EtherCAT
Technology Group

ETG Newsletter
December 2009 | #22

EtherCAT®
Automation Protocol

Content

Editorial

Dear EtherCAT Technology Group Members,

2009 has been a challenging year for the automation industry world wide - and a very busy one, not only for the EtherCAT Technology Group. Lots of members have implemented EtherCAT interfaces in their products: for example, over 70 manufacturers provide EtherCAT master products, and 60 drive manufacturers have EtherCAT enabled drives either readily available or publicly announced. End of 2008 we counted 17 different I/O suppliers with EtherCAT support, this year 39. So we are happy that ETG not only has the largest membership and an outstanding product selection, but also the best adoption rate among the Industrial Ethernet Technologies.

ETG is flourishing worldwide: in Asia, membership grew by an astonishing 52%, and in North America also by 41% within one year. And we find that most members do not just join the organization, but start to implement or use the technology soon afterwards.

EtherCAT is also making progress in international standardization: Safety over EtherCAT, the new Installation Profile and the updated edition of IEC 61158 (protocols and services) are due for final voting in IEC at the beginning of next year. A Japanese version of the specification is now also available.

Well attended plug fests in Europe and North America, the new EtherCAT Test Center in Japan, Seminar Series in India, Taiwan and the US, and EtherCAT booths on major trade shows further underline the worldwide view and presence of the EtherCAT Technology Group.

This newsletter for ETG members provides an update on the EtherCAT Technology Group activities. Please read it carefully and distribute it to all those within your organization that are concerned with or interested in EtherCAT - including R&D, product management and marketing.

From the EtherCAT point of view, 2009 was not only challenging and busy, but also quite successful. We are looking forward to an exciting 2010 and hope that it will be another successful one for EtherCAT and for all of you.

With seasons greetings on behalf of the entire EtherCAT Technology Group Team,

Martin Rostan
Executive Director

HOT TOPICS

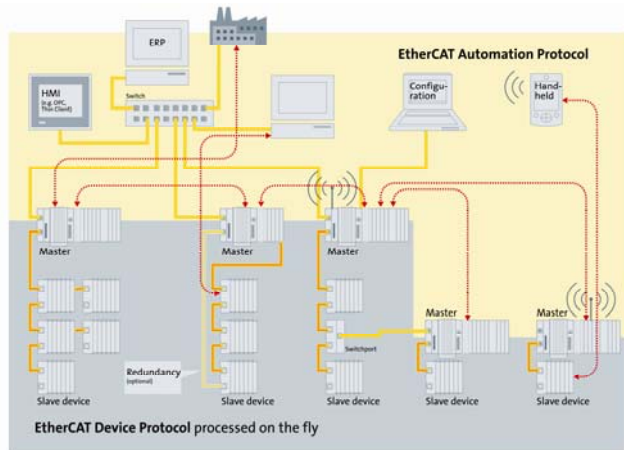### EtherCAT Automation Protocol - EtherCAT also for factory communication!

EtherCAT is a well-established technology for machine level control networks. Now ETG has also put a focus on the factory network, enhancing the EtherCAT specification by defining services for the supervisory control level. As a result, EtherCAT will also comprise the Ethernet communication between control systems, as well as to the supervisory systems. The new EtherCAT Automation Protocol (EAP) simplifies the direct access of process data from field devices at the sensor / actuator level and also supports the integration of wireless devices.

For the factory level, the base protocols for process data communication have been part of the EtherCAT specification from the very beginning. Now they were enhanced with services for the parameter communication between control systems and for routing across system boundaries. Uniform diagnostic and configuration interfaces are also part of the EAP. It can be used in switch-based Ethernet topologies as well as via wireless Ethernet. Process data is communicated like network variables, either cyclically or event-driven. Both the classic EtherCAT Device Protocol, which utilizes the special EtherCAT functional principle of "processing on the fly", and the new EAP make use of the same data structures and facilitate vertical integration to supervisory control systems and networked controllers.

