Abstract:

Model-based development tools are one possible solution to handle the increasing complexity of mechatronic systems. While traditional approaches often separate design of hardware and software, especially in mechatronic systems hardware/software interaction is the most critical component. Hence, both aspects must be considered in this context. The goal is a model-based development tool for software/hardware co-design including the generation of efficient code for the respective target platforms. EasyLab is a modular and easily expandable development tool especially suitable for such applications. Its objectives are to facilitate reusability and to accelerate the development process. It raises the level of abstraction and thus simplifies the development of mechatronic systems even for unexperienced users. A graphical user interface provides various modeling languages that are easy to use. By employing platform optimized generation of the code, efficiency of the resulting programs can be guaranteed, which we demonstrate on a set of experimental mechatronic systems.

Stichworte: embedded, easykit, EasyLab, Hardware-Software Codesign, Model-based Development, Rapid Hardware Prototyping, Zero Code Development

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