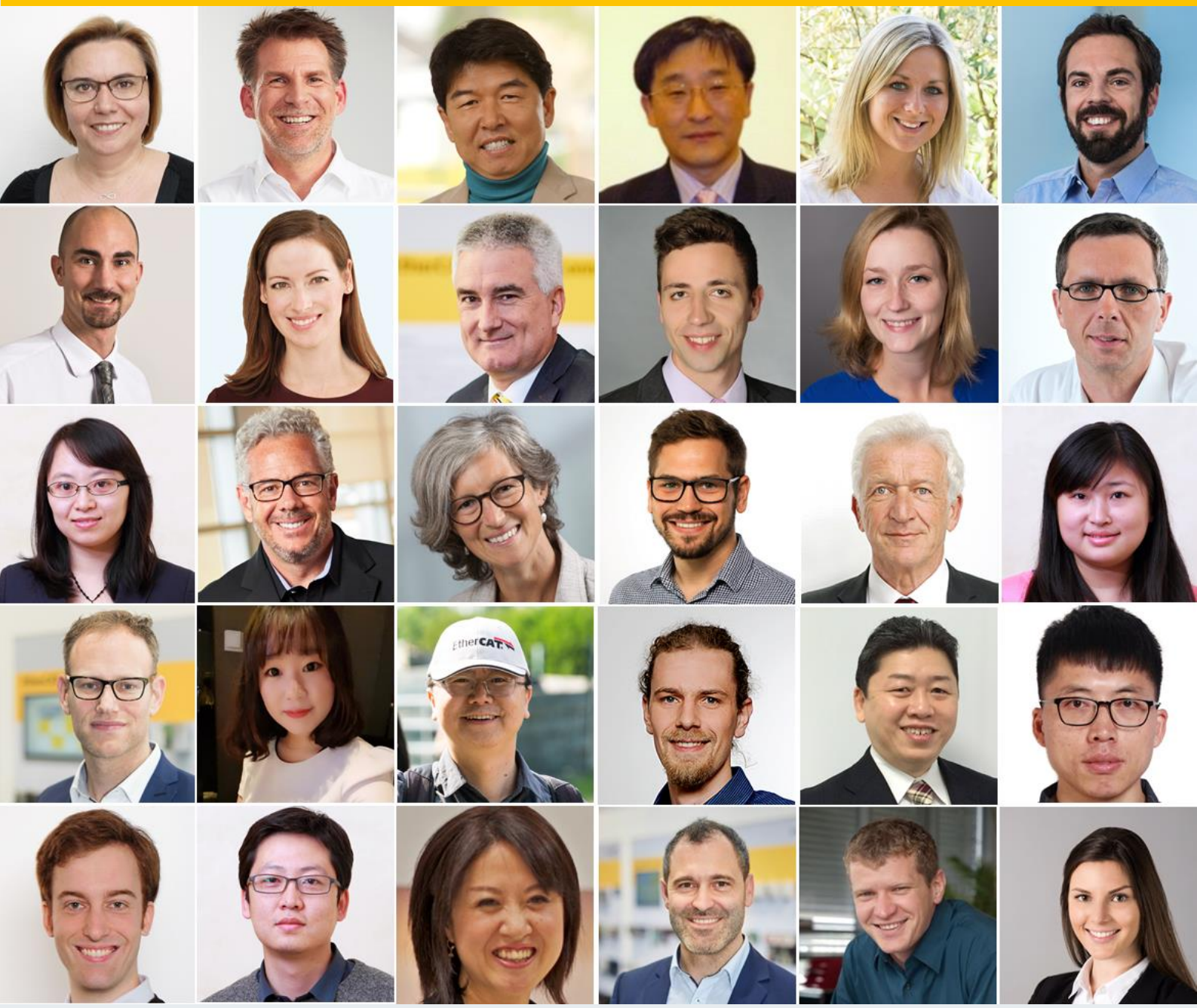
ETG News

April 2021 | #32



EtherCAT® Technology Group

EtherCAT Technology Group
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Website: www.ethercat.org
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CONTENT

further information

www.ethercat.org

EDITORIAL

Dear Members,

Of course, one of the tasks of a fieldbus organization is to observe the development of its market companions. And what is developing there now makes me very confident. The only relevant competitors are the technologies of the three 'gorillas' in the market - at least as far as factory automation is concerned. We are now battling with them for market leadership, and in our estimation, we have left at least two of the three behind us. And at least two of the three are on the verge of replacing their previous technology versions with TSN-based versions. This means a complete technology break, with new chips, new hardware, new software, new tools throughout, and thus 'back to square one': It will take years until the chips are widely available, the technology is stable, field experience and a sufficient selection of devices will be available. And in that time, hardly anyone will implement the now old technology.

