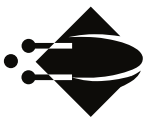
User Experience of bAir

Kristian S. M. Andersen

Advisor: Thomas Pederson
Submitted: December 2015



IT University
of Copenhagen

Abstract

This is an abstract

Contents

Chapter 1

Introduction

Air quality is a major concern in terms of personal health and environmental factors. Over the years Air quality has declined with the introduction of more and more cars and other pollution sources in the bigger cities. In more recent years the air quality has improved with the introduction of green initiatives. In several reports from the Department of Health in Denmark it has been found that the citizens that breathe the most polluted air are the people on the roads. Several reports suggest that cyclists are the most exposed. In Copenhagen the air quality is measured and monitored only on 3 different streets by the Department of Health.

At ITU a new project based on the prior research done with NoxDroid is currently running, called bAIR. In this project most problems with prior projects for personal air quality measurements are being addressed such as:

- Sensor sensitivity
- Power consumption
- Casing for the sensor
- Calibration
- Infrastructure for local and Cloud storage

One aspect that has not been rigorously covered is the user experience, the usability of the sensor system and the evaluation of the system by users.

Chapter 2

Related Work

[Andersen2012] A. Andersen, P. KrÃÿgholt, S. Bierre, A. Tabard, Nox-Droid âĂŞ A Bicycle Sensor System for Air Pollution Monitoring

[2] [3] K. Hansen, N. Kuraszynska, SiNOxSense: A textile-based wearable simple NOx sensing system

[4] Tudose et al, Mobile Sensors in Air Pollution Measurement

[1] A. Al-Ali, A Mobile GPRS-Sensors Array for Air Pollution Monitoring

Chapter 3

Design

Chapter 4

Evaluation

4.1 Method

4.2 Short Term

4.3 Long Term

Chapter 5

Results

Chapter 6

Discussion

Chapter 7

Conclusion

7.1 Acknowledgements

Bibliography

[1] Al-Ali, A., Zualkernan, I., and Aloul, F. A mobile gprs-sensors array for air pollution monitoring. *Sensors Journal, IEEE 10*, 10 (2010), 1666–1671.

[2] Hansen, K. B., and Kuraszynska, N. Sinox sense-simple nox sensing, reacting and collection in the wild.

[3] Hansen, K. B., and Kuraszynska, N. Sinoxsense: A textile-based wearable simple nox sensing system, 2012.

[4] Tudose, D. Ş., Pătraşcu, N., Voinescu, A., Tataroiu, R., and Ţăpuş, N. Mobile sensors in air pollution measurement. In *Positioning Navigation and Communication (WPNC), 2011 8th Workshop on*, IEEE (2011), 166–170.