Press Release

EtherCAT®
Technology Group

Safety over EtherCAT now an international Standard

Together with the IEC 67184-3 standard, the Safety over EtherCAT Protocol was accepted unanimously by the 27 national IEC committees. Achieving this international standard is an important milestone for the EtherCAT Technology Group (ETG). It will further leverage the wide acceptance and uniform usage of EtherCAT technology within the automation world.

The Safety over EtherCAT protocol is referred to as FSCP 12 (Functional Safety Communication Profile) in IEC 61784-3. This standard defines the fundamental requirements of a communication system in terms of safety relevant data transmission. In order to do so, it also defines potential errors whose occurrences have to be assumed and describes possible recognition and corrective measures. All requirements are met safely by the Safety over EtherCAT protocol.

The Safety over EtherCAT protocol was introduced by the EtherCAT Technology Group and is in use in numerous applications worldwide since 2005. The protocol is ideal for applications up to the Safety Integrity Level SIL3 according to IEC 61508. Safety communication and standard communication use a single bus system.

Usage of Safety over EtherCAT however is not limited to EtherCAT. By employing the "black channel" approach it is ensured that the safety quality is independent of the communication channel: EtherCAT, Ethernet, other fieldbus systems, underlying subsidiary bus systems and even wireless communication links are allowed.

This is confirmed by the certification of the notifying body TÜV SÜD and is used in practice: Safety over EtherCAT data containers are routed via standard controllers and even gateways to neighbouring systems where they are interpreted in a safe manner – thus one safety domain can successfully span the entire installation.

EtherCAT Technology Group
Martin Rostan
Ostendstraße 196
90482 Nürnberg
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
Andrea Bock

Phone: +49 (0) 911 / 540 56 225
Fax: +49 (0) 911 / 540 56 29
press@ethercat.org
www.ethercat.org/press/

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"Safety over EtherCAT is simple to implement, bus independent and open," says Dr. Guido Beckmann, who is in charge of the Safety over EtherCAT technology within the ETG. "The acknowledgement of this well-proven safety protocol as an international standard is yet another logical step towards the proliferation of EtherCAT technology. It provides additional reassurance to both device manufacturers and end users who can depend on a stable and globally accepted technology."

The publication of the international standard IEC 61784-3 Ed.2 is expected soon.

EtherCAT sets new standards for real-time performance and topology flexibility, while meeting or undercutting traditional fieldbus cost levels. EtherCAT features include high precision device synchronization, cable redundancy options, and a functional safety protocol (SIL3). EtherCAT is an international standard (IEC, ISO and SEMI).

The protocol **Safety-over-EtherCAT (FSoE)** was specified for the transmission of safety relevant data. It is used to send input information of safety sensors (such as safety light curtains or emergency stop buttons) to a safety logic controller. Based on these inputs, this controller computes the commands for the safe outputs (such as contactors or safety relevant drives) and thus controls the safety functionality of the machine.

The **EtherCAT Technology Group (ETG)** is an organization in which key user companies from various industries and leading automation suppliers join forces to support, promote and advance EtherCAT technology. With over 1300 members from 50 countries, the EtherCAT Technology Group has become the largest organization in the world that is exclusively focused on Industrial Ethernet technologies. Founded in November 2003, it is also currently the fastest growing fieldbus organization.

➔ For further information please also see **www.ethercat.org**