

CITI-SENSE

Development of sensor-based Citizens' Observatory Community
for improving quality of life in cities

Newsletter N° 6



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CITI-SENSE goes Basque (Alena Bartonova, NILU)

Being nearly half way through the project, it is time to evaluate the activities. After 18 months of the project, all locations have generated their first results. We have been working hard, we have made progress and we have learnt much. Sensor device prototypes have been tested and used to demonstrate the CITI-SENSE information chain (sensors-platforms-products-users) in three pilot cases. Case studies have been done in eight outdoor case studies, four school case studies and one empowerment initiative for public spaces. Parallel with the field experiments, we developed a way how to assess our performance, to allow us to improve before we go for larger scale implementation. We have also developed first concepts of shared citizens' observatories, and methodologies and tools for all chain elements.

To take stock of the progress, the CITI-SENSE consortium met from 13-15 May 2014 for the annual meeting at the premises of our partner Tecnalia (Bilbao/Spain). We enjoyed three days of hospitality, excellent food, sunshine and lovely environment. But, what sounds like a really nice vacation was actually a very intense work, and if you want to see what more is done in the Basque country these days, keep reading on.



Work will continue during the summer, perhaps with less intensity for some since it is our main holiday season. So we will take a breath during the next weeks and be back again for a fresh start in the autumn.

Have a good summer!

Vitoria EI (Juan Angel Acero Alejandro, Tecnalia)

Worldwide urban areas are introducing important sustainability criteria to improve the environment and thus, the quality of life and health of their inhabitants. Similarly, citizens' participation in public management is becoming frequent. Without any doubt, empowering citizens, results in a higher protection of the environment.

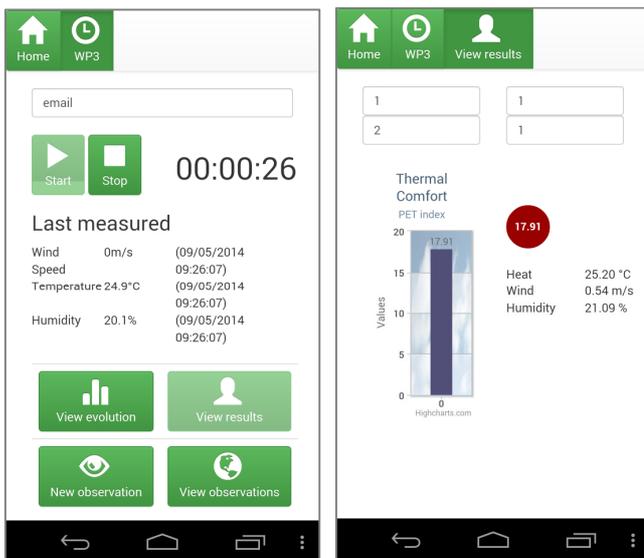
One of the case studies (Empowerment Initiatives – EIs) developed in the EU FP7 project CITI-SENSE focuses on citizens' participation in the management/design of outdoor public spaces. Participants are to measure ambient variables and provide their subjective perception of environmental quality and comfort of public spaces. This EI is under preparation at Vitoria-Gasteiz (Spain) where it will be applied in four different urban public spaces, like squares and parks. Thus, the domain does not extend to the whole city but it focuses on specific areas of city.



Handheld Kestrel sensor to measure thermal comfort

Participants for the EI will be selected from already established environmental working groups within the municipality. Each participant will evaluate the selected areas during 2-3 days, using mobile sensor and smartphone. In each area, measurements of 10-15 minutes at specific sites will be carried out. A specific methodology has been defined for the participants to collect ambient data. The objective and subjective measurements that will be taken on-site are:

- Objective environmental data: acoustic data, UV radiation and thermal conditions by help of a mobile sensor unit
- Subjective data: participants' perception and evaluation of the environmental conditions (thermal comfort, acoustic comfort) and perception of the quality of the place (general satisfaction, urban landscape, visual perception, safety, cleanness).



CITI-SENSE mobile application to display data on thermal comfort

All information registered in each measurement is centralized in a smartphone. Thus, the smartphone does not only receive data from the mobile sensors unit, but is also an interface to collect comfort perception (i.e., through questionnaires). Also the camera helps to evaluate urban landscape perception.

