



COST

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

COST Action TD1105

WGs and MC Meeting at Rome, 4-6 December 2012

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

Year: 2012-2013 (*Starting Action*)



**Newcastle
University**

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(WG2-3/SIG2 members, Editorial Board members,
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Scientific context and objectives in the Action

Background: Involved in several national and international projects: MESSAGE, 4M, LAMPPOSTS, CIF2 in Medway, plus several low cost sensors (mote) deployment around UK. Main interests in monitoring traffic related pollutant concentrations and modelling dispersion from city scale to street canyons. Development and test of low-cost environmental sensor.

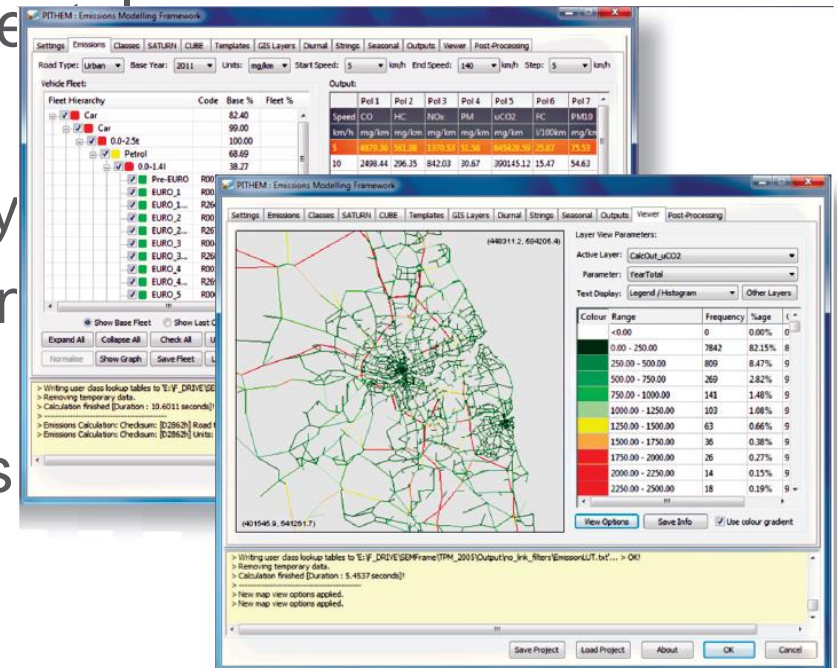
ACTION's and Newcastle's objectives:

- *Assessment of:* **(Galatioto)**
 - *environmental measurements* in field by AQC gas sensor-systems in the air-quality stations
 - *air-quality modelling* with data assimilation from integrated AQC gas sensors
 - *new sensing technologies*, including AQC gas sensors and wireless sensors network, for environmental management
 - *clean technologies and environmental management systems* reducing the *emission* of air-pollutants, green-houses, particulate matter
- *Evaluation of integrated air quality plans and strategies:* role of low-cost AQC gas sensors
- *Protocols for:* **(Neasham)**
 - *fabrication of gas sensors*
 - *integration of nanostructures and nanomaterials into AQC gas sensors*
 - *design and implementation of new transducers for AQC gas sensors*
 - *integration of portable gas sensor-systems for AQC*
 - *development of wireless sensors network for AQC*
- Report on *integrated intelligence of AQC gas sensors and distributed computing*

Current research activities of the Partner (1/2)

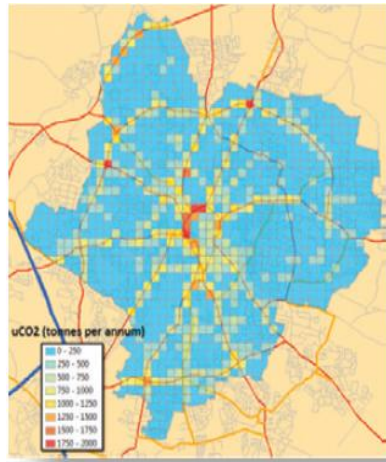
Current research topics:

- Low power sensor circuit design
- Wireless transceiver, antenna and protocols
- Sensor signal processing to remove drift
- Air quality pervasive deployment and monitoring
- Transport related Emissions and Air quality
- Calibration and validation of environmental sensors
- Human exposure and health impacts
- Assessment of traffic related air quality
- Real-world emissions measurement and validation from traffic sources
- Low carbon and ultra-low carbon transport



Research Facilities available for the Partner (2/2)

Research Facilities:



Simple Business Modeling Framework

Year	CO2	CO2e	CO2e	CO2e	CO2e	CO2e	CO2e	CO2e	CO2e
2008	1000	1000	1000	1000	1000	1000	1000	1000	1000
2009	1000	1000	1000	1000	1000	1000	1000	1000	1000
2010	1000	1000	1000	1000	1000	1000	1000	1000	1000
2011	1000	1000	1000	1000	1000	1000	1000	1000	1000
2012	1000	1000	1000	1000	1000	1000	1000	1000	1000
2013	1000	1000	1000	1000	1000	1000	1000	1000	1000
2014	1000	1000	1000	1000	1000	1000	1000	1000	1000
2015	1000	1000	1000	1000	1000	1000	1000	1000	1000
2016	1000	1000	1000	1000	1000	1000	1000	1000	1000
2017	1000	1000	1000	1000	1000	1000	1000	1000	1000
2018	1000	1000	1000	1000	1000	1000	1000	1000	1000
2019	1000	1000	1000	1000	1000	1000	1000	1000	1000
2020	1000	1000	1000	1000	1000	1000	1000	1000	1000



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- Durha
- Air qu
- Newc
- Preci
- Portab
- noise
- 6 vide





Suggested **Priorities** for future research

- *needs to improve cost-effective AQC gas sensors to be integrated in/to validate air-quality models*
- *short-term operational developments in the air-quality plans*
- *improving portable AQC gas sensor-systems in integrated models for mid- and long-term applications*
- *Recommendations for AQC wireless sensor networks management*
- *Guidelines for an open framework on new sensing wireless technologies for AQC*
- *Guidelines for implementation of new AQC sensing wireless technologies*