



More information:

[www.ethercat.org](http://www.ethercat.org)

Wide recognition for innovation in motion control

## EtherCAT G wins CMCD 2019 New Age Bus Technology Innovation Award

In December 2019, the 2020 Intelligent Manufacturing & China Motion Control/ Direct Drive Industry Development Summit Forum and Award Ceremony was held in Ningbo, Zhejiang, China, organized by the China Transmission Network and the China Motion Control Industry Alliance. EtherCAT G, which has been widely recognized by the industry for its innovation in motion control, won the CMCD 2019 New Age Bus Technology Innovation Award at the event.

EtherCAT technology has long enjoyed an excellent reputation for its high performance, flexibility, low connection costs and simple implementation. The unique functional principle of EtherCAT, namely processing of data in a continuous flow, makes the technology the tool of choice for engineers. As an extension of the basic EtherCAT technology, EtherCAT G was introduced in April 2019, which now



Beryl Fan (left) gladly accepted the CMCD 2019 New Age Bus Technology Innovation Award on behalf of the EtherCAT Technology Group.

also raises EtherCAT to gigabit level, making the technology even more attractive, particularly for demanding motion applications.

Beryl Fan, representative of the EtherCAT Technology Group (ETG) in China, who attended the award ceremony, gladly accepted the award. Beryl Fan: "In the past, EtherCAT technology has become the mainstream communication protocol and industry standard in the field of motion control. As an extension of the standard EtherCAT technology, EtherCAT G represents a new breakthrough. With the introduction of EtherCAT G into the ETG, the scope of the technology's performance will be further expanded, the new requirements for the modernization of domestic production will be met and future challenges are well prepared."

Outstanding technology and comprehensive support

## EtherCAT Technology Group takes stock of its membership growth

By the end of last year, the ETG has once again taken stock of its membership growth, which was again convincing in 2019. 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.

In recent years, ETG has grown by more than 500 new members in 12 months, up to date the organization counts more than 5,700 members. Considering that ETG does not count any individuals as members, but only entire companies or universities, these figures are even more impressive.

Looking at the worldwide distribution of ETG member companies, the high percentage in Asia is particularly striking. About 40% of ETG's members come from China, Taiwan, Japan or Korea. These figures show that EtherCAT technology has completely arrived and is widely accepted on the Asian continent.

As the fastest industrial Ethernet technology available, it is primarily EtherCAT itself that attracts the numerous members to ETG. The unique functional principle of processing on the fly, coupled with numerous features such as simple configuration, precise diagnostics, high-precision synchronization and the largest variety of devices on the market, make EtherCAT the communication system of choice for the majority of users.

In addition, the large number of members is also due to the work of ETG's global experts. These knowledgeable representatives ensure that all members have access to a comprehensive range of EtherCAT technology at seminars and training courses, in product development support, at trade fairs and events such as the EtherCAT Plug Fests. As a result, the "EtherCAT Developer Ecosystem" is fully developed and highly active.

More information:

[www.ethercat.org/members](http://www.ethercat.org/members)

