

## Omniscientis

Odour Monitoring and Information System based on Citizen and Technology Innovative Sensors



Have you ever been bothered by unpleasant industrial or animal odours near your home? Odour emissions can generate varying levels of annoyance, and therefore disturb those living in proximity to varying degrees. This depends on the way the odours are emitted, the emission levels, their dispersion based on weather conditions, as well as the perception of local residents.

### Context

Generally speaking, companies participate in the economic life of their region. Nevertheless, in the course of their business activities, they may emit odours that represent a nuisance to local citizens. What types of odours are in fact noticed? When do these odours present the greatest nuisance to citizens? What role can citizens play in improving the present conditions?

To answer these questions, two pilot programmes have been launched within the scope of the OMNISCIENTIS project, one in Austria near a pig farm (PigFarm), and one in Belgium near a pulp and paper mill (Pulp & Paper Mill). So far, surveys have been regularly conducted to collect data and opinions so as to identify and remedy any annoyances caused. Data is collected in two stages: manually, using data supplied by local citizens, and electronically, using electronic noses that measure particles emitted into the air.

OMNISCIENTIS is a FP7 project launched within the scope of a "citizen observatory" call for proposals, which places citizens at the centre of the observation process. It aims to use information technologies to drive innovation in the area of collecting and processing data in real-life situations.

### Innovation

The role of The Luxembourg Institute of Science and Technology (LIST) in the OMNISCIENTIS project is to set up a Living Lab in order to best respond to this environmental problem. Starting from the principle that each stakeholder (citizens, local authorities, industries, etc.) has a part to play in local environmental governance, it is important to provide an operational structure that is tailored to each stakeholder. The response offered by LIST researchers through the Living Lab aims to put such a structure in place.

Using a computerized system (computer platform, mobile application, and electronic nose) to collect and process sets of data, researchers are working to define a methodology that implicates and motivates each stakeholder, as well as to identify the services to be developed in order to ensure their long-term collaboration. The proposed method would allow each stakeholder to express and share their own interests while also co-building a common vision for the environmental problem in question.

Based on methodology previously developed by LIST researchers within the scope of stakeholder network management, the various stakeholders will be asked to define a strategic roadmap by answering the following questions: Who are we? What do we want? What should we do? The ultimate goal is to propose an action plan whereby each stakeholder has a clearly defined role based on its expectations and responsibilities vis-à-vis other stakeholders. This action plan will establish the Living Lab development phase and highlight the points which must be taken into consideration to ensure that it remains durable over time.

### Impact

The project will propose solutions to improve environmental governance at both national and Greater Region levels. The implementation of the Omniscientis project results will provide the foundation for a tool to help improve the ability of local authorities to make decisions in conjunction with their citizens and industries. This will also strengthen LIST's expertise in terms of managing potentially conflicting partnerships.

The topic of "citizens' observatories" and Living Labs is currently considered a major point of interest at the European level, particularly within the scope of future calls for proposals under the Horizon 2020 programme. The model proposed under the Omniscientis project may therefore serve as a foundation for defining future projects and collaborations at both national and international levels.

## Partners

SPACEBEL (BE) , Odometric (BE) , KTT-IMA (FR) , Université de Liège - Department of environmental sciences-management (BE) , Technische Universitaet Graz - Institute for Internal Combustion engines & thermodynamics (AT) , APS Technology (US) , Burgo-Ardenne (BE) , Inter-Environnement Wallonie (BE)

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