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**Projekt-Konsortium SmartAQnet – Aerosol Akademie**

# 17. Newsletter SmartAQnet

**May to July 2019**





## Newsletter May to July 2019 Smart Air Quality Network

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## WORK PACKAGE 0: Project management

### Aerosol Akademie

Klaus Schäfer participated in the monthly Jour Fixe of the consortium, performed as telephone conference and was present with several contributions at **the F2F meeting in Augsburg** on July 29th / 30th.

### HMGU - EPI

Measurements of the ceilometers for investigation of the north-south profile of the mixture layer height in Augsburg at the aerosol measuring station at the HSA and in the 'Klostergarten' are still running continuously. The data is stored in the database at the IGUA.

Measurements with the particle monitor [GRIMM EDM164](#) and some low-cost particle sensors SDS011 from KIT / TECO will be continued after the active phase in the initiative "Jugend forscht" at the Werdenfels-Gymnasium Garmisch-Partenkirchen.

## WORK PACKAGE 1: Data mining and campaigns

### Uni Augsburg

The comparative measurements of the 30 SDS011 sensors and the new bicycle bags have been completed. On April 24, a workshop was held for volunteers. Four bicycle bags and 9 SDS011 sensors were distributed to the 10 participants.



Fig. 1: Comparative measurements of the 30 SDS011 sensors and bicycle bags at the Institute of Geography.

## WORK PACKAGE 2: Data collection / Devices

In July, an intensive month of measurement (IOP) has taken place. The evaluation of the data and further results will be communicated in the **August** newsletter.

## WORK PACKAGE 3: Data aggregation and analyses

### KIT/ IMK-IFU:

The sub-contract of the KIT / IMK-IFU with the Technical University of Graz (TUG) to develop a small-scale emission register for Augsburg is being continued successfully. A second sub-contract to the TUG for the evaluation of the developed emission register was signed by the partners.

The setting up of PALM4U for small-scale numerical simulation of air quality in Augsburg was continued in cooperation with the colleagues of the recently extended BMBF project Urban Climate in Transition [UC] 2.

## WORK PACKAGE 4: Data application

### KIT/ TECO:

In May, a workshop on sensor assembly was held in the **Zeughaus Augsburg** (May 14, 2019 from 7 pm to 10 pm). As in previous workshops, many interested people participated. More information can be found here:

<http://www.teco.edu/research/mitmachen-im-smart-air-quality-network-workshop-augsburg/>

The firmware of the TECO sensor had been updated so that the data could be used directly for the project.

SmartAQnet was also presented on the **day of computer science on 19 June at KIT TECO**. Many interested visitors were able to get an idea of the latest state of SmartAQnet. The project website also created the section Live Data. Now it is possible to watch live data from sensors.

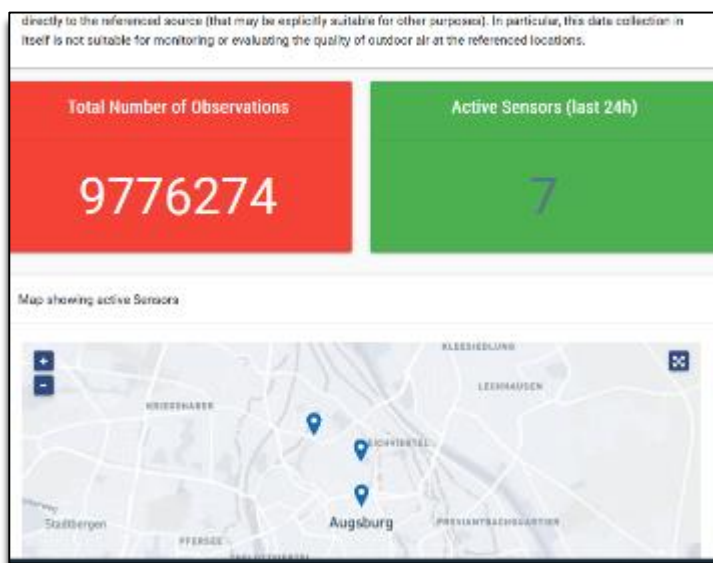


Fig. 2: Live view of available sensors and observations (measured data) in Augsburg



Fig. 3: View of *Observed Properties*

Under *Observed Properties* the different data types (PM2.5, PM10, temperature, humidity and others) are displayed.

It is also planned to visualize temporal changes of air quality. For this purpose, it will be possible to load time ranges of interest.

## WORK PACKAGE 5: Data oriented dissemination and application

The ideas of business models were discussed at the F2F meeting.

The concluding event „Anwenderbezogene Abschlussveranstaltung auf Basis der geplanten Betriebsmodelle“ is scheduled in May 2020 in Augsburg, together with an open day and further umbrella activities in close cooperation with the Environmental Department of the city of Augsburg.

The cooperation with AirVeraCity, Lausanne, Switzerland which Klaus Schäfer initiated in June was continued at the F2F meeting by discussion of the results of mobile measurements in Augsburg and the inter-comparison of new sensors with LÜB station monitoring at LfU.

A cooperation with the VDI/DIN-working group „Messen von Partikeln in der Außenluft“ to develop guidelines for middle- and low-cost sensors was agreed upon between Volker Neuroth, managing director of the VDI/DIN-commission *Reinhaltung der Luft (KRdL) – Normenausschuss*, and Klaus Schäfer.

**University of Augsburg** participated from **July 15 to 23, 2019** at the [ISARRA](http://www.isarra.org) (International Society for Atmospheric Research using Remotely piloted Aircraft) in Lugo, Spain.

Two posters have been presented:

- Petersen E., A. Philipp, J. Redelstein: *First 2.5 dimensional results of intensive operation periods for evaluating a Smart Air Quality Network in Augsburg, Germany*

- Redelstein J., E. Petersen, A. Philipp: *Determination of the boundary layer height with unmanned aerial vehicles*

Andreas Philipp gave a presentation on SmartAQnet: [http://www.isarra.org/wp-content/uploads/2019/08/ISARRA\\_2019\\_Thur\\_Philipp.pdf](http://www.isarra.org/wp-content/uploads/2019/08/ISARRA_2019_Thur_Philipp.pdf)

*Philipp A., C. Beck, L. Glawion, A. Groos, A. Langhein, E. Petersen, J. Redelstein, M. Roith, M. Schörner, A. Straub: Boundary layer variability observed by unmanned aerial systems in Berlin and Stuttgart for model validation*

Furthermore, UNA participated in flight days:



Fig. 4: Preparation for the flight



Fig. 5: Drones are ready to take off

### Further Information

Currently there is no other information available.