And if users have to switch to another technology anyway, why not switch to the one that can already do all the things the others are trying to accomplish now?

We are therefore experiencing an openness to EtherCAT even among users who were previously firmly in the hands of the 'gorillas'. And who are impressed by the stability of EtherCAT: even EtherCAT G only extends EtherCAT and does not change our proven technology. And makes it future proof without making the largest variety of devices on the market look old.

To make it unmistakably clear: we have nothing at all against TSN! TSN technologies will become very useful, and ETG is actively contributing to their development - but they do not belong in the fieldbus layer.

So: it becomes more and more clear that it was the right decision to keep EtherCAT stable. And not to change EtherCAT itself by TSN technologies but to enable the coupling of EtherCAT segments to TSN-based networks. This will let EtherCAT grow further!

On behalf of the entire EtherCAT Technology Group team, I wish you all the best - stay healthy!

Martin Rostan, Executive Director

Crisis is time for innovation – gain market share with EtherCAT!

Let's be honest: A crisis is not a good thing. And neither is the historical crisis we are currently experiencing. Nevertheless, crises enable us to examine ourselves and our actions, even if we are forced to do so.

Are we using the right strategies, the right technologies? If not, now is the time to innovate, which will ultimately allow us to emerge stronger from the crisis. In the world of industrial automation, choosing the right bus system is critical to future developments. The bus system rather than the controller as the core of the control architecture? Why?

Read more on page 2.

EtherCAT adoption rate: vendors

EtherCAT is widespread in different markets as well as countries. Please have a look at the impressive figures:

188 EtherCAT drive vendors + 9*

224 EtherCAT master vendors + 3*

130 EtherCAT I/O vendors + 3*

*Indicated changes are compared to the last ETG news.

Playing with figures (vol. 8)

We have more than **6200** members from **69** countries and **6** continents. EtherCAT is implemented on **36** different RTOS and over **1100** products have been entered in the official EtherCAT Product Guide. There are **43** different Safety over EtherCAT vendors and **60** sensor and actor manufacturers. Furthermore, EtherCAT offers connectivity to **33** other communication systems. About **400** new members have joined the EtherCAT Technology Group in the last **12** months. ETG has over **4500** followers at LinkedIn, more than **1000** subscribers at YouTube, and over **5000** WeChat fans.

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INSIDE ETG

Crisis is time for innovation – gain market share with EtherCAT!

In times of crisis, we come across many supposedly motivational quotes. There is talk of lemons that become lemonade, or of doors that close so that others can open.

But let's be honest: A crisis is not a good thing, and no amount of talk about it will help. And neither is the historical crisis we are currently experiencing.

Nevertheless, crises enable us to examine ourselves and our actions, even if we are forced to do so. Are we using the right strategies, the right technologies? If not, now is the time to innovate, which will ultimately allow us to emerge stronger from the crisis.

In the world of industrial automation, choosing the right bus system is critical to future developments. The bus system rather than the controller as the core of the control architecture? Why?

The bus system defines system performance at least as much as the controller. But it is the bus system that determines the selection of components and their manufacturers. As such, it has a major impact on the overall cost of the control system. It determines whether or not a centralized control architecture can be used. In fact, it is the bus cycle time that determines whether the control system cycle time is actually usable, and by which response times are ultimately determined.

Thus, the best control performance is of little value if it cannot be optimally utilized with the help of a fast bus system. Due to its unique operating principle of frame processing on the fly, EtherCAT is the fastest Industrial Ethernet technology available – and thus does not become a bottleneck for otherwise high-performance control systems. In short: EtherCAT runs and paves the way for innovation even in difficult times. Shorter response times speed up any application with advanced switching conditions - even comparatively sluggish mechanics and shorter control times lead to better precision and thus to improved quality. EtherCAT is therefore not an end in itself, but an added value for almost all applications.

