

Engineeringtalk

The world's number 1 design news source ...updated daily

Ads by Goo000oog1e

Register for the FF Engineeringtalk en newsletter now! **Ne about Mid-range : Large PLCs and r every issue. Click details.**

Hard Chrome Coatings and Plated Plastic Coatings



News Release from: **Siemens Automation and Drives**
 Subject: **Simatic PCS7 Process Control System**
 Edited by the Engineeringtalk Editorial Team on **30 June 2006**

Breakthrough weblab controlled by Sie

The University of Cambridge has developed an unique Internet-based system to facilitate experiments that can be conducted remotely over the web

Note: Readers of the **free** Engineeringtalk email newsletter will have read this news when it was announced. [Find out how to register for your free copy now.](#)

Ads by Google

The University of Cambridge has developed an unique Internet-based system to facilitate experiments that can be conducted remotely over the web. Controlling, monitoring and providing results output for this groundbreaking development is a state-of-the-art Simatic PCS7 [process control](#)

[system](#) from Siemens Automation and Drives. The idea for this exciting new development was spawned by two people: Markus Kraft, Reader at the University's Department of Chemical Engineering, and Professor Clark Colton at the Massachusetts Institute of Technology (MIT), between which organisations there was already a student exchange programme in place.

Development of the project began in 2003 with support from the Cambridge-MIT Institute, an organisation that aims to enhance the productivity and competitiveness of the UK economy by improving the exchange of knowledge between [universities](#) and industry.

The project was intended to explore the use of remotely controlled laboratory experiments in [chemical engineering](#) education.

Anders Selmer, a research assistant in the Computational Modelling Group, and Mike Goodson, teaching fellow at the Department of Chemical Engineering, were tasked with developing the web-based experiments whereby other universities or academic institutions sign up for an Internet time slot.

When the allocated time arrives, users can log in and perform a real experiment, obtaining real data in real time from any computer with an Internet connection.

'We wanted the weblab to run as a fully functioning chemical engineering plant', says Selmer.

Ads by Goo000oog1e

'When it came to sourcing a hardware and software provider we decided to call Siemens Automation and Drives at Manchester'.

'They presented to us and convinced us they had the technical capability to meet our objectives'.

Close ties between industry and education have been a long-standing tradition at Siemens Automation and Drives, which is why the company has established Siemens Automation Co-operates with Education

(SCE).

SCE is aimed at research, development and secondary education training centres around the world and helps facilitate: partnerships between industry and education; communication of basic knowledge of automation and drives; and the provision of e-education in co-operation with partner organisations.

In January 2006 SCE delivered a complete Simatic PCS7 package to the University of Cambridge.

The kit comprises: a Simatic AS-400 DCS controller; three industrial PCs; three Siemens Coriolis flow meters; temperature probes; various input/output modules; and fully functional control software.

The flow meters and temperature probes in the PCS7 system communicate over

Profibus PA to the three PCs, whereas the other devices use digital or analogue input/output modules.

The whole system is controlled by the Simatic AS-400 DCS controller.

The three industrial PCs play four different roles in the Siemens setup: one is the engineering station where the operating system can be programmed and downloaded to the controller, and where the graphical interface can be designed and transferred to the operating system server, which resides on a second computer.

The engineering station doubles as an operator station where the system can be deployed via the operating system server.

The third computer is the webserver, broadcasting a web accessible version of the process control system via the Internet.

Simatic PCS7 is the Siemens process control system offering that can be used for small scale applications such as pilot plants, up to extremely large plants or groups of connected facilities.

As part of the Totally Integrated Automation (TIA) range of solutions from Siemens, PCS7 not only simplifies engineering but also enables the seamless integration of all aspects of a plant, including both primary and secondary processes.

Through homogenous integration of [Industrial Ethernet](#) and Profibus, plant devices and packages controlling a wide range of control activities can easily be integrated and managed from a single point.

The weblab at the University of Cambridge controls a real reactor, which are at the very core of chemical engineering and appear on the syllabus of virtually all chemical engineering courses.

The reactor can be run in batch or continuous mode and ideal to non-ideal mode, while the volume and temperature can also be varied.

The chemicals used are sodium hydroxide and phenolphthalein solutions.

The progress of the reaction is monitored by measuring the intensity of light at 550nm going through a flow cell situated at the outlet of the reactor.

The first experiments over the Internet have already been controlled by students at MIT and [Imperial College](#) London.

Gert Rohrmann, Partner Manager - Systems Integrators at Siemens Automation and Drives, says: 'SCE helps us present the Siemens brand to tomorrow's customers'.

'The project at the University of Cambridge is already proving highly successful and has landed a lot of kudos to both the Department of Chemical Engineering and Siemens SCE'.

'PCS7 is a powerful system and is widely deployed in 'real life' process applications including chemical production'.

- [Siemens Automation and Drives: contact details and other news](#)
- [Email this news to a colleague](#)
- [Register for the free Engineeringtalk email newsletter](#)
- [Engineeringtalk Home Page](#)



[Download the FREE 2007 guide for Marketing Managers from Engineeringtalk \(PDF, 900kB\)](#)

[Put your news on Engineeringtalk](#) | [Advertise](#) | [Get our FREE newsletter](#) | [Home: About Us](#)

Site copyright © 2000-2007 Pro-Talk Ltd, UK. Based on information from Siemens Automation and Drives



Click on the advertisement to visit the advertiser's web site now