

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

COST Action TD1105

WGs & MC Meeting at PRAHA (CZ), 5-7 October 2016

New Sensing Technologies for Air Quality Monitoring

Action Start date: 01/07/2012 - Action End date: 30/04/2016 - Year 4: extension – 30/11/2016

Updating on Report on *Innovation on Environmental Sensor Technologies*



Agenzia nazionale per le nuove tecnologie,
l'energia e lo sviluppo economico sostenibile

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Technology

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 **cost**
EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY



Why a Report on Innovation on Environmental Sensor Technology?

- To collect the overall knowledge on AQC shared in the past 4 years!
- To assess the key factors in sensor technology and the relative state of the art in an effective and exhaustive way
- To map the strengths and weaknesses factors of the European Technology in sensors for ACQ
- Increase and share in the community the awareness of the existing and developing methodologies to produce innovation in the Action topics.



Expected Deliverables from Focus Group on Innovation...

- A Report on European Innovation Sensor Technologies for Air Quality Monitoring as one of the final deliverables of the COST EUNETAIR Action
- “Extraction” of popular or ‘didactic’ article on innovation in sensor technology for AQC available for generic press release and social media

Table of Contents -1-

Management Summary (Executive Summary) - 1 page

REFERENCE POINT: Penza



Vision and Strategic Goals - 1 page

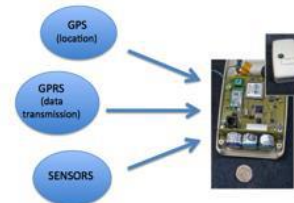
REFERENCE POINT: Penza

OTHER CONTRIBUTORS: Schuetze, Karatzas, Borrego, Hertel, Chowdhury, von Sicard, Hueglin

Typical Applications - 3 pages

REFERENCE POINT: Schuetze

OTHER CONTRIBUTORS: Karatzas, Hueglin.....



Political, Economic and Technical Framework - 2 pages

European Regulation and EU Ambient Air Directive

Other Definitions ???

REFERENCE POINT: Borrego

OTHER CONTRIBUTORS: Hertel, Karatzas, Hans-Guido Muecke (WHO-CC), Romano



Table of Contents -2-

✓ Indoor Air Quality Applications - 5-10 pages

REFERENCE POINT: Schuetze

OTHER CONTRIBUTORS: Kock, von Sicard, Noren,

Research, Development and Innovation

Companies

Academy

Agency

✓ Outdoor Air Quality Applications - 5-10 pages

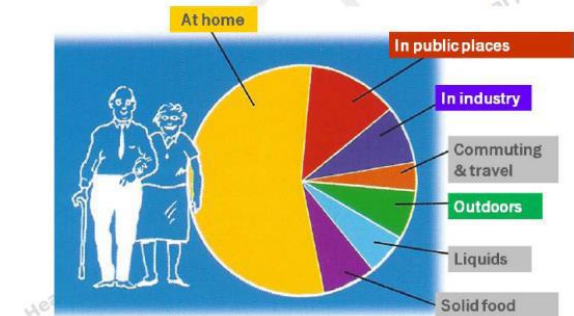
REFERENCE POINT: Hertel

OTHER CONTRIBUTORS: Kostas Karatzas, Carlos Borrego, Nuria Castell, Thomas Schneider, Jan Theunis, Christoph Heuglin, Maria Bech Poulsen



GUIDELINES FOR HEALTH-BASED VENTILATION IN EUROPE - HEALTHVENT

Indoor air is significant contributor to life-time exposures



<http://www.healthvent.byg.dtu.dk/>

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✓ IOT in Air Quality Applications

Reference Point: Martimort

✓ Standards and Protocols - 2 pages (APPENDIX B)

Research, Development and Innovation
Companies

Academy

REFERENCE POINT: Ingrid Bryntse?, Oliver Martimort?(to be asked/confirmed)

OTHER CONTRIBUTORS: WG4 members/sub-leaders: Saffield, Moser, Romain, (tbc)