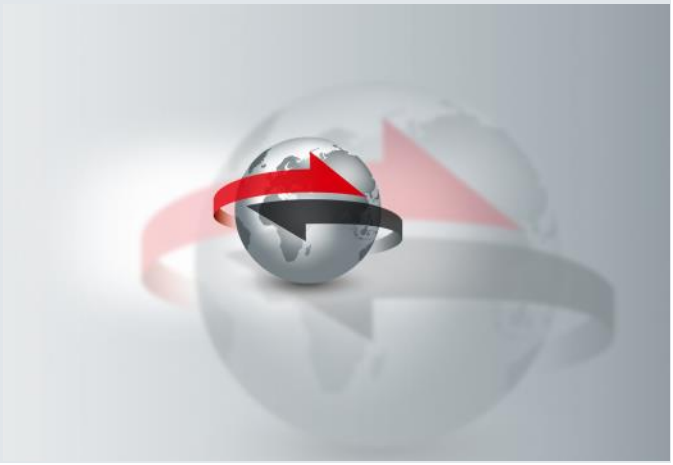
The membership development of the EtherCAT Technology Group shows that many manufacturers and users have understood this. Even in the crisis the growth is unbroken.

Of course, all this does not mean that we in the ETG had no challenges to master this year. On the contrary, a large part of our global activities usually requires personal presence. Here, we also had to act at short notice and break new ground. By converting our face-to-face seminars and meetings into online formats, we were able to prepare previous content in a more target group-oriented way. In addition, we gained the time in the team to get long-term projects off the ground.

Even if I we're all missing the direct contact with people around the world, we can say that we have taken a big step toward the future in terms of the digitization of our organization during these challenging times.

Let's close the loop: A crisis is not a good thing. What we make of it is.

Watch video

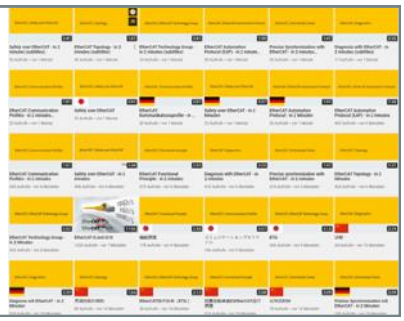


MULTIMEDIA

Update: ETG multimedia content

Since our last newsletter we have again uploaded some new videos to our YouTube channel.

Furthermore, from now on we provide all new videos of the EtherCAT in 2 minutes series also with subtitles. Visit the ETG YouTube channel for all available videos.



ETHERCAT COSMOS

3,000 registered device manufacturers prove EtherCAT system's advantages

Beckhoff introduced the EtherCAT real-time Ethernet system to the market in 2003 and disclosed its details within the EtherCAT Technology Group (ETG) the same year.

The ultra-fast communication system has taken the automation world by storm ever since, says Thomas Rettig, Senior Manager of Control Systems and Communication Architecture at Beckhoff – a fact that was underscored further when the ETG issued its 3,000th EtherCAT vendor ID in July 2020.

Read full press release

ETG hosts first online EtherCAT Interoperability Testing Week

Recently the first EtherCAT Interoperability Testing Week of the ETG took place. The goal of the week-long digital event was to provide EtherCAT device developers with an online opportunity to improve the interoperability of their products as well as to gain practical EtherCAT development know-how.

In addition, the event provided a platform for the device manufacturers to exchange knowledge.

Read full press release

ETG welcomes Roll-2-Roll Technologies LLC as member number 6,000

The latest membership milestone in the growth of the EtherCAT Technology Group (ETG) shows that EtherCAT technology is successfully defying the current global crisis:

The American sensor manufacturer Roll-2-Roll Technologies LLC recently became member number 6,000 of the world's largest fieldbus user organization.

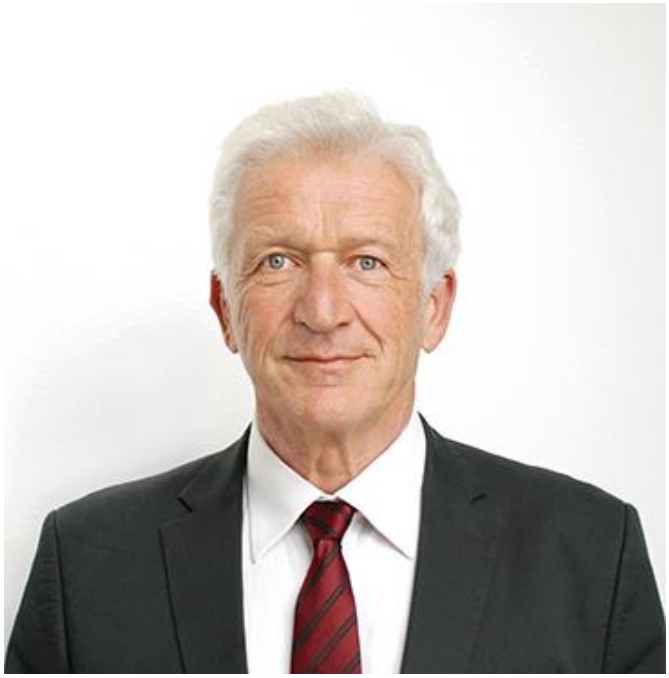
Read full press release

EtherCAT expert is a decision maker in the IEEE Standards Association (SA)

