

Software Ecosystems for the Internet of Things

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Abstract text Developments in the Internet of Things (IoT) area have so far focused on technical solutions that enable the connection of devices to the Internet. This technology has now reached a sufficient maturity to enable companies to implement IoT on a broad scale, which leads to a shift in attention towards large-scale systems engineering and business issues.

This presentation summarizes our research on software ecosystems for IoT, suggesting a partly open development model in which different actors can extend a base product with new features and services. We call this concept Federated Embedded Systems (FES). In a FES, each device has the possibility to dynamically plug-in software extensions, thereby improving time-to-market for new features; system-of-systems integration; and open innovation. In the presentation, we will discuss implications on business models, system architecture, and quality assurance when transforming into an IoT ecosystem. Application areas include automotive, energy, process automation, smart cities and buildings.