Collective Awareness Platform for Tropospheric Ozone Pollution

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List of Abbreviations

ARPA	Regional Environmental Protection Agency
CAP	Collective Awareness Platform
NGOs	Non-governmental organization

Executive Summary

Description of the Work:

The aim of deliverable D4.1 is to provide a *common engagement and monitoring plan* in order to coordinate the involvement of citizens, NGOs and political stakeholders during the different phases of the project and to guarantee the correct flexibility for Italian, Spanish and Austrian test bed areas.

With this aim we will first start the deliverable with an introduction into State-of-the-Art on citizens' motivations in citizen science and then introduce the concrete plans that we have developed for CAPTOR to engage diversified stakeholders in collaboration and mutual learning.

Objectives:

- Describe the CAPTOR engagement plan
- Describe the CAPTOR monitoring plan

1. Introduction

Air pollution severely affects human health, being responsible for 400,000 premature deaths in Europe each year, and puts considerable damage to agriculture as well as our natural environment.[1]

In fact, according to the recent Eurobarometer Study on "Attitudes of citizens towards their environment", air pollution is the topic that Europeans worry most about.[2]

The CAPTOR project aims to monitor the ozone concentrations in rural areas, using low-cost and widely distributed sensors, while engaging and creating awareness in the population, thanks to a new model of participatory innovation based on open collective platforms.

To reach the project objectives the involvement of citizens from regions affected by tropospheric ozone pollution is key. Only if we can reach citizens who are willing to install the low-cost sensors, who are motivated to collaborate with the researchers during the collection of data and who get involved in a mutual learning and sharing of ideas and solutions, the project will be successful and have real impact in the involved communities. A targeted engagement plan is thus key to success, the basis of our work and closely linked to the communication and dissemination activities amongst the broader public described in D6.1.

2. Aim of this deliverable

The aim of deliverable D4.1 is to provide a *common engagement and monitoring plan* in order to coordinate the involvement of citizens, NGOs and political stakeholders during the different phases of the project and to guarantee the correct flexibility for Italian, Spanish and Austrian test bed areas.

With this aim we will first start the deliverable with an introduction into State-of-the-Art on citizens' motivations in citizen science and then introduce the concrete plans that we have developed for CAPTOR to engage diversified stakeholders in collaboration and mutual learning.

3. Motivational drivers of volunteers in Citizen Science projects

Motivational issues of citizen scientists are key in CAPTOR and the basis of our engagement plan. Thus, we start with a discussion of factors that attract and keep people involved in citizen projects here and will in the course of the project also contribute with evaluation data to the State-of-the-Art on motivation in participatory science.

Attracting and retaining people who are willing to contribute their skills, time, and effort for a scientific cause is an important pillar of citizen science work and thus receives more and more attention. While there were only a handful of articles on motivation five years ago, in recent publications, which specifically deal with the motivation of citizen scientists, are becoming more popular (Follett & Strezov 2015).

Motivation is a complex construct that includes intrinsic drivers like the inherent interest and joy in doing a certain activity (activity-specific), as well as external factors that come into play and refer to doing something because it leads to a desired separable outcome, reaching from collective

[1] http://www.eea.europa.eu/themes/air, European Environment Agency

2 "Attitudes of European Citizens towards the Environment", 2014, Special Eurobarometer 416 / Wave EB81.3

motives to aspects of financial remuneration (consequence-related). In addition, motivation is a dynamic construct that changes over time, where we can differentiate two pivotal points in a project: 1) the initial acquisition of contributors and 2) the continuous involvement of those successfully acquired.

In citizen science, recent studies reveal that there is one motivational driver for citizens that is most prominent in all studies – which is the desire to **contribute to a "greater good" and to help science** to solve problems that are perceived as relevant and pressing in todays world (Martin et al. 2016, Silva et al. 2016, Land-Zandstra et al. 2016). The desire to advance the project's objectives is especially relevant for attracting people into a research project and explains why people join the project in the first place. Therefore, especially among new volunteers, communicating the project's mission, achievements and its scientific contributions is of importance.

However once active contributors, **intrinsic motivators** and **social influences** come into play to retain citizens active and involved (Nov & Anderson, 2011) and are also mentioned as aspects that need to be strengthened when not only quantity but also quality of contributions should be increased (Nov et al., 2014).

The role of the community:

Establishing a community of volunteers who share beliefs, interact regularly, and work collectively towards a common goal reinforces the volunteers' identification with the project and their participation intention. But not only the contact to other volunteers, also the direct contact to the scientific staff and the exchange of information and experiences, the acknowledgement and recognition of contributions is key (Silva et al, 2016, Dickinson et al., 2012, Raddick et al. 2010)

Intrinsic motivations:

(Dickinson et al., 2012) suggest that volunteer activities have to be "easy, fun, and social" to recruit a large number of volunteers. Opportunities for social interaction, enjoyment of the outdoors, and altruistic motivations are mentioned as being important in sustaining volunteer effort. The enjoyment that is inherently related to an activity itself can successfully supported with a careful design of the involvement activities and also speaks for game-like approaches like Fold.it (Nov et al. 2014)

Self-competency:

The aspect of making participation "easy" (Dickinson et al., 2012) is also mentioned by Martin et al. (2016) who refer to the aspect of control beliefs, which are beliefs about the degree to which a person can actually perform the behaviour. This means that participants require the feeling that they are able to participate positively in the project with the skills and knowledge they possess. Providing training (online or face to face), information sources, but also opportunities to connect with other participants and exchange information are aspects mentioned as important to support control beliefs (ibid).

