Software Development Kit Addresses Medical Imaging

Texas Instruments' version 2.0 medical imaging software toolkit (STK) is an updated and expanded collection of imaging algorithms optimized for TI's TMS320C64x+ digital signal processors (DSPs). Complementing TI's full portfolio of analog and embedded processing solutions for medical imaging, the updated toolkit offers new image processing kernels that shorten product development time and enable real-time medical imaging applications such as diagnostic ultrasound and Optical Coherence Tomography (OCT). For more information on how to download the STK visit: www.ti.com/mistk-pr-dsp-tools [1].

Leveraging the sophisticated processing capabilities of TI's C64x+ architecture for efficient performance and power consumption, upgraded features in the STK 2.0 enable B-mode ultrasound processing, 3D rendering and real-time processing for OCT. For example, TI's new 3D affine warp algorithm can be used for image transformations such as rotation, scaling or shifting, to enable portable real-time OBGYN visualizations as well as cost effective solutions to accurately guide needles and catheters. Since its clinical use in ophthalmology, a large number of OCT applications have emerged in cardiology, oncology, surgery and many other specialties. The DSP algorithms for OCT enable embedded processing solutions that are programmable, lower power and smaller form factor than current computing implementations.

"We are very satisfied with TI's medical imaging software toolkit," said Erik N. Steen, principal engineer, GE Healthcare. "TI's software toolkit is easy to work with and has helped us develop high performance mobile ultrasound products."

Key features and benefits:

- Optimized C64x+ software modules allow medical OEMs to get to market faster while improving coding efficiency, yielding higher performance systems at lower cost and power.
- Expanded real-time image processing source code for medical imaging applications.
- Well defined APIs simplify development by abstracting modules and enabling easy integration into existing systems.
- Optimal implementation references allow for function customization and provide coding illustrations of computational optimization methods for the C64x+ core, which can be modeled in custom processing functions.
- Full test benches provide assurance of module functionality while aiding in evaluation and development. Custom test vectors are provided along with automatic function cycle profiling using TI's Code Composer Studio™

(CCStudio).

TI's TMS320C6472 [2] and TMS320C6474 [3] multicore DSPs are particularly well suited for greater performance and power efficiency in medical imaging applications. Additionally, TI's OMAP35x™ and DaVinci™ processors are highly integrated SoCs designed to reduce development costs and time to market for portable medical imaging equipment. These SoCs feature combinations of a C64x+ DSP core, an ARM® core (either Cortex™-A8 or ARM926), accelerators for video and/or graphics, and a host of on-chip peripherals.

Availability

The STK 2.0 is available now from TI and is free. To obtain access to the STK 2.0, please visit www.ti.com/mistk-pr-dsp-tools [1] to fill out a contact form for approval. If approved, customers will receive instructions for downloading the free STK 2.0 including documentation and test bench programs.

Find out more about TI's medical imaging portfolio by visiting the links below:

- Medical imaging STK: www.ti.com/mistk-pr-dsp-tools [1]
- Evaluation modules, including:
    - DSP Starter Kit for Medical Imaging: www.ti.com/mistk-pr-dsk [4]
    - TMS320C6472 [2] EVM: www.ti.com/mistk-pr-c6472evm [5]
- TI's complete portfolio of embedded processors and high-performance analog products for medical imaging: www.ti.com/mistk-pr-home [6]
- Medical imaging media gallery: www.ti.com/mistk-pr-media [7]
- Multicore for medical imaging white paper: www.ti.com/mistk-pr-wp [8]
- Follow TI on Twitter: www.twitter.com/txinstruments [9]

For more information, please visit www.ti.com/medical. [10]

Source URL (retrieved on *03/27/2015 - 2:14am*):
http://www.ecnmag.com/product-releases/2010/09/software-development-kit-addresses-medical-imaging?qt-video_of_the_day=0

Links:
[1] http://www.ti.com/mistk-pr-dsp-tools
[2] http://focus-webapps.ti.com/general/docs/sitesearch/searchdevice.tsp?partNumber=tms320c6472
[3] http://focus-webapps.ti.com/general/docs/sitesearch/searchdevice.tsp?partNumber=tms320c6474
[4] http://www.ti.com/mistk-pr-dsk
[5] http://www.ti.com/mistk-pr-c6472evm
[6] http://www.ti.com/mistk-pr-home
[7] http://www.ti.com/mistk-pr-media
[8] http://www.ti.com/mistk-pr-wp

[9] http://www.twitter.com/txinstruments
[10] http://www.ti.com/medical