FLUKE®

From regional focus, Southern Alberta Institute of Technology has quietly grown to world-class provider of FOUNDATION™ fieldbus training

Technology at Work

The world is Michael Clark's classroom. The intricate layers that tie together a modern processing plant's networking systems are his curricula.

Clark, Project Manager and trainer for the Southern Alberta Institute of Technology in Calgary, Alberta, provides certified training to technicians and engineers in a new type of network-oriented processing plant information architecture known as "fieldbus".

Fieldbus is a digital communications protocol for automation and control industries. An international standard that affects a wide range of industries, including the massive global petroleum industry, fieldbus allows control devices and instruments from a range of manufacturers to communicate with one another, resulting in seamless compatibility and a more efficient and effective business operation.

Fieldbus-based systems provide much more information to plant managers, allowing them to make better-informed business decisions. The technology is being rapidly adopted because of the tremendous new value it provides to process industry users – and because of an unusual amount of cooperation from corporations throughout the process industry. The Fieldbus Foundation is a not-for-profit corporation of 187 leading process and manufacturing automation companies worldwide, whose major purpose is to provide an open and neutral environment for the development of a single, international, interoperable fieldbus protocol. Under the auspices of the Foundation, end users, manufacturers, universities and research organizations are working together to develop the technology, provide development tools, support and training, coordinate field trials and demonstrations, and enable product interoperability. The result is a type of fieldbus called FOUNDATION™ fieldbus.

Students from across Canada come to SAIT's BP Control Engineering Technology Centre for training in automation and industrial control, where the SAIT fieldbus training facility provides basic and advanced certified fieldbus training for end users, systems integrators and engineering firms. Students and professionals receive FOUNDATION™ fieldbus training, from introductory classes to the type of expertise that comes only from the years of experience SAIT brings to the field. With thousands of commercial fieldbus installations now around the world, however, the demand for training and installation expertise is immense. The SAIT training and demonstration facility is one of a prestigious handful of FOUNDATION fieldbus training facilities worldwide. It was originally chartered to serve primarily Western Canada and the Territories, but demand for its curriculum is so strong that it now reaches much wider.

"We try to go where we're needed," Clark said. Fieldbus-based systems link interoperable, intelligent field devices with the system's host computer networks. Because

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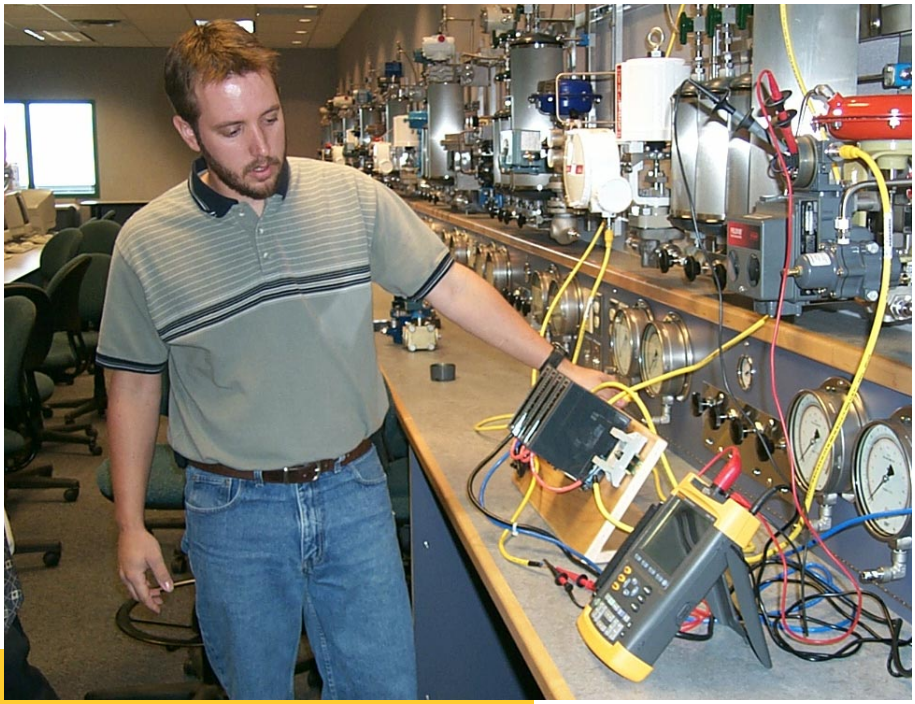

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fieldbus technology allows up to 32 devices on a single wire pair, wiring complexity and installation time and effort is significantly reduced. The ability to expand or reconfigure the system with less additional wiring means considerable savings over conventional, individually connected control systems, and some studies show as much as a 10 to 30 percent savings in new installations.

Training is crucial to make the most of the business efficiencies fieldbus systems can offer. Conversion to a fieldbus system brings demonstrable benefits, but it also requires a whole new way of doing business. And that means proper equipment, new procedures, and new ways of thinking.

"Many times fieldbus requires technicians to make the leap from analog systems to digital," Clark said. "Digital technology is a second language to many in the field, but others have spent their entire careers working with analog systems. When I speak with an audience of technicians, I am asking them to change the way they think about what they do for a living. Some may at first think they'll never be able to learn it."

That's why Clark carries with him the tools required to build and troubleshoot fieldbus modules. His classes are hands-on, for good reason.

"The only way you really 'get it' is to have the digital tools," he said. "When we show them the waveforms, they get it. If they can see it, they can understand it."

Viewing the waveforms typically requires the use of an oscilloscope. Because so much of a fieldbus technician's work is out in the field, a typical benchtop instrument is not practical. Clark instead teaches his students troubleshooting skills using a Fluke ScopeMeter™ portable test tool that combines the capabilities of a benchtop scope with a DMM and paperless recorder. Weighing just 2 kg with a four-hour battery life, the ScopeMeter's power and portability make it ideal for fieldbus troubleshooting.

Founded in 1916, SAIT is the oldest polytechnic institute in Canada, with a reputation for creative curriculum design and innovative instruction. SAIT's fieldbus courses range from an overview of fieldbus technology through a hands-on discovery of fieldbus modules and systems to advanced research.

Clark's reward for his time on the road is that moment when a technician who thought he couldn't learn the system first discovers what fieldbus technology can do. After that, there's no stopping him, Clark said.

"We're shattering the paradigm of the technician," he said. "You can see it in their eyes when they get it. It's amazing to see the response."

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Printed in U.S.A. 5/2002 1989018 A-ENG-N Rev A