

SystemC AMS Day 2011

Industry Adoption of the SystemC AMS Standard

BLOCK 3: SYSTEMC AMS DESIGN METHODOLOGIES, EDA TOOLS AND FLOWS

Using IEEE 1685 Standard (IP-XACT) for Managing AMS Design Flow Based on SystemC AMS

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Today, the state of the art AMS flow is divided into digital and analog parts, after a common root dedicated to system specifications and virtual platform prototyping. For designing the digital parts, the state of the art is to use SystemC models for hardware dependent software development, architecture exploration, and performance analysis where simulation speed is key. The missing points that we tried to solve are concerns the integration of the AMS flow: there is a lack for modeling AMS systems at abstracted levels and SystemC AMS is the way to explore the functionality of analog parts, including automated system integration using the concept of AMS IP.

In this talk, we will present the industrial requirements on design techniques which have been analyzed to define the new proposed AMS design flow from system-level to implementation. This flow is based on the IEEE 1685 standard, IP-XACT, which is already widely used for digital designs in combination with SystemC virtual platforms. We will see how IP-XACT can be the basis for the data backbone that is needed to introduce mixed-signal ESL (Electronic System Level) methods, including bottom up or top down modeling, SystemC and SystemC AMS model generation, properties checking and validation, model characterization or system requirements traceability.