Development of the EtherCAT Automation Protocol was kicked off in March 2009. The corresponding ETG working group plans to publish the specification in January 2010. Since EAP mainly uses already available protocols and services, for example, those already implemented in many EtherCAT control systems for access to field devices from outside via TCP/IP, it is a fully compatible enhancement of the standard. While EAP handles the communication in the millisecond range on the process control level and between control systems, the EtherCAT Device Protocol handles I/O and motion control communication in the field level in the microsecond range.

Further Information about EAP can be found in this publication:
→ www.ethercat.org/pdf/english/pcc_0409_etg_e.pdf

Omron selects EtherCAT as generic automation network

Shinya Yamasaki, Senior General Manager, Automation Systems Strategic Business Unit, Omron Corporation, announced at the ETG Press Conference at SPS/IPC/DRIVES Show in Nuremberg, Germany, that Omron has selected EtherCAT not only as motion bus but as generic automation network for machine control applications. Yamasaki also said that Omron develops EtherCAT devices ranging from Controllers, Servo Motors and Inverters to Sensors and I/O terminals.

The presentation from the Press Conference can be found here:
→http://www.ethercat.org/download/press/ETG_PK_SPS_2009_Slides.pdf

EtherCAT Spec in Japanese Language available

The EtherCAT specification is now also available in Japanese language. The translation was done by Omron with support from ASTEM RI, Hitachi IES, K.MECS and Fuji Electric.

The translation comprises all 5 parts of the ETG.1000 document which corresponds to IEC-61158-12. The Japanese version will further boost the acceptance of EtherCAT in Japan, where the technology already is very well received. Even before the Japanese spec was available, 2009 access statistics to the ETG website showed that Japan makes for the single most accesses that can be related to a specific country.

Both the English and the Japanese Specifications can be found here:
→ http://www.ethercat.org/MemberArea/download_spec.asp

EtherCAT Website | Miscellaneous Updates

New downloads were published within the download section, such as minutes and slides from former ETG events.
→ www.ethercat.org/en/publications.html

Please find the updated EtherCAT brochure in English language, now including the items 'Conformance and Interoperability' and 'Safety over EtherCAT'.
→ www.ethercat.org/pdf/english/ETG_Brochure_EN.pdf

For all Japanese visitors we also provide an Japanese version of the EtherCAT brochure. The FAQ-section is enhanced to find the desired content more effective.
→ www.ethercat.org/pdf/japanese/ETG_Brochure_JPN.pdf

We also received new products from ETG member companies and added them to the website. Please search through the updated Product Guide section:
→ www.ethercat.org/en/products.html

Welcome new ETG Members!

Since the last news mail, the following members joined the ETG:

