

## **Application-ready implementation of Modbus TCP, PROFINET, EtherCat, and EtherNet/IP in FPGA-based I/O hubs of new Kontron processor boards**

March 1, 2011 Eching/Nuremberg, Germany- At the Embedded World trade fair in Nurnberg Kontron and Softing Industrial Automation GmbH announced a new cooperation. Softing's IP cores and stacks for PROFINET, EtherCat, EtherNet/IP and Modbus TCP will soon be available for application-ready implementation in the FPGA-based I/O hubs of Kontron's new processor boards and can also be licensed via Kontron. With these types of services, customers can save valuable time when carrying out their individual FPGA configurations.

Currently, Kontron's application ready platform FPGA portfolio includes the Kontron PCIe/104 single board computer MICROSPACE MSMST with an Intel Atom E600 processor and Altera Arria II GX FPGA on a multi-chip module as well as the Kontron COM Express FPGA Starterkit with Altera Cyclone IV GX FPGA. In addition to this, Kontron offers customer-specific designs at the board level (i.e. motherboards) and system level (i.e. HMI/Panel PCs and Box PCs). FPGA-based Real-Time-Ethernet protocols are often used when OEMs want to vary the real-time protocols on a platform. This reduces the number of different hardware variants which results in reduced development effort and an optimized stock control. Further application areas include Motion Control where customer-specific algorithms are implemented on the FPGA in addition to the real-time-Ethernet protocols allowing extremely fast central response times to be achieved when several axes are being controlled synchronously.

"Our aim is to provide our OEM customers with application-ready designs which have the interfaces implemented to suit their specific needs and which are already thoroughly tested and can be directly certified with the target application," says Dirk Finstel, CTO of Kontron AG. "OEM customers don't want to have to deal with specific I/O interfaces and communications protocol layers, which aren't part of their actual application. Their core competence is in the application itself. As a supplier of boards and systems it is our job and our core competence to provide all the relevant interfaces and tested communication protocols. Our cooperation with Softing now lets us offer this for our FPGA solutions on the basis of their FPGA stacks and IP cores for real-time Ethernet protocols which have already been field-tested. We are now in a position to provide customer-specific implementations including first-level support - and we can do this at top speed."

Dr. Wolfgang Trier, CEO of Softing AG, says "As specialist in industrial communication, Softing provides all major Industrial Ethernet protocols like PROFINET, EtherNet/IP, EtherCAT and Modbus TCP by hardware and software products. The strengths of Softing's Industrial Ethernet solutions are universal application interfaces and the flexibility to support any hardware platform which significantly reduces the application integration effort. Softing's field-tested and certified portfolio has offerings for a wide range of customer requirements, from source code or IP core licenses to ready-to-use modules.

A very strong feature of the Softing solution is the modular architecture of our protocol stacks, for example for FPGA based platforms customers can choose from any combination of Standard and Softcore CPUs for their system and application concept. This architecture is optimally supporting Kontron's FPGA based embedded computer offerings. With Softing's protocol stacks on board, customers will significantly reduce the development and verification effort on their way to an Industrial Ethernet capable product.

Customers benefit from a high level of flexibility of the FPGA-based realization of the I/Os via FPGAs, which allows upgrades and/or modifications without having to adapt the board layout. This will have a lasting effect on the way x86 platforms are developed and laid out, as only the FPGA configuration and the physical design of the interfaces define the individual I/Os. In this way one and the same hardware platform can be used in a multitude of different applications, which saves development time and costs and significantly reduces time-to-market. OEMs also profit from improved long-term availability of their solutions as the Kontron Global Software Center also offers

customers FPGA programming as an optional software service. Furthermore, on request, Kontron can handle the complete development and production, including revision control, supply chain management and country/market-specific testing and verification procedures.

Sample implementations of Softing stacks and IP cores for Real-Time-Ethernet protocols (RTE) PROFINET, EtherCat, EtherNet/IP and Modbus TCP will be available soon on the Kontron PCIe/104 Singleboard Computer MICROSPACE MSMST and the Kontron COM Express FPGA Starterkit.

#### About Kontron

Kontron is a global leader in embedded computing technology. With more than 30% of its employees in Research and Development, Kontron creates many of the standards that drive the world's embedded computing platforms. Kontron's product longevity, local engineering and support, and value-added services, helps create a sustainable and viable embedded solution for OEMs and system integrators. Kontron works closely with its customers on their embedded application-ready platforms and custom solutions, enabling them to focus on their core competencies. The result is an accelerated time-to-market, reduced total-cost-of-ownership and an improved overall application with leading-edge, highly-reliable embedded technology.

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#### About Softing:

Softing AG is a global active management holding. Softing companies provide hardware and software products for industrial automation and automotive electronics. In close cooperation with its customers, Softing develops high-quality standard technology products as well as individual solutions.

The daughter company Softing Industrial Automation GmbH is a worldwide leading specialist in industrial data communication like fieldbus or industrial Ethernet. With over 30 years of experience, Softing Industrial Automation delivers connectivity and diagnostic products and services to customers in factory and process automation.

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