

Business First of Columbus - November 20, 2006

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Blue Collar Computing resources offered for welding simulations

Business First of Columbus - November 17, 2006 by [Dan Eaton](#) Business First

Two industry organizations are coming together in an effort to put high-powered computing resources into the hands of businesses that otherwise might not have access to them.

The Ohio Supercomputer Center and the Edison Welding Institute are working in a program to provide remote access to a state-backed organization's high-performance computing systems and software to more than 200 Edison Welding-member companies in the welding and materials joining industries.

The effort, through the Supercomputer Center's Blue Collar Computing initiative, will help companies take testing from the workshop to the computer - an ability expected to save users time and money.

"Welding isn't just arcs and sparks," said Henry Cialone, Edison Welding's CEO. "We're doing a lot of mathematical modeling. Mock-ups can be expensive."

Testing welds requires building a model of a product or weld and putting it through physical tests, he said.

Computers have given the industry the ability to conduct some tests through simulations, reducing the need for physical models. But many companies don't have the resources to easily simulate complex physical processes of metal and polymers.

Cialone said Edison Welding has computer simulation capabilities for its members, but nothing compared with what large companies have or with what the Supercomputer Center is offering through Blue Collar Computing.

"This is a good, concrete example showing how small companies can take advantage of high-performance computing," said Stan Ahalt, the Supercomputer Center's executive director. "You do not need to hire an expert in complicated code to get answers to your questions."

Saving time

Ahalt said the Supercomputer Center provides the services at cost for operating the software; both groups are seeking federal support to further defray those costs.

Cialone said it is hard to project exact financial benefits because many variables affect users, but he says he knows how the partnership will benefit the industry. Edison Welding has a simulation program used for pipe design and construction work, for example, that takes eight days to run necessary tests and months to get final results.

Using the Supercomputer Center's capabilities, the same project would take four hours to run with results available in a week.

"The expertise to run code for simulations is fairly significant," Ahalt said. "With this, you'll basically plug in the information, ship it to (the Supercomputer Center) where it will be calculated. Instead of a week, it'll take hours."

Cialone said high-performance computing not only saves money, but will produce better products.

The new capabilities, he said, eliminates the "endless trial and error" of physical prototyping and enables users to test bolder design ideas. While a company might only be able to afford one or two physical mock-ups of a weld or product, the computer simulations might allow it to test many more.

Ohio Supercomputer Center

Business: State-funded organization created to provide high performance computing and services to universities and industries.

Based: Columbus

Executive director: Stan Ahalt

Web site: osc.edu

Edison Welding Institute

Business: Nonprofit organization for the welding and materials-joining industries.

Based: Columbus

CEO: Henry Cialone

Employees: 150

Web site: ewi.org

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