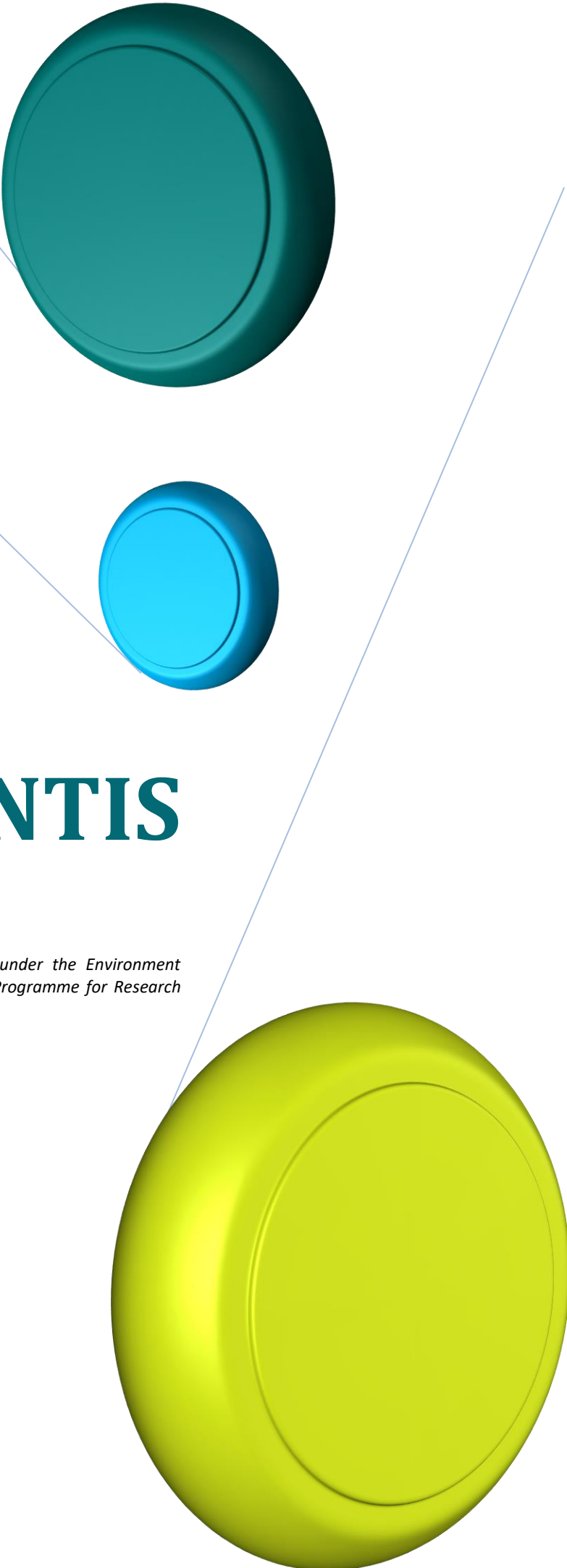




OMNISCIENTIS

Fact Sheet

This project is supported by the European Commission under the Environment (including climate change) Theme of the 7th Framework Programme for Research and Technological Development.

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Problem

Odour is recognized as a strong or even severe nuisance. Be it emitted by industry, landfill or livestock breeding, Odour is listed as the second source of complaints by the Environmental Agency ADEME in France and the Environmental Policy in Wallonia (Belgium). Odour cannot be monitored or regulated like a pollutant: its perception is linked to a human sense; it must be evaluated in terms of impact and potential annoyance on people.

In contrast to air pollutants or noise, odour monitoring limitation and regulation are a complex issue and non-homogenous concepts and approaches support the odour regulation in Europe.

Industrials usually develop strategies to mitigate the olfactory impact of their production processes on the neighbours, in the framework of the existing regulations (use of masking products, adjustment of the production to cope with legal constraints).

Though, citizens are up to now, “victims” appealing against odour nuisance. Sometimes they may be asked to contribute to solve the problem in “passive” observatories, allowing them to complain but, in the majority of cases, without getting feed-back, and their input is seldom used to validate the results of models or measuring devices such as e-noses.

