Embedded System Protocol Design Flow based of SDL:
From Specification to Hardware/Software Implementation

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ABSTRACT
SDL (Specification and Description Language) is popular for communication protocol
design. SDL tools allow simulating and verifying SDL models. In this paper, we show
how SDL models can be transformed into hardware/software implementations for
embedded systems. Our design flow contains a lightweight operating system integration
layer and a cosimulation framework that supports hardware/software partitioning.
The design methodology has been applied to an implementation of the IEEE 802.15.3
MAC protocol. We present results from a prototypical system including a protocol
accelerator.