Publication of results:

A large study with students who participated in a citizen science project related to cancer research also highlights the importance of training and brings up another aspect – reflecting the results from the collaborative scientific work back (Silva et al., 2016). Also (Land-Zandstra et al., 2016) mention that a majority of participants in a flu-tracker project regularly access the results from the study,

which demonstrates how important this sharing of data and outcomes is for all stakeholders involved.

Dynamic contribution environments:

Motivation is a dynamic construct and thus needs also "dynamic contribution environments" with regard to the design of tasks and responsibilities. It is recommended to foresee involvement concepts that allow volunteers with different skills and interests to contribute at different levels and also to deepen engagement in the course of the project, reaching from lower-level granularity tasks to more demanding tasks and responsibilities (Nov & Anderson, 2011). Amongst the most motivated volunteers are those who can define their own research questions (Fortson et al., 2011), who take responsibility and ownership for the underlying question and how to address it.

Such a mutual, equal partnership between researchers, NGOs and volunteers is also what CAPTOR is targeting for where bottom-up environmentalism, exchange and learning as well as real involvement on local decision making processes are what we strive for.

4. Communication and interaction in Citizen Science

Concerning the different means and strategies of communicating with the involved stakeholder groups, existing studies and publications are even harder to find. The sheer diversity of citizen science projects makes it difficult to find one best practice, as the type of scientific work and geographic scale of participation strongly shape the strategies that a project uses to meet its goals and to communicate with its members (Wiggins & Crowston, 2014).

To better understand how participants are engaged in Citizen Science projects the authors investigated type of communication media used for communication and coordination (ibid) and identified three categories of communication strategies:

The first group of factors was *science-focused and data-centric*, and involved use of traditional media for dissemination, including print publications, research articles, maps, graphs and charts, animated or interactive maps, and data querying tools. The availability of these tools likely coincides with more funding or technical resources; for example, data visualizations are consistently underused by projects with little funding.

A potentially similar category emerged from the *basic coordination tools* combination of Web sites, e-mail, conference calls, maps, and data querying tools. These projects were less likely to be focused on scientific publication and may have had less funding, but provided participants with some access to data.

A third group of projects focused on supporting *social participation* with blogs, forums, photo galleries, animated or interactive maps, and social media. These projects offered a variety of ways to support the social aspects of participation, but access to data was relatively limited.

As pointed out above we can normally see a mixture of communication means and instruments, where traditional means of communication are more and more combined with social networking instruments, and different focus are set related to the goals, funding, task complexity and spatial scale of the projects.

An interesting article comes from (Robson et al., 2013) who compared the use of Social Networking and Traditional Media Channels for a project in the environmental sector grounded in a local region. The comparison showed that the social networking campaign was just as successful at

recruiting participants as an international press release, and more successful than a participation campaign through existing communities. However, the participation campaign resulted in more data being collected then either other campaign. So, focusing on existing users who have an established interest in the project resulted in more work for the project being completed (i.e. more data collected), whereas recruiting new users had less immediate impact on data collection.

5. CAPTOR Engagement and Monitoring Plan

In CAPTOR, we aim for an equal partnership between science and society to harvest the full innovation potential that such a mutual relationship can support. We have two main streams of work that we follow in our engagement work:

- **The Ozone Monitoring plan**, which prepares the proper measurement of Ozone data with our low-cost servers and involves national Air Quality Agencies in the preparation, respectively the comparison and calibration of first measurement data with data from official monitoring stations.
- **The Citizens Engagement and Monitoring plan**, which is our flexible contribution framework that foresees the involvement of volunteers in CAPTOR on different levels, with regard to task-complexity, interest and required knowledge.

In the following sections, we will now describe both plans in more detail:

5.1 Ozone Monitoring plan

The ozone monitoring phase, which will take place during the summer months, will be divided in some steps depending upon the assembly and deployment of the sensors.

- **Step 1. Locating the areas most affected by ozone pollution**:
  The areas to deploy the sensors should be detected by doing a temporal analysis of the ozone concentration over the past 5 years, using the data from the national Air Quality Agency.
  The areas with the highest average concentration should be taken into account as ideal spot for the sensors deployment.
- **Step 2. Comparing the areas of step1 with the local facilitators/hosts organisations network**.
  Among the areas identified in step 1, it is important to choose those areas that have a host of a local organisation, which is engaged in this project.
  This step is very important to ensure the correct information about the project and maintenance of the nodes for all three years of the Captor project.
- **Step 2.1 Selection of the volunteers**
  The selection of volunteers takes place during different time points in the project. While in the Spanish test bed first volunteers will already be involved as hosts during the campaign 2016, in Austria and Italy the real involvement will only start for the campaign in 2017. Nevertheless, during this selection, it is important to choose the volunteers that ideally can be able to guarantee the correct functioning of the nodes for all the three years of the project.
- **Step 3. Contacting the national Air Quality Agency**:

During summer 2016, some sensors will be deployed to the test bed areas for testing. The national Air Quality Agency will be contact in order to place the Captor nodes next to the official monitoring station.
During the monitoring months, a sensor will be calibrated on site at least 1 time during each summer and will work as travelling standards to the others nodes, so the contact with the Air Quality Agency is very important.

5.2 Citizens engagement and Monitoring plan

Citizens will be involved at different engagement levels:

- **Hosts**, the person that "host" the sensors on their houses, grounds etc. During the project, partners will be responsible to install and repair the sensors, but hosts (e.g. farmers, schools, citizens, city hall) have to guarantee the constant functioning of the nodes.
- **Observers**, people who watch data, discuss and take further actions
- **Innovators**, citizens and stakeholders who propose innovative solutions, ask for support of scientists.
- **Makers**, volunteers that participates in the construction of a sensor node. A maker should be interested in learning the process of integrating the Hardware/Software parts of a sensor node. He/she will have materials, e.g. manuals, videos, etc from the Captor project in order build his/her own node.