A unique application in the smartphone controls (start/close) other services developed for accessing data from the sensors. The application developed in CITI-SENSE accesses the recorded data and provides the participant with on-site measured information. Additionally, all the information is sent and stored in a specific platform of the CITI-SENSE project so that it can also be accessed from a web portal.

The collected data describes the environmental situation of the areas with focus on urban comfort. This information will



be useful for local authorities to make decisions on the future of the public spaces. It will also allow research to improve the understanding of factors and environmental variables that influence the global perception of the place.

Since Vitoria-Gasteiz has a long tradition of green and sustainable policies (European Green Capital in 2012), the EI is expected to be successful and to be used as a demonstration for the real/operational implementation of citizens' observatories.

Empowerment in Vitoria (Jonatan Moreno, IBATUZ)

The general objective of Vitoria's empowerment initiative (EI) is to empower citizens in designing public places from an environmental point of view. This goal can be specified as follows:

- Allow citizens to collect and share quantitative and qualitative information related to the environment of existing public places as well as their well-being in those places. Attention will be paid, among other things, to thermal and acoustic comfort, UV radiation, urban landscape, cleanness and general satisfaction.
- Allow stakeholders (i.e. public authorities, citizens, associations etc) to view and analyse this information, which should reflect citizens' opinions and perceptions as well as objective measurements of environmental aspects.
- Support communication between citizens and local authorities to enable authorities to integrate citizens' preferences into their strategic planning.



The general approach is based upon two interrelated principles: simplicity and practicality. Essentially, the idea is to organise an empowering initiative that can live up to notion of citizen empowerment while being realistic at the same time. To do so, the local CITI-SENSE team has distinguished between minimum and optimal results. The minimum results are: (i) to test the tools developed for environmental monitoring, (ii) to attract a sufficiently number of participants to set up the EI, and (iii) to disseminate the data produced through this study to have at least the opportunity to exert some influence over societal environmental priorities and policy decisions. Optimal results are: (i) to attract demobilised citizens and, thus, (ii) be able to give a voice to underrepresented social groups. The general approach is to secure minimal results and, if possible, achieve

the optimal goals. Given the resources of the local team, securing minimal results means keeping the EI simple and building on already existing participatory spaces and social networks.

So far, the following steps have been taken:

1. Research of Vitoria's participatory context with a view to identifying those participatory processes, associations and stakeholders with which the CITI-SENSE local team can (or even should) cooperate.

2. Based upon the assumption that the municipality of Vitoria seems committed to environmental issues and to promoting citizen participation, and given that it constitutes a key stakeholder, i.e. it has the potential to affect significantly this project, a meeting with them has been organised.
3. It has been agreed that the EI can be organised in cooperation with the Aulas de Ecología Urbana de Vitoria-Gasteiz (i.e. established working groups of citizens interested in urban ecology), and that other communication channels such as the municipality's webpage as well as the mailing list and newsletter of the Department of the Environment can be used to attract more participants. Furthermore, it has been agreed that the municipality will be informed in due course of subsequent steps taken by this study.

The next steps in this empowerment initiative are:

- Develop a questionnaire to wider audience (that could be offer to general public in this places). With this questionnaire we want to get more inputs of the people that uses this places (regarding to environmental conditions) despite of a less profound analysis.
- Prepare other participatory methodologies and spaces in this EI like interviews, forums, etc. When we have this proposal properly prepared and discussed inside WP3, we will offer to Vitoria municipality and, if they accept, we will develop in the following months.

Upcoming events

Activity/event	Where	When
8th international symposium on air monitoring and biomonitoring	Marseille (France)	15-19/06/2014
IoT week 2014	London (UK)	16-20/06/2014
ISEE 2014	Seattle (USA)	24-28/08/2014
ISES 2014	Ohio (USA)	12-16/10/2014
Smart City Expo World Congress	Barcelona (Spain)	18-20/11/2014

Contacts

Project coordinator: Alena Bartoňová – email: alena.bartonova@nilu.no

Dissemination Leader: Elena Turco – email: elena.turco@sensingcontrol.com

Project website: <http://www.citi-sense.eu/>

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