

Secure Implementations for the Internet of Things

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Abstract. In the world envisioned by the Internet of Things (IoT), every object is able to communicate digitally. An important step towards this vision is the use of passive RFID tags. These devices are contactless powered by a reader field and hence do not require a dedicated power source. The corresponding counter-parts to these tags are already integrated in some modern mobile phones. The combination of mobile readers integrated in every-day objects like smart phones and low-cost tags could deliver basic building blocks for a lot of new applications. However, in order to get broad acceptance, the capabilities of such systems in the sense of usability are as important as their security to preserve the privacy of the users. No malicious user should benefit from information that is collected, transferred, or processed. Hence, the user must be able to rely on the protocol as well as on the implementation. In this talk, we discuss potential future developments of the Internet of Things and the requirements regarding security and privacy. Furthermore, we highlight the need for trustworthy implementations and show actual results in this context.

