

MONITORING URBAN NOISE



CARDWARE IOT SERVICES

CardWare offers IoT based online monitoring of urban noise. A wireless network of individual sound level meters provides mapping and monitoring data of an area.

- ✓ Real-time data
- ✓ Web based visual interface
- ✓ Analysis and notifications
- ✓ Alarms

☎ +36 1 382 01 84

🏠 Mikes Kelemen 5/A, 1112 BUDAPEST, HUNGARY

✉ info@cardware.hu

URBAN NOISE POLLUTION AND THE EFFECTS TO OUR HEALTH

SOURCES

- construction
- motorized vehicles
- machines
- crowds
- concerts

LEVELS

- constant level noise
- variable level noise
- impulse noise

FREQUENCY SPECTRUM

- line spectrum noise
- continuous spectrum noise
- combined spectrum noise

Sound levels of 50 dB(A) or higher can cause health issues




EFFECTS ON HEALTH

"Excessive noise seriously harms human health and interferes with people's daily activities at school, at work, at home and during leisure time"

(WHO)



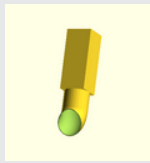
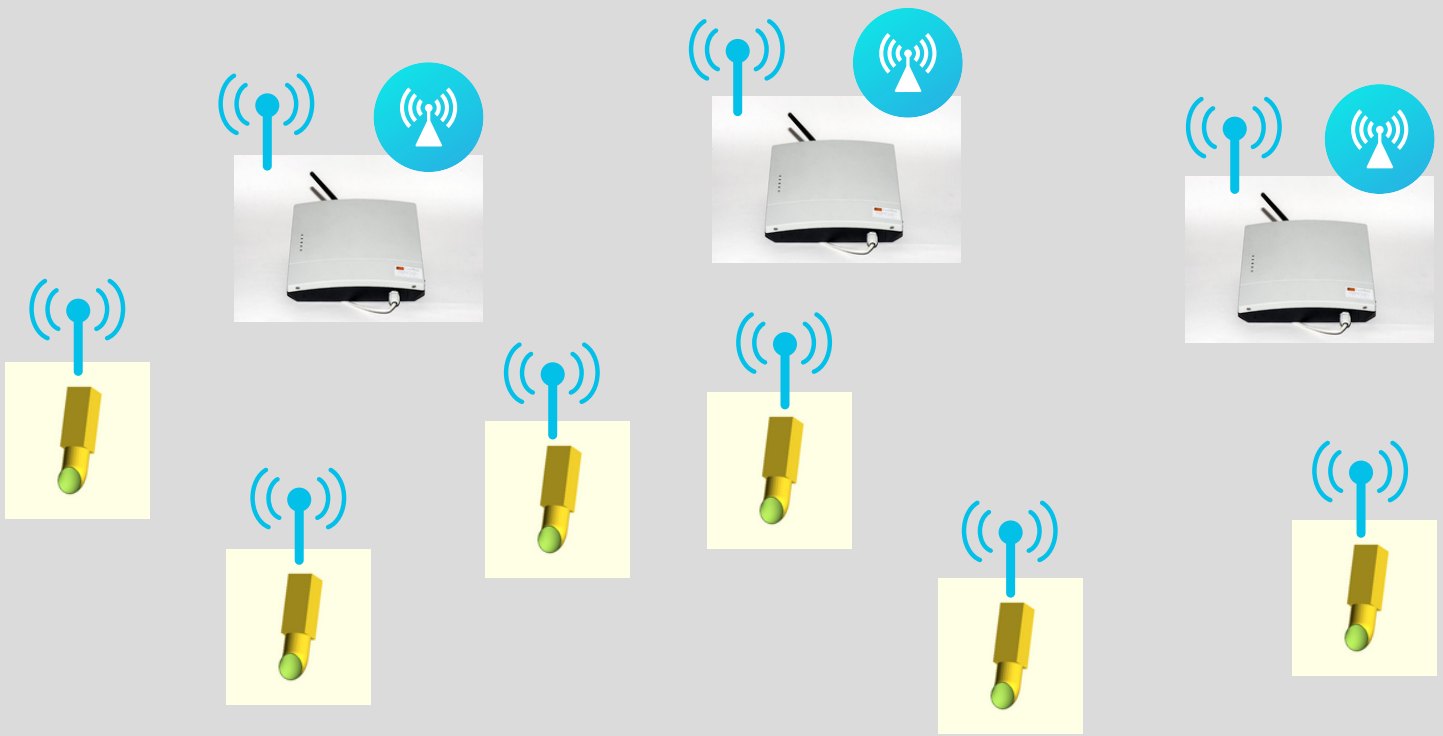
- SLEEPING DISORDERS
- CARDIOVASCULAR DISEASE
- ATTENTION AND FOCUSING PROBLEMS
- PSYCHOPHYSIOLOGICAL EFFECTS

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CARDWARE'S ONLINE MONITORING OF URBAN NOISE USING ONLINE IOT TECHNOLOGY



Battery powered mobile audio noise meter with radio communication



Local radio communication on 869 MHz ISM band



Mobile internet connection on GSM band (SIM card)



IoT data collector and gateway unit

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CARDWARE IOT NOISE MONITORING BASIC HARDWARE AND SOFTWARE PARAMETERS

MOBILE AUDIO NOISE LEVEL METER UNIT

- Small plastic case cca. 15 X 8 X 5 cm, without microphone
- Directional external microphone, adjustable direction
- Battery powered, Replaceable 3V primary battery included
- Battery lifetime of cca. 2 years
- Sound level units: dB(A)
- Sampling rate: adjustable
- Two way data communication: ISM, 869 MHz frequency band
- 10 mW output power, cca. 100m of communication range

DATA GATEWAY UNIT

- Communication converter for the ISM / GSM band. SIM card included
- Plastic case cca. 25 X 20 X 10 cm
- Mains powered with UPS battery
- Possibility of using photovoltaic panel power source, cca 40 X 25 cm of size

SOFTWARE MODULE

- Database management of recorded noise data
- Visual graphical interface and analysis
- Notifications and alarms via email, SMS



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