They will be involved also in different phases (and in different periods) during the project. The citizens and other stakeholders involved are composed from public institution (local administrator, regional references, environmental agency etc), volunteer associations (civil protection group, NGO, worker category, etc) and local citizens.

	Makers	**Hosts**	**Observers**	**Innovators**
Local administrators			X	X
Regional references				X
Environmental agency			X	X
Health agency			X	X
Civil protection local groups	x	X	X	
Civil society organisations (NGO, cultural, environmental, religious …)	X	X	X	X
Workers category		X	X	
Farmers		X	X	X
Maker community	X			

Table 1: example of stakeholder and role

In this framework volunteers can participate, as observers, hosts, makers and innovators, while an initial low involvement as e.g. observer can and ideally should evolve over time towards eg. the involvement as innovator and participants can of course also take several roles.

Irrespectively of the role taken, we aim for a highly interactive and close collaboration between citizens and scientists that takes places in the off- and online world.

The facilitators of this communication and learning process are the bottom-up environment organisations of the project (Legambiente, Ecologistas and G2000), that make use of their years of experiences in volunteer communication and access to existing communities to acquire motivated volunteers. They are in addition the interface to the national Air Quality Agencies, the media and political decision makers. In addition, scientists will immerse in the test beds, e.g. looking for the right places for the CAPTORS (sensors), taking care of the installation/deinstallation and maintenance, or participating in training or workshops on formation, consequences and solutions related to tropospheric ozone.

The social embeddedness in the community of CAPTOR participants will not only be supported by face-to-face events but also by the local community platforms (CAPs) that foster the sharing of experiences, stories and ideas on solutions amongst citizens and researchers.

The CleanAir App, the Caps and the website will visualise the collected data and provide access to the results from every sensor – not only to show the results of involvement but also to initiate discussions and mutual learning between all stakeholders involved.

5.2.1 First phase of engagement (January – September 2016)

- **Targets to involve:** official environmental agencies, volunteer associations
- **Roles**: local facilitators – Hosts
- **Monitoring tools**: authorization for calibration and registration on the website
- **Means**:

  At the beginning of the project (before the 2016 summer period), every partner has to form and define a “local facilitators” group.

  These groups are called to engage a first group of stakeholders in order to explain the air pollution problems (e.g. air pollution → Ozone Pollution → Human Health effects → causes → recommendations) and the aim of the project (Explanation of the project (monitoring nodes, test bed areas, citizen science, citizen engagement and monitoring, solutions to the problem).

  In this phase of the project it is necessary to involve the official environmental agency (e.g ARPA in Italy, “Departament de territory I Sostenibilitat” in Spain, or “Umweltbundesamt” in Austria) to have access to the official monitoring network to make calibration of the captor nodes.

  In the same period, it is important the local community in the Spanish testbed will already be involved as host, while in the other testbeds a first awareness raising will be conducted to explain the air pollution problems and the aim of the project (see point 3.2.1).

  This engagement is important in the first summer because it is the “official presentation” of the Captor project and an important step for quality assurance to let to the local community/citizens know that the Captor's instruments are tested with the official network instruments.

5.2.2 Second phase of engagement (October 2016 – May 2017)

- **Targets** to involve: official environmental agency and local citizens group (es. seniors, farmers, schools, commuters, etc)
- **Engagement**: Hosts – Observers

- **Monitoring tools**: “Hosting certification”, registration on the website/CAP's, Captor events participation.
- **Means**: In the second phase of the project, it is important to involve a bigger number of hosts after the calibration period (especially in Italy and Austria that in the first summer have few nodes on the test bed areas only).

  The hosts will be trained from the local facilitators as expected in project proposal.

  It is also important to involve a larger group of “observers”, who take in charge the tracking of data of the calibration period, the official data reported in the platforms and the web/Cap's. This monitoring is also the initial point of starting discussions about the Ozone pollution problem and getting people gradually involved as innovators.

  The use of Captor platforms in each country, the registration in the CAP's and the sharing of the local stories, local problems, local solutions, analysis of the data of the previous summer is an important indicator of the engagement situation.

5.2.3 Third phase of engagement (June 2017 – May 2018)

- **Target** to involve: all stakeholders of the local test bed areas
- **Engagement**: Makers - Hosts - Observers - Innovators
- **Monitoring tools**: “Hosting certification”, registration on the website/CAP's, Captor events participation. Solutions and best stories
- **Means**:

  This is the central period of the project and the objective is to involve all the people that are following the project. This is also the summer period and people can see directly the level of ozone in the test bed area. It is useful for the project monitoring success to have/ to give a real-time evaluation of ozone concentrations and to announce eventual overcoming level of Ozone concentrations limits.

5.2.4 Fourth phase of engagement (June - December 2018)

- **Target to involve**: Policy makers, local administrators, regional administrator, citizens
- **Engagement**: Hosts – Observers - Innovators
- **Monitoring tools**: “Hosts volunteer certification”, registration on the website/CAP's, Captor events participation. Solutions and best stories
- **Means**:

  Hosts, makers and innovators will be asked to continuously participate in mutual learning and solution finding based on the experiences made in the phases before. The widespread dissemination of the experiences and results engaging all stakeholders is the focus here, by also organising local events to widespread the CAPTOR messages/experiences. All the communication tools used in the project can be used in this phase.

