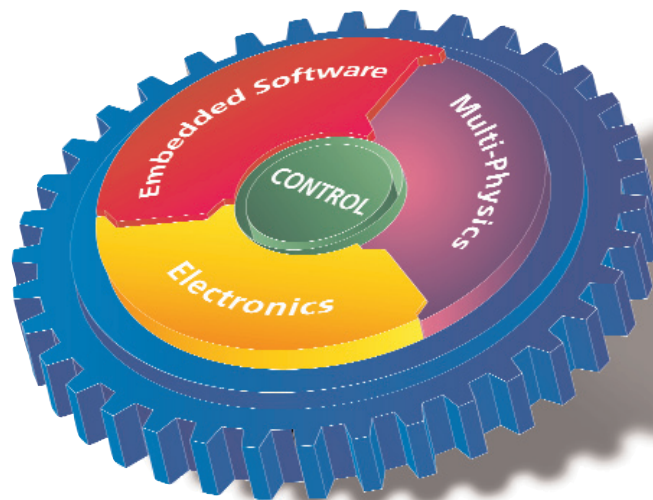
In today’s marketplace, the ability to perform system design, integration, and verification in a timely manner is a key contributor to a successful product launch. The current methods for performing system design consist of creating architectural block diagrams and transfer functions—which ignore physical design details. As a result, system integration cannot be performed in such a “virtual” environment and must wait until the actual physical hardware is available. This often leads to unanticipated complications and costly design modifications that could have easily been prevented with the availability of accurate component models for system simulation.

The SystemVision approach is to leverage existing, industry-standard modeling languages and not rely on proprietary formats. The key enabler for this capability is Mentor’s simulation engine technology with multi-language support. The powerful IEEE standard VHDL-AMS modeling language provides the ability to model a wide variety of electronic, multi-physics and embedded software components at multiple stages of the design process. SystemVision also supports the SPICE and C modeling languages to provide exceptional modeling flexibility.

Increasingly, such sophisticated designs are implemented as distributed systems with embedded software operating on multiple (networked) microcontrollers, interacting with both electronic and multi-physics hardware components. SystemVision provides a mechanism to model the hardware components in such distributed systems. (See the SystemVision / Simulink integration on page 4.)

SystemVision is targeted at industries that design mechatronic systems. This includes Automotive, Aerospace, Industrial Controls, and even consumer electronics and appliances. Using SystemVision, engineers in these industries can simulate and analyze their system performance throughout the design cycle. SystemVision includes graphical design entry, VHDL-AMS modeling and library tools, leading-edge simulation technology, and powerful waveform viewing and analysis tools.

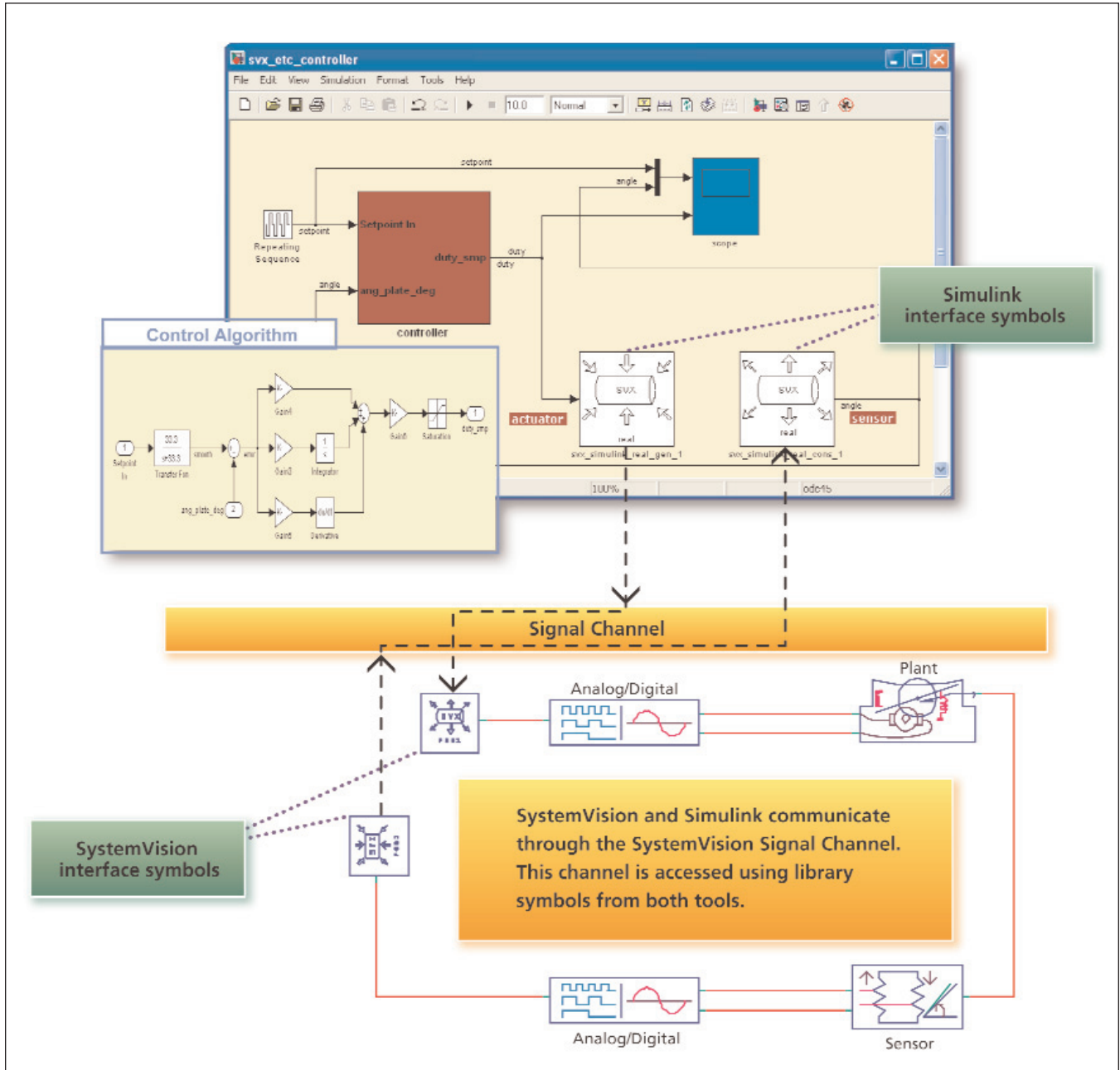
SystemVision also supports ModelSim®-compatible libraries, SPICE format models, and C-language modeling to provide exceptional modeling flexibility.



The components of mechatronic system design.

Mechatronic System Design: SystemVision and Simulink

The SystemVision integration with Simulink provides an environment that leverages the strengths of both tools. Simulink is used to rapidly develop a control algorithm and automatically generate code from it. SystemVision is used to test the control algorithm with physics-based hardware models that provide realistic system simulation results. Together, these tools allow for comprehensive HW/SW system design and analysis.



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