SystemCrafter

Bringing Hardware And Software Together

SystemCrafter Success in Design Lab Study of SystemC

Ipswich, UK, 21 January 2008 – The Danish Technological Institute has successfully used SystemCrafter to demonstrate the benefits of a SystemC design flow.

SystemC and SystemCrafter were incorporated into a design flow from functional specification to implementation. The DTI found that this approach resulted in fast protoyping and verification, reuse of test benches at different design stages and simulation 10-100 times faster than pure RTL.

Kim Bjerge, Senior Consultant at the Danish Technological Institute commented, "Developing FPGA designs with SystemC and SystemCrafter SC means that with only a little extra learning, embedded software developers can design to hardware. They can then use the same language for both software and hardware development".

He added, "SystemCrafter SC gave us a quick and easy route from SystemC to hardware. Plus we could use our SystemC test bench to verify the gatelevel HDL which was a significant time-saver".

SystemCrafter SC v3 was used in a number of examples to demonstrate the hardware/software codesign workflow, including a second order biquad type IIR filter used for coefficient calculation. This has been implemented and tested on a Xilinx ML405 board with an embedded power PC.

The design flow started with a functional view written in C++, identifying the sub components and interfaces but with no implementation details. The architecture view allocated each subcomponent to a hardware or software implementation. The IIR filter was written in SystemC (system level) and then compiled to a gate level SystemC and corresponding HDL (VHDL) description using SystemCrafter SC v3. It was then possible to simulate the system level and gate level descriptions using the same SystemC test bench. The SystemC simulation times for 1000 samples were <1s at the functional level, 2s for system level and 23s for gate level.

Further details of the study (in English) can be found at www.teknologisk.dk/it-udvikling/22103.

About The Danish Technological Institute

The Danish Technological Institute is an independent, not-for-profit institution approved by the Danish authorities to provide technological services to businesses and the community. The Accelerated Design Laboratory, which opened on 12 December 2007, has been set up to provide advice and expertise on using FPGA technology, including usage, system design and modelling.

About SystemCrafter

SystemCrafter brings customers the power of fourth-generation electronic design synthesis, and makes it easier, faster and less risky to create advanced IC designs. To fulfill this mission, they have created SystemCrafter SC. SystemCrafter SC is a software tool that automatically synthesizes designs written in the industry-standard SystemC language to electronic hardware. SystemCrafter have invested heavily in the engineering development of SystemCrafter SC, but keep sales and marketing costs very low. This enables them to sell the tool at a price within range of all chip designers. SystemCrafter was founded in 2002, and is based in Ipswich, England, about 70 miles northeast of London.

Their website is www.systemcrafter.com.

All trademarks are acknowledged.

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