COSYNTH GmbH & Co. KG

Embedded Systems

CoreSynth Vision – Modular FPGA cores
for industrial image processing
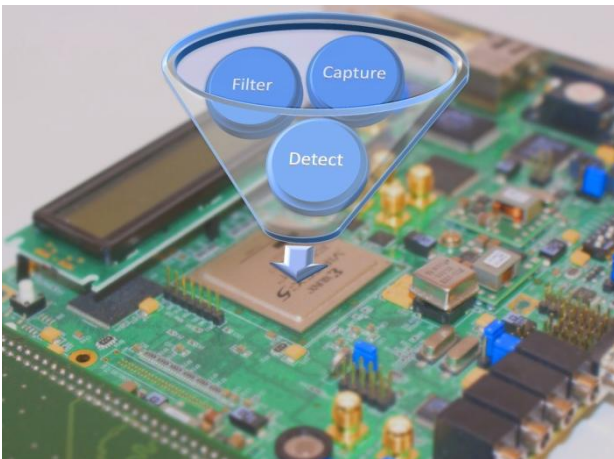
Oldenburg, October 10th 2011 *** At *VISION 2011* **CoSynth GmbH & Co. KG** will present their collection of ready-made components for hardware accelerated industrial image processing for the first time. These IP cores are optimized for use in FPGAs. They are immediately available under the brand *CoreSynth Vision*. Fast and compact embedded systems are quickly developed with their help. Typical application areas are machine vision, industrial automation and similar areas of industrial image processing. The component interfaces are using standardized connections for easy and efficient combination of multiple modules for complex processing. The parallel execution of the components on the FPGA yields high frame rates even for huge image resolutions.

The IP cores support the following domains:

- Input and output
- Preprocessing and filtering
- Object recognition and handling

All typical image processing functions, such as convolution, morphological operators, scaling, contrast and color adaption are available. Bayer pattern demosaicing and color space conversions are supported by the preprocessing modules. Further modules provide edge enhancement, image segmentation, integral image calculation and other statistics on a per-image base. These allow for implementing more complex processing chains, e.g. for object recognition.

For use with camera based systems, IP cores for the integration of cameras via LVDS and Ethernet are available. Other IO modules support various bus protocols for the integration of the image processing module into the complete system. This enables a rapid prototyping of a system on chip in combination with a micro controller or processor. The IP core pool is continuously being extended. CoSynth also offers IP cores beyond image processing, e.g. for communication operations and encryption.

All modules are highly configurable and can be used with a multitude of FPGA platforms. The algorithms can be licensed per module or in packages. Simulation models for fast simulation with SystemC can be optionally licensed. These Electronic System Level models are available timed and untimed for verification in early phases of development. They are also the base for further customizing the cores. CoSynth offers the necessary high-level synthesis technology as well as contract development for customization and system design.

About CoSynth

CoSynth is a startup in the area of embedded systems design. The company offers design services and tools for fast and efficient development of electronic solutions at system level. The SystemC and C++ based methods are particularly suitable for the design of mixed hardware/software systems and FPGA based solutions. Hardware accelerations for existing software applications are developed fast and precisely with CoSynth's intersectoral methodology and an own synthesis tool. CoSynth offers software development for embedded systems, too. Further information about services and products can be found at the company's website http://www.cosynth.com. CoSynth was granted the entrepreneurship prize *Gründercampus Niedersachsen* in February 2011. CoSynth is supported by means of the European Regional Development Fund.

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