



**Integrated approach for exposure and health effects monitoring of engineered nanomaterials in workplaces and urban areas**

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## OVERVIEW

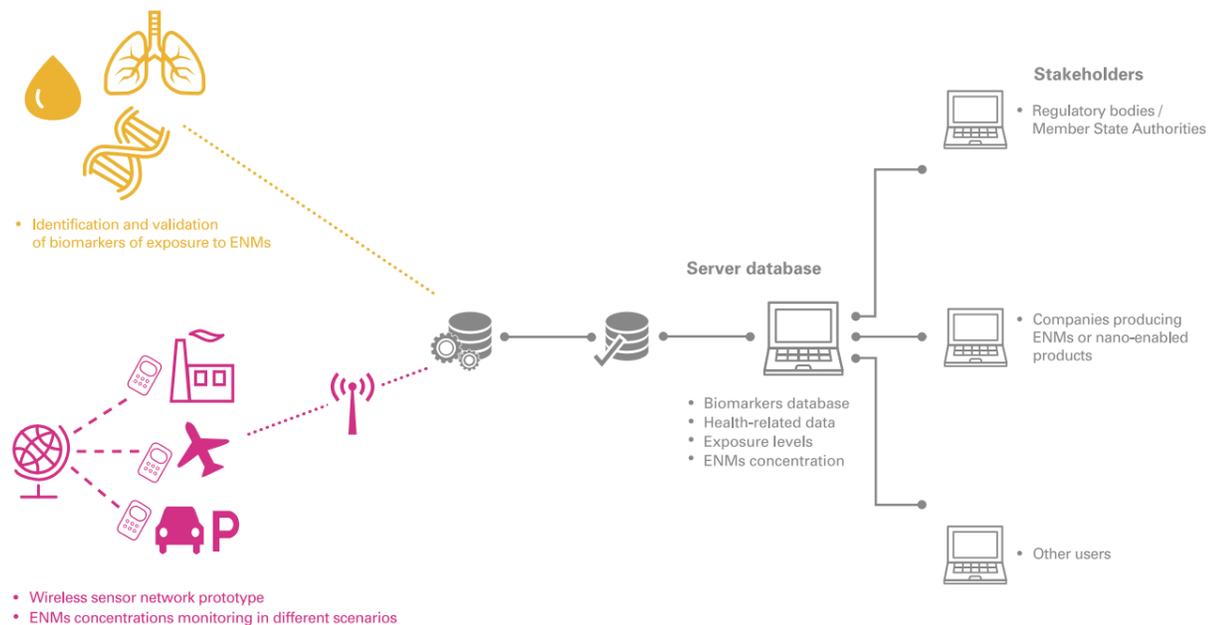
NanoExplore is a 3.5 years EU Life project that runs from September 2018 to February 2022. It has a budget of about €2.2 million.

There is an urgent need to provide stakeholders with an integrated approach to generate robust data on the levels of exposure and related health effects, supporting the risk assessment.

NanoExplore promotes a harmonized approach to overcome current data gaps and barriers limiting the implementation of the REACH regulation and the use of human bio-monitoring data in the protection of human health and the environment when dealing with particles in the nanometer range (1-100 nm) by combining long series of robust data on the concentration of ENMs measured by a wireless sensor network (WSN) of monitoring devices, appropriate biomarkers, and a tailored designed data management application. This approach addresses current environmental, health, and safety questions about ENMs, providing stakeholders from government, industry, NGOs, or the general public, with reliable data on the concentration and effects of particles in the nanometer range (1-100 nm).



## Development of the web-based platform



## Project Objective

The overall aim of the NanoExplore project is to develop and demonstrate the feasibility of an integrated approach to conduct biomonitoring studies, characterize exposure levels and elucidate possible health effects deriving from exposure to engineered nanomaterials (ENM) in indoor workplaces and urban areas.

### Preparatory Stage

#### Selection of a representative cohort of workers:

A well-designed cohort study will be developed for examining the applicability of candidate biomarkers.

### Implementation Stage

#### Validation of biomarkers:

Proposed biomarkers will be analysed depending of the type of ENMs and exposure levels, being validated on the basis of the variability of the effects observed with respect to the control subjects.

### Monitoring Stage

#### Demonstration in case studies:

Candidate biomarkers will be applied in subjects exposed to ENMs.

## Future Tasks

Several tasks will be conducted in the upcoming months, including technical and dissemination activities:

- Design and development of the wireless sensor network
- Validation of biomarkers for human biomonitoring studies
- Development of the NanoEXPLORE Web-Based Platform
- Screening biomonitoring studies in industrial facilities and urban areas



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