

Unlike many proprietary component systems, the academic ones do not have sufficient support in integrated development environments. This thesis analyzes development of component-based applications in terms of the SOFA 2 component system and it finds out that the main issue is an insufficient connection between processes of common application design and creation of particular components. Based on this analysis, it defines a subset of the UML, a universal language for application design, and its semantics regarding entities of the SOFA 2 component system. Furthermore, it creates a tool integrated to the Eclipse IDE, which enables a developer to automatically generate these entities from a UML component model as well as to connect this model with already existing entities enabling their automatic correction in case of model changing. This tool is designed modularly so that it is possible to easily change semantics of the model or using it for other models. Finally, this thesis analyzes possibilities of extensions of this tool for other component systems, code generation and component behaviour verification.