SEMIKRON and National Instruments announce strategic collaboration to accelerate power electronics design

Collaboration seeks to reduce converter development and deployment effort by up to four times.

Nürnberg, November 21st 2016
SEMIKRON, a world leader in power electronics, announced today a technology collaboration with National Instruments (NI), a leading provider of deployable Field Programmable Gate Array (FPGA) based embedded control platforms. The strategic collaboration is intended to help lower the cost and risks of developing power conversion products such as renewable energy inverters, energy storage systems and specialized variable frequency drives at power levels over 50 kilowatts.

Reducing barriers to development
“We are very happy to announce this collaboration to help enable our shared customers to speed up their time to market substantially”, says Mr. Timo Gassauer, Marketing Manager at SEMIKRON. “The complexity of power electronic systems and control is increasing dramatically and we have observed how design teams greatly benefit from building on proven and deployable platforms.” Mr. Gassauer explains: “We are working with NI to help improve the productivity of power electronic system designers by providing them with reference designs, pre-validated interfaces and pre-built software templates. This way, our customers can begin developing their application software right away!”

The collaboration brings together the reliable SEMIKUBE, SEMISTACK and SKiiPSTACK families with the proven, tried and tested NI General Purpose Inverter Controller (GPIC) deployment hardware and the LabVIEW FPGA Module from NI. SEMIKRON’s power electronic stacks are assembled in five stack centers located on four different continents, providing global manufacturing capability with short lead-times.

Unlike traditional DSP-based control systems, the NI GPIC powered by Xilinx Zynq-7020 with embedded FPGA contains hundreds of embedded DSP cores, that deliver up to 70 times higher performance per dollar. LabVIEW FPGA enables control design engineers to implement the most advanced control capabilities using intuitive and familiar graphical programming. The NI tool chain includes an extensive library of power electronics floating point control algorithms for many different converter topologies from 50 kW to 5 MW.

SEMIKRON and NI now provide a comprehensive tool chain for selection of full qualified and ready-to-use power assemblies, control algorithm development, NI Multisim circuit design and FPGA co-simulation, real-time Hardware-In-the-Loop (HIL) testing, electric power analysis, and power grid communication protocols.

Easing the transition to high performance digital control
“The need for advanced power electronics technology is impacting many industries, including the power grid, industrial equipment and transportation,” said Chad Chesney, Vice President for Data Acquisition and Embedded Systems at NI. “This collaboration is intended to help ease the
transition for our shared customers. Better integration of SEMIKRON power electronics stacks with NI FPGA-based embedded control design and deployment platforms can help design engineers significantly reduce development effort, time, cost and risk. With NI controls and Semikron power electronics, we’ve seen many of our customers experience a substantial reduction in development time compared to designing everything from scratch."

The companies are working on a number of additional tools and capabilities, including new products to further enhance the combined offering. You can learn more about the NI platform for power electronics design and deployment at www.ni.com/power/electronics.

Photo: SEMIKRON_Pressefoto_Stack_BacktoBack-converter_2016-11-21

About NI
Since 1976, NI (www.ni.com) has made it possible for engineers and scientists to solve the world’s greatest engineering challenges with powerful platform-based systems that accelerate productivity and drive rapid innovation. Customers from a wide variety of industries – from healthcare to automotive and from consumer electronics to particle physics – use NI’s integrated hardware and software platform to improve the world we live in.

About SEMIKRON
SEMIKRON is one of the world’s leading manufacturers of power modules and systems primarily in the medium output range (approx. 2 kW up to 10 MW). Our products are at the heart of modern energy efficient motor drives and industrial automation systems. Further application areas include power supplies, renewable energies (wind and solar power) and utility vehicles. SEMIKRON's innovative power electronic products enable our customers to develop smaller, more energy efficient power electronic systems. These systems in turn reduce the global energy demand.

SEMIKRON is a family owned business founded in 1951, headquartered in Nuremberg, Germany. Today the company has a staff of more than 3,000 people in 25 subsidiaries world-wide. This international network with production sites in Germany, Brazil, China, France, India, Italy, Korea, Slovakia and the US ensures fast and comprehensive service for customers. By establishing the ONLINE SHOP in 2009, SEMIKRON increased its presence for customers. The SEMIKRON ONLINE SHOP offers 24-hour availability and world-wide access with multi-language sales and technical support.

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