- DISTek Integration
- Granite Devices
- BySTORM & CO.
- Delta Computer Systems
- Harmonic Drive Systems
- ACD Antriebstechnik
- TK Engineering
- FRE TOR
- Cranfield Precision, Division of Cinetic Landis Ltd
- Solcept
- SEMIKRON Elektronik
- Tecan Schweiz
- MULTIPROX
- Archery Technologies
- SurSystem
- eonas IT-Beratung und -Entwicklung
- Institute of Modern Manufacturing Engineering, Department of Mechanical Engineering, Zhejiang University
- Kräutner Software Solutions
- Peyer Engineering
- Tianjin High-Sea Acoustics Instrument
- Intel
- cbb software
- oehri electronic
- Infineon Technologies Asia Pacific
- Art Control Systems
- Phase Motion Control
- Weatherford Oil Tool
- Thomson Broadcast & Multimedia
- DAIN Technologies
- Jabil Circuit
- Bsquare
- Technische Universität Dresden (TU Dresden), Institut f. Werkzeugmaschinen u. Steuerungstechnik
- KUNBUS
- PFU
- Shinano Kenshi
- Tokyo Electron Technology Development Institute
- XIOS Hogeschool Limburg, Department N-Technology
- AXOR INDUSTRIES
- MICRO-EPSILON Optronic
- Sherpa
- Alcorn McBride
- Mesa Electonics
- SKF Magnetic Bearings
- Agena
- Syslogic
- Hochschule Luzern - Technik & Architektur, Lucerne School of Engineering and Architecture (LSEA)
- I²AR Institut für Informatik, Automatisierungstechnik und Robotik, Fachhochschule Emden/Leer (University of Applied Sciences Emden/Leer)
- BitSim
- THK
- Dynamic Robotics Laboratory, School of Mechanical, Industrial, and Manufacturing Engineering, Oregon State University
- Avalon Embedded Solutions
- Cobble Blackburn
- Grenotech
- Wapice
- CADKraft Engineering
- Aros Electronics
- Converteam UK
- Beijing Aerospace Numerical Control System
- Hirschmann Automation and Control
- Safegate International
- APHA AUTOMATE
- JINAN RAILWAY VEHICLES EQUIPMENT
- BlueBotics
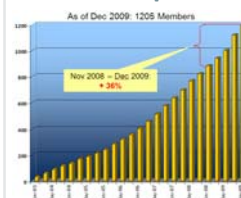- Oerlikon Saurer Arbon
- ABB - Power Quality

- SAEL
- DENSAN
- MSC (Malta)
- IPS SYSTEM
- ELIMCO SYSTEMAS
- Larsen & Toubro Limited, EmSyS Division
- CLIPhIT
- Institute of Mechanical and Electrical Engineering, Department of Mechanical and Electrical Engineering, Xiamen University
- Softlink Technology
- ASTC Australian Semiconductor Technology Company
- SEI
- Beijing CTB technology
- System Level Solutions (India)
- The 45th Institute of China Electronics Technology Group Corporation (CETC)
- Beijing New Image Electric Technology Development
- NDR
- Renu Electronics
- IMIX Vision Support Systems
- Dunkermotoren
- ELOVIS
- BrainCenter Noord
- Agile Planet
- Harmonic Drive
- IEP Ingenieurbüro für Echtzeitprogrammierung
- Correct Power Inst.
- maxon motor, Elektronik & Systemtechnik
- Bloom Energy (India)
- e-GITS
- MarquipWard Limited
- McML Train Control Technologies
- CITCEA-UPC
- Haitian Plastic Machinery Group
- SYSCOM Electronic
- EUCHNER
- DSP Control Group
- HOFO Automation
- RTA
- ORSoC
- ANCA Motion
- Shanghai Kinway Technologies
- Visual Act
- Precise Automation
- Gleichmann Electronics Research (Austria)
- Tailyn Communication Company
- HDT
- KIRRON

We welcome the new members and thank you for joining forces to promote and advance the EtherCAT technology!
Please find the members listed here at the ETG website:
→ www.ethercat.org/en/members.php

Membership booms within ETG

As of Dec 2009: 1205 Members

Nov 2008 – Dec 2009 + 36%

As seen above the rapid growth of the EtherCAT Technology Group (ETG) continues at full speed – and since the 1000 member mark was passed, it accelerates even further.

To-date, there are now **1225 ETG member** companies from 48 countries; equivalent to an increase of 314 members per year.

Most ETG members are located in Germany, where EtherCAT originated, followed by the USA, Japan and China/Taiwan.
Please find the corresponding press release here:
→ www.ethercat.org/en/press.html

SPS/IPC/DRIVES 2009 | SPECIAL

Exceptional response @ ETG Joint Booth

The ETG Joint Booth at the SPS/IPC/DRIVES again demonstrated the strong support from member companies, the openness of the technology and in particular the large EtherCAT product variety with more than 200 products shown there.

At 133 square meters the 52 co-exhibiting member companies not only showed their products on the passive product walls, but also presented EtherCAT technology solutions in active presentation areas. These demos have clearly helped to support EtherCAT´s position as a leading Industrial Ethernet technology, and thus to facilitate and leverage our members EtherCAT product sales.