Objectives

- To involve all stakeholders in the endeavour of odour nuisance mitigation;
- To set up and to improve the performance of an Environmental Information Management System, based on:
 - citizens’ observations (perception and level of acceptability);
 - real time measurement of odours near the sources, meteorological conditions and process parameters;
 - Modelling odour dispersion;
 - transparent and fast presentation of relevant information, available for all stakeholders (including neighbours and local Authorities);
- To improve citizens’ observations by smart interactive monitoring requests and feedback;
- To encourage the active participation of citizens.

Solution

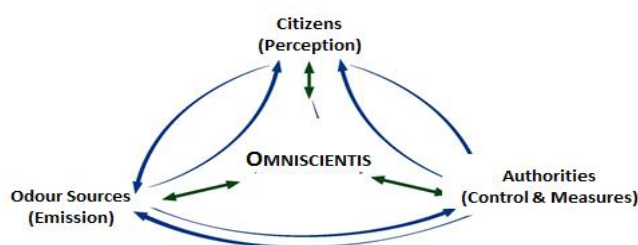


Figure 1 - OMNISCIENTIS Stakeholders

The OMNISCIENTIS project is concerned with a triangle of stakeholders (cf. Figure 1) :

- the source of nuisance (e.g. industry, farming, waste water plant and chemical plant),
- the citizens living in the neighbourhood,
- the authorities at various levels (City, Environmental Administration, legislative bodies).

The critical challenge of OMNISCIENTIS is the integration of citizens as “community-based” observation providers, giving the odour perception

and discomfort in real time and getting the feed-back in real time from a learning monitoring system. In order to support this novel approach, the OMNISCIENTIS project will develop a comprehensive solution, using recent technological developments in information and communication technologies, atmospheric modelling and sensors to build a generic, service oriented system, as sketched in Figure 2.