Dr. Karl Weber, an expert in industrial communication at Beckhoff Automation, has been appointed to the IEEE SA Standards Board (SASB).

He is one of two Europeans among the 24 IEEE SASB experts. This Board of IEEE (Institute of Electrical and Electronics Engineers), the world's largest professional association of electrical and information technology engineers, decides on all project plans and approvals of standards.

Read full press release



ETG.7100.2 FSoE Test Record Specification and FSoE Test File Set for CTT

An update of the ETG.7100.2 Safety over EtherCAT Conformance Test Specification (FSoE Conformance Test Record) and the FSoE Test File Set for the Conformance Test Tool (CTT) has been released.

Updated files and documents:

- Test files TF-2602, TF-2603, TF-2604, all V1.3.0
  - There was an incorrect behavior with a certain constellation of parameter length to FSoE frame length. This has been fixed. (this was the trigger for the update)
- FSoE Conformance Test Record ETG.7100.2 V1.2.5 The ETG.7100.2 has been divided into two documents:
  - Part 2-1 as a general part for defining terms
  - Part 2-2 for the FSoE Slave Test Record An informative part has been added, which describes the execution of the test with the Conformance Test Tool as well as the execution of the interoperability test exemplarily. Test instruction list has been updated to the current CTT V2.2.1. Some editorial edits have been done, too
  - (Part 2-3 is intended for the FSoE Master Test Record)
- The currently official CTT V2.2.1 is used with the updated Test Files V1.3.0

The TÜV SÜD Rail has approved the updates. Both, the FSoE Test Record and the FSoE Test Files, become mandatory to be used for in-house testing and for the official FSoE Conformance Test after a six weeks transition period on March 5, 2021.

www.ethercat.org/ETG7100

ETG.5120 Safety over EtherCAT Protocol Enhancements

The ETG.5120 Safety over EtherCAT Protocol Enhancements Specification has been released in Version 1.2.0.

This specification contains enhancements to the existing ETG.5100 Safety over EtherCAT specification. It includes rules for SRA paramater set CoE start-up commands and the usage of access rights for CoE and FSoE parameter sets, now.

Download the specification via:

www.ethercat.org/ETG5120

ETG.6100 Safety Drive Profile

Version 1.3.0 of the ETG.6100 Safety Drive Profile is available for download as an official release.

The main change is the definition of the "FSoE Drive Connection Profile" in chapter 9 of part 3. Until now, the FSoE connection for drives was described in ETG.5001.4 (FSoE MDP Drive Connection). However, there are conflicts with the DS402 profile due to different index increments (0x10 vs. 0x0800). Now the objects for the connection are assigned to the index range of an axis (with 0x0800 IndexIncrement).

www.ethercat.org/ETG6100

ETG.7011 FSoE Conformance Test Check List for common issues

Based on the experience gained through support and numerous FSoE Conformance Tests in the EtherCAT Test Centers, the FSoE Conformance Test Check List Version 1.0.2 points to many common-made errors.

It is not part of the official EtherCAT/FSoE Test Record, but informal guidance. Thus, helping to implement Safety over EtherCAT in an (EtherCAT) device meeting specification and quality demands. The list is based solely on the experience of the EtherCAT Technology group experts, gained during the discussion with and answering questions from FSoE device vendors and on the close cooperation with ETCs. Common issues are listed in the form of a checklist to help the developer track the result of the check.

www.ethercat.org/ETG7011

WEBSITE

Updated downloads: EtherCAT Presentations

EtherCAT Technology Presentation (in 20 Minutes)

This slide set intends to provide a quick overview of the most important features of the EtherCAT technology. It is intended for ETG members who want to introduce EtherCAT to their customers and partners.

