Workshop GLUON, Jerry Galle

Measuring Particulate Matter With a Raspberry Pi station and storing retrieved data.

Touring with our DataBuz is a pre-installed AQI (Air Quality Index) station that measures particulate matter on the spot. The data is saved in a json file for further analysis and implementation for future projects. There's this tutorial online if you want to build such a station yourself.

It can be said quite roughly that fine dust is a very small particle in the air. A distinction is made between PM10 and PM2.5. PM10 are all particles in the air that are smaller than 10µm, whereas PM2.5 are all particles that are smaller than 2.5µm. The smaller the particles, i.e. everything smaller than 2.5µm, the more dangerous they are to health.

The WHO recommends the following limit values:

Annual average PM10 20 µg/m³
Annual average PM2,5 10 µg/m³ per year
Daily average PM10 50 µg/m³ without permitted days on which exceeding is possible.
Daily average PM2,5 25 µg/m³ without permitted days on which exceeding is possible.

These values are below the limits set in most countries. In the European Union, an annual average of 40 µg/m³ for PM10 is allowed.

What is the Air Quality Index (AQI)?

The Air Quality Index can be calculated on the basis of the particulates in the air. It indicates how "good" or "bad" the air is. Unfortunately, there is no uniform standard here, because different countries calculate this differently or have different scales. The Wikipedia article on the Air Quality Index provides a good overview.