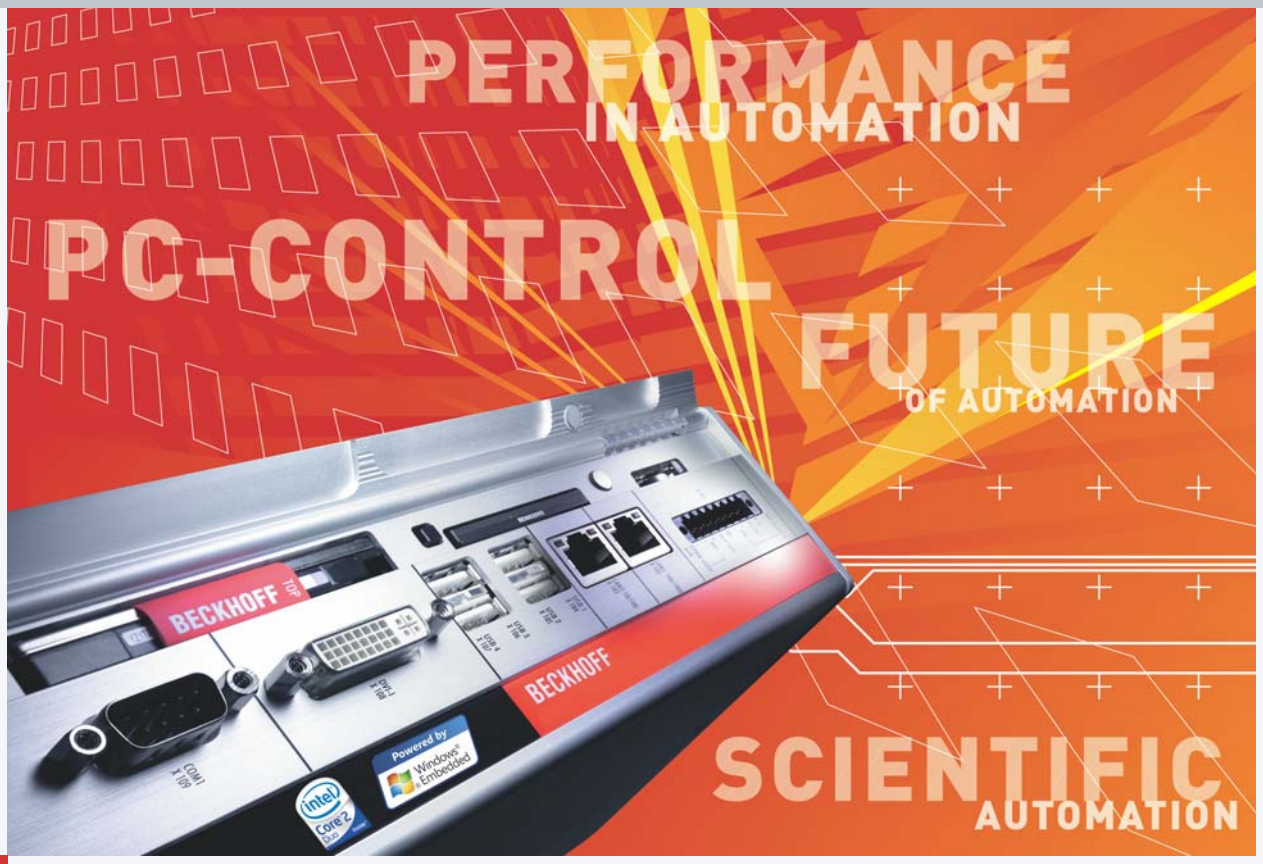
Hanover Fair 2008: PC Control in the Application Park in Hall 17, Booth D26

The trade show presence in the "Application Park" in Hall 17, Booth D26, is based on the motto "PC Control – Open Platform for Advanced Automation". Together with Intel, Microsoft and other partners, Beckhoff presents current and future technologies based on PC-based control technology, such as leading edge "Scientific Automation".



PC CONTROL OPEN PLATFORM for advanced automation

PC Control – Open Platform for Advanced Automation

In the Application Park Deutsche Messe AG intends to convey practice-orientation with live demonstrations. The Beckhoff presentation focuses on PC Control as the basis for open, high-performance and future-proof control technology. The main topics are:

- **PC Control**
- **Performance in Automation**
- **Future of Automation**
- **Scientific Automation**
- **PC Control Applications**

In keeping with the prediction of the joint founder of Intel, Gordon Moore, PC Control technology brings a doubling of the CPU power for control applications every 18 months. Hence the question can already be asked today: "What can an Industrial PC with 32 GB RAM and a 64-core CPU achieve?" Beckhoff will provide answers in the "Application Park" at Hanover Fair.

