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Title of the article:
SysCOLA: A Framework for Co-Development of Automotive Software and System Platform

Abstract:
A modeling language with formal semantics is able to capture a system’s functionality unambiguously, without concerning implementation details. Such a formal language is well-suited for a design process that employs formal techniques and supports hardware/software synthesis. On the other hand, SystemC is a widely used system level design language with hardware-oriented modeling features. It provides a desirable simulation framework for system architecture design and exploration. This paper presents a design framework, called SysCOLA, that makes use of the unique advantages of both a new formal modeling language, COLA, and SystemC, and allows for parallel development of application software and system platform. In SysCOLA, function design and architecture exploration are done in the COLA based modeling environment and the SystemC based virtual prototyping environment, respectively. Our concepts of abstract platform and virtual platform abstraction layer facilitate the orthogonalization of functionality and architecture by means of mapping and integration in the respective environments. As SysCOLA is targeted at the automotive domain, the whole design approach is showcased using a case study of designing an automotive system.

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7

Notes:

Occurrences: