SystemC AMS Day 2011

Industry Adoption of the SystemC AMS Standard

BLOCK 2: SYSTEMC AMS FOR AUTOMOTIVE AND SENSORS SEMICONDUCTOR INDUSTRY

SystemC Executable Specification of Magnetic Speed Sensor

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The main goal of the behavioral SystemC model was to provide the means to close the gap between the application requirements and the specifications for the design implementation. The focus of the modeling was set on the conversion of the application environment into physical inputs for the IC model and the nonlinear digital regulation algorithms of the sensor itself. The application requirements were covered in test cases with automated or semi automated performance parameter extraction.

The test cases and application environment where developed in Matlab/Simulink to make use of the libraries and functions but also to have a common simulation tool with external partners. The IC behavioral implementation was modeled in SystemC. The benefit of SystemC was the easy inclusion in Simulink with an S-function wrapper and the native support of the SystemC implementation in the Mentor Graphics design tools as a reference model. With this the gap between application requirements and design implementation was closed.