# National Instruments Honors Engineering and Science Innovation With 2011 Graphical System Design Achievement Awards

National Instruments honored 17 innovative applications developed by engineers, scientists and researchers from around the world at the fourth annual Graphical System Design Achievement Awards. At the award ceremony held during the annual NIWeek conference and exhibition, winners from eight application categories ranging from robotics and academic research to advanced control systems and embedded monitoring were recognized for using NI technology and a graphical system design approach to develop solutions to critical engineering and science challenges. The 2011 Application of the Year Award was presented to Christian Sames of the Max Planck Institute of Quantum Optics for developing a custom time digitizer to study fundamental quantum properties of light-matter interaction.

“The Graphical System Design Achievement awards recognize the engineers and scientists who are using the NI graphical system design approach to develop and deploy groundbreaking solutions to some of the world’s greatest engineering and scientific challenges,” said Dr. James Truchard, president, CEO and cofounder of National Instruments. “These engineers and scientists are testing the boundaries of innovation to create products and applications that can have significant impact on the world.”

The Max Planck Institute of Quantum Optics was honored for its achievement in building a powerful and versatile custom time digitizer that makes it possible to implement real-time execution of time-critical tasks in hardware. By using NI FlexRIO and the NI LabVIEW FPGA Module, Max Planck engineers implemented feedback control for systems as small as a single atom and performed fast decision-making processes on time scales of one nanosecond based on the detection of single photons. This innovation makes it possible for researchers to study the fundamental quantum properties of light-matter interaction.

The Green Engineering Award was presented to Vestas Wind Systems and CIM Industrial Systems A/S for designing and testing the durability of a wind turbine drivetrain. By using LabVIEW software and NI CompactRIO hardware, the test system increases the structural reliability of the gearbox and contributes to longer uptimes and lower turbine costs, resulting in the lowest cost per kilowatt hour in the wind energy market.

Kitasato University received the Humanitarian Award for developing the world’s first real-time 3-D medical imaging system. Using field-programmable gate array (FPGA)-based processing made possible by NI FlexRIO, the team computed more than 700,000 512-point fast Fourier transforms (FFTs) every second to achieve 3-D imaging. This medical instrument can potentially detect cancer during medical checkups without requiring the patient to undergo the severe stress of a biopsy.

More than 300 authors from 20 countries submitted entries to the Graphical System Design Achievement Awards, making this year's pool of applicants the largest and most competitive in the awards' history. The applications were judged by a panel of technical experts, industry specialists, technical trade publication editors and National Instruments executives. The panel judged the applications on criteria ranging from how technically challenging the solution was to how well the benefits of adopting graphical system design for the project were articulated.

To learn more about the Graphical System Design Achievement Awards and to view a comprehensive list of this year's winners, readers can visit www.ni.com/gsdawards [1]



**Links:**
[1] http://www.ni.com/gsdawards