Press Release

One year after it was established, ETG has become the fastest growing fieldbus organisation

EtherCAT slave controllers available

Founded in November 2003, the group now has 132 members worldwide. At SPS/IPC/DRIVES in Nuremberg, 28 ETG members will show their EtherCAT products on the ETG stand, thus demonstrating their strong commitment to EtherCAT. Many manufacturers consider EtherCAT technology to be the way to go and will announce associated products. The process of international standardisation of EtherCAT slave controllers has been initiated, and the devices are now available for delivery.

The EtherCAT Technology Group is making good progress at all levels. ETG executive committee member Clement Peters from Schuler AG said: "Apart from the functional features of a technology, availability of a wide range of components is very significant for users of automation devices. The fact that just one year after ETG was established 28 member companies are already presenting EtherCAT products and that further products are in preparation is clear evidence for the success of this young technology. The main factor determining user acceptance continues to be simple and effective handling of the EtherCAT system in terms of configuration and diagnosis."

For Dr. Peter Heidrich from Baumüller GmbH, who is also an ETG executive committee member, availability of the EtherCAT slave controller is a very significant factor: "During 2003, the company Baumüller spent a considerable amount of time looking at Ethernet-based fieldbus systems with real-time capability. Baumüller decided to use EtherCAT due to the significant benefits it can offer, particularly in terms of price/performance ratio and promised availability.

This decision was underlined through our active collaboration in the ETG executive committee. After the first year of ETG's existence we continue to be convinced that the decision for EtherCAT was the right one. As soon as EtherCAT slave controllers became available, Baumüller started producing connections for the b maXX 4400 system in August 2004. The first pilot applications and field tests are being rolled out. One example is the demonstrator that will jointly be shown on the ETG stand at

EtherCAT Technology Group
Martin Rostan
Ostendstraße 196
90482 Nuremberg
Germany

Phone: +49 (0) 9 11 / 5 40 56 20
Fax: +49 (0) 9 11 / 5 40 56 29
m.rostan@ethercat.org
www.ethercat.org

Press Contact
Frank Metzner
BECKHOFF Industrie Elektronik
Eiserstr. 5
33415 Verl
Germany

Phone: +49 (0) 52 46 / 9 63 164
Fax: +49 (0) 52 46 / 9 63 9164
f.metzner@beckhoff.com
www.ethercat.org/press/

SPS/IPC/DRIVES 2004 by the companies Schuler, Beckhoff and Baumüller. In parallel, Baumüller will also show their own EtherCAT-based solutions consisting of controllers and drives on the Baumüller stand at SPS/IPC/DRIVES 2004. Within just one year, ETG has demonstrated that, due to the universality of the EtherCAT technology, EtherCAT-based systems can be developed and realised very quickly. The large number of companies present at the EtherCAT stand is further evidence of this."

Speaking for these companies, Dieter Hess, managing director of 3S-Smart Software Solutions GmbH, said: "3S decided to implement EtherCAT as the first real-time Ethernet protocol, since EtherCAT utilises the maximum performance of Ethernet. For us as a software manufacturer, the fact that the master implementation is independent of special plug-in cards is particularly attractive. The software can be based on the universally available standard Ethernet controller. The openness of the system and Beckhoff's active support for ETG are further significant factors."

Standardisation

A first milestone has been reached in terms of international standardisation: In November, the EtherCAT specification was officially submitted to IEC for standardisation. The EtherCAT Technology Group is an official liaison partner of the IEC committees for digital communication. As far as IEC is concerned, ETG therefore has the same status as PNO and ODVA. While IEC deals with the standardisation of communication services and protocols, ISO deals with the device description. EtherCAT was submitted to the latter in October.

EtherCAT Slave Controller

One advantage of EtherCAT technology is cost-effective implementation. No special plug-in cards are required on the master side - the standard board Ethernet port is sufficient. Cost-effective slave controllers for slave devices are available from several sources. Hans-Juergen Hilscher, managing director of Hilscher GmbH, said: "We were surprised about the large number of enquiries as to whether our netX supports EtherCAT. Today can we can answer "Yes", and we are pleased that we now have all real-time Ethernet systems on chip, based on a technology agreement with the company Beckhoff."

FPGA-based EtherCAT slave controllers (ESC) developed by Beckhoff are available for ETG members from EBV Elektronik - one of the largest distributors of electronic components - with immediate effect. The blocks integrate all time-critical EtherCAT communication functions. Therefore, no additional high-performance communication processors are required. It is available in two versions: with distributed clock functionality (ESC20) and without (ESC10). This makes the ESC20 particularly interesting for devices where high-precision synchronisation is critical. In addition to minimum jitter, EtherCAT also offers unique simultaneity: even under industrial conditions, values of less than 100 ns can be achieved for both parameters. Together with short cycle times, these performance characteristics enable high-precision, distributed control processes to be implemented.

The EtherCAT slave controllers feature the following functions:
- 4 kB DPRAM as application memory
- 8/16-bit µC interface
- 32-bit digital interface
- 2 (ESC10) or 4 (ESC20) FMMUs (Fieldbus Memory Management Unit)
- 4 (ESC10) or 6 (ESC20) sync managers
- ESC20: SPI interface, distributed clock function

EtherCAT slave controllers and ASICs will be available from the second quarter of 2005. ETG chairman Martin Rostan explained: "Since FPGA already offers a powerful and cost-effective solution, speed to market is less of a priority for ASIC. The suggestions that are currently still flowing back from the development projects of the device manufacturers will benefit the ASIC. ETG helps to ensure that EtherCAT is positioned more widely and meets the requirements of more manufacturers and applications."

Please send readers' questions to:
EtherCAT Technology Group
Ostendstraße 196, 90482 Nürnberg, Germany
Phone: +49 (0) 9 11 / 5 40 56-20
e-mail: info@ethercat.org, Internet: www.ethercat.org