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MathWorks Announces Simulink Code Generation Targets in New Freescale Motor Control Development Toolbox

Simulink and Embedded Coder enable engineers to generate production code for Freescale MCUs in IEC61508 (SIL3) and ISO26262 (ASIL-D) compliant systems

NATICK, Mass. – April 25, 2012 – [MathWorks](#) today announced that [Simulink](#) code generation targets have been built into [Freescale](#)'s new [Motor Control Development Toolbox](#) through [Embedded Coder](#). The toolbox, consisting of Simulink motor control blocks and target-ready code generation support, lets automotive and industrial controls engineers design motor control systems using Freescale microprocessors in IEC61508 (SIL3) and ISO 26262 (ASIL-D) compliant systems.

With the Motor Control Development Toolbox, engineers can design motor algorithms as well as configure and generate all software needed to execute the algorithms on any Freescale MPC5643L or PXS20 hardware platform. The toolbox includes a Motor Control Library developed by Freescale's Motor Control Center of Excellence. With this library, engineers can model their designs using blocks optimized for fast execution on Freescale MCUs and run bit-accurate simulations of those designs. The toolbox offers optimized code generation and support for model-in-the-loop (MIL), software-in-the-loop (SIL) and processor-in-the-loop (PIL) testing through Embedded Coder from MathWorks.

“Our automotive and industrial automation processors are increasingly deployed by engineers who use Model-Based Design,” said Steve Pancoast, vice president of Product Solutions for Freescale's Automotive, Industrial and Multi-Market Solutions Group. “The blocks in the Motor Control Development Toolbox represent years of motor control IP, and now with the toolbox, engineers can automatically implement, verify, and optimize their designs for Freescale's newest processors.”

According to Tom Erkinen, embedded applications and certification manager at MathWorks, “Customer reaction to the breadth and depth of the capabilities provided by the Motor Control Development Toolbox has been remarkable and serves as a testament to the strength of Freescale's investment and support of [Model-Based Design](#).”

The Motor Control Development Toolbox supports the MPC564xL, MPC567xK and PXS30 and PXS20 MCU families.

Block libraries in Motor Control Development Toolbox provide base math functions including trigonometry, PI controllers, FIR and IIR filters, and motor control operations including Park and Clarke transforms. Peripheral block support includes ADC and PWM, as well as SPI and CAN buses.

The generated C source code can be automatically built with Freescale CodeWarrior® IDE, Wind River Diab, Green Hills Software MULTI, and other compilers. For examining software on target hardware, the toolbox provides FreeMASTER, which enables parameter tuning, real-time monitoring, and data logging.

More information on Freescale's Motor Control Development Toolbox is available at http://cache.freescale.com/files/32bit/doc/fact_sheet/MTRCTRTLBXFS.pdf?fsrch=1&sr=1:

About MathWorks

MathWorks is the leading developer of mathematical computing software. MATLAB, the language of technical computing, is a programming environment for algorithm development, data analysis, visualization, and numeric computation. Simulink is a graphical environment for simulation and Model-Based Design of multidomain dynamic and embedded systems. Engineers and scientists worldwide rely on these product families to accelerate the pace of discovery, innovation, and development in automotive, aerospace, electronics, financial services, biotech-pharmaceutical, and other industries. MathWorks products are also fundamental teaching and research tools in the world's universities and learning institutions. Founded in 1984, MathWorks employs more than 2400 people in 15 countries, with headquarters in Natick, Massachusetts, USA. For additional information, visit www.mathworks.com.

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