

EtherCAT, the real-time Ethernet technology for control applications developed by Beckhoff, is making headway at all levels: Basic development and technical testing were completed successfully in close cooperation with selected pilot customers, and the technology was presented and discussed in detail in the EtherCAT Technology Group. While several special protocol features – partially prompted by contributions from ETG members – are still being added, implementation from FPGA to ASIC has already started.

EtherCAT on the road to success



The ETG board of directors (left to right): Clement Peters, Schuler AG, Martin Rostan, Beckhoff and Dr. Peter Heidrich, Baumüller.

International standardization of EtherCAT has also been initiated successfully. EtherCAT has become an established industrial Ethernet technology, and it is hard to imagine related symposia, conferences and workshops without this subject. This is also apparent from the numerous awards for EtherCAT over recent months. EtherCAT has attracted best new technology awards not only in German-speaking countries, but also in the USA, Sweden and Poland.

ETG membership reaches 100

On Friday, June 26, 2004, the 100th membership application form arrived by fax at the EtherCAT Technology Group head office in Nuremberg. In the history of fieldbus organizations, the ETG thus had an exceptional start: from zero to one hundred in less than 8 months. But that's not all: Only a week later, ETG already had 105 members. But it is not only the number of member companies that is impressive, the worldwide distribution also speaks for itself. Currently, companies from the USA, Canada, China, Korea, Taiwan, Israel, Belgium, Sweden, Finland, Great Britain, Italy, Switzerland, Liechtenstein, Austria and, naturally, Germany are represented in the ETG; enquiries from South America, Africa and Australia have been received.

"No doubt the number of members is not everything," Martin Rostan, EtherCAT

product manager at Beckhoff, explained, "but it indicates the tremendous worldwide interest in EtherCAT. We are particularly pleased about the considerable number of participants at ETG events, which indicates that the members are indeed committed to EtherCAT and want to actively share this technology. It also shows that the members are satisfied with what the ETG has to offer. For us this is confirmation and incentive at the same time."

EtherCAT Technology Group kick-off meeting

The EtherCAT Technology Group (ETG) kick-off meeting, held March 9/10, 2004 at Frankfurt in Germany, was very well received. More than 70 delegates from 45 member companies gained insights into the EtherCAT specification, adopted a constitution and exchanged information.

During the meeting, the ETG members elected a board of directors, which will manage and represent the ETG in future. With Clement Peters from Schuler AG and Dr. Peter Heidrich from the company Baumüller, both the user side and the manufacturer side are represented on the board. Martin Rostan was elected to the board of directors for Beckhoff as the technology providing automation company.

**New ETG members since
the last edition of PC Control:**

3S-Smart Software Solutions GmbH, Germany
ACS-Tech80 Ltd., Israel
AMK GmbH & Co.KG, Germany
AutomationX GmbH, Austria

Aweta G&P, The Netherlands
Axiom GB Ltd., United Kingdom
Beck-IPC GmbH, Germany
Cimetrics, Inc., USA
DeWind GmbH, Germany
Eagle Precision Technologies Inc., Canada
Electronic Control Systems, Italy
Elmar Vögel Software & Automation, Austria

Fachhochschule Solothurn, Switzerland
ferrocontrol Steuerungssysteme
GmbH & Co KG, Germany
Flanders Mechatronics Technology Centre, Belgium
Fritz Kübler GmbH, Germany
ICP DAS Co. Ltd., Taiwan
Industrielle Automatisierung Kremer B.V., Belgium
IVECO Motorenforschungs-AG, Switzerland



With 30 participants, the first meeting of the ETG technical committee on May 5/6 in Nuremberg/Germany was very well attended.

Clement Peters, coordinator for control and drive systems at press manufacturer Schuler, talks about the reasons for his commitment to ETG: "The Schuler Group deals with a wide range of applications covering a variety of requirements for industrial communication systems. Hydraulic controllers require maximum performance. The size of our systems leads to extensive networks, and costs naturally also play an important role. In the past we had to use several different bus systems, because no single system was able to cover all aspects. Particularly in terms of cycle time, we nevertheless reached the limits of conventional fieldbus technology. With EtherCAT we found a technology that enables us to solve all our applications. We are very keen to see a wide range of EtherCAT devices, and we therefore actively contribute to the EtherCAT Technology Group, which from our point of view had a very promising start. We also encourage our suppliers to implement EtherCAT."

