

DESIGN

Test Software TERADYNE CREATES WEB-BASED 'TESTSTUDIO'

ATE environment opens

By Stan Runyon

BOSTON—When the Nepcon show opens its doors here tomorrow, Teradyne Inc. will open a door of its own. The Boston-based test company is set to unveil an open, Web-based ATE operating environment of the sort that test engineers have been dreaming about for years.

TestStudio, as it is called, enfolds test development, documentation, debug and execution, and it lets users easily integrate almost any programming language, application development environment or test code.

Multiple linkups

With simple mouse clicks and drag-and-drop operation, it's possible to link in Visual Basic, Visual C++, HP VEE, LabVIEW, an application development environment or a specialized in-house programming tool. Just as easily, users can arrange or rearrange test activities into any desired order.

"The entire ATE community is heading toward openness in hardware," said Hadi Shavarini, project manager for TestStudio, "as evidenced by the move to VXI plug-and-play [and] PC-based systems. Why not do the same for software and create a complete, uniform ATE operating environment?"

TestStudio draws on familiar Web-based browser and hyperlink technologies to provide a common, intuitive user interface for all programming tools. Just like

Netscape, TestStudio allows users to plug in software components; the more plug-ins, the more powerful the environment.

Thanks to Teradyne's use of Microsoft Windows NT and the Component Object Module (ActiveX) interface standards, plug-ins can consist of any software that is COM-compatible: analysis packages, programming languages, etc. That means users can link in and share previously developed code or libraries, whether obtained over the Internet or elsewhere.

No matter the number of application development environment sources, the sequencing engine executes the final code seamlessly, sharing data between nodes as necessary.

From one test to another

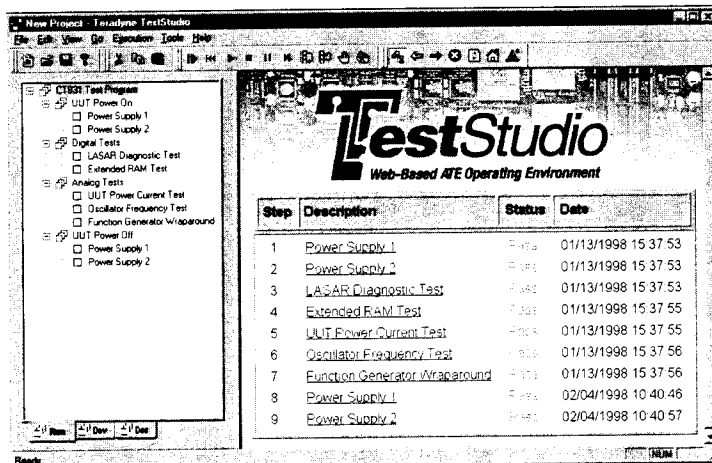
"One node could be written in LabVIEW, the next in HP VEE and the next in LabWindows," Shavarini said. "TestStudio shares the data at each node with the rest of the tree. All plug-ins therefore can communicate seamlessly with each other."

Consequently, users can, for example, sequence an analog test, look at the results and then conduct a boundary-scan test. Data from each test can flow between nodes and work cohesively as needed—all transparent to the user.

Because of TestStudio's tight integration with Teradyne's Lasar and Victory test-generation tools for digital functional testing, users can import simulation results or boundary-scan test data directly into TestStudio.

"Leaflets" is the term Teradyne uses for the mechanism behind the tool intercommunications capability or the connecting of nodes to applications. A library of leaflets is available for each popular development environment or test tool (HP VEE, for example), and more are in development.

When a user clicks on a node, a leaflet emerges. Double clicking brings up a li-



Teradyne's TestStudio ATE operating environment—to be shown at Nepcon—integrates all test phases, including development, debug and documentation.

Using TestStudio's hierarchical test-sequencing engine, users can organize test activities into steps displayed as nodes on a project tree and manipulate the node order to visually organize a test-development plan.

Reordering a test sequence involves simply moving execution steps up or down the tree.

brary, or dynamic (hyperlinked) page, of, say, HP VEE function calls for selection. "That allows users to leverage their extensive legacy code-development libraries without recompiling or rewriting anything," Shavarini said.

Explorer-based

Documentation in almost any form can be captured online and linked, as long as the format can be viewed by Internet Explorer. (TestStudio loads Internet Explorer 4.01 if it is not already installed.) This allows the linking of Word, PowerPoint and Excel documents. Users can even bring in video or audio clips—a capability that Teradyne says reduces the cost of documentation and obviates the need to reformat data for exchange across networks or applications.

Integrating the documentation within the test process can boost productivity.

For example, with the original programmer's notes linked to a test step, a new programmer can easily verify the fault coverage of a test program. Or, with a test step linked to a demonstration video, an operator sees exactly how to load a test fixture or probe for faults on a board. And

Users can sequence an analog test, look at the results and then conduct a boundary-scan test.

users can jump back and forth among test results, schematics, manufacturing error tracking and so on.

To manage such information, TestStudio includes four selectable security levels: administrator, developer, technician and operator. It also contains a test executive for flow control, looping, branching,

breaking and the like. Again, mouse clicks create loops between any sections of the nodal tree.

Recommended minimum hardware and software for TestStudio includes a 200-MHz Pentium, 32 Mbytes of RAM, 256-color support (65,536 preferred), 100

Mbytes of free disk space and Windows NT 4.0 or Windows 95.

TestStudio is available now as a commercial product for test-system integrators or those

developing in-house automatic test equipment. A single-user license starts at \$5,500.

Teradyne also deploys TestStudio in its freshly released VXI functional test system, the VECTOR 9000 Series.

Call (617) 482-2700

www.teradyne.com