Bundesministerium
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digitale Infrastruktur

SmartAQnet

mFUND
Das Startkapital für die Mobilität 4.0

Project consortium SmartAQnet – Aerosol Akademie

Newsletter SmartAQnet

July 2018




Newsletter July 18
Smart Air Quality Network

Table of contents (alphabetically sorted by partner name)

Aerosol Akademie

WP 5: Data oriented dissemination and application

- AA sent out and published the authorized press release.
- AA will participate and present the SmartAQnet-project at the AGIT Salzburg. The presentation will be uploaded in the GIT repository.

GRIMM

Helmholtz – CMA and EPI

WP 1: Data mining / Campaigns

- Participation in the workshop Network Planning on 24 May 2018 in Augsburg and presentation there by Josef Cyrys “Historie der (Gesundheits-)Forschung in Augsburg”.
- Preparation for the Task Force “Network Planning” meeting, invitation of team partners and selection of sampling sites for the measurement campaign 1
- Description of the LfU measurement stations (location, photos, detection of on-site available WIFI networks)
- Solving of issues regarding the WIFI connection at the FH reference station in Augsburg: temporal access creating hotspot, finally created new connection cable binding the containers and placed the ASUS router in the secure box at the roof of the container. The connection is stable now.
- Preparation of an agreement with LfU and Dr. Pitz and Dr. Ott regarding the installation of the scientific scouts at the LÜB measurement station and transfer of LfU data to the project partners
- Site visit of the Gut Lindenau, which is considered as a site for the measurements in regional background area. Two locations were under consideration. The site located near the field, 300-350 meters from the B2 federal highway in the west, shielded by farm buildings about 30 m to the west and south, was finely chosen for the measurement campaign.

Figure 1: Location of the measurements near Gut Lindenau

Figure 2: At Gut Lindenau the measurement container will be placed close to the old transformer building

- Selection and sites visits further measurement sites:
  - A traffic measurement site near Schertlinstraße. The selected location is near the road crossings (Hutfabrik Lembert, Haunstetter Straße 49, 86161 Augsburg). The owner is already contacted. WLANs are available.

Figure 3: : Location of the measurement site near Schertlinstraße

- Klostergarten, the head of the Monastery is already contacted in order to obtain the permission to install SAQN devices. There is no WLAN, it is a need to set up the router connection.

- Personal sampling instruments and techniques were field tested in cooperation with Charles University in Prague, Czech Republic (7-9th June 2018). A prototype back pack for walking measurements containing Optical Particle sizer (OPS) covering PM 0.3-10 µm, P-Trak® Ultrafine Particle Counter (UPC), MicroAethalometer for black carbon (BC) measurements, Sioutas Personal Cascade Impactors and (S)VOC sampler as well GPS and POV camera, was tested.
  Figure 4 shows some impressions taken during the walking measurements while Figure 5 shows spatiotemporal variation of PM10, PM2.5, PM1 and BC at the first city walk during the trial campaign in Prague, Czech Republic:

