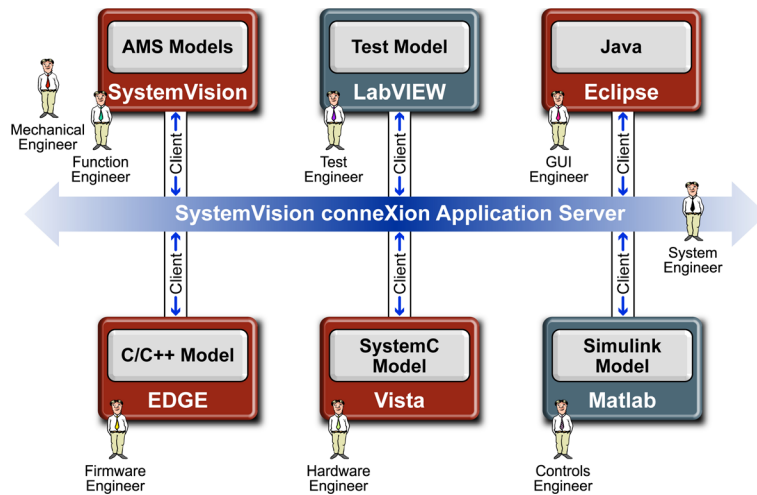


# SystemVision® conneXion™



*SystemVision conneXion is a virtual execution environment that connects otherwise isolated, domain-specific modeling and software tools dynamically - at any phase of the design process - over a secure, managed signal channel.*

## Multi-Discipline Collaboration Environment

Today's products are a sophisticated collection of mechanics, electronics, control systems, and software. Successful product deployment requires a development paradigm that unifies and leverages the strengths of these individual disciplines. Gone are the days of "throwing the pieces over the wall" to be integrated at the end.

However, cross-discipline collaboration is difficult. Engineers from different disciplines speak different languages and use different tools. The paths to implementation are diverse and littered with manual steps and opportunities for miscommunication. The SystemVision conneXion multi-discipline collaboration environment provides a framework for precise definition of interfaces, flexible interaction of tools, and smooth transitions to implementation.

## Distributed Client-Server Architecture Ties Everything Together

The SystemVision conneXion client-server architecture provides for precise, distributed, time-synchronized interfaces between signal generators and consumers. These interfaces are easily placed, as symbols, in graphical tools such as SystemVision, LabVIEW™, and Simulink®. In addition, a C/C++ API makes it easy for application embedded software to interact with models of control systems, multi-physics subsystems, sensors & actuators, and analog & digital electronics.

LabVIEW is widely used for establishing, managing and executing tests. LabVIEW virtual instruments provide a flexible set of building blocks to connect test configurations with models of design and environment. The SystemVision conneXion client for LabVIEW provides extensive virtual instrument support for

## FEATURES AND BENEFITS:

- Unifying collaboration environment for mechanical, electrical, controls, and software engineers
- Flexible client-server communication framework that facilitates time-aligned signal transport between a diverse set of client execution engines
- Out-of-the-box client engine support for SystemVision, LabVIEW, Simulink, and realtime embedded software clients
- Discipline-specific, implementation-oriented design language support including VHDL/VHDL-AMS, Spice, Simulink, and C/C++
- Easy-to-use generator/consumer interface paradigm that abstracts details and protects intellectual property
- Networked architecture that facilitates distributed collaboration across LAN or WAN infrastructure
- Insightful visualization and analysis tools that provide a coordinated, time-aligned perspective on multi-discipline systems

test development and co-execution with simulation models.

Simulink is another example of a tool widely used for exploring control strategies by modeling with transfer functions. The conneXion environment makes it possible to extend the usefulness of such models by enabling closed-loop simulation with other simulation engines and corresponding modeling formats.

The SystemVision conneXion environment makes it easy to **test the design implementation virtually**. Integrate hardware described in digital HDLs, plant, sensors and actuators described in VHDL-AMS, analog electronics defined in SPICE, embedded SW written in C or C++, controls in Simulink, and controls or test programs in LabVIEW.

### Accurate Specification of Signal Type, Resolution, and Timing

The signal generator and consumer APIs include a uniform mechanism for unambiguous specification of signal type (e.g., signed/unsigned integers, real, Boolean, etc.) and resolution / precision (e.g., 16 bit integers, single or double precision real numbers, etc.). It also provides a precise, flexible mechanism to define the timing requirements for the signal (e.g., update frequency, communication latency, etc.). With this capability, it is now practical to **develop and verify the timing specifications and constraints** of a

distributed system in the context of its functional behavior.