6. Monitoring and Engagement plan in practice: activities and experiences from the first field tests

The process of involvement of volunteers in the first field test in Catalonia summer 2016 has approached four principal stages:

6.1 Preparation of the launch of the call of volunteers with allies of the CAPTOR project.

A meeting was convened with leading partners of the project to present the first year work plan and especially, ask for their implication to involve volunteers among their organizations. The project foresees a total of 20 volunteers to the first year of 2016.

The meeting was held on January 11th and participated the following partners:

- Air Quality Platform in Catalonia
- Unió de Pagesos del Vallès i d'Osona
- Grup Ecologistes en Acció del Vallès
- Associació La Torrentera
- Coordinadora per a la Salvaguarda del Montseny

Also were contacted by mail and phone other organizations that were unable to attend as Grup de Defensa del Ter in the region of Osona, and other organizations in the Vallès as Granollers en Transició and Ecologistas en Acción del Vallès.

Figure 1: Meeting with CAPTOR allies at UPC ,11th January, Barcelona

6.2 Launch of the call for volunteers

First, we developed the brochure with explanatory information for volunteers and with key messages to encourage participation, covering the following issues:

- Question: Do you live in one of the regions affected by ozone pollution: Barcelonès, Maresme, Vallès or Baix Ripolles?

- Short explanation about the tropospheric ozone.
- Short explanation about the CAPTOR project
- Question: How can you contribute?: become a volunteer in the CAMPAIGN of ozone MEASUREMENT
    - It's very easy, you don't need previous experience or training.
    - We only ask that you have a sensor in your house. We will come to install and to uninstall it.
    - Does not imply any cost
- What are the requirements?
- What should you do to become a volunteer?
- When will you receive an answer?
- See the area affected by ozone in where we are looking for volunteers

CAPTOR

COLLECTIVE AWARENESS PLATFORM
FOR TROPOSPHERIC OZONE POLLUTION

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 688110

Necessitem la teva ajuda, fes-te voluntari/a!

Campanya ciutadana d'ozó troposfèric

Un dels principals contaminants de l'aire que respirem

1. Viu a una de les comarques afectades per la contaminació d'ozó troposfèric: Barcelonès, els dos Vallès, el Maresme, Osona o el Baix Ripollès?

Vol saber si respira aire contaminant? Sap quins efectes té l'ozó sobre la seva salut, els conreus i la natura? Vol participar en un projecte de ciència ciutadana i ajudar a trobar solucions a aquest problema?.

2. L'ozó troposfèric

És un dels contaminants atmosfèrics més importants que afecten greument la salut humana i l'agricultura i els ecosistemes, i és un dels gasos que causen l'efecte hivernacle. Els nivells elevats d'ozó poden provocar un increment de la mortalitat diària. Afecta a les zones rurals i àrees periurbanes tot i que el seu origen prové de la contaminació generada per les grans ciutats.

2. El projecte CAPTOR

És un projecte europeu impulsat per Universitat Politècnica de Catalunya, el Consejo Superior de Investigaciones Cientificas (CSIC) , Ecologistes en Acció i Guifi.net. Es desenvoluparà a Catalunya, Itàlia i Àustria per sumar esforços per combatre aquest contaminant.

4. Com pot contribuir?: FES-TE VOLUNTARI/A DE LA CAMPANYA DE MESURAMENT D'OZÓ

- **És molt fàcil, no cal experiència prèvia ni formació.**

Els sensors dels voluntaris/es recolliran dades d'aquest contaminant que són claus per millorar el coneixement científic i de la població sobre el problema, així com per mobilitzar al conjunt de la ciutadania per trobar solucions. Les dades seran públiques i el projecte informarà sobre la qualitat de l'aire i les propostes per canviar la situació, de forma comprensible i participativa.

- **Només li demanem que tingui a casa seva un sensor que serà proporcionat pel projecte durant 3 campanyes (estiu 2016, estiu 2017 i estiu 2018). Nosaltres vindríem a instal·lar-lo i desinstal·lar-lo.**

El projecte farà esment dels voluntaris/es en la memòria de resultats del projecte així com en la difusió prevista a través de butlletins, destacant la seva contribució clau per al projecte. Els voluntaris/es que així ho desitgin podran donar el seu testimoni per ampliar l'impacte del projecte, participant en jornades així com en les tasques de comunicació previstes amb el projecte.

- **No li suposarà cap cost, tan sols l'electricitat que calculem en un total de 1,5 euros a l'any (el sensor és de molt baix consum)**

CAPTOR COLLECTIVE AWARENESS PLATFORM FOR TROPOSPHERIC OZONE POLLUTION

5. Quins són els requisits?

- Ha de **viure en la zona d'estudi** (comarques del Barcelonès, el Vallès Occidental, el Vallès Oriental, el Maresme, Osona i el baix Ripollès).
- Ha de **viure en una zona rural** (allunyat de la influència directa de carreteres o indústries, a prop de boscos o camps, però no al cim de muntanyes altes)
- Ha de tenir un **lloc on es pugui instal·lar el sensor**:
  - a l'exterior, a una balconada o a l'ampit d'una finestra
  - que estigui situat entre 1.5 i 4 metres sobre el terra,
  - que no estigui apantallat (que no tingui estructures pel voltant que dificultin la circulació de l'aire),
  - que no hi hagi cap sortida d'aire acondicionat ni de cap caldera a prop,
  - que tingui connexió elèctrica, ja que el sensor ha d'estar connectat a la corrent (una connexió normal d'ús domèstic),
  - i que tingui wi-fi, ja que el sensor envia la informació que recull a través de la xarxa wi-fi.

CAPTOR COLLECTIVE AWARENESS PLATFORM FOR TROPOSPHERIC OZONE POLLUTION

6. Què he de fer?

Omplir aquest formulari clicant **aquí.** Són menys de 5 minuts!

