

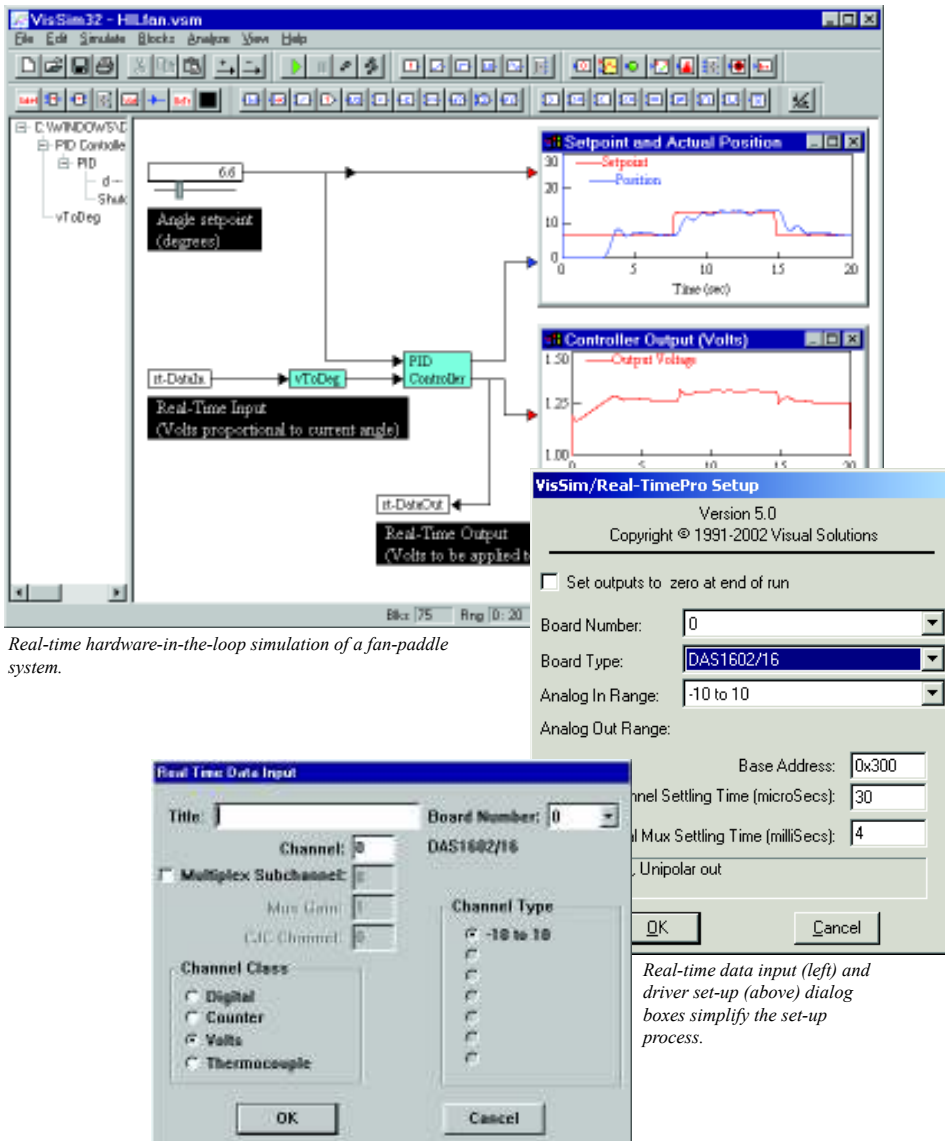
# VisSim/Real-TimePRO™ 7

## Data Acquisition, Control, and Hardware-in-the-Loop Validation

VisSim/Real-TimePRO provides the capability to couple a VisSim system model directly with a "real" process or controller. With VisSim/Real-TimePRO, hardware-in-the-loop (HIL) systems can be configured and executed by interfacing VisSim plant or controller models with real-world hardware, such as manufacturing plants, chemical processes, motors, pumps, and electric drives. The interface to real-world hardware is through computer I/O cards; high-speed motion control interface cards; or serial port connections to Programmable Logic Controllers (PLCs) or Distributed Control Systems (DCSs). And no code generation or programming is involved to configure an HIL system with VisSim/Real-TimePRO.

