



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*)



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SIG Leader (SIG 2)

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Scientific context and objectives in the Action

Smart sensors for Urban Air Quality measurements in Cities

❑ Objectives:

- Mapping of Gas Sensors for AQC applications.
- Research & Technology in Sensors for air-pollution control in Europe.
- Technological Transfer.

❑ Activities:

- Supporting writing of the State-of-Art planned in the Action for **Smart Gas Sensors and Transducers** activities related to the Action issues.
- Promotion/Definition of EU proposals for funding of new research projects in the AQC Sensors and related Action research and innovation on environmental monitoring.

❑ Deliverables (MoU):

- Supporting preparation of reports on **Smart Gas Sensors and Transducers**
- Report on proposed **Guidelines Air-Pollutant coupled to Best Transducer Activities** to be approved by Action Management Committee.

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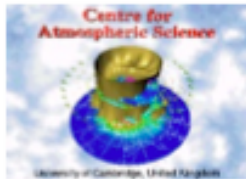
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Current research activities of the Partner (1/2)

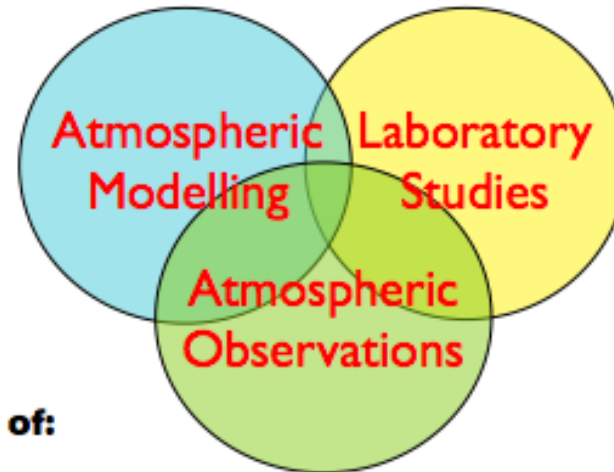
University of Cambridge Centre for Atmospheric Science:

World leading multidisciplinary research in atmospheric and environmental science

- **Fundamental science**
 - Natural environment
 - Climate Change
 - Hazards (e.g. volcanic)
- **Applied Science**
 - Air quality
 - Observational methods
 - Aviation (impacts, technologies)



Synergy in atmospheric science



Departments of:

Chemistry
Applied Mathematics
Geography
Earth Sciences
Engineering
Architecture

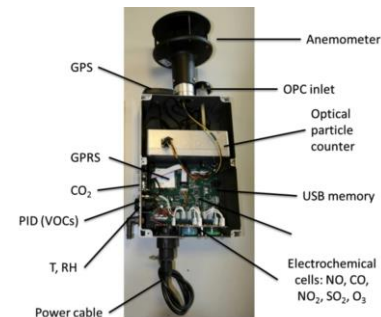
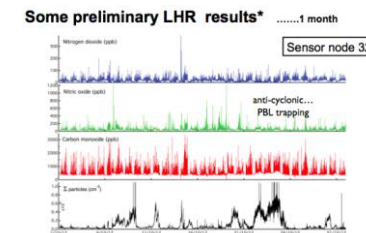
20 + academics,
100 + researchers
> £10M p.a.

Current research activities of the Partner (2/2)

- Fundamental atmospheric physics and chemistry.
- Atmospheric observations, novel measurement techniques and measurement platforms.
- Atmospheric sensors and sensor networks, sensor network design.
- Sensor network calibration methodologies, data mining. data display/mapping techniques.

Activities include:

- SNAQ Heathrow (Network of A/Q sensors at Heathrow airport) (EU)
- CITI-Sense (EU)
- GAUGE (Vertical profiles of CO₂, CO, using chemical sondes) (UK)





Research Facilities available for the Partner (2/2)

- Laboratory test facilities for calibrating:
 - gas sensors for air quality measurements, including environmental effects
 - aerosol/particulate measurements.
- Field testing capability for sensor nodes for monitoring urban air quality including gas phase and particulates.
- Design, development and construction facilities for:
 - instruments for measuring atmospheric composition and structure
 - sensor nodes as part of sensor networks, including software/firmware.
- Wide ranging facilities for atmospheric measurements, laboratory kinetics and numerical modelling on scales from local to global.



Suggested **Priorities** for future research

- Species: gas phase, particulates (ultra-fine, composition?).....
- Selectivity/cross sensitivity/stability, power/size
- Communications (lower power)
-
- ...
- ..

Context: Intent not to replace fixed monitoring sites,

- Complementarity?
- Compliance?
- Equivalence?

Suggested **Priorities** for future research to Action WGs/SIGs General Assembly

- **(2 slides)**
- Research directions as WGs PRIORITIES for Action TD1105:
- [Suggest briefly the PRIORITIES for research to be carried out in the Action for future activities.]
- [Highlight the *Innovation* of your suggested PRIORITIES]
- **Please, organize these 1-2 slides AFTER DISCUSSION of your WG or SIG Meeting on 5 December at Rome taking into account various contributions from WG/SIG partners. This Presentation must be given by the WG or SIG Leader to related Action General Assembly.**



Suggested **Priorities** for future research to Action WGs/SIGs General Assembly

- Priorities
- R&D Needs
- Roadmap