www.ethercat.org/introduction

EtherCAT Communication Principles

The updated presentation contains an in-depth technical introduction about EtherCAT technology, including communication basics, slave device structure, device model, physical layer, data link layer, distributed clocks mechanisms, application layer, device profiles, device description, tools, EtherCAT master as well as standards and references.

www.ethercat.org/communication

Safety over EtherCAT Seminar Handouts

The Safety over EtherCAT seminar presentation contains information about the Safety over EtherCAT technology (FSoE, Fail Safe over EtherCAT).

www.ethercat.org/safetyseminar

EtherCAT Compendium: first chapters online

The EtherCAT Compendium provides a comprehensive, coherent description of EtherCAT with its technical details, system, implementation, and user aspects. It supplements the formal specifications with easily readable, applicable and application-specific know-how. The compendium is work in progress, first chapters are now online.

The EtherCAT Compendium aims at generally interested readers, developers, and support engineers, as well as test engineers, students, and academics of ETG members. The EtherCAT Compendium is organized in several sections. The first chapters which are published are part of the section “Technology details”. Other sections which will follow are “EtherCAT introduction”, “System aspects”, “Implementation aspects” and “User aspects”. Individual chapters are published one by one until they will form the complete EtherCAT Compendium.

www.ethercat.org/compendium

EtherCAT Knowledge Base

The EtherCAT Knowledge Base combines information about detailed technical descriptions, FAQs, a glossary around the EtherCAT technology, and hands-on how-to descriptions. Due to its continously extention, you can find more than 100 different entries. The descriptions are intended for the use of trained specialists in control and automation engineering who are familiar with the applicable standards.

Content is available in English and Japanese language.

The latest entries that have been updated, enhanced or added:

- CTT (Conformance Test Tool)
- Object Entry Flags/Attributes
- Safety over EtherCAT (FSoE = FailSafe over EtherCAT)

Please visit the EtherCAT Knowledge Base via the following shortlink (member login required):

www.ethercat.org/kb

ETG.2000 EtherCAT Slave Information (ESI) Specification

Version 1.0.12 of the ETG.2000 EtherCAT Slave Information (ESI) specification has been completely restructured. The now Xpath-based structure allows to find the node descriptions easier. Both using the bookmarks in the document and search a copied Xpath (e.g., from an xml editor) can be used more efficiently.

The clickable attributes, child and parent nodes make it easy to navigate through the XML tree back and forth. Specific ESI functionalities can be read jumpfree due to the straightforward document structure matching the structure of the ESI file itself. Clause 4 ("Document") in the specification shows how to use the restructured document. Technical content of the specification and the corresponding schema match the replaced version of the specification.

www.ethercat.org/ETG2000

ORGANIZATION

New members (since last news) in order of membership application 1/2

We welcome all new members and thank you for joining forces to promote and advance the EtherCAT technology.

