

Virtual Prototype Life Cycle in Automotive Applications

Manfred Thanner
Freescale Halbleiter Deutschland GmbH
Munich, Germany
manfred.thanner@freescale.com

Abstract—Virtual prototypes for automotive applications see a unique life cycle in the context of the supply chain from semiconductor to Tier1 to OEMs and within the eco-system.

The presentation gives an overview of current experiences and finding in this field and challenges observed. The virtual platforms targeting the mid to high end application spaces of chassis, to powertrain and driver information systems. The use cases primarily address today semiconductor internal developments and Tier1 level deployment. Additionally different software vendors use the models in their development cycle which drive model requirements like stimulus and abstraction levels.

The development of virtual prototypes often start with the reuse of existing cores, accelerators and IP models. These models had certain use cases to address and were created accordingly. Therefore the models sometimes don't necessarily match fully the requirements of the overall virtual prototype and compromises were made. Further to this, models are often from different design centers, vendors, etc. This can lead to conflicting model features versus the primary use case requirements of the virtual platform for the intended usage. Examples are cycle accuracy vs. functional, correct behavior vs. error behavior and error injection.

Keywords—Virtual Platform; System Level; SystemC; Automotive