The ETG product flyer contained all exhibiting companies and showed the type of products on display at the booth. For the first time ETG also provided a special handbook for all co-exhibitors, including all important information about the booth in advance, e.g. appearance of the booth.

Here is an overview of the booth highlights:

– **Multi-Axis Presenter** with 30 synchronized axes from 20 different vendors within one EtherCAT network
– **EtherCAT Master Presenter** with 17 different EtherCAT master controlling two I/O terminals from 2 different vendors
– **Safety over EtherCAT Demo** with functional safety components from several different vendors running within one system and exchanging safe date between two EtherCAT networks.
– **Flexible Topology Demo** with Master to Master communication, as well as showing Power over EtherCAT devices included in the same network and integration of classic fieldbus systems via gateways. In addition this display showed cable redundancy, hot connect of network segments, tunnelling of Ethernet frames as well as various topology variants.
– **EtherCAT Automation Protocol** to enable EtherCAT also for factory communication
– **Product Variety Walls** to show EtherCAT products available, including Master (PLC, embedded, motion controller), tools (software, hardware), Slaves (servo drives, inverter, encoder, sensors, valves, I/O,...) and Development products.

Multi-Axis Presenter | World Record

The enhanced presenter with 30 synchronized axes from 20 different vendors within one functional EtherCAT network was one of the highlights at the ETG booth - this can be considered a world record!

This presenter was first shown at the Hanover Fair 2009, at that time with 25 axes from 16 different vendors.

ETG Membership Assembly

The annual ETG Membership Assembly took place on November 24, right before the end of the first trade show day.

At the fair ground of the SPS/IPC/DRIVES, the Board of Directors reported on membership development, the Marketing Committee, ETG events (trade show participations, road shows, training classes, Plug Fests, regional member meetings and other activities), the new EtherCAT Test Center in Japan, the actual market situation of EtherCAT, Updates on International Standardization and plans of events and activities in 2010.

After the discharge of the Board of Directors the participating members were informed about technology updates like the EtherCAT Automation Protocol and Safety Drive Profile.

The minutes and slides of the membership assembly can be downloaded within the Member Area:
→ www.ethercat.org/en/publications.html#ETG_Events

ETG Press Conference

One of the topics at the ETG Press Conference during the SPS/IPC/DRIVES was the official announcement of the EtherCAT Automation Protocol (EAP). It enables EtherCAT also being used in factory communication and not only at the fieldbus level. Please read more about this topic on page 3 of this newsletter. Angelo Bindi, Senior Manager Central Control and Information Systems from Continental Teves, stated that Conti is looking forward to this new protocol. It helps them to optimize their communication through their factory network, having the same process data structure throughout.

At the same event Shinya Yamasaki from Omron announced the selection of EtherCAT as their generic automation network. Detailed information can be found on page 3 of this newsletter and in the complete slide set from the press conference here:
→http://www.ethercat.org/download/press/ETG_PK_SPS_2009_Slides.pdf

ETG Joint Booth | Impressions

Please have a look at further impression from this trade show:

REPORTS

2nd Industrial Ethernet Seminar Series 2009 | India

More than 300 participants registered for the 2nd Industrial Ethernet Seminar Series which was held in Ahmedabad, Bangalore, Chennai, Pune and Mumbai in November. This 2nd Industrial Ethernet Seminar Series was dedicated to end users, such as machine builders, system integrators, consultants and application engineers. In contrast, the 1st Seminar Series held in May 2009 had aimed at ETG member companies and their Indian branches and distributors, in order to make the local teams aware of the EtherCAT technology and its advantages.

The agenda of the 2nd series covered an Ethernet introduction and EtherCAT technology lecture, followed by EtherCAT application presentations from the sponsoring ETG member

companies (Baumüller, Beckhoff, Hilscher and SEW-EURODRIVE), as well as a comparison between EtherCAT and classic fieldbus technologies. In between the attendees informed themselves about EtherCAT products at the table top exhibition from the supporting companies.

