



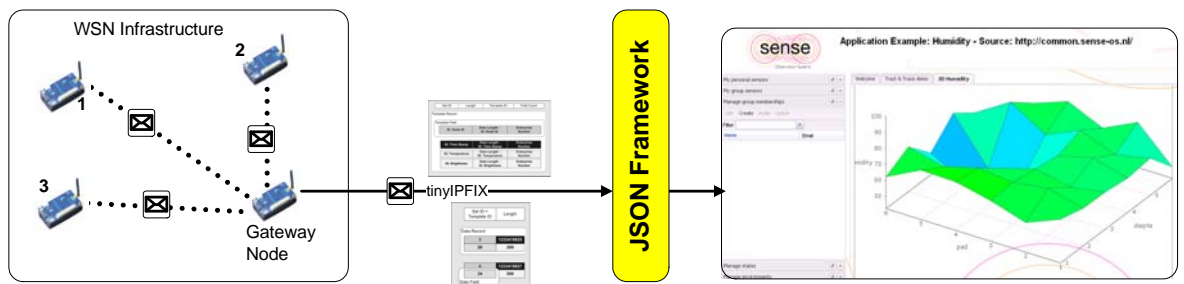
Framework Development for tinyIPFIX- conversion into JSON format

Motivation

Today Wireless Sensor Networks can be found nearly everywhere. Due to the different applications and requirements the number of collected data is huge. Corresponding to this development the range of analysing and displaying tools are manifold.

In our department a resource saving transmitting protocol tinyIPFIX was developed which transmits the meta information and the data itself in different packets through the WSN towards a gateway node. On the gateway among other factors a XML-File is used to decode the data accordingly the specifications.

For analysing and displaying those sensor data tools such as JSON exists to import the data to application tools. RFC 4627: "JavaScript Object Notation (JSON) is a lightweight, text-based, language-independent data interchange format. It was derived from the ECMAScript Programming Language Standard. JSON defines a small set of formatting rules for the portable representation of structured data."



Your task

JSON is a special developed Javascript Object Notation independent data interchange format (RFC 4627). CommonSense is one open-source application tool which imports sensor data using JSON. Our sensor data is collected and transmitted by using tinyIPFIX. We now want to use such tools as CommonSense to display the sensor data. Therefore, we need a framework which transforms the incoming tinyIPFIX packets on the gateway node in such a way that it can be imported to CommonSense (<http://common.sense-os.nl/>) or equivalent tools by using JSON.

After a successful implementation of the framework an evaluation step will follow to show the functionality and adaptability to open-source tools such as CommonSense, openbms (sMAP plotting engine - <http://www.openbms.org/smap/plot>) and other tools.

Requirements

- Knowledge of Javascript and http implementation would be helpful
- Experiences with TinyOS would be helpful
- Interaction with other students working with tinyIPFIX

Keywords

Wireless Sensor Networks, Javascript/HTTP, Displaying tools for WSN data

