



# The AQUILA Network New Pollutants and Supersites

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# Road map of presentation

- AQUILA: network and main goal
- The National Reference Laboratories and their Representatives
- Tasks according to the Directive
- Achievements & Topics
- New Pollutants and Supersites
- Starting Point in the Networks: First results of the Questionnaire
- Requirements of the Networks, as soon as the new directive enters into force
- Possible Role of AQUILA – to be discussed within AQUILA
- Research versus Routine

# AQUILA

➤ **Network**

of 36 National Air Quality Reference Laboratories founded in 2002

➤ **Main Goal**

Harmonisation of air quality monitoring according to the EU air quality directive

**comparable measurements and data throughout the EU**



# The National Reference Laboratories

- Appointed by the appropriate competent authorities and bodies  
(according to the EU air quality directive)
  
- The representatives in AQUILA:  
(nominated, continuity of work)
  - Experts with academic background in QA/QC from e.g. monitoring networks, calibration laboratories, ...
  - Competent advisors for the operating networks concerning measurement techniques and QA/QC
  - Good knowledge of the monitoring networks and their needs

# Tasks according to the Directive

- **Co-ordinating QA/QC activities at national and EU level, method development and validation.**
  - Obligation to participate at interlaboratory comparisons at JRC ISPRA
  - Organisation of interlaboratory comparisons at national level
- Participating in standardisation activities.
- Providing expert judgement on matters regarding measurement strategy.
- Providing technical support to the development and implementation of correct measurements
- Developing common research projects and pilot studies.
- Organising training courses, workshops and conferences

# Achievements & Topics

- contribution to development and validation of CRMs
- guidance documents
- QA/QC programmes
- training uncertainty estimation
- AQUILA recommendations
- equivalence testing
- workshops on sensors
- input to review of air policy
- ...

# New Pollutants and Supersites

- The revised air quality directive from October 2022 follows most AQUILA proposals (concerning the new pollutants and supersites)
  - AQUILA: Distinction between supersites and research sites
    - e.g. oxidative potential at research sites
  
- From AQUILA meeting November 2022:  
suggestion for working groups on:
  - ultrafine particles
  - eqBC
  - NH<sub>3</sub>
  - supersites

# Starting Point in the Networks: First Results of the Questionnaire (14 replies)

Wishes for guidance on supersites:

Supersites criteria	Supersites variables	others	No guidance
4	7	DQO, UFP	6



# Starting Point in the Networks: First Results of the Questionnaire (14 replies)

Needs for supersites:

	Rural background	Urban background
Equipment	11	12
Human Resources	11	9
Expertise	5	7
Ready (nothing missing)	1	1
Others	1 with different plans 1 cooperation	1 cooperation
Missing response	1	1
Remarks	EMEP and ACTRIS	

# Starting Point in the Networks:

## First Results of the Questionnaire (14 replies)

	UFP (total number concentration)	UFP (size distribution)	eqBC	NH3	Oxidative Potential (OP)	e-reporting near real time
Equipment	7	8	4	10	10	7
Human Resources	6	8	3	6	10	6
Expertise	6	6	1	4	10	5
Research	1	1	-	-	1	-
Ready	5	4	8	3	-	1
Missing standard	1	1	1	1	3	-
Missing response			1			

**Comments:** NH3: diffusive samplers are favoured – no near real-time reporting

e-reporting has to be updated; no near real-time data for NH3 and OP, maybe for UFP and eqBC

# Starting Point in the Networks: First Results of the Questionnaire (14 replies)

- Heterogenous:
  - some networks are well prepared
  - some networks are not prepared at all
  
- In common:
  - Most important: **Lack of equipment and human resources**
  - Lack of expertise in 6 networks for UFP, in most networks for OP

Most networks will only be able to operate supersites and measure new pollutants, if necessary resources are provided.

As long as the directive is not revised, this will not be the case!

# Requirements of the Networks, as soon as the new directive enters into force

- Human resources and equipment for continuous, long lasting measurements!
- Start-up financing is important and welcome, but will not help in the long run
- **Monitoring at supersites is not a project, but an ongoing task!**

# Possible Role of AQUILA

## – to be discussed within AQUILA

### ➤ Supersites:

- develop criteria
- find solutions to combine routine and research
- available infrastructure of the monitoring networks

### ➤ New pollutants:

- check for available standards
  - » feasibility for networks
  - » costs and resources
- alternative measurements? equivalent methods?
- develop QA/QC measures to provide comparable data for the measurements carried out in networks
- help transfer from research level to routine level

Research Monitoring		Routine Monitoring Network
Transboundary processes, Climate change, Upcoming issues, ...	<b>Our task is to connect and exchange</b>	Protection of Human Health and Vegetation
Remote areas, ...		Hot Spots, urban, rural
Low concentrations (special equipment)		High concentrations (routine instruments)
Upcoming pollutants without standards: <ul style="list-style-type: none"> <li>• Oxidative potential</li> <li>• Micro plastic</li> <li>• PFAS</li> <li>• ...</li> </ul>		Pollutants with standards: <ul style="list-style-type: none"> <li>• <i>UFP (TS)</i></li> <li>• <i>NH3 (Diffusive samplers)</i></li> </ul>
campaigns		Ongoing task!

**Thank you for your attention!**