### Verify Real-Time Software Early

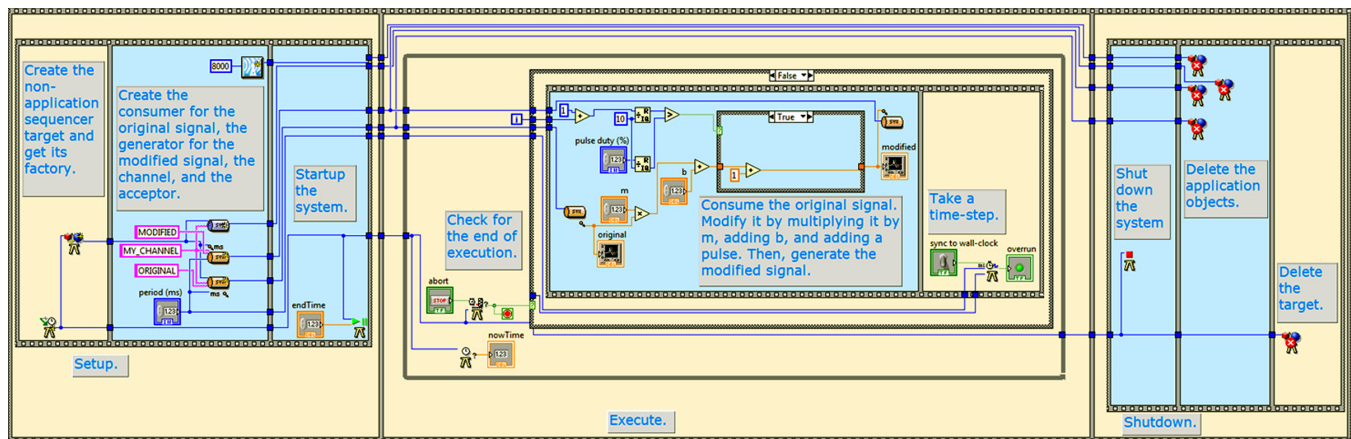
- Develop software/flows prior to hardware availability
- Examine software performance using an IDE
- Set breakpoints
- Stop "time" and watch variables
- Profile SW signals and view with HW signals

### Extend Your Environment with Additional Applications

- Execute SystemVision and embedded code (C or C++)
- Execute SystemVision and Simulink models
- Verify LabVIEW tests prior to HW availability
- Use conneXion application server to span multiple platforms
- Add further clients to support broad collaboration

### SystemVision conneXion Packaging Options

SystemVision conneXion is available with clients for SystemVision, LabVIEW, Simulink, C/C++, Java, xtUML, SystemC, and multi-client/multi-computer application signal routing.



For the latest product information, call us or visit: [www.mentor.com/systemmodeling](http://www.mentor.com/systemmodeling)

©2011 Mentor Graphics Corporation, all rights reserved. This document contains information that is proprietary to Mentor Graphics Corporation and may be duplicated in whole or in part by the original recipient for internal business purposes only, provided that this entire notice appears in all copies. In accepting this document, the recipient agrees to make every reasonable effort to prevent unauthorized use of this information. All trademarks mentioned in this document are the trademarks of their respective owners.

**Corporate Headquarters**  
Mentor Graphics Corporation  
8005 SW Boeckman Road  
Wilsonville, OR 97070-7777  
Phone: 503.685.7000  
Fax: 503.685.1204  
  
**Sales and Product Information**  
Phone: 800.547.3000  
[sales\\_info@mentor.com](mailto:sales_info@mentor.com)

**Silicon Valley**  
Mentor Graphics Corporation  
46871 Bayside Parkway  
Fremont, CA 94538 USA  
Phone: 510.354.7400  
Fax: 510.354.7467  
  
**North American Support Center**  
Phone: 800.547.4303

**Europe**  
Mentor Graphics  
Deutschland GmbH  
Arnulfstrasse 201  
80634 Munich  
Germany  
Phone: +49.89.57096.0  
Fax: +49.89.57096.400

**Pacific Rim**  
Mentor Graphics (Taiwan)  
Room 1001, 10F  
International Trade Building  
No. 333, Section 1, Keelung Road  
Taipei, Taiwan, ROC  
Phone: 886.2.87252000  
Fax: 886.2.27576027

**Japan**  
Mentor Graphics Japan Co., Ltd.  
Gotenyama Garden  
7-35, Kita-Shinagawa 4-chome  
Shinagawa-Ku, Tokyo 140-0001  
Japan  
Phone: +81.3.5488.3033  
Fax: +81.3.5488.3004

