



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

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***New Trends and Challenges for Air Quality Control***

**University of Latvia - Faculty of Geography and Earth Sciences**

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## **PRACTICAL APPLICATION OF COMMERCIAL ALPHA M.O.S. E-NOSE FOR AIR QUALITY CONTROL IN RIGA**



INSPIRING  
ENVIRONMENT

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# Background information

**Object:** Port terminal, unloading, short-term storage and loading of crude oil and heavy fuel oil.

## Problematic issues:

- Dynamic air pollution sources;
- Emissions of smelling substances;
- Citizen complaints;
- Requirement to control and improve situation with odour nuisance.



# Technical solution

Introduction of the **Alpha M.O.S.** continuous e-nose odour monitoring system in one of the oil terminals of Riga Free Port.

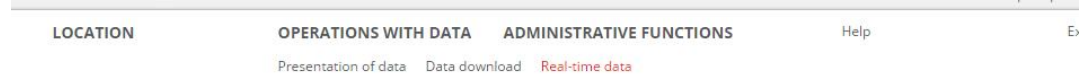
## System specification:

- RQ Box (PID sensor, electrochemical cells and MOS sensors);
- Data Box;
- Weather station;
- Server for data storage and processing + WEB application



# Process stages

1. **Pre-installation study:** Analyses of emission sources, identification of major smelling substances, configuration of RQ Boxes;
2. **System installation;**
3. **Calibration stage;**
4. **Routine work stage**



West

Monitoring station error ●  
Instrument MAC address: 30:30:31:31:38:34  
Last received data: 27/03/2015 09:44

Name	Value	Unit
H2S	0.0	ppm
PID	0.3	ppm
NH3	0.0	ppm
Odor	0.8	unit
W.Speed	6.2	m/s
W.Direct	140.2	Degr
SR	103.4	
Temp.	5.5	°C
UV	255.0	index
Rain vol.	0.0	mm
Pressure	1009.9	HPasc





# Calibration stage

1. Odour study according to EN 13725 (dynamic olfactometry);
2. Each RQ Box becomes a panel member;
3. Data collected during the study is used to calculate the model which «translates» sensor data into odour units suited to the site;
4. Model is then integrated into the analyser control software



# CONCLUSIONS

The system has large potential to:

- serve as an **alternative to the single or regular olfactometry measurements,**
- provide opportunity for the operator to demonstrate their own **contribution to the total level of odour nuisance,**
- serve as a **management, operational and odour control tool,**
- facilitate **communication between the operator, state environmental institutions and general public,**