

This thesis is a part of a bigger research vision called Progress which aims at providing component based techniques for the development of real-time embedded systems. Progress introduces the concept of a virtual node in order to increase the effectiveness of constructed systems and improve hardware abstraction. The thesis starts research of the runtime structures of the Progress component model. The thesis aims at identifying necessary questions about the runtime internal structure of virtual nodes and about the supporting mechanisms needed to run virtual nodes on destination hardware. A part of this thesis is also a sample implementation of the virtual node runtime environment covering local and Ethernet communication, event driven and timer driven tasks, and multiple computational nodes.