

World's first Java-powered Industrial Robot is EtherCAT-based!

Developed by Dr. Klas Nilsson and his team at Lund University and supported by Sun Microsystems, the robot was presented at the JavaOne Conference in San Francisco, California. The robot, a FlexPicker from ABB, is controlled with EtherCAT drives from a standard PC. The entire EtherCAT master was implemented in standard real-time Java within two months, starting from scratch. Lund University intends to use the system with other robot types as well and also make the EtherCAT Java master available as open source.

EtherCAT was chosen primarily for two reasons: outstanding performance, which is crucial for demanding applications such as robot control, and the possibility to implement the master entirely in software, without any dedicated master hardware. This ensures maximum flexibility and independence from hardware manufacturers.

Dr. Klas Nilsson: "The use of EtherCAT directly from real-time Java via the Solaris STREAMS/Data Link Provider Interface works very well and means that the entire EtherCAT master can be implemented in standard real-time Java, which provides maximum portability. We developed the stack within just two months, which was only possible because the technology is well documented."

"EtherCAT is on its way to become the de-facto standard for demanding motion applications in general, and for robotics in particular. This impressive project clearly demonstrates both the openness of the technology as well as technical benefits", comments Martin Rostan, Executive Director of the EtherCAT Technology Group. "We also welcome the plan to make the Java master stack available as open source. It will be a valuable enhancement of the EtherCAT open source software portfolio, which already contains implementations for several operating systems."

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