Thema: A middleware for Seamless Device Integration and Cooperation

Aim:
In a ubiquitous computing environment, a user needs to manage and interact with several devices. This can offer enormous possibilities to improve connectivity and cooperation, it can, however, create significant cognitive load (distraction) on the user. A typical example is a user managing several devices inside a car: a navigator, a mobile phone, a radio, and several other embedded devices.
The aim of this thesis is to enable dynamic device integration and cooperation when the devices are found in the same context, such as inside a car, at home, or in an office. Ontology should be proposed to semantically describe resources and to express rules for device integration and coordination.

Research Focus:
1) Investigation of related work (smart spaces, context-aware infrastructures, ontology)
2) Identification of application domains (smart cars, smart home, smart office)
3) Use of ontology (OWL) to model smart environments
4) Rules and policies for cooperation and seamless integration
5) Prototype

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