8.6 Version Meets Parallel Programming Challenge

National Instruments' LabVIEW 8.6 is the latest version of the graphical system design software platform for control, test and embedded system development. Building on the inherent parallel nature of graphical programming, LabVIEW 8.6 delivers new tools to help engineers take advantage of the benefits of multicore processors, field-programmable gate arrays (FPGAs) and wireless communication.

Currently, engineers are forced to work with multiple tools which are not designed for parallel programming. By using the latest version of LabVIEW, engineers now have a single platform to increase test and control system throughput with multicore processors, reduce the development time of high-performance FPGA-based advanced control and embedded prototyping applications, and more easily create distributed measurement systems to acquire data remotely.

Expanding on the built-in multithreading technology of the LabVIEW platform, LabVIEW 8.6 offers supercomputing performance through multicore-optimized features which can help engineers process increasing amounts of measurement data to meet advanced control application challenges and increase test system throughput.

To increase performance, LabVIEW 8.6 includes more than 1,200 advanced analysis functions optimized for faster math and signal processing on multicore systems for control and test applications. Vision applications can benefit from multicore systems by using innovative image processing functions included in the NI Vision Development Module for LabVIEW 8.6 that automatically distributes data sets across multiple cores. Also using new multicore features, test engineers can develop applications to test wireless devices up to four times faster with the latest version of the NI Modulation Toolkit for LabVIEW, and control system engineers can execute simulation models in parallel up to five times faster with the LabVIEW 8.6 Control Design and Simulation Module. Additionally, engineers now can better identify parallel sections of code using a new feature that reorganizes LabVIEW diagrams.

With the intuitive dataflow paradigm of LabVIEW, engineers can use the LabVIEW FPGA Module and FPGA-based commercial off-the-shelf (COTS) hardware, such as NI CompactRIO, to customize measurement and control systems for increased performance in applications such as semiconductor validation and advanced machine control. LabVIEW 8.6 continues to make FPGAs more accessible to domain experts without experience in low-level hardware description languages or board-level design.

As wireless technology advances, engineers have the opportunity to take measurements in isolated locations. Using wireless technology with LabVIEW 8.6, engineers can extend applications into new areas of data acquisition, such as environmental and structural monitoring. The flexibility of LabVIEW graphical programming and the ubiquity of Wi-Fi network infrastructure make it easy to incorporate wireless connectivity into new or existing PC-based measurement and control systems.

Readers interested in learning more about LabVIEW 8.6 and downloading the evaluation software can visit www.ni.com/labview86.