Press Release

EtherCAT complies with criteria for open technologies

Openness is an increasingly important criterion when it comes to selecting technologies. But what criteria does a technology have to meet in order to be regarded as open? How do users benefit from these features? These questions are discussed below using the example of EtherCAT.

Openness means free access to technology

Each company – be it manufacturer or user, competitor or not – may join the EtherCAT Technology Group (ETG) and obtain free access to EtherCAT technology. So far 235 companies from 25 countries have taken up this offer. The ETG executive board has never declined an application.

Openness means lower costs

Charging several thousand euros per year for access to a technology is not exactly a sign of openness. ETG membership is free. ETG members receive specifications, training sessions, circuit diagrams, even development support and software free of charge. The source code for the slave protocol stack is included in the evaluation kit (which is available for a nominal fee), while other technologies charge 5-digit figures just for a project licence. The master, including the operating system, will soon be made available free of charge as open source. The slave controller chips are available at a very reasonable price. Even an FPGA code buyout costs less than the equivalent of two annual membership fees for other associations. Incidentally, FPGAs represent such an attractive implementation variant that other technologies use them exclusively or have converted to them for cost reasons.

Openness means interoperability

Interoperability is only possible if technology discontinuities are avoided. Therefore, with EtherCAT there are no incompatible versions, and no manufacturer has the right to adulterate the technology. The EtherCAT Slave Controllers themselves ensure a high degree of interoperability, because chips from different suppliers are tested thoroughly or use the same code basis. ETG also organizes interoperability validation events (so-called “plug fests”), and conformance and interoperability tests are in preparation.

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Openness means standardization

EtherCAT is an open standard, and EtherCAT uses open standards. ETG is ecogniszed as an official IEC partner organization, and EtherCAT has been published as IEC/PAS 62407. ETG experts sit on IEC and ISO standardization committees. EtherCAT is currently being incorporated into four different international standards. EtherCAT uses Ethernet frames according to IEEE 802.3 and supports the use of other Ethernet protocols (including non-IP-based protocols) in the same network.

Openness means multi-vendor capability

From a user point of view, perhaps the most important aspect is that multi-vendor systems ensure competition, lower costs, good availability, and quality. At this year's SPS/IPC/DRIVES fair in Nuremberg 40 manufacturers will present more than 75 products featuring EtherCAT, including controllers, drives, sensors, I/O components, valve terminals, hydraulic components, tools, and services. For device suppliers themselves, the multi-vendor principle is also important, for example with regard to semiconductors. EtherCAT Slave Controllers are available from different suppliers, and common FPGAs can be used. On the master side, EtherCAT is the only Ethernet technology with true real-time capability that does not require a special interface. An existing Ethernet port is sufficient. EtherCAT masters can be implemented on any Ethernet controller.

Openness means open implementation

There are plenty of implementations of so-called open network technologies, where the configuration tools do not support devices from third-party manufacturers (or only provide very rudimentary support). In the TwinCAT System Manager – the configuration tool from Beckhoff for EtherCAT and many other open technologies – devices from other manufacturers are treated in the same way as Beckhoff devices. It is sufficient to copy the device description into the associated directory in the form of an XML file. Any future devices will be supported without requiring modification of the tool. The same approach applies to configuration tools from other manufacturers.

Openness means future-proofness

EtherCAT is a future-proof technology due to its openness and associated features, and because its outstanding performance ensures that future requirements can be met without a change in technology.

➔ ETG booth at the SPS/IPC/DRIVES: **Hall 6, Booth 309**

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