- SunPower
- Defence Research and Development Organisation (DRDO), Research & Development Establishment (Engineers)
- Cremer Speciaalmachines
- MORNSUN Guangzhou Science & Technology
- Shanghai JiQi Robot Technology
- ULVAC Korea
- Anurichip System
- Eaton Electric (Japan)
- STMicroelectronics Design and Application
- ILJIN Global Holdings
- TenAsys Europe
- Distalmotion
- Vintecc
- ShenZhen HongChuangXing Motion Technology
- Universidad de La Frontera, Facultad de Ingeniería y Ciencias, Centro de Modelación y Computación Científica (CEMCC)
- Kane Terry Partridge dba Open Designer
- Janasi Industries
- TSUBAKIMOTO CHAIN
- Caldwell Machines & Tools (CMT Engineering)
- Università degli Studi di Bergamo, Facoltà di Ingegneria, Dipartimento di Ingegneria e Scienze Applicate (DISA), Laboratorio di Meccatronica
- ELNA
- Pearl Kogyo
- Smokie Robotics dba. AUBO Robotics
- Process Instruments (UK)
- Kulicke & Soffa
- Woodward
- Starlab Technology
- MT Drive & Control (Shenzhen)
- TRUMPF Sisma
- Bastian Solutions
- Vyuti Systems, Cybernetics Laboratory (CynLr)
- Busch Manufacturing Korea
- MVTECH
- WEISS
- Moltech
- Indus Four
- Gable Systems
- Physikalisch-Technische Bundesanstalt, Fachbereich 1.4 Gase
- Kepco
- Javox Solutions
- TechForU
- STMicroelectronics
- Surgivisio
- isMedia
- Karlsruher Institut für Technologie (KIT), Fakultät für Informatik, Institut für Anthropomatik und Robotik (IAR), Lehrstuhl für Intelligente Sensor-Aktor-Systeme (ISAS)
- Constructions-3D
- Parijat Controlware
- Beijing Agile Robots Technology
- Sophion Bioscience
- ASCO Numatics
- Shenzhen Yangshun Tongda Digital Technology
- 9363-9300 Quebec, dba Waybo
- M2M craft
- MIRAPRO
- YouTool Automation
- EK-Electronics
- Blue Shadows Astronomía e Ingeniería
- Universität Stuttgart, Fakultät Konstruktions-, Produktions- und Fahrzeugtechnik, Institut für Medizingerätetechnik (IMT)
- Hardt
- Nanjing WEILAN Intelligent Technologies
- IBH-Tec
- ABB
- Shandong University of Science and Technology, College of Ocean Science and Engineering
- Guangdong Coordy Numerical Control Technology
- Uhlmann Pac-Systeme
- Seorim Technology
- Holy Stone Enterprise
- Shandong SIASUN Industrial Software Research Institute
- CGX Intelligent Manufacturing (Wuxi)
- FD3D (Extruder)
- Dojo Five
- Shenzhen Diju Intelligent Technology (DiGE)
- Technische Universität München, Fakultät für Elektrotechnik und Informationstechnik, Lehrstuhl für Kognitive Systeme (Institute for Cognitive Systems (ICS)
- Shanghai Micron Automation
- STMicroelectronics International
- Skyloom Global
- L & S Electric
- Wearable Robotics
- EPHI
- EGON HARIG
- SIC! Software
- krtkl
- Grupo Gamaco
- DAWONSYS
- Yokogawa Electric Korea
- Infinum 3d
- TSCm
- Taurob
- DNV Electronics
- GE Grid
- Molprodukt
- kumkeo
- ASYS Automatic Systems
- ESDA, di ing BASSI Franco &C
- Red Rock Marine
- NEXPION
- Dongguan Kaifull Electronics Technology
- IK Electronic Manufacturing Services
- Ho Chi Minh University of Technology (HCMUT), Faculty of Mechanical Engineering, Department of Mechatronics, Laboratory of Mechatronics
- Projitech
- Riole Eletrônica
- FIRSTEC
- GUREN Design & Engineering
- Oki Electric Industry (OKI Denki Kogyo)
- SPAN Inspection Systems
- Shanghai MindMotion Microelectronics
- Robert Bosch Engineering and Business Solutions Vietnam
- Fuji Electric Consul Neowatt
- Cyber Surgery
- SeQso
- Perspecta Labs
- Motorsports Electronics
- ZHITENG (Shenzhen) Motion Technology
- Transcell Technology
- Amacker Automation
- Tormach
- TRUMPF (China)
- Elbit Systems Land
- KYEONGIN TECH
- Maxphotonics
- Ono Food
- Fraunhofer Italia Research
- ABB Technikerschule
- ARUM DENTISTRY
- Ningxia Yinfang Intelligent Technology, (Encompass Technologies)
- Resilient Power Systems
- Nanjing AllController Technology
- PsiControl
- Shanghai Fangmei Machine Tool Equipment
- SimpleMotion
- MH Robot & Automation
- CASTEK Mechatron Ind
- Suzhou EastTech Electronics
- Harmuth Elektronik
- UEC Scientific Instrument (COSTWELL TEK brand name)
- Elco Elettronica Automation
- Nextelligence
- Soukai Electric
- University of Dayton Research Institute (UDRI)
- CMRO Engineering
- NITTOSEIKO
- LÄPPLE
- TECNA
- LIVSMED
- Dr. Bohrer Lasertec
- GUANGZHOU HAOZHI INDUSTRIAL
- DSD Controls
- Michael Koch
