

Air quality monitoring in a Prague school

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4

months of continuous measurement

over

47%

of the schooltime a bad-quality air high CO₂ (>1000 ppm)

over

74%

of the schooltime dry air (RH<30%)



The Idea

Because of the assumption that there is a bad air in schools, and therefore students have concentration problems, Protronix and his partners (O2 IT Services, IQRF Alliance, MICRORISC, Camea, ...) decided to make a long-term 4-months measurement. The CO₂, temperature and relative humidity values were monitored. They were continuously analyzed and finally followed by recommendations for ventilation.



The Solution

This solution consists of

- 1) 10 combined sensors of CO₂, temperature and relative humidity
- 2) an IQRF wireless mesh network for data transfer
- 3) a gateway enabling data transfer from the IQRF network to TCP/IP network
- 4) a data storage and a web application with visualization of measured data.



The Results

As a result, it was found that minimum recommended values of relative air humidity had not been reached for most of the schooltime and maximum allowed CO₂ values had been exceeded for almost half of the time. These variables and their values are directly linked to the concentration and health of students.



The IQRF Benefits

The IQRF network is easy to install, so installation of all sensors and their subsequent removal took place within a very short time without disturbing the teaching. The entire large school for 600 students was covered by a network with 10 hops, although the IQRF network has more than 240 hops. Extension of additional sensors would be easy.