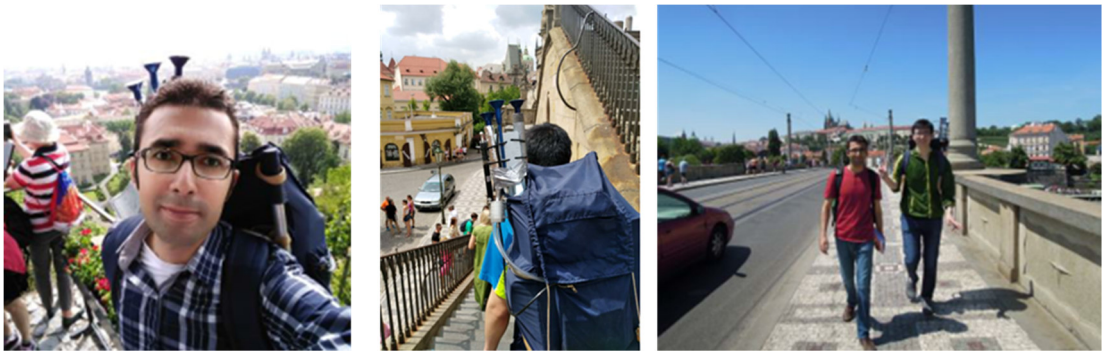

Figure 4: Some impressions taken during the walking measurements

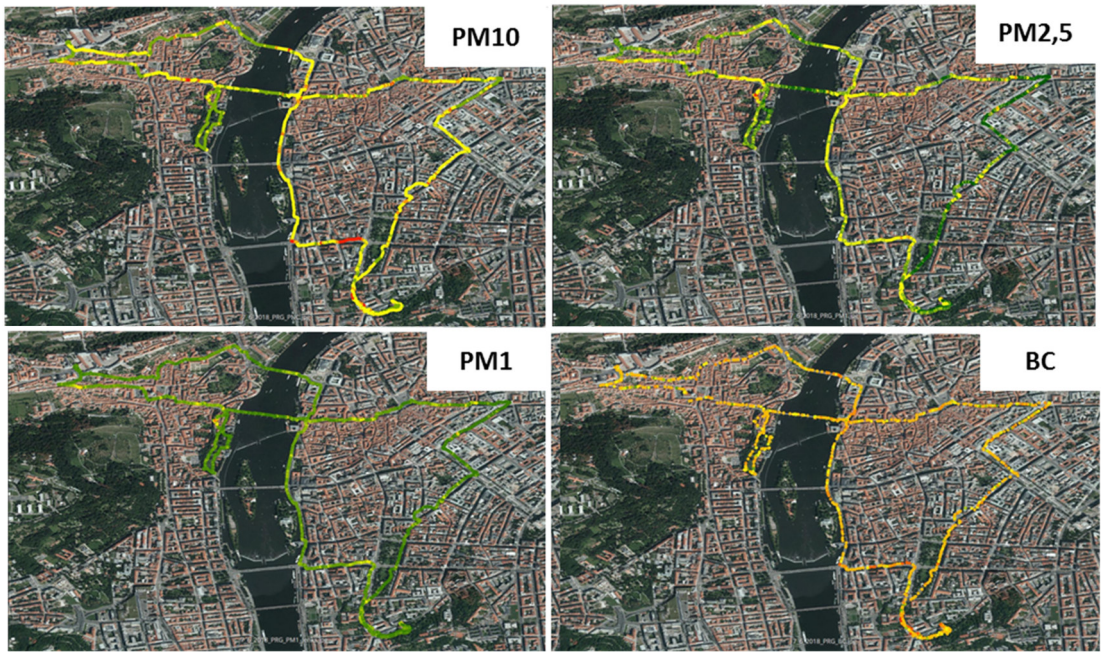

Figure 5: Spatiotemporal variation of PM10, PM2.5, PM1 and BC at the first city walk in Prague

KIT/IMK-IFU

WP 1: Data mining / Campaigns

Contribution to the decision about the location of the regional background station from the view of modelling. Discussion of the location of the third ceilometer in the north-south profile of mixing layer height observations as alternative to the LÜB station Bourgesplatz.

WP 3: Data aggregation and analyses

- The basics and concepts of the development of the emission inventory for application in the dispersion models GRAL and PALM4U as well as the statistical models were deeply discussed. This discussion included clustering of domestic heating, types of grids, spatial resolution and data anonymization and showed potential new scientific results in the area of small-scale numerical simulation of air pollution.
- First numerical simulations of the wind field and the PM10 concentrations on the basis of historical data by Ulrich Uhrner, TU Graz, and Johannes Werhahn, KIT/IMK-IFU, were successfully presented.

KIT-TECO

Uni Augsburg

WP 1: Data mining/Campaigns

An SHT75 temperature and humidity sensor has been integrated onto the Raspberry Pi of the Alphasense. The script for saving the data has been adapted for this purpose. The SHT75 will be integrated into the bicycle bags and replace the Almemo data loggers.