The lively participation at the Q&A sessions showed that besides EtherCAT applications quite a few EtherCAT implementation projects are under way in India already. Therefore ETG will hold implementation workshops in India in February 2010. Thanks also to the media partnership with A&D India the seminars enjoyed notable interest and also got exceptional press coverage.

Please read the A&D India Cover Story:

→www.ethercat.org/pdf/english/ETG_CoverStory_AandD_India.pdf

8th European EtherCAT Plug Fest | October 2009

The 8th European EtherCAT Plug Fest in October this year was hosted by STÖBER Antriebstechnik in Pforzheim, Germany. 8 Master vendors tested their EtherCAT implementations against the slave product variety of 19 different slave device vendors.

The Plug Fests have established themselves as pragmatic and effective contribution to achieve interoperable EtherCAT products and also as a valuable developer forum where technology questions can be discussed.

The **9th European EtherCAT Plug Fest** will be held at VIPA in Herzogenaurach (Germany), on **March 18-19, 2010**. Please find more information on the last page of this newsletter.

ETG also plans to hold the 2nd Asian EtherCAT Plug Fest in the second half of 2010, this time in Japan.

ETG Info Booth | International Tradeshows: Summarization of 2009

In addition to the large joint booths, ETG also participates with smaller "Info Booths" at major trade shows worldwide. Please find a list of the 2009 ETG info booth trade shows below.

We thank the sponsoring ETG members (3S-Smart Software Solution, AMK Arnold Müller, Baumüller Nürnberg, Beckhoff Automation, Copley Controls, Danaher Motion/Kollmorgen, Deutschmann Automation, Festo, Grossenbacher Systeme, HARTING Deutschland, HMS Industrial Networks, INA - Drives & Mechatronics, KÖNIG Prozessautomatisierung, Kontron, Kuhnke Automation, LTi DRiVES, MTS Sensor Technologie, RAFI, SEW-EURODRIVE, SHF Communication Technologies, Soft Servo Systems and VIPA) for their support!

- **embedded world 2009**, Nuremberg (GER), Mar 3-5
  Hall 9-329 | Exhibition Centre Nuremberg
  → www.embedded-world.de/en/
- **CHIFA 2009 (**from 2010: SIAF**)** | Guangzhou (CHN), Apr 4-7
  Hall 2.2-A222b | Exhibition Grounds
  → www.chifa.com.cn/
- **Sensor+Test 2009** | Nuremberg (GER), May 26-28
  Hall 9-F19 | Exhibition Centre Nuremberg
  → www.sensor-test.de/
- **SEMICON West 2009** | San Francisco, CA (USA), Jul 14-16
  Booth 2531 | Moscone Center
  → www.semiconwest.org/
- **hi[09]**| Herning (DEN), Sep 1-4
  Industrial Bussystems Pavillion | Messecenter Herning
  → www.hi-industri.dk/gb/
- **Automaatio 09 Fair** | Helsinki (FIN), Sep 23-25
  Helsinki Exhibition & Convention Centre
  → www.finnexpo.fi/automaatio/?code_language=en
- **IAS - Industrial Automation Show** | Shanghai (CHN), Nov 3-7
  Hall E1-B073 | New International Expo Centre
  → www.industrial-automation-show.com/
- **SCF - System Control Fair** | Tokyo (JPN), Nov 25-28
  Booth 1-24 | International Exhibition Centre
  → http://scf.jp/_english/

All recent trade show participations can also be found here:
→ www.ethercat.org/events_2009.php

1st North American EtherCAT Plug Fest | Sept 2009

The 1st North American EtherCAT Plug Fest was hosted by National Instruments in Austin, TX, USA in September. 20 Participants attended and tested four new master implementations with the slave variety of 8 different vendors.

The next North American Plug Fest will take place in Sept 2010.