En compliment de l'art. 5 de la llei 15/1999, de 13 de desembre, de protecció de dades de caràcter personal, us informem que les teves dades s'incorporaran a un fitxer "Voluntaris/es campanya ozó CAPTOR», titularitat d'Ecologistes en Acció de Catalunya». Les dades recollides s'emmagatzemaran amb les mesures de seguretat i confidencialitat establertes legalment. Podràs accedir, rectificar o cancel·lar les teves dades enviant un escrit a l'adreça mail : contaminacio@ecologistesenaccio.cat

7. Quan tindrà resposta?

En funció dels voluntaris/es que es presentin, els científics del CSIC seleccionaran els 35 que participaran després de valorar la seva millor localització per cobrir l'àrea afectada. Ens comunicarem amb vostè durant el mes de maig.

8. Per a més informació

Si necessita informació addicional, contacti amb:contaminacio@ecologistesenaccio.cat

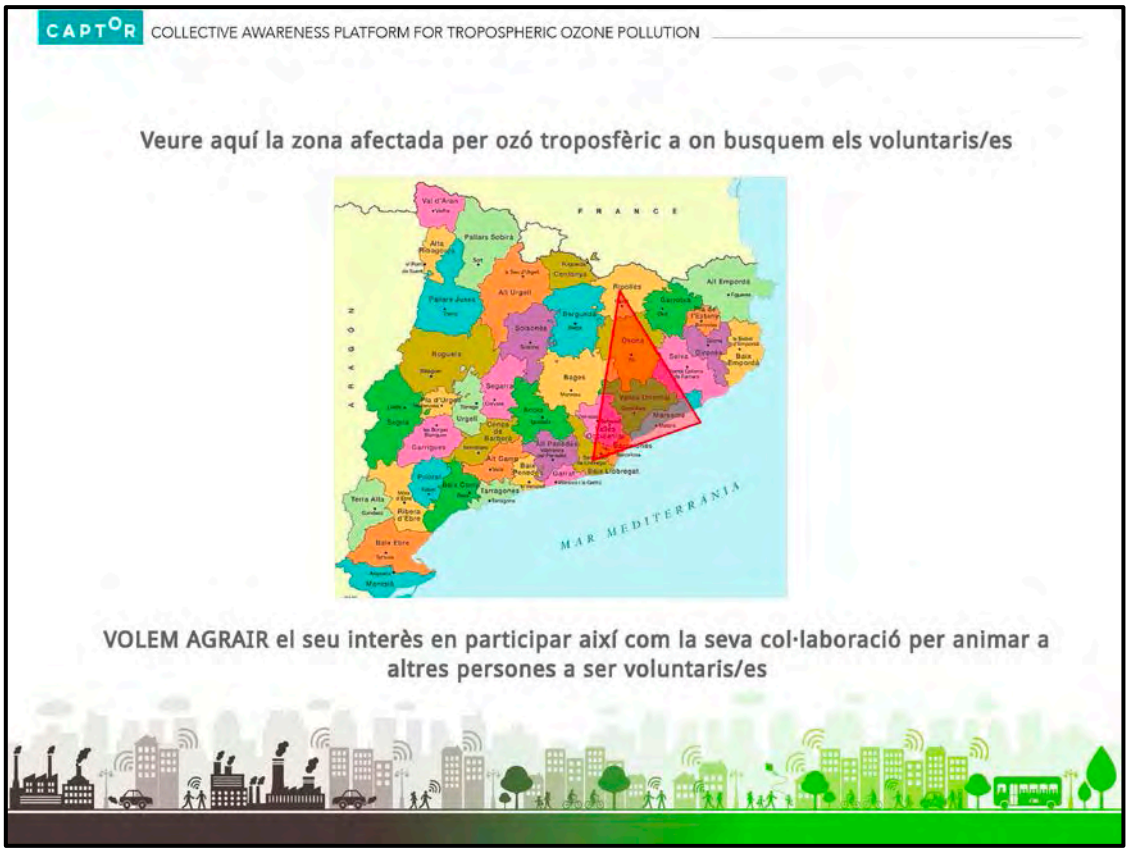

Figure 2: Become a CAPTOR volunteer brochure

Figure 3: Become a CAPTOR volunteer launch campaign

Then was designed the launch campaign with specific materials for dissemination throughout e-mail and social media:

Examples:

- Spanish CAP Platform: http://www.qualitatdelaire.org/2016/05/campanya-ciutadana-dozo-troposferic.html
- Twitter: https://twitter.com/Qualitat_Aire/status/732530944784142336
- “Grup de Defensa del Ter” Facebook

