

Abstract

TinySIP: Using the SIP Protocol to Access Wireless Sensor Networks **Karl Ostendorf** **Deutsche Telekom Laboratories**

Building upon previous research at Deutsche Telekom Laboratories, we present TinySIP as a way to interact with wireless sensor networks. TinySIP is based on the session initiation protocol (SIP), which is a standard application-level signaling mechanism. Users on traditional networks remotely interact with a wireless sensor network by sending SIP messages. A gateway maps the SIP abstractions to the corresponding TinySIP abstractions and propagates the messages to the sensor nodes.

We have developed TinySIP with the goal of providing a unifying messaging protocol that not only supports distributed interactions among sensor nodes but also enables users on a traditional network to interact with the sensor nodes through familiar devices, such as mobile phones and PDAs. TinySIP leverages the communication abstractions provided by the Session Initiation Protocol (SIP), but uses a more compact and energy-efficient message format for communication with resource-constrained nodes. TinySIP supports interaction with sensor nodes using publish-subscribe, instant messaging, and session-based semantics.