- Roll-2-Roll Technologies
- OptiViz Technology
- Hydrobar THP
- FiSens
- FAIR Innovation(Suzhou) Robot System
- Frankfurt University of Applied Sciences, Fachbereich 2, Informatik und Ingenieurwissenschaften (Faculty 2: Computer Science and Engineering)
- Mechatroniklabor (MecLAB) (Mechatronics Lab)
- MPEX ROBOTICS
- Fujikura
- ROTEC
- MOTEON
- Print Web International (PWI)
- Tecnosens
- Meusburger Deutschland
- TRITEM
- AST Kunststoffverarbeitung
- Eltorque
- SECOM
- Zvinax ingénierie
- Re Controlli Industriali
- Big Cat HPV dba Catrike
- DELTA I/O
- READY Robotics
- UPLOAD
- Taiwan Innovative Space
- Beta Robots
- Kniel System-Electronic
- Shenzhen MICFIND Drive Technology
- NOMOS, Tecnologie del Software
- Kardanan Shargh
- ANLOGIC INFOTECH
- JSCC AUTOMATION (XIAMEN)
- Swisslog
- centrotherm international
- Cerescon
- Elekta Solutions
- SERT METAL
- GMVT
- Therm-x of California
- Alphasystem
- CARE Measurement & Control
- S & H
- Nidec Avtron Automation (dba Nidec Industrial Solutions North America)
- Mouvent
- Safran Electronics & Defense
- Flokontrol Endüstriyel Otomasyon
- Harbin Yiao Information Technology
- EDB
- University of Debrecen, Faculty of Engineering, Department of Mechatronics
- Sample PCB
- Carendes
- smart IoT
- University of the Basque Country, Faculty of Engineering of Gipuzkoa, Department of Automatic Control and Systems Engineering
- Institute of Physics of the Czech Academy of Science, HiLASE Centre
- The Edmunds Manufacturing dba Edmunds Gages
- Xixian New District Shuangyu Intelligent Technology
- Zhejiang Alpha Automotive Technology
- Hangzhou Bergerda Automation Technology
- University of Alberta, Faculty of Engineering, Department of Electrical and Computer Engineering
- Yanshan University, School of Mechnical Engineering
- Guangdong Chaochuan Electronic Technology
- Nexter Systems
- ESR Labs
- iMAR Navigation
- Danfoss Industries
- Sipronika
- Ekoenergetyka Polska
- TAZMO
- Technische Universität Darmstadt, Fachgebiet Leistungselektronik und Antriebsregelung (LEA; Institute for Power Electronics and Control of Drives)
- Svaya Robotics
- Vosch Electronic
- Endoenergy Systems
- Hypex
- CK Precision Instrument
- Fasford Technology
- CHINO
- ARRIVAL
- Chongqing University of Posts and Telecommunications, College (School) of Automation, Key Laboratory of the Ministry of Education for Industrial Internet of Things and Networked Control
- HERMOS
- Fraunhofer-Institut für Windenergiesysteme IWES
- OKAYA SEIRITSU ENGINEERING
- WINGLOBAL TEK
- RWTH Aachen University, Faculty of Electrical Engineering and Information Technology, Institute for Power Electronics and Electrical Drives (ISEA)
- Crea-Tech International
- Basemap, DBA Automaton
- Hogeschool PXL, PXL-Green & Tech Department
- haag embedded systems und IT consulting
- COMFILE Technology
- TAMAGAWA ELECTRONICS
- Vivo Surgical
- IMKO Micromodultechnik
- Plexim
- University of Denver, Ritchie School of Engineering and Computer Science, Department of Mechanical and Materials Engineering, Robotics, Locomotion, and Control Lab
- Tesollo
- MAGNETIC COMMUNICATION
- "University of Tyumen
- Institute of Mathematics and Computer Sciences
- Department of Information Security"
- "Ho Chi Minh University of Technology (HCMUT)
- Faculty of Electrical & Electronics Engineering
- Department of Control Engineering & Automation"
- Jiangsu Shenzhou Semiconductor Technology
- Coretronic
- SuperVac Maschinenbau
- Azureus Solutions
- SOREAM
- GTM Testing and Metrology
- Atonarp
- Beijing Grand Hitek
- Thinkwintek
- Shenzhen Huiteng Innovation Technology
- Hangzhou Muxun Technology
- Precise-ITC
- Automation Industrial
- GrainSoft
- První Signální
- Nautilus Systems
- MECCAD
- DCO Systems
- University of Strathclyde, National Manufacturing Institute Scotland (NMIS)
- Burghart Messtechnik
- Georgia Institute of Technology, ECE Department, Center for Distributed Energy (CDE)
- Chengdu Vantron Technology
- Hyvision System
- TOKYO ELECTRON TECHNOLOGY SOLUTIONS
- KOEM
- Cambridge Filter Japan
- Systerel
- Astro- und Feinwerktechnik Adlershof
- AICRA
- MVD İnan Takım Tezgahları
- ControlWorks
- BT-Anlagenbau
- Alpine Racing
- Yantai Free Intelligent Equipment
- FiberBridge Photonics
- Constructions Électriques