✓ Educational Needs - 2 pages

REFERENCE POINT: Romano

OTHER CONTRIBUTORS: Karatzas, Hertel, Schuetze, Borrego

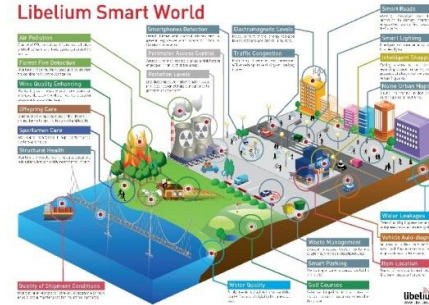
- a. for company
- b. for agency
- c. for research

✓ Societal Needs - 2 pages

REFERENCE POINT: Karatzas

OTHER CONTRIBUTORS:

- a. Indoor Air Quality Applications
- b. Outdoor Air Quality Applications



IAQ SOLUTIONS PROTOCOL

It supplies standards for acceptable indoor air quality.

Pollutant	EU reference value	Exposure estimate (%)	WHO AQG	Exposure estimate (%)
SO ₂	Day (125)	0.3-2.3	Day (20)	68-85
NO ₂	Year (40)	7-19	Year (40)	7-19
PM ₁₀	Day (50)	18-40	Year (20)	80-90
PM _{2.5}	Year (25)	< 1	Year (25)	< 1
CO	8-hour (10)	0-2	8-hour (10)	0-2
O ₃	8-hour (120)	16-50	8-hour (100)	> 95

Colour coding of exposure estimates, fraction of urban population exposed to concentrations above the reference level:

Exposure estimate (%)	Population fraction
< 10%	< 10%
10-50%	10-50%
50-90%	50-90%
> 90%	> 90%



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✓ **Main Industrial Needs and Related R&D Challenges and Skills**

REFERENCE POINT: Martimort

OTHER CONTRIBUTORS:

✓ **Main Research Needs in Terms of Instruments, Infrastructures, Regulations**

REFERENCE POINT: Chowdhury

OTHER CONTRIBUTORS:

✓ **Best European and World Practices in Sensor Technology (1 page/COST Country)**

Country Analysis (COST Parties joined to EuNetAir)

REFERENCE POINT: Penza

OTHER CONTRIBUTORS: MC/WG Leaders - ITALY FORMAT by Penza

✓ **Representation, Communication etc.**

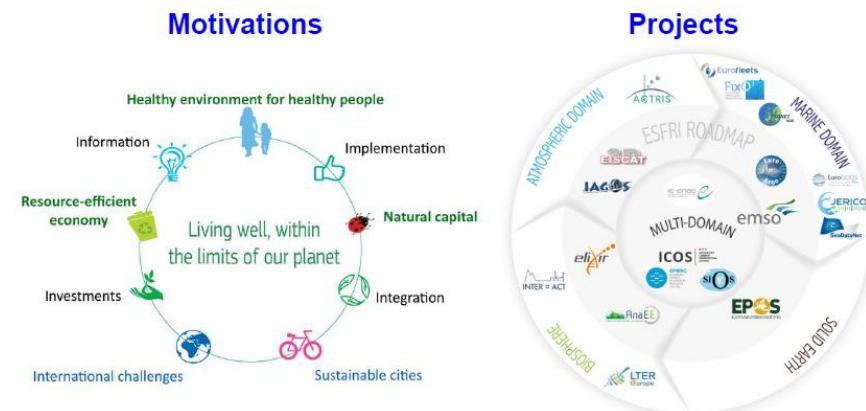
REFERENCE POINT: Karatzas

OTHER CONTRIBUTORS:Martimort

✓ **Conclusions / Recommendations - 1 page – ALL**

✓ **Relevant Bibliography (more recent, no limit)**

REFERENCE POINT: Chowdhury - OTHER CONTRIBUTORS: ALL



<http://ec.europa.eu/environment/action-programme/objectives.htm>

Contributors (at present time...):

- ✓ **Mohamed Foysol CHOWDHURY**
- ✓ **Ole HERTEL**
- ✓ **Carlos BORREGO**
- ✓ **Andreas SCHUETZE**
- ✓ **Kostas KARATZAS**



LCAQS will “liberate” environmental information, making it available anytime, anywhere, thus rendering it as part of the information space shaping our personal urban universe.

***THANKS FOR YOUR
KIND ATTENTION!***



GRAZIE