European Network on New Sensing Technologies for Air Pollution Control and Environmental Sustainability - *EuNetAir*

COST Action TD1105

WGs and MC Meeting at LINKOPING, 3 - 5 June 2015

Action Start date: 01/07/2012 - Action End date: 30/06/2016

Year 3: 1 July 2014 - 30 June 2015 (*Ongoing Action*)

Summary of Research and Innovation Needs from WG3 Session: Environmental Measurements and Air-Pollution Modelling

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Mobile measuring platforms

Demands of mobile measuring platforms

- **Temporal resolution**
- **Autonomous operation**
- **Accuracy of measurements**

VS

MiniDiSCs

- **Not designed for 24/7 operation**
- **Instruments require periodical maintenance**
- **Data from periods without instrument maintenance (2-3 months) are of good quality**

- OpenSense UFP data set of good quality
  - Potential in the optimization of the sensor network design
  - MiniDiSCs can provide reliable data during 2-3 months of autonomous operation
- Statistical modelling of UFP concentrations
  - Methodology developed for generating UFP maps
  - Model results reasonably agree with measurements at fixed sites
- Potential tool in widespread application fields
  - Urban planning
  - Exposure estimation
  - Public health

The use of Sensors for VOC Emissiob Control at Industrial Sites (Jan Peters)

Multisensor Plataform – MSProject

Sensor technologies apply 2 diferentes Env Monitoring

Monitoring Urban Env. (health protection, several pollutants, contínuos operational mode, response time-high, detection limit low, Use- Mobile /stationary

Industrial Sites (mainly VOCS emissions, principal aim LOW COST EQUIPMENTS

MOX SENSOR PLATFORM IN OUTDOOR ODOR NUISANCE MONITORING (Wolfhard Reimringer)

- **MOX sensor technology**

  -Main commercial fields of application:

  - **Leakage detection**
  - **Odour assessment**

Can temperature cycled MOX sensors be used for "immission" monitoring?

- Odor nuisance reported by residents
- Sensor network for objective monitoring with sufficient time and location resolution

Results regarding sensor system

- **Not one single system failure since October**
- 24/7 operation
  throughout the winter months
  - No alterations apart from
    periodic filter exchange
  - Adaptation of temperature cycle via SD config
- Next steps in development
  - Remote access (3G wireless)
  - Additional sensors for special use cases
    (EC cells, other technologies,
    e.g. in research partnerships)
  - Dilution unit for emission use
  - Sampling unit

EVALUATION OF MONITORING GASES AND PM WITH LOW-COST AND REFERENCE DEVICES AT AMS(S) IN BELGRADE, SERBIA (Milena Jovašević-Stojanović)

- To use low-cost devices with improved sensors that eliminated influence of O3
- To update methodology of calibration in the field:
    - apply correction function for meteorological data
    - determine frequency of calibration and life time of sensors
- To compare results from different available units in the aim of finding optimal solution for analyzing and presenting indicative levels of selected pollutants and meteorological data that may be usable for citizens

USING LICHENS AS MULTI-POLLUTANT BIOINDICATORS IN AIR QUALITY MONITORING (Maja Maslać)

Lichen bioindication
Cheaper
Higher spatial resolution
Lower time resolution
Cumulative effect
Biotransformation
Pollutant bioavailability and extractability

The Model Has Changed…

The Model of Generating/Consuming Data has Changed

Old Model: **Few** are generating data, **all** are consuming data

New Model: **all** are generating data, and **all** of us are consuming data