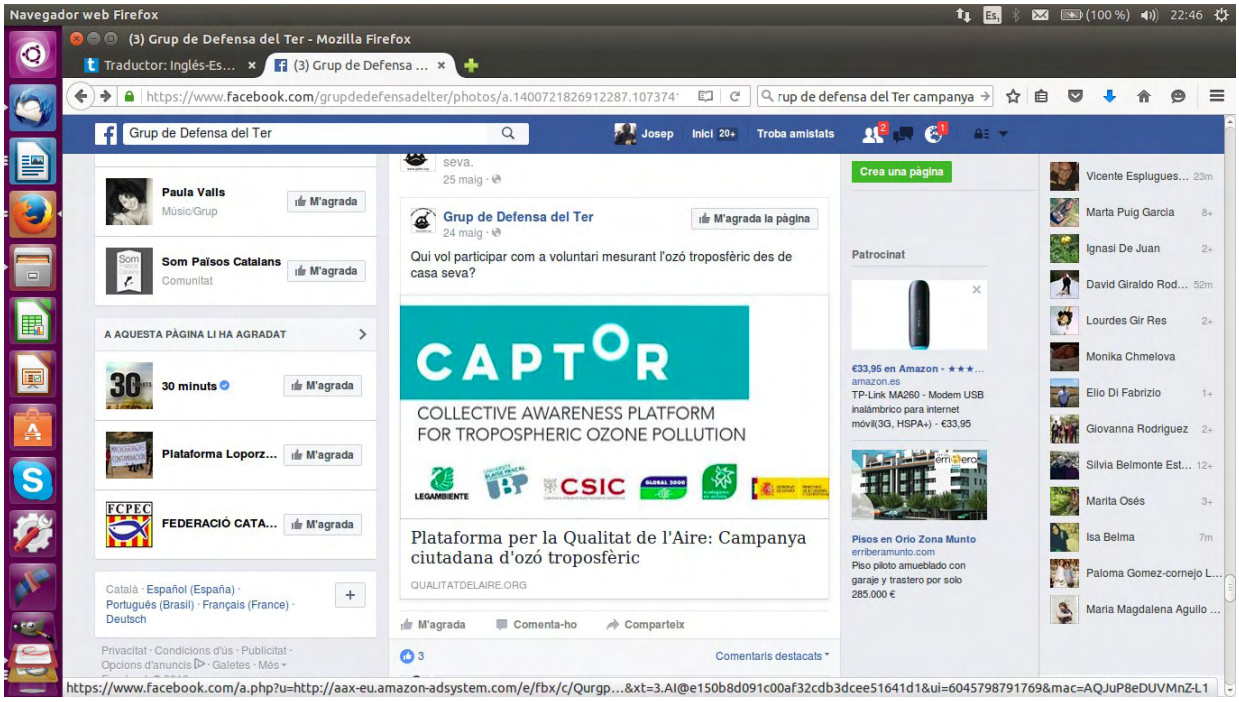

Figure 4: Call for participation as volunteer in facebook

A registration form was also prepared asking for the data needed to assess each candidate.

6.3 Volunteers’ selection process

The response to the call for volunteers **was very positive**, with a total of **84 registered candidates** from the test bed area.

Then the CSIC team made the selection based on the following criteria:

- Compliance with the requirements requested by the form.
- Ensure the distribution in the geographical area
- Visit of recognition conducted by CSIC and UPC team.

Following this process, we selected **20 volunteers** from the first campaign, three of them as **volunteer coordinators**. CSIC and EEA team sent to the candidates not selected a communication with the result and suggesting keep in touch for future campaigns (planned to expand to 35 volunteers) or to collaborate in activities provided for the project. Only one candidate requested to unsubscribe, the rest remain interested in supporting the project.

Two high schools have offered to contribute to the project as potential **makers**, integrating the training of construction of sensors in its educational program.

6.4 Incorporation and engagement of volunteers

A second visit was made to the selected volunteers for installation of the nodes captor in their homes. On the visit to each volunteer, in addition to installing the sensor, we proceeded to sign a collaboration agreement with the volunteer. Moreover, we asked the volunteers to fill out the first questionnaire that will serve to make the monitoring of the social impact of the project.

Voluntari/a campanya Ozó

CAPTOR - Projecte europeu impulsat per Universitat Politècnica de Catalunya, el Consejo Superior de Investigaciones Cientificas (CSIC) , Ecologistes en Acció i Guifi.net

