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UML and Model-Driven Development for SoC

Wolfgang Mueller, Paderborn University, Germany
Yves Vanderperren, Wim Dehaene  KU Leuven, Belgium

This tutorial introduces the basic concepts of UML 2.0 and the key ideas of the Model Driven-Architecture (MDA) design process for application in SoC design. The first part starts with a self-contained, comprehensive overview of the UML 2.0 with focus on relevant parts for architectural and behavioural descriptions. Thereafter, we introduce the basic concepts of application-specific UML adaptations via UML profiles and recent developments in the definition of SysML (System Modelling Language) and the SoC profile. The second part of the tutorial presents the basic principles of Model-Driven Architecture (MDA) and its relevance and implications for tools. After an overview of current SoC design flows which integrate UML, the tutorial finally closes with a discussion of future perspectives beyond the question of languages and tools.