

# SystemC AMS Day 2011

*Industry Adoption of the SystemC AMS Standard*

## BLOCK 5: RESEARCH AND ACADEMIC

### **A Range-based System Simulation and Refinement Design Flow**

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Range-based system simulations are favored in recent years to cope with the performance issues inherent with standard multi-run simulations. Unlike to steadily varying the system parameters and simulating all of these parameter space realizations, deviations of system parameters are modelled in continuous ranges. When performing a range based semi symbolic simulation, one simulation run provides the result for all the modeled parameter deviations thus significantly reducing the computation effort.

This work uses a semi-symbolic simulation environment integrated in the SystemC AMS framework to obtain a range based system response. Following the semi-symbolic potential of backtracking the resulting ranges to its parameter origin is used to identify parameter refinement candidates. Based on this techniques a refinement design flow is presented which is targeted to improve the robustness and accuracy of cyber physical systems.