REPORTS

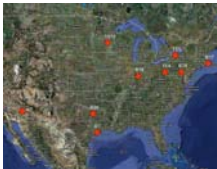### Asian Industrial Ethernet Seminar Series 2009 in Taiwan

175 participants in three events in Taipei, Tainan and Taichung: the ETG seminar series in Taiwan was well attended.

Main speaker was Beryl Fan, ETG Representative in China, who presented the EtherCAT Technology Introduction. The agenda also covered application examples and an Industrial Ethernet technology comparison.

The seminar series was well organized by Taiwanese ETG member company Jidien, and co-sponsored by Anca Motion, Beckhoff, Hilscher, and M&M Software. The sponsoring ETG members contributed with application presentations and a table top exhibition.

EtherCAT Seminar Series in the US continues

The North American office of ETG, in support of its local ETG members, presented again 9 EtherCAT Introductory seminars throughout much of the US in 2009. The seminars were aimed at those individuals not familiar with EtherCAT technology or Ethernet.

As resulted in much positive feedback, additional seminars for 2010 will be added to the event section soon.

EtherCAT Training Classes in China

With many Chinese automation equipment manufacturers implementing EtherCAT in their devices there is an increasing need for implementation support.

EtherCAT Technology Group responds to this demand by holding several implementation training classes in China. Trainer at the recent event in Shanghai was Dr. Yanqiang Liu from Beihang University, Beijing.

Conformance Section | Enhanced

As more and more members using the Conformance Test Tool with different kind of EtherCAT slave devices, it was necessary to add some test exceptions:
→ http://www.ethercat.org/memberarea/ct_exceptions.asp

Detailed information about Conformance & Interoperability can be found on the web, including an updated Conformance Test Request Form:
→ www.ethercat.org/en/conformance.html

MISCELLANEOUS

EtherCAT Product Guide updated - Add your product, too!

The updated EtherCAT Product Guide now contains more than 200 product pages featuring over 500 EtherCAT products. Please inform yourself about the great variety of EtherCAT products either already available or coming up.
→ www.ethercat.org/en/products.html

The product guide, however, does not include all EtherCAT products available or announced worldwide, since the corresponding information has to be provided actively from the vendor to the ETG headquarters.

Therefore:

Add your product today - for free! This is a great chance to show your EtherCAT product, service or expertise to interested visitors of the EtherCAT website. Please read how to add your product:
→www.ethercat.org/memberarea/download/pdf/ETG_Product_Guide_Rules.pdf

Working Group | Results

WG CiA402 Drive Profile

Main topics of the last working group meeting was the revision of the CiA Implementation Guideline as well as CiA402 Test Implementations for the Conformance Test Tool.
→ www.ethercat.org/memberarea/wg_driveprofile.asp

WG Conformance

The agenda of the last working group meeting included the enhancement of Test Cases for the Conformance Test Tool, review of Test Case comments, Suggestions of test IDs and clarification of Family Certification.
→ www.ethercat.org/memberarea/wg_conformance.asp

WG EtherCAT Automation Protocol

At the working group master classes the main focus was on the Draft Specification for the EAP, which was announced at the ETG Press Conference during the SPS/IPC/DRIVES 2009.
→www.ethercat.org/memberarea/wg_automation_protocol.asp

WG Master Classes

The working group discussed the structure of Master Classes Specification ETG.1500 and reviewed requirements of Master Classes.
→ www.ethercat.org/memberarea/wg_masterclasses.asp

Job offers @ ETG Office Japan

ETG is enhancing its presence in Japan and is looking for staff, both for technology marketing as well as for implementation support. If you know somebody interested in an exciting position at the leading edge of technology, with a product management or R&D background, who is fluent in Japanese and English, please invite him to contact Martin Rostan directly: m.rostan@ethercat.org

UPCOMING EVENTS

Working Group | Dates

If you are interested to join one of the following groups and contribute to their work, please visit:
→ www.ethercat.org/memberarea/working_groups.asp

