

TD1202 Mapping and the Citizen Sensor 2012 | 2016

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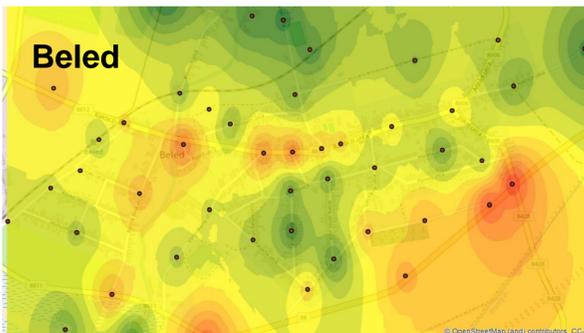
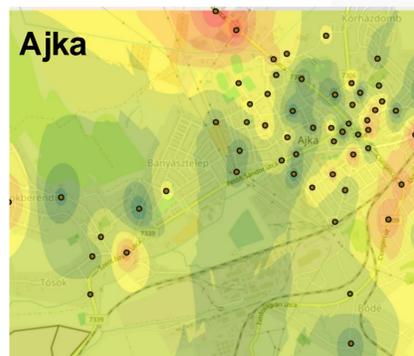
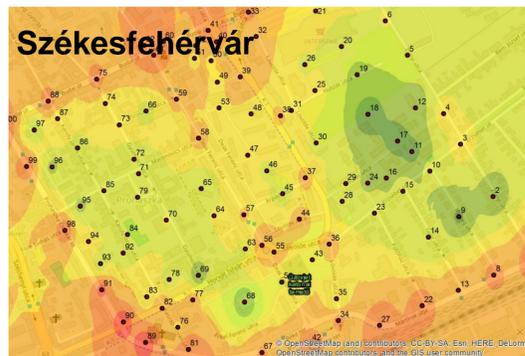
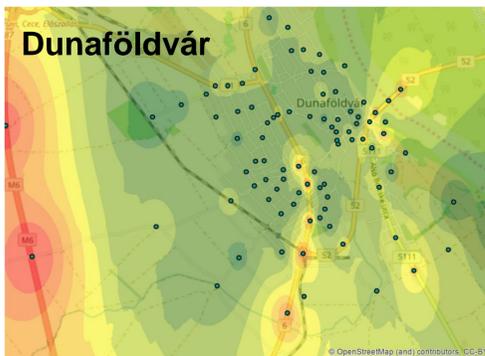
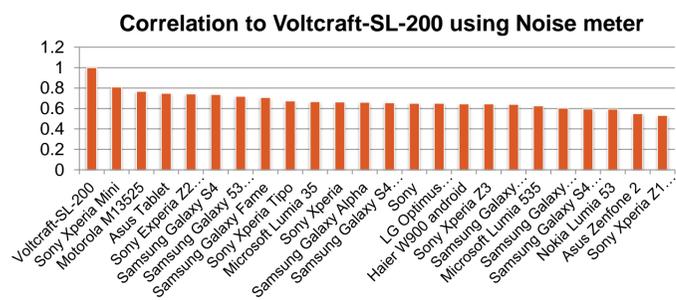
**Mapping and analysing environmental noise  
using smart phones- A Hungarian case study**

**Introductions:** Noise pollution is one of the main and growing environmental problems in urban areas According to the Environmental Noise Directive of the European Union 2002/49/EG article 7, agglomerations with a population more than 250 000 should create a noise map. The Hungarian Government Decree 280/2004. (X.20) in 2004 obliged all settlements to comply with the Directive. The Decree also requires to renew these maps every five years, however due to the *lack of financial resources* local authorities are unable to fund the renewal of these maps. An alternative to update the noise maps is crowdsourced data collection. Due to increased availability of location-enabled smart phones with a range of digital sensors including sound recording, this kind of data acquisition is promising.

However it is important to assess the accuracy of surveys carried out by mobile equipment. In this preliminary study we investigated 2 aspects of crowdsourcing noise data collection.

**Methods:** We analysed 2 scenarios. In case A we applied 3 applications (2 out of 3 were analysed) and we used 23 different devices and a sound level meter, in case B we used mobile devices and made a measurement campaign in smaller Hungarian cities.

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The crowdsourcing campaign identified that major roads , railways produce higher noise exposure. These findings would help local authorities to implement our conclusions in further studies and reveal environmental problems for the citizens. Our results confirmed our hypothesis that crowdsource noise measurement can unfold problem areas, although they are not fully substituting official noise measurements.

**Conclusion:** Crowdsourcing can be a good option to involve citizens to measure noise exposure in their surroundings. This study suggests that standardizing the protocol of the survey may lead to reliable measurements, however more investigations are required.

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