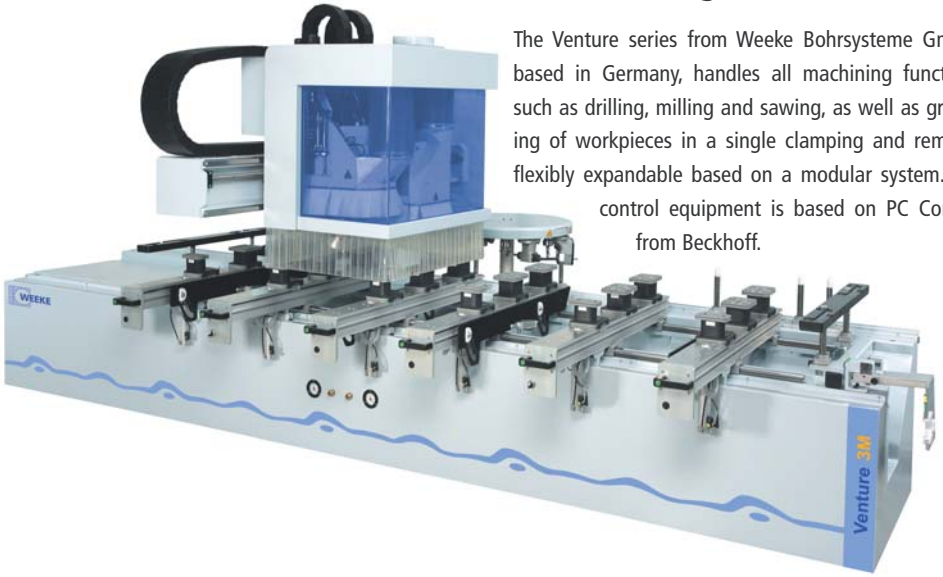
Today's Industrial PCs are already regarded as the most efficient control platform. With increasing processor power they will be able to perform additional tasks, in addition to basic functions such as PLC, motion and HMI. This means that special functions, such as vision, robotics and measurement technology, which are usually implemented as special hardware units today, will soon become part of the software PLC.

Further Information:
→ **www.beckhoff.com/PC-Control-Live/**

Hanover Fair 2008: PC Control Live!

In PC Control technology, Beckhoff has created a standard that has established itself worldwide and is used in the widest variety of applications and industries. Its universality and versatility will be demonstrated in the "Application Park" through several application examples, including a CNC timber processing centre and a micro-injection molding system for medical products. With the high-speed "SpiderCam" camera system, Beckhoff offers an interesting example for an application outside machine and system engineering.

CNC machining center



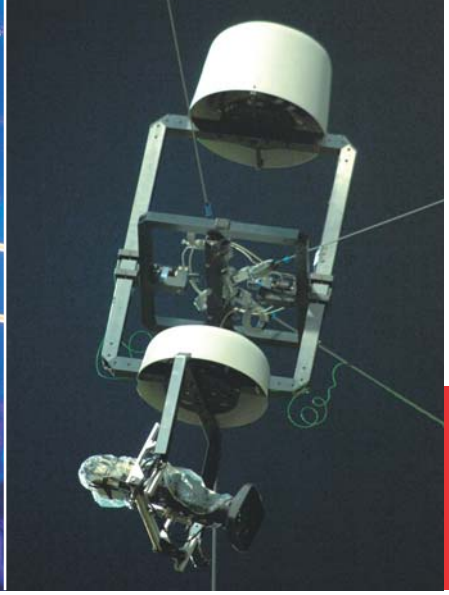
The Venture series from Weeke Bohrsysteme GmbH, based in Germany, handles all machining functions such as drilling, milling and sawing, as well as grooving of workpieces in a single clamping and remains flexibly expandable based on a modular system. The control equipment is based on PC Control from Beckhoff.

High-precision, micro-structured components through PC Control

In the Application Park Beckhoff will present a micro-injection molding system with linear drive, which was developed in cooperation with the Department for Medical Engineering at TU München. The machine was developed as the core of a compact production cell for the manufacture of micro precision parts for medical applications.

PC-based control technology from Beckhoff was selected for the implementation of the real time control and regulation of the machine processes. The task of the micro injection molding machine is to move and mould small masses with high precision and repeatability. This demands extremely short reaction times and high sampling rates from the controller. This is where XFC technology is used. It enables deterministic system reactions in the order of microseconds.

The SpiderCam is used regularly in shows or sports event in German television.



Different cameras can be fitted to the camera head, or dolly, according to need. The image signals are transmitted to the director's booth or the transmitter van along the glass fiber that is embedded in the plastic cables.

PC-based Control becomes a film star

In the SpiderCam, the company of the same name has developed a camera robot that moves the camera freely in every direction, like a remote-controlled aircraft. A cable winch system can be attached to four masts, to the ceiling or to other available fixed points to hold the camera in the desired position. Cable winches that shorten and lengthen the cables and coordinated controls drive the system, making it fast and agile. Speeds of up to 9 m/s (32 km/h) are possible.

In order to control this complex process, spidercam GmbH is using a CX1000 Embedded PC running Windows CE as an operating system for the central controller. Each winch station incorporates a CX9000 Embedded PC with TwinCAT software that communicates through network variables with the CX1000 in the central control unit. Integrated TwinSAFE I/O terminals ensure maximum safety, particularly at critical times such as commissioning or when under manual control.

In spite of the complex technology, it is relatively easy to use the SpiderCam. Only two people are needed to operate the camera system. While one flies the SpiderCam through space with the aid of a joystick, the second operates the camera itself. A control monitor with online display provides accurate information about the exact position of the camera at all times.

The booth partners

- Intel, **www.intel.de**
- Microsoft, **www.microsoft.com/embedded**
- Microsoft Research, **www.microsoft.com/emic**
- Weeke Bohrsysteme, **www.weeke.de**
- IPA Robotersysteme, **www.ipa.fraunhofer.de**
- spidercam, **www.spidercam.tv**
- EPLAN Software & Service, **www.eplan.de**
- Delmia, **www.delmia.com**
- Hasso Plattner Institut, **www.hpi-web.de**
- TU München/Medical Engineering, **www.medtech.mw.tum.de**
- Cologne University of Applied Sciences, **www.fh-koeln.de**
- University of Kassel, Embedded Systems section, **www.uni-kassel.de**