Dr. Peter Heidrich, Development Manager at Baumüller, explains his involvement in ETG: "As one of the leading manufacturers of electrical drive and automation solutions, the Baumüller group has been familiar with both open and proprietary fieldbus systems for some time. Baumüller has also been active with technology development in this area. The best example for such developments is our CANsync, which we have been using successfully for a number of years. In order

to be able to combine our heterogeneous automation and drive solutions b maXX 4000, b maXX 3000 and b maXX 2000 with a synchronous fieldbus system in new, sometimes even more complex, demanding or price-sensitive applications, we have been looking at real-time Ethernet fieldbus technologies in some detail. For us, important criteria are total system costs, performance, availability of initial solutions and potential for the selected technology to become an open standard supported by a large number of manufacturers. EtherCAT has proven to be the technology that best meets our expectations. We are convinced of the success of this system, and we actively want to help shape EtherCAT." Martin Rostan comments: "The ETG meetings clearly show that the EtherCAT Technology Group approach is working. Beckhoff presents EtherCAT development and opens up this attractive technology for all interested companies. At the same time, their qualified feedback contributes to improving the specification and leads to existing features being complemented for special device classes or applications. All those involved and naturally EtherCAT itself benefit from this co-operation without unnecessary loss of time through the development of specifications in committees with continuously changing membership and majorities. Members can influence the EtherCAT development with minimum investments, while Beckhoff can maintain the aim of rapid availability on the market, despite the openness."



More than 70 participants from 45 member companies attended the EtherCAT Technology Group kick-off meeting on March 9/10, 2004 in Frankfurt/Germany.

KEB Antriebstechnik, Germany
 Koenig Prozessautomatisierungs GmbH, Germany
 KW-Software GmbH, Germany
 Lust Drivetrionics GmbH, Germany
 LVD company, Belgium
 MESCO Engineering GmbH, Germany
 Moeller GmbH, Germany
 Pfeiffer Vacuum, Germany

Profimatics GmbH, Germany
 Robert Bosch GmbH, Germany
 ROBOX S.P.A., Italy
 Rohwedder AG, Germany
 Samsung Electronics, Korea
 S.W.A.C. GmbH, Germany
 SMC European Technical Centre, United Kingdom
 Soft-O-Matic, The Netherlands

Steinhoff Automation GmbH, Germany
 Weidmüller Interface GmbH & Co KG, Germany
 Weidmüller Schweiz AG, Switzerland
 WIKA Alexander Wiegand GmbH & Co. KG, Germany
 Wipotec GmbH, Germany
 Wittenstein Motion Control GmbH, Germany
 WTTCM, Belgium
 Zhejiang Supcon Technology Co Ltd, China

The complete list of ETG members can be found at www.ethercat.org

“Pure technology”

Once the formalities were out of the way, delegates started discussing technical issues. Developers from Beckhoff, headed by Dr. Dirk Janssen, gave insights into the details of the EtherCAT specifications. A live presentation of the main features rounded off the technology part of the meeting. In direct conversation, questions regarding the implementation of devices in EtherCAT networks could be clarified, and participants made good use of this opportunity.

With 30 participants, the first meeting of the technical committee, which took place on May 5/6 in Nuremberg/Germany, was very well attended. Apart from technical discussions, the emphasis was on training. Dr. Dirk Janssen and Holger Büttner, supported by other developers, introduced the protocol, the implementation and the latest developments. During this phase, it is obvious that conveying information features prominently in technical meetings: After all, EtherCAT is no longer in the development phase, but is already largely implemented. Nevertheless, the discussion brought up interesting suggestions and aspects, which are currently being included in the specification. The meeting was therefore very useful for all involved.

It also showed that a training component is helpful and necessary, particularly for those who have not attended a meeting before. The next meeting, entitled “implementation kick-off meeting” and to be held July 6-8, will therefore start with a one-day EtherCAT training session.

International standardization initiated

Disclosure is not only driven from within the EtherCAT Technology Group – the international standardization of EtherCAT has also been initiated already. Both the Real-Time-Ethernet Working Group of IEC and ISO have accepted an accelerated standardization procedure for EtherCAT, so that EtherCAT is expected to obtain the status of an official IEC or ISO specification quite soon. This makes EtherCAT’s openness kind of “official”.

ETG dates and events 2004

Sept. 16 | ETG Technical Committee Meeting

Oct. 19–20 | Berlin, Germany, Estrel Convention Center
 VDE Congress 2004:
 The Ethernet fieldbus is called EtherCAT

Nov. 23–25 | Nuremberg, Germany
 SPS/IPC/DRIVES: ETG Multi-Vendor presentation

IAONA: “Memorandum of Understanding” signed

At the Hanover Fair ETG, IAONA, Modbus-IDA, ODVA, SERCOS and EPSG signed a “Memorandum of Understanding” (MoU). All partner organizations declared their willingness to co-operate in the following areas: network security, wiring, application of the IEEE 1588 standard (adjustment of clocks via the network), and general system integration. This declaration underlines the co-operation between IAONA and ETG. Martin Rostan has been a member of the IAONA technical steering committee right from the outset and has represented IAONA as a technical expert in IEC working groups.