*Required

Nom i cognoms *

Your answer

Adreça mail *

Your answer

Telèfon de contacte *

Your answer

Comarca

Your answer

Població *

Your answer

Adreça postal *

Your answer

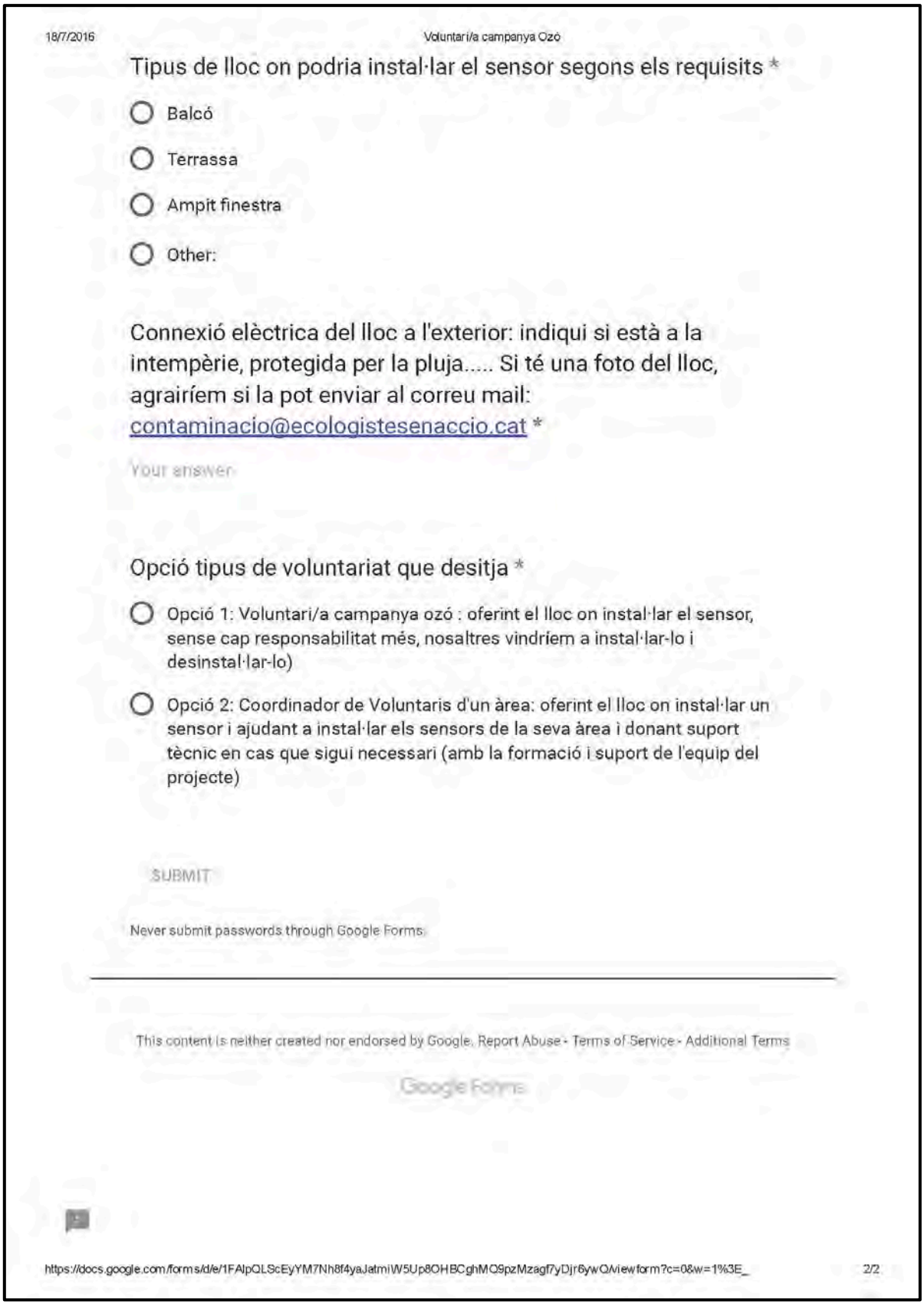

Figure 5: registration form as a volunteer

CAPTOR

Collective Awareness Platform for Tropospheric Ozone Pollution

VOLUNTARY AGREEMENT OF COLLABORATION PARTNERSHIP BETWEEN THE EUROPEAN PROJECT CAPTOR AND THE VOLUNTEER FOR THE REALIZATION OF THE CITIZEN CAMPAIGN OF MEASUREMENT OF OZONE

_____, _____ _____ 2016

Mr./Mrs _____, with ID _____, VOLUNTEER for the realization of the citizen campaign of ozone

And in representation of the project captor Ms. _____. with ID _____ which acts as the coordinator of the citizens campaign of ozone.

AGREE to

I. That the volunteer accept the installation of the node _____ at the location _____for the ozone measurements during the citizen campaign of ozone that will take place in the summer of 2016, 2017 and 2018. Reserving the right to withdraw from the study at any time.

II. That the CAPTOR project is responsible for the installation and any material damage that this installation can cause, as well as the node own damages that may be incurred.

III. And that therefore, both parties agree to sign this agreement with the following

PACTS

First. The CAPTOR project is committed to providing access to the ozone data measured at the location above to the volunteer.

Second. The CAPTOR project undertakes to store the personal data of the volunteer according to the security and confidentiality measures legally established by art. of law , of protection of personal data.

Third. The volunteer can access, correct or delete their personal data by sending a written request to the email address:

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CAPTOR

Fourth. The volunteer does not have any responsibility for the operation and maintenance on a node.

Fifth. The volunteer authorizes the publication of the coordinates of the location mentioned on the web site of the CAPTOR project and its written report, without any reference to names or surnames of the volunteer.

Sixth. The volunteer authorizes (YES/NO) to entities that promote the CAPTOR project to use the images of the different activities that makes as a volunteer of the citizen campaign of ozone that can be used as material for the promotion and dissemination of the project. Reserving the right to cancel this authorization or to prevent that make use of any photo, image or data that considers that it should not be published.

Seventh. The term of this agreement begins on the date of signature and will end when it has carried out the last citizen campaign of ozone in the summer of 2018.

And as proof of conformity, have signed this agreement with duplicate copy to a single effect, in the city and on the date of the header.

Signed by CAPTOR project responsible: Signed by Volunteer:

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Figure 6: Agreement with volunteers (the version we actually used was written in catalan)

PRE-QUESTIONNAIRE AVALUATION

Data of the volunteer:

Volunteer Identification:_____ ID CAPTOR:_____

Name and surname:_____ Address:_____

Town/city:_____ Email address:_____

How did you hear about the project CAPTOR (social networks, social organizations, friends, etc.)?

_____

Participates in some social organization? YES/NOT

If so, what?

Activity: Installation of the sensors at the volunteers houses.

1. Why are you interested to participate in CAPTOR?

I want to learn more about Ozone Pollution and what to do against it

not at all very much

0	1	2	3	4	5	6	7	8	9	10

I want to help raising awareness for the Ozone Pollution in my region

not at all very much

0	1	2	3	4	5	6	7	8	9	10

I want to actively fight Ozone Pollution in my region.

not at all very much

0	1	2	3	4	5	6	7	8	9	10

I am attracted by the idea to be involved in a research project

not at all very much

0	1	2	3	4	5	6	7	8	9	10

Other reasons for participating:

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2. Ozone Pollution and you ...

Do you know the difference between stratospheric ozone and tropospheric ozone? YES/NOT

Do you know that ozone is a pollutant that affects the air you breathe and the territory where you live, e.g. the crops!?: YES/NOT

For how long (approximately) have you been concerned about ozone pollution?

How did you become aware of this problem?:

In general, how would you estimate your knowledge on Ozone Pollution and its origins?

