

# NetSim™ Basic

## Control Simulation Tool

### Applications

NetSim™ Basic provides accurate control simulation for Woodward' high-end hardware platforms. The GAP™ code is compiled for simulation or for the target hardware in an identical manner. NetSim Basic ensures the preservation of the dynamic performance from NetSim Basic to the actual target hardware. Supported hardware platforms include:

- MicroNet™
- AtlasPC™
- Future platforms

The NetSim Basic environment allows execution of the control software only. No I/O is supported.

Additionally, NetSim Basic provides an ideal training tool for personnel who are learning GAP, wanting to test open loop functionality of a group of GAP blocks, or wanting to verify communication to a human–machine interface (HMI). A NetSim Basic training simulator, coupled with the actual HMI software on a separate PC, provides an excellent platform to train operators on unit start-up, shutdown, load transients and simulated equipment failures. Operators gain experience with the control and HMI so that they know how to respond when it really counts.

### Description

NetSim Basic is a tool that provides a powerful simulation environment for Woodward's pictures-to-code GAP software. It produces a virtual test stand in the office or in the field. Using no control hardware, the engineer performs accurate simulations of the control design. GAP supports a variety of programming environments—Functional Block Diagrams, Sequential Function Charts, Structured Text, and Ladder Logic Diagrams. The NetSim Basic environment brings the GAP-generated control software and the design concept together into a total test environment. Testing with NetSim Basic validates the design of the control software. The GAP code executes on the control exactly as it does in the simulation. The software controls "Time", giving the user complete control of program execution to thoroughly test and analyze control code.

NetSim Basic consists of a Control Executive & Utilities that synchronize time so that rate group execution of the GAP is perfectly preserved. Because the software owns and controls the "time", this simulation environment is ideal for testing. The simulation can be quickly advanced (faster than real time) to a trouble spot, stopped to allow review of the current conditions, and then single-stepped through the problem area to allow full debugging. The dynamic response of the control is unaffected because all functions are running in the same relative time frame.

- Works with GAP programming environment
- View GAP blocks during simulation
- Built-in data logging
- Built-in clock control
- Runs on PC or Laptop using Windows 2000, XP, Vista, and 7 (32-bit)
- Downloadable from the Internet

## Communications

NetSim Basic supports several industry standard communication protocols. All of the communication structures can be included in the simulation testing. By including the various communications (e.g. HMI), all of the pieces of the system can be verified and time in field commissioning is thereby reduced. Supported communication protocols include:

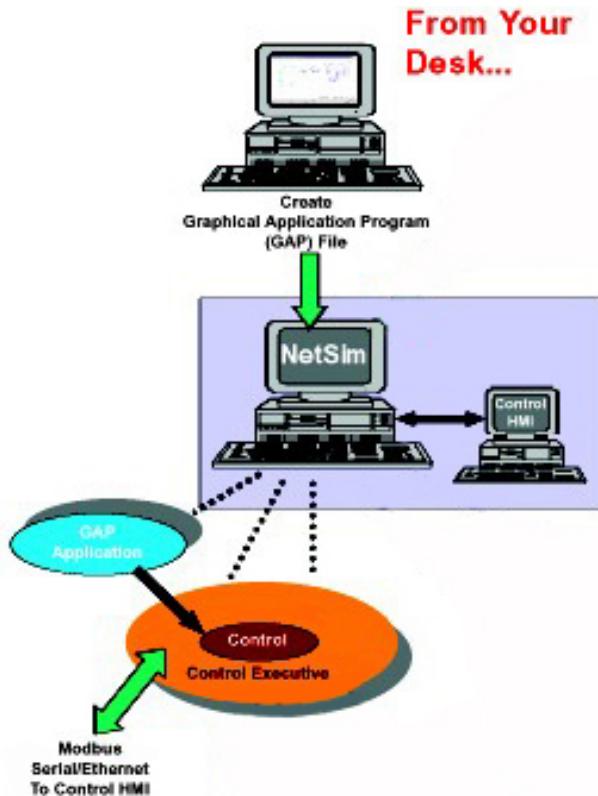
- Ethernet OPC
- Ethernet Modbus® \*
- Serial Modbus

\*—Modbus is a trademark of Schneider Automation Inc.

## Additional Services

Woodward offers analytical assistance with complex control issues. Using NetSim Basic and other advanced tools, Woodward can help in solving difficult or unusual problems.

NetSim Basic product training is available at Woodward or customer designated sites. This training allows the user to maximize the usefulness of the NetSim Basic tools.



Finally, know things will go smoothly in the field.

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