

## Titel: New Challenges for Connected Embedded Systems: Safe and Secure Cloud-based Connections

### Abstrakt:

Highly connected embedded devices enable the creation of an information-rich ecosystem that influence and enrich the modern connected life. Internet of Things (IoT) is the platform for bringing billions of electronic gadgets into connected networks including cloud connectivity. Such networks consist of ubiquitous smart physical objects embedded with electronic components, sensors, software, and connectivity elements to sense, communicate and interact with the external environment including clouds.

The communication network capabilities are increasing compared to the traditional devices in the past. For example cars, road signals, consumer electronics etc. joining this communication networks. There exist a lot of known design methodologies for embedded systems, but in conformance with the increasing complexity and connectivity due to IoT new challenges are emerging as, for example, how it is possible to provide full connectivity to networks, safe and secure architectures that enable to support in an efficient way, to different services like cloud access. Therefore, the following research questions getting more and more important: a) creation of an intelligent protective shield to ward off cyber attacks and manipulations to increase network security; b) detect attacks during system run-time; c) adaptation to the highly integrated systems architecture in their operational environment.

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