

Abstract

The information exchange technologies of the recent embedded systems converges towards the internet along the use of smart devices. As the computational power of digital systems are growing exponentially, and the power consumption of such devices is shrinking excessively, there are several ways available for them to connect to the internet.

Cloud based services provide an increasing platform for utilizing internet technologies efficiently. Chip-to-cloud technologies open a new dimension in data processing for embedded systems.

My aim was to design and implement the embedded firmware of a general ultramodular system which can provide several improvements to a plastic greenhouse. Besides I had to integrate this ultramodular system to an actual greenhouse.

I received the hardware modules readily at the beginning of my task with no software support. I created the behavioral software models of the hardware modules with well-defined interfaces from the raw hardware via which modules can be contacted.

I managed to accomplish the appointments of my thesis. The software framework I created has far more potential than controlling an actual greenhouse. A general hardware module family has been created with standard interfaces.