

Resource Management for Multicore Aware Software Architectures of In-Car Multimedia Systems

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Abstract: With increasing hardware capabilities the demands on the functionality of user centric systems continuously expand. The next generation of automotive embedded systems is going to make use of multicore hardware architectures, which strongly enhances the computational power. This means a movement from concurrent to parallel computing. Although the competition for CPU time will decrease, other resources are not available in multiple instances. This raises the need for a management unit that controls access to resources other than the CPUs. Such a resource manager is able to utilise the capabilities of multicore hardware architectures for component based software systems more predictably. This paper builds a case for a resource scheduler, identifies requirements and provides details of a prototype implementation. As an illustrative example, the domain of automotive multimedia/infotainment systems is used.