MITTTR

OVERVIEW

MITTTR is an experimental IoT-sensor solution, capable of sensing air temperature, humidity and pressure. It can be used to collect data over a long period of time, and data can be interactively viewed through the included web-interface.

MITTTR is targeted for typical outdoor and indoor conditions. Its effective temperature sensing range is from -40 to +85 °C.

MITTTR is designed to work both wirelessly over a WiFi network and directly through a serial port. An external 5V power supply is required when running MITTTR wirelessly.
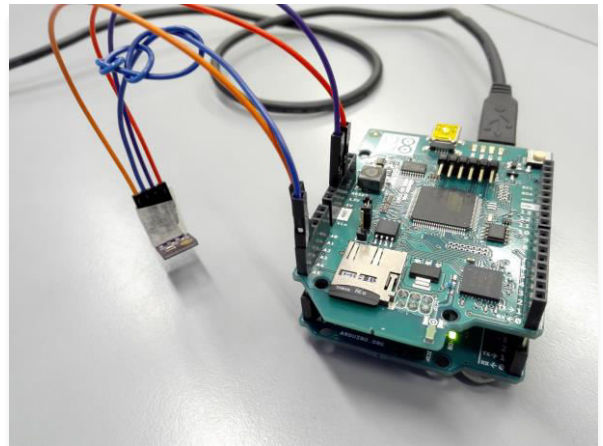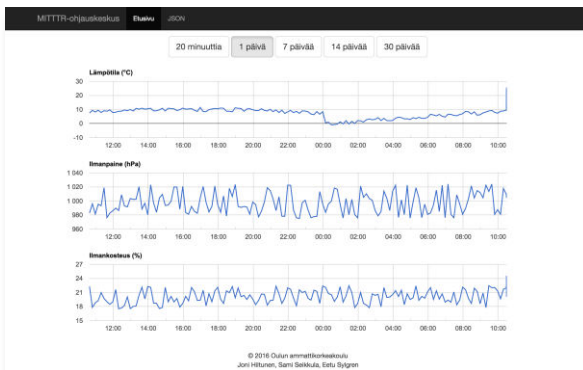

IMAGE 1 Picture of the device

IMAGE 2 Interactive web interface

SOFTWARE

MITTTR consists of multiple software components, all working together to produce the end result. The Arduino contains software written in C++. The server was written in Python, and the user interface was done in JavaScript, HTML & CSS.

HOW IT WORKS

MITTTR is built from three major components:

- an Arduino Uno microcontroller with a WiFi Shield module
- a BME280 sensor
- a server application that runs on your computer

The Arduino reads values output by the BME280 sensor through an I2C bus, and translates these values into familiar, human readable SI units.

Next, the Arduino sends a single sample of temperature data both to the serial port and to the server—in case a succesful WiFi connection has been established.

Finally, this data is aggregated into a single database that lives on the host computer machine. The user can then view this data through the included interactive web interface.