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PRESS RELEASE

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CERN Takes Home Three National Instruments Graphical System Design Achievement Awards

Awards From NI Honor Innovations That Meet Complex Engineering Challenges

Austin, August 6, 2013 – National Instruments today announced CERN took home three honors during the National Instruments Graphical System Design Achievement Awards ceremony, including winning the Advanced Research category and being selected as the Humanitarian Award and Intel Intelligent Systems Award recipient. The awards, which were presented at a ceremony held during the NIWeek conference and exhibition in Austin, Texas, on August 6, recognized companies and universities that use the graphical system design approach to develop innovative applications that meet complex engineering and science challenges. CERN was selected for its innovative system that [controls a particle accelerator for more effective ion beam cancer therapy](#).

“I am honored to accept the awards on behalf of CERN”, said Dr. Johannes Gutleber, who leads the project’s control system activities. “This particular project is a great example of knowledge transfer from fundamental physics research to a concrete medical application, enabled by using technologies from National Instruments. It shows that NI’s and CERN’s visions overlap significantly: to improve society through our technologies.”

The system developed under the guidance of CERN includes a distributed control system for up to 300 magnets generating magnetic fields in real-time that control the generation of the particle beam with 1 microsecond synchronization and regulation precision of less than 10 ppm. This level of precision means that the protons and carbon ions used for cancer treatment can precisely target deep-seated tumor cells while leaving healthy tissue behind the tumor intact. The researchers at CERN conceived this control system using NI FlexRIO hardware, the NI LabVIEW FPGA Module, and a set of PXI Express real-time controllers programmed with LabVIEW to meet stringent latency, throughput, and scalability requirements while maintaining the flexibility to implement advanced software solutions quickly and cost effectively.

“This application is a perfect example of a Graphical System Design Achievement Award nominee leveraging NI’s graphical system design approach and product platforms to solve a grand engineering

challenge we are currently facing,” said Francis Griffiths, vice president, Europe at National Instruments. “I am particularly proud to see that a European company was given three of the 16 awards, and would like to congratulate CERN and MedAustron on this achievement and their significant contribution to changing and improving our everyday lives.”

National Instruments selected the 18 finalists for the Graphical System Design Achievement Awards from 152 submissions of authors from 29 countries. Winners were selected across nine application categories by a panel of technical experts and National Instruments executives who used judging criteria that spanned factors such as the technical difficulty of the application to the benefits achieved from using the application. In addition to the application category awards, NI also recognized authors with the Humanitarian, Green Engineering, Xilinx All Programmable Innovation, Intel Intelligent Systems, NI Community’s Choice, and the Customer Application of the Year awards. Popular Science Editor-in-Chief, Jacob Ward, also recognized one organization with the Editor’s Choice Award and two student teams with the LabVIEW Student Design Competition Awards.

Readers can learn more about the Graphical System Design Achievement Awards at ni.com/gsdawards/.

About National Instruments

Since 1976, National Instruments (www.ni.com) has equipped engineers and scientists with tools that accelerate productivity, innovation and discovery. NI’s graphical system design approach provides an integrated software and hardware platform, speeding the development of any system needing measurement and control. NI ensures customer success with an ecosystem of services, support and more than 700 Alliance Partners worldwide. The company’s long-term vision and focus on improving society through its technology also enables the success of its employees, suppliers and shareholders.

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