List continues on next page...

ORGANIZATION

New members (since last news) in order of membership application 2/2

We welcome all new members and thank you for joining forces to promote and advance the EtherCAT technology.

- Ho ChiMinh City, Posts and Telecommunications Institute of Technology (PTIT-HCM)
- Koncept Impuls
- Regloplas
- Shenzhen ZhaoWei Machinery & Electronics
- WSTECH
- ASE
- ASU PRO
- Shenyang Siasun Digital Drive
- Langer & Laumann Ing.-Büro
- Sogeti Nederland
- Handtmann e-solutions
- Raman Research Institute
- VisionWorks Engineering
- TRUMPF Maschinen Austria
- Volvo Car Group
- Marel
- Relativity Space
- MISAKI Electronics
- AKRYVIA
- Airbus Defence and Space
- Budker Institute of Nuclear Physics of Siberian Branch Russian Academy of Sciences (BINP SB RAS)
- Korea Institute of Machinery & Materials, Advanced Manufacturing Systems Research Division, Department of Ultra-Precision Machines and Systems
- FANUC Deutschland
- M.D. Micro Detectors
- Dataletics
- eNTiDi software
- AEG Identifikationssysteme
- JD Squared
- Celox Photonics Technology
- TissUse
- Mold Hotrunner Solutions (DBA WestFall Technik)
- swissQprint
- SAMES KREMLIN
- SysTec Systemtechnik und Industrieautomation
- EFORT Intelligent Equipment
- JANOME SEWING MACHINE
- Beijing BITA Technical Services
- B. Braun Avitum
- Toray Engineering D Solutions
- Guangzhou Accuglen Intelligent Tech
- MAGICS Instruments
- WOW TECH
- Ciere
- SHANGHAI DOYEE CNC TECHNOLOGY
- RACING ELECTRIC INSTRUMENT
- Kontinent ETS
- Duale Hochschule Baden-Württemberg Mannheim, Fakultät Technik, Studiengang Elektrotechnik
- Aqualife Services
- Chernihiv Polytechnic National University, Institute of Electronic and Information Technologies (IEIT), Radiotechnic and Embedded Systems Department (RTES)
- Soehnle Industrial Solutions
- Reforce Robotics
- Changzhou Baolong Motor
- Roundpeg Technologies
- Yeungnam University, College of Mechanical and IT Engineering, Department of Information and Communication Engineering, Advanced Networking Technology Lab. (YU-ANTL)
- TOKAI AUTOMATICS
- Ningbo Nachuan Automation Technology
- Sunita Engineering
- Trilix Engineering
- UJin Technology
- FPA
- SmartX Connected Products
- ULVAC Technologies
- The Manufacturing Technology Centre
- YANTAI DERON INDUSTRY
- SOTHIS CIC TECH (Shanghai)
- ishttaa TechCraft
- PTS-Prüftechnik
- Griffin Motion
- XITASO IT & Software Solutions
- Vectis Drive
- OSCAR PLT
- Leibniz Universität Hannover, Fakultät für Elektrotechnik und Informatik, Institut für Antriebssysteme und Leistungselektronik
- GMT GLOBAL
- Reaction Dynamics Lab
- Atargis Energy
- TOKKYOKIKI
- Hunan Staim Microelectronics
- Weka Robotics
- Trotec Laser
- PACK'R
- Unication
- LE Robotics

Please find the full list of members online: www.ethercat.org/members

UPCOMING EVENTS

EtherCAT Interoperability Testing Weeks | Online

North America
April 24th — 30th, 2021

Rep. of Korea
June 14th — 18th, 2021

China
June 21st — 25th, 2021

Japan
September 6th — 10th, 2021

Further details and all other events can be found here:
www.ethercat.org/events

Membership development

During the last years the ETG has constantly grown and, as of March 2021, counts 6200 members from 69 countries and 6 continents. ETG continues to be the world's largest fieldbus organization, and a truly global organization as well.

In more detail, about 420 new members have joined the EtherCAT Technology Group in the last 12 months! This is, of course, largely due to the quality of the EtherCAT technology itself, but also to a high extent to the comprehensive range of support and information available, which the members of the world's largest fieldbus user organization can access without restriction. We also welcomed new members from Iceland, and Sri Lanka, which increases the member country count to 69.

Besides its strong growth in Europe, there is further increase in new membership applications from Asia and America.