

## Development of a real-time information and monitoring system to support the risk assessment of nanomaterial under REACH

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NanoMONITOR shares its latest developments concerning the NanoMONITOR Software and the Monitoring stations.

### ABOUT NANOMONITOR

The LIFE+ project NanoMONITOR addresses the challenges of supporting the risk assessment of nanomaterials under REACH by development of a real-time information and monitoring system.

### SUMMARY OF THE OUTCOMES SO FAR

The main outcomes of the project include:

- ✓ A Microsoft EXCEL based application to evaluate the reliability of data on the concentration of ENMs in indoor and outdoor areas according with the information requirements laid down on REACH
- ✓ A complete inventory of data on the levels of particles in the nanometer range measured during the production and downstream use of ENMs and nano-enabled products.

## Next Events

04/04/2017

NanoMONITOR 1st stakeholders' day

Valencia, SPAIN

## Relevant News

NanoMONITOR's latest developments will be disseminated amongst large international audience including the European Nanosafety community and targeted members of the International Risk Analysis Community. In particular, the project's latest achievements will be presented during the high impact events such as the New Tools and Approaches for Nanomaterial Safety Assessment Conference, on 7-9 February in Malaga, Spain and the SRA Policy Forum: Risk Governance for Key Enabling Technologies on 1-3 March 2017 in Venice, Italy reaching out to more than 370 attendees from EU countries, as well as South Africa, USA, China, South Korea and beyond.

- ✓ An on-line library of exposure scenarios across the life cycle of 15 ENMs
- ✓ Design of the NanoMONITOR software platform
- ✓ Design of the first NanoMONITOR measurement station prototype
- ✓ Edition of dissemination materials.

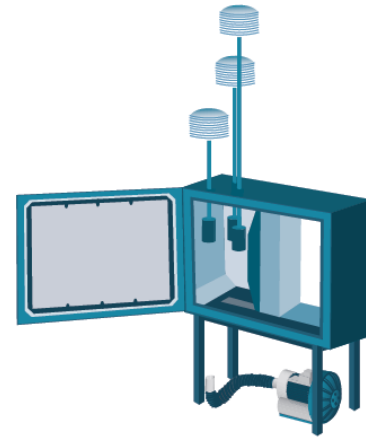
## MONITORING STATION LATEST DEVELOPMENTS

The NanoMONITOR monitoring station prototype is a compact size air monitoring station designed to provide real-time information of the concentration of engineered nanomaterials (ENMs) in outdoor and indoor areas. It has been designed by the members of the project NanoMONITOR, in particular ITENE and CEAM. The station prototype has been designed considering two integrated modules.

**Module 1**, or “particle counting unit” able to detect and measure the levels of nanosized (1 to 100 nm in diameter) and ultra-fine airborne particles (10 to 300 nm in diameter) in indoor workplaces and outdoor environments, providing data on the number concentration (number/ cm<sup>3</sup>), mass concentration (mg/ cm<sup>3</sup>), lung deposited surface area (μm<sup>2</sup>/ cm<sup>3</sup>), and average particle diameter (nm).

**Module 2**, or “pump-based sampling system” able to collect nanosized and ultra-fine airborne particles from an aerosol stream on a collection plate or filter.

A tailored designed software to control the instrument settings, collect and store data has been designed.



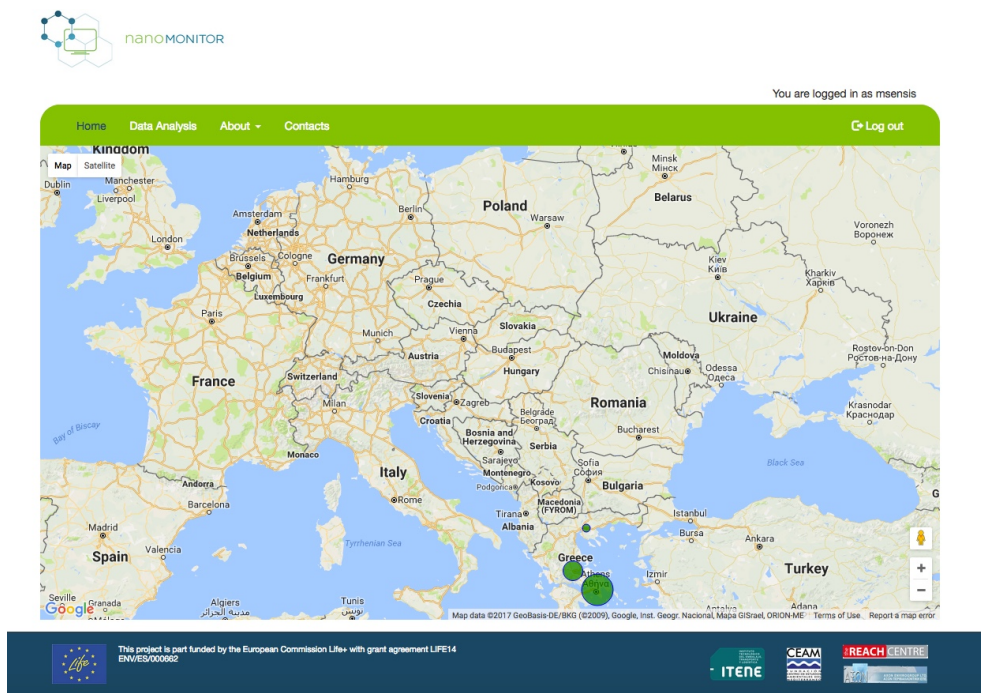
The software offers a dynamic control of the operation of the station, considering:

- ✓ Tailored designed lab view Programming
- ✓ Remote and local access to configure the settings of the monitoring station. Provide user configuration and scheduling of main sampling and operation conditions.

- ✓ Remote and local access to information on the levels on nanosized and ultra-fine airborne particles measured by the station.
- ✓ Real-time display of measurements.
- ✓ Ability to identify relevant events during operation. (i.e. high concentration or external situations affecting the measure).

## NANOMONITOR SOFTWARE LATEST DEVELOPMENTS

The development and deployment of a back-end application Server accompanied by a Web based client application has been selected in view of the opinions retrieved from the target audience of the project. The NanoMONITOR software platform is an infrastructure, accessible over the Web, making available processed and/or raw data from the various data sources, including data transmitted by the network of monitoring stations in operation or/and uploaded by the companies or researchers interested in provide measured data on the concentration of ENMs using our portal. The web portal is a full graphical GUI “Graphical Using Interface” using modern responsive HTML5 dynamic pages generation technology and it is intended to be used primarily by non IT personnel e.g. environment scientists.



## NEXT STEPS

NanoMONITOR upcoming schedule includes

- ✓ Delivery of the first two units of the monitoring prototype in early April 2017
- ✓ Delivery of two additional units in late June 2017
- ✓ Release of the beta version on the NanoMONITOR software in early April 2017.

## CALL FOR FEEDBACK

We welcome feedback from anyone interested in using and testing our solutions in the period July - October 2017. For more information please contact Carlos Fito ([cfito@itene.com](mailto:cfito@itene.com)).

### Project Partners:

ITENE (Packaging, Transport & Logistics Research Centre), Spain

AXON Enviro-Group Ltd., Greece

The Mediterranean Center for Environmental Studies (CEAM), Spain

The REACH Centre, UK



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