Development of applications for embedded devices is a daunting task particularly due to the diversity of used hardware. Technologies like Java ME attempt to provide unified programming model in the spirit of slogan “write once – run anywhere”; however the platform specifics still linger. Applications for embedded devices could therefore benefit from the use of component – based development where platform – specific parts can be separated into well – defined easily replaceable components. The goal of this thesis is to analyze the current deployment process for the component applications written using SOFA 2 component system and propose changes that would allow such applications to be deployed in Java ME environment, particularly CLDC configuration with MIDP profile. The proposed solution is based on transformation of SOFA 2 component application into MIDlet application. This transformation includes pregeneration of code for static instantiation of components which is normally done dynamically by interpreting component descriptions. The result of the transformation is standalone MIDlet package that contains all necessary code - this includes adjusted component runtime and components themselves. The development process of SOFA 2 applications is also adjusted to support new deployment process.