- **WG EtherCAT Automation Protocol**
  January 12, 2010 | Frankfurt, Germany
- **WG Safety**
  January 26, 2010 | Nuremberg, Germany
- **WG Device & Network Description**
  January 27, 2010 | Nuremberg, Germany
- **WG Conformance**
  February 23, 2010 | Nuremberg, Germany
- **WG CiA402 Drive Profile**
  February 24, 2010 | Nuremberg, Germany

Industrial Ethernet Seminar Series | Norway 2010

The ETG offers Industrial Ethernet Seminars taking place in Horten, Stavanger and Trondheim on **February 09/10/11, 2010** in Norway.
Please find the invitation including agenda and details here:
→ www.ethercat.org/norway2010

ETG Marketing Committee Meeting | February 24

The next **Marketing Committee Meeting** will take place on **February 24, 2010** in Frankfurt, Germany, at the Cosmopolitan Conference Centre.
Please send an email to info@ethercat.org if you are interested in participating this meeting. We expect all participants to make an active effort to this committee.

Next Tradeshows | 2010

Visit us at the next tradeshows in your region, see EtherCAT application examples and meet EtherCAT experts:

- **embedded world 2010**,
  Nuremberg (Germany), Mar 2-4
  Hall 9-331 | Exhibition Centre Nuremberg
  → www.embedded-world.de/en/

- **SPS - Industrial Automation Fair (SIAF) 2010**, Guangzhou, China
  (Germany), Mar 8-11
  Pazhou Complex Guangzhou, China
  → www.siaf-china.com/en/

- **Hannover Messe 2010** | Hanover
  (Germany), Apr 19-23
  Exhibition Grounds
  → www.hannovermesse.de/homepage_e

Next Seminars / Workshops

The next **EtherCAT Technology Basics for Developers (Seminar)** will take place on **February 9, 2010**. At the same location there will be the **EtherCAT Evaluation Kit Workshop** on **February 10, 2010**. The **Master Sample Code Workshop** is being scheduled for **February 11, 2010**. All events take place at the Beckhoff Headquarters in Verl, Germany.

ETG Technical Committee Spring Meeting 2010

The next **Technical Committee Spring Meeting** will take place on **March 17, 2010** in Raunheim at the Mercure Hotel Wings Frankfurt Airport in Germany.
A separate invitation will follow at the beginning of 2010.

Next Technical Training Class, Safety over EtherCAT Seminar in March 2010

One day before the Technical Committee Meeting, an **EtherCAT Technical Training Class** is held on **March 16, 2010** in Raunheim at the Mercure Hotel Wings Frankfurt Airport. The seminars are free of charge (only the room costs will be shared) and will be accompanied by a **Safety over EtherCAT Seminar**. A separate invitation will follow in time.

9th European EtherCAT Plug Fest | March 18-19

The **9th European EtherCAT Plug Fest** will be held at VIPA in Herzogenaurach, Germany on **March 18-19, 2010**.
We invite and encourage all manufacturers of EtherCAT devices, code and tools to participate. The goal of this developers event is to perform interoperability tests, implementations according to the CiA402 OD Conformance Tests. Also, devices supporting the Modular Device Profile will be part of the setup.
The invitation including further information and registration form will be available at the event section of the ETG homepage soon.

2nd North American EtherCAT Plug Fest | Sept 9-10

Mark your calenders and adjust your EtherCAT implementation plans accordingly: The **2nd North American EtherCAT Plug Fest** is planed to be held in Illinois on **September 9-10, 2010**.
Not only the North American manufacturers of EtherCAT devices, code and tools are invited—this is also an excellent opportunity for European and Asian device makers to participate and check the interoperability of their implementations.
The invitation including further information and registration form will be made available at the event section of the ETG homepage.

Please check out the events section of the EtherCAT website for further events:

→ www.ethercat.org/en/events.php