VisSim/Real-TimePRO has been used successfully in a wide variety of industries to:

- Develop and validate control strategies
- Perform off-line tuning
- Verify the feasibility of product and process transitions
- Train system operators (on the plant model, not the actual plant)



## Highlights

- No code generation required
- Universal library support for both Measurement Computing and National Instruments boards
- Real-time data acquisition and display
- Real-time hardware-in-the-loop execution
- Real-time data logging with gating
- Closed-loop process control
- Cold junction compensation
- Pulse width modulation
- Thermocouple linearization
- Up to 10 kHz data sampling rate
- PID tuning
- Counter-timer
- Quadrature encoding
- Connect up to 16 boards simultaneously
- Simultaneous use of boards from different vendors
- Multiplexer add-ons provide up to 112 channels per board
- Data switching of 120V AC systems

## Sample Applications

- Biomedical engineering
- Furnace control
- HVAC
- Model verification
- PLC commissioning
- Precision servo design
- Pulp and paper
- Real-time simulation
- System identification

## Technical Specifications

- Up to 5000 Hz closed-loop data rate
- Up to 1792 analog input channels
- Up to 256 analog output channels
- Up to 384 digital input channels
- Up to 384 digital output channels
- Up to 48 frequency input channels
- Up to 48 frequency output channels

## System Requirements

- Professional VisSim 7
- 8MB RAM
- 500K disk space

Real-time data input (left) and driver set-up (above) dialog boxes simplify the set-up process.

## *I/O Boards Supported by VisSim/Real-TimePRO*

### **Measurement Computing**

All boards (including legacy ISA bus) are supported by Universal Library software

#### **PCI Boards**

##### *Analog I/O*

PCI-DAS6071  
PCI-DAS6070  
PCI-DAS6040  
PCI-DAS6025  
PCI-DAS6023  
PCI-DAS4020/12  
PCI-DAS1602/12  
PCI-DAS1200/JR  
PCI-DAS1200  
PCI-DAS1002  
PCI-DAS1001  
PCI-DAS1000  
PCI-DAS08/SoftWIRE  
PCI-DAS08  
PCIM-DAS16JR/16  
PCIM-DAS1602/16  
PCI-DAS6402/16  
PCI-DAS64/M2/16  
PCI-DAS64/M1/16  
PCI-DAS6052  
PCI-DAS6036  
PCI-DAS6035  
PCI-DAS6034  
PCI-DAS6033  
PCI-DAS6032  
PCI-DAS6031  
PCI-DAS6030  
PCI-DAS6014  
PCI-DAS6013  
PCI-DAS1602/16  
PCI-DAS-TC/BRD

### **Measurement Computing (continued)**

#### *Analog Output*

PCI-DDA02/16  
PCI-DDA02/12  
PCIM-DDA06/16  
PCI-DDA04/16  
PCI-DDA04/12  
PCI-DDA08/16  
PCI-DDA08/12  
PCI-DAC6703  
PCI-DAC6702

#### *Digital I/O*

PCI-CTR20HD  
PCI-CTR10  
PCI-CTR05  
PCI-DUAL-AC5  
PCI-DIO96H  
PCI-DIO96  
PCI-DIO48H  
PCI-DIO24H  
PCI-DIO24/S  
PCI-DIO24/LP  
PCI-DIO24  
PCI-QUAD04  
PCI-PDISO8  
PCI-PDISO16  
PCI-INT32

#### *PCMCIA Cards*

##### *Analog Input & I/O*

PC-CARD-DAS16/12  
PC-CARD-DAS16/12AO  
PC-CARD-DAS16/330  
PCM-DAS08  
PC-CARD-DAS16/16  
PC-CARD-DAS16/16AO

#### *Analog Output*

PC-CARD-C37F/26  
PC-CARD-DAC08  
PCM-DAC02

### **Measurement Computing (continued)**

#### *Digital I/O*

PC-CARD-D24/CTR3  
PC-CARD-DIO48  
PCM-QUAD02

#### *USB Cards*

USB-1208FS  
USB-1208LS

#### *CompactPCI*

cPCI-DAS4020/12/1  
cPCI-DIO24H  
cPCI-DIO48H  
cPCI-DIO96H

### **National Instruments**

All boards supported by NI-DAQ Universal Driver software