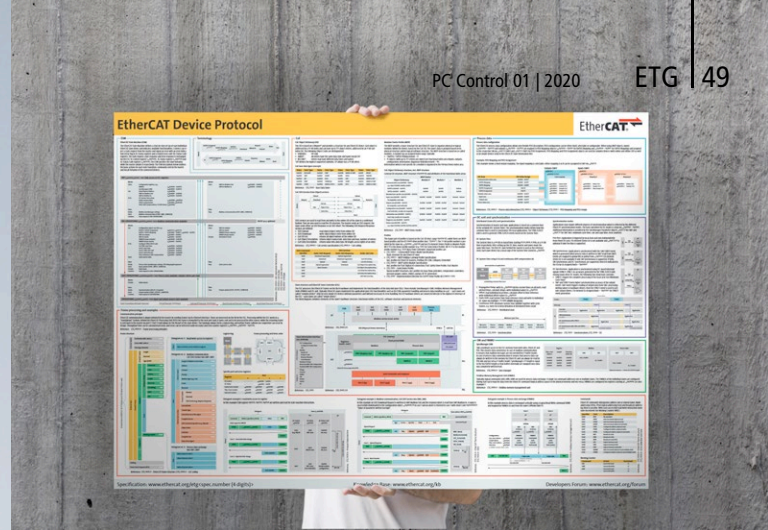
Orientation in the EtherCAT world

## ETG provides new educational tool for developers

The EtherCAT Technology Group offers manufacturers, developers and users comprehensive support services for EtherCAT technology. The EtherCAT Device Protocol Poster is an additional tool that specifically helps developers of EtherCAT devices successfully navigate the EtherCAT world.

The poster deals with the basics of EtherCAT technology, the EtherCAT Device Protocol (EDP), and provides a visual overview of EtherCAT. It describes the basic functional principles of EtherCAT, the structure of the frame and its processing in the EtherCAT Slave Controller (ESC). Additionally, it provides further information on the registers used by the ESC, the object model and references to relevant specification documents.

The target group for the EDP poster is primarily the developer community, and ETG intends for the document to serve as a basis for extended support for this group. Of course, the poster is also helpful for all who want to delve deeper



ETG's EtherCAT Device Protocol poster offers all users of the technology an orientation in the EtherCAT world.

into the EtherCAT technology. For example, students who want to get a general overview of the technology, will find the document a helpful support tool.

Stephan Köhnen, EtherCAT expert at ETG and responsible for the EtherCAT Device Protocol Poster project, explains: "My goal for the poster was to provide EtherCAT device developers a visual basis for a deeper understanding of EtherCAT technology. Comparable to a geographic map, the poster helps to orientate oneself in the EtherCAT world."

The poster is available for all free of charge, including those without ETG membership, and available in English and Japanese. It is available in printed form in ETG trade fair booths and at ETG seminars.

More information:

[www.ethercat.org/poster](http://www.ethercat.org/poster)

ETG Technical Committee accepts technology addition

## ETG officially supports EtherCAT G

The Technical Committee of the EtherCAT Technology Group (ETG) has accepted EtherCAT G as an addition to the EtherCAT standard. Moving forward, EtherCAT G, which extends EtherCAT technology to 1 and 10 Gbit/s, respectively, will be supported and promoted by the ETG.

Currently, the ETG is working to add EtherCAT G to the corresponding technology specifications. Dr. Guido Beckmann, Chairman of the ETG Technical Committee, explains why ETG welcomes the active integration of EtherCAT G into ETG: "EtherCAT is already the fastest industrial Ethernet fieldbus, and will remain so due to its special functional principle. With EtherCAT G, particularly data-hungry applications, such as machine vision and high-end measurement technology, can now also be integrated. This extends the range of applications for EtherCAT technology and makes it even more viable for the future."

The well-known 100 Mbit/s EtherCAT technology remains the proven solution for the majority of applications. However, EtherCAT G offers additional user advantages, especially in applications where particularly large amounts of process data must be transported per device. This can include, e.g., machine vision, high-end measurement technology or complex motion applications

that go beyond the scope of classic drive control. As an extension of standard EtherCAT technology, EtherCAT G is fully compatible; existing devices designed for 100 Mbit/s can be seamlessly integrated into an EtherCAT G system, and EtherCAT G devices in a 100 Mbit/s EtherCAT system behave like classic EtherCAT devices.

The central element of EtherCAT G is the use of EtherCAT Branch Controllers, which essentially fulfil two main functions: On the one hand, they act as a kind of node for the integration of segments from 100 Mbit/s devices; on the other hand, they enable parallel processing of the connected EtherCAT segments. This significantly reduces the propagation delay in the system, which increases system performance many times over previous levels.

Typical for EtherCAT: The integration of EtherCAT G is simple, as the extension is fully compatible with the IEEE 802.3 Ethernet standard and no software adaptations in controllers are required for the standard mode. "The advantages of EtherCAT are well known and include processing on the fly, comprehensive diagnostics, simple configuration and integrated synchronization," says Beckmann. "These attributes are of course fully retained when EtherCAT G is used."