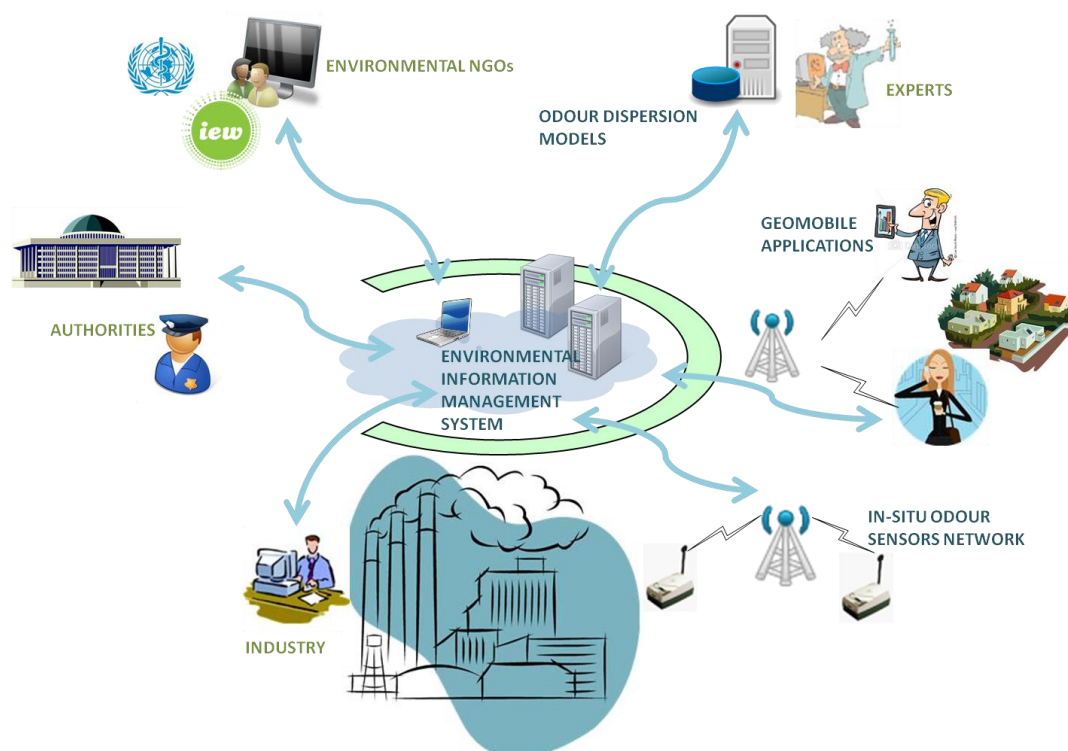


Figure 2 - Architecture of the OMNISCIENTIS solution

In the OMNISCIENTIS solution, the neighbours (citizens) can use a mobile device (Smartphone, Tablet) to provide information on their own perception, get direct feedback versus the input provided by retrieving useful aggregated or consolidated data about the prevailing wind and the olfactory nuisance they may suffer from.

The industry generating the olfactory nuisance will get an immediate warning in case of anticipated trouble in the vicinity of the site or in case of notification of discomfort or nuisance complaint from the citizens.

The public authorities will have access to services providing:

- statistical information on odour nuisance or complaints from the citizens,
- information on maximum, minimum and mean values for impact levels and emission rates, when feasible,
- simulation capabilities to conduct impact studies.

The odour experts ("Panelists") will use information from the mobile devices:

- To help in calibrating the measuring equipment and to adjust the parameters of the model;
- To assist in performing assessments in the field, either under the direct control of experts or in a "free" way, whenever panellists are aware of odour nuisance, using the methods described in the future EN standard of CEN/TC 264/WG 27 "Measurement of odour impact by field inspection.

The solution will be tested and validated on the field, using two distinct pilot cases:

- a pig fattening farm in Austria;
- a major industrial site in Wallonia (Belgium).

A Living Lab Approach to Develop Sustainable Environmental Governance

The OMNISCIENTIS project combines the active participation of the stakeholders (with a specific focus on the neighbours, representing a "citizens-based observatory") with the implementation of innovative technologies to improve the governance in the field of odours. To succeed in this challenging endeavour, the OMNISCIENTIS project will adopt a systemic approach involving all affected stakeholders, i.e. not only authorities and government but also industries and citizens. In order to create this "governance space" and make it sustainable and profitable, the Omniscientis project will draw from the Living Lab approach, involving the stakeholders in its conception itself.

Enabling the stakeholders to express and share their respective concerns and interests, identify and co-construct fields for improvement in the management of environmental issues on local basis, is the backbone of the Omniscientis project.

Benefits

The major expected impacts of the OMNISCIENTIS project will be

Enhanced local environmental governance

Better cooperation between potentially conflicting Parties

OMNISCIENTIS shall significantly contribute to the empowerment of the citizens during and after the project. During the project, the Living Lab approach will involve the stakeholders from the beginning of the project and give a “voice” to the citizens in the overall process, from requirements up to the validation of the resulting products. After the project, innovative tools and solutions will make the citizen a major contributor in the process of collecting, interpreting and communicating environmental information.

Beyond the project, the implementation of the OMNISCIENTIS solution will allow the decision-makers (Authorities and Industries) to analyze the information collected through the service platform in order to help in:

- tuning the nuisance generating processes, in order to mitigate the impact on the neighbourhood;
- improving the decision-making capacity of the local Authorities;
- providing clear, uncontroversial data to improve the national and European legislative framework.

Partners

PARTNER	COUNTRY	TYPE OF ORGANIZATION
SPACEBEL SA (Coordinator)	Belgium	SME
ODOMETRIC SA	Belgium	SME
KTT-IMA SARL	France	SME
UNIVERSITY of LIEGE	Belgium	Research Center
UNIVERSITY of TECHNOLOGY - GRAZ	Austria	Research Center
APS Technology SCRL	Belgium	SME
BURGO Ardennes SA	Belgium	Industry End User
Inter-Environnement Wallonie	Belgium	NGO End User
RESEARCH CENTRE Henri TUDOR	Luxembourg	Research Center

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