



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

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Year: 2012-2013 (*Starting Action*)



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Harmonisation of Environmental Measurements
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WG 3.3 Harmonisation of environmental measurements

- MoU objective:
To approach standardisation of methods for air quality measurements e.g. harmonisation of test procedures, chemical analyses, post processing, protocols etc.
- Related WG3 Workplan Objective:
Report on harmonisation of environmental measurements in EU-zone and non-COST areas
- No specific deliverable

Scientific context and objectives in the Action (2)

Harmonisation: Assure that different measurement systems yield comparable results under similar conditions

To define:

- Comparability criteria
 - ➔ depend on purpose (e.g. screening or compliance tests) and corresponding requirements/regulations
- Comparability conditions for the assessment
 - ➔ depend on area of application
(e.g. indoors, occupational, urban air, background air)

Practically:

- laboratory and field intercomparisons,
- equivalency tests (if pre-defined reference methods exist)

Scientific context and objectives in the Action (3)

Air Quality Directives: Gaseous compounds

Pollutant	Standard	Method
CO	EN 14626: 2005	NDIR absorption
SO2	EN 14212: 2005	UV fluorescence
NO2	EN 14211: 2005	Chemical
O3	EN 14925: 2005	
Benzene	EN 14662 Part 1-3 (2005)	Chromatography (GC)
VOC (O3 precursors)	no reference method	Chromatography (GC)

Air Quality Directives: Particulate matter and heavy metals compounds

Pollutant	Standard	Method
PM10		filter sampling/gravimetry
PM2.5		filter sampling/gravimetry
As, Cd, Ni, Pb	under development (CEN-TC 264, WG 14)	filter digestion/ICP-MS or AAS
Elemental/organic carbon	under development (CEN-TC 264, WG 35)	Thermo-optical analysis
Polycyclic aromatic hydrocarbons (PAHs);B(a)P	under development (CEN-TC 264, WG 21)	GC or HPLC
Water soluble ions	under development (CEN-TC 264, WG 34)	filter extraction/ion chromatography

Other methods possible but equivalency to reference method has to be demonstrated

Suggested Priorities for future research

Pre-normative work for AQ Sensors on:

- **Performance criteria for sensors with respect to field of application (e.g. influence of spatial/temporal resolution and post-measurement aggregation)**
- **Calibration and other QA/QC procedures (interaction with ERLAB/AQUILA)**
- **Design of suitable lab and field tests in view differing approaches (e.g. passive vs. active devices)**