Very low very high

0	1	2	3	4	5	6	7	8	9	10

How would you estimate your knowledge on Ozone Pollution and ways to reduce it?

Very low very high

0	1	2	3	4	5	6	7	8	9	10

Do you have the feeling that you can positively influence the air quality in your region?

Not at all very much

0	1	2	3	4	5	6	7	8	9	10

In what way do you think you can influence the air quality in your region:

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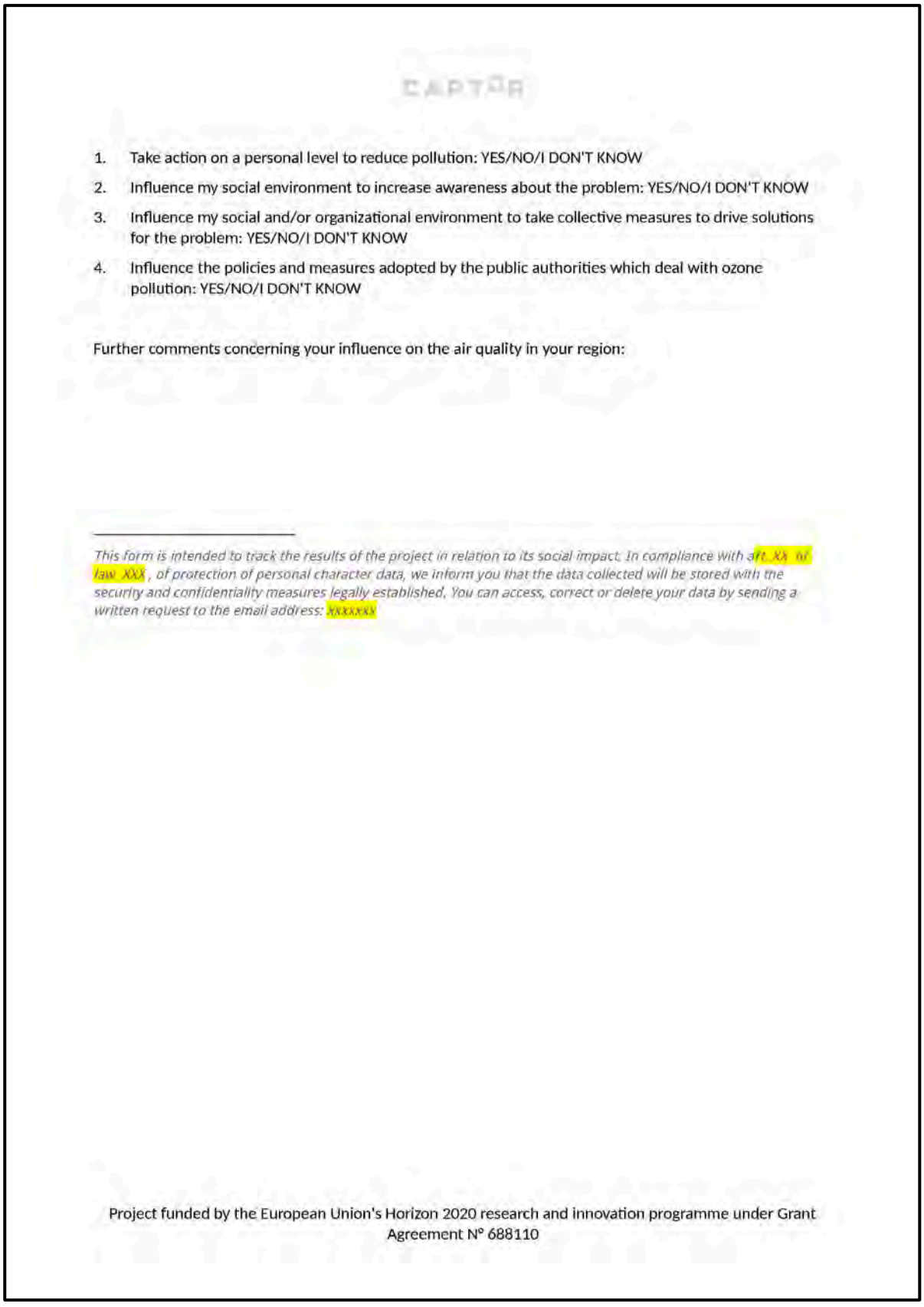

1. Take action on a personal level to reduce pollution: YES/NO/I DON'T KNOW
2. Influence my social environment to increase awareness about the problem: YES/NO/I DON'T KNOW
3. Influence my social and/or organizational environment to take collective measures to drive solutions for the problem: YES/NO/I DON'T KNOW
4. Influence the policies and measures adopted by the public authorities which deal with ozone pollution: YES/NO/I DON'T KNOW

Further comments concerning your influence on the air quality in your region:

This form is intended to track the results of the project in relation to its social impact. In compliance with art. XX of law XXX, of protection of personal character data, we inform you that the data collected will be stored with the security and confidentiality measures legally established. You can access, correct or delete your data by sending a written request to the email address: xxxxxxx

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Figure 7: Questionary evaluation form

To encourage their involvement with the project and go forward from being a host *volunteer* to an *observer* (people who watch data, discuss and take further actions), the following actions will be developed:

- Keep them informed of all the news and events related to the project, as well as the next steps in the campaign.
- Encourage them to join the Air Quality Platform e-mailing list, partner of the project and main coalition of anti-pollution (founded in March 2015 by ecologists in action and other organizations)
- Invite them to the Conference carried out in their areas, in the future by participating in the explanation of the campaign.
- Invite them to give their testimony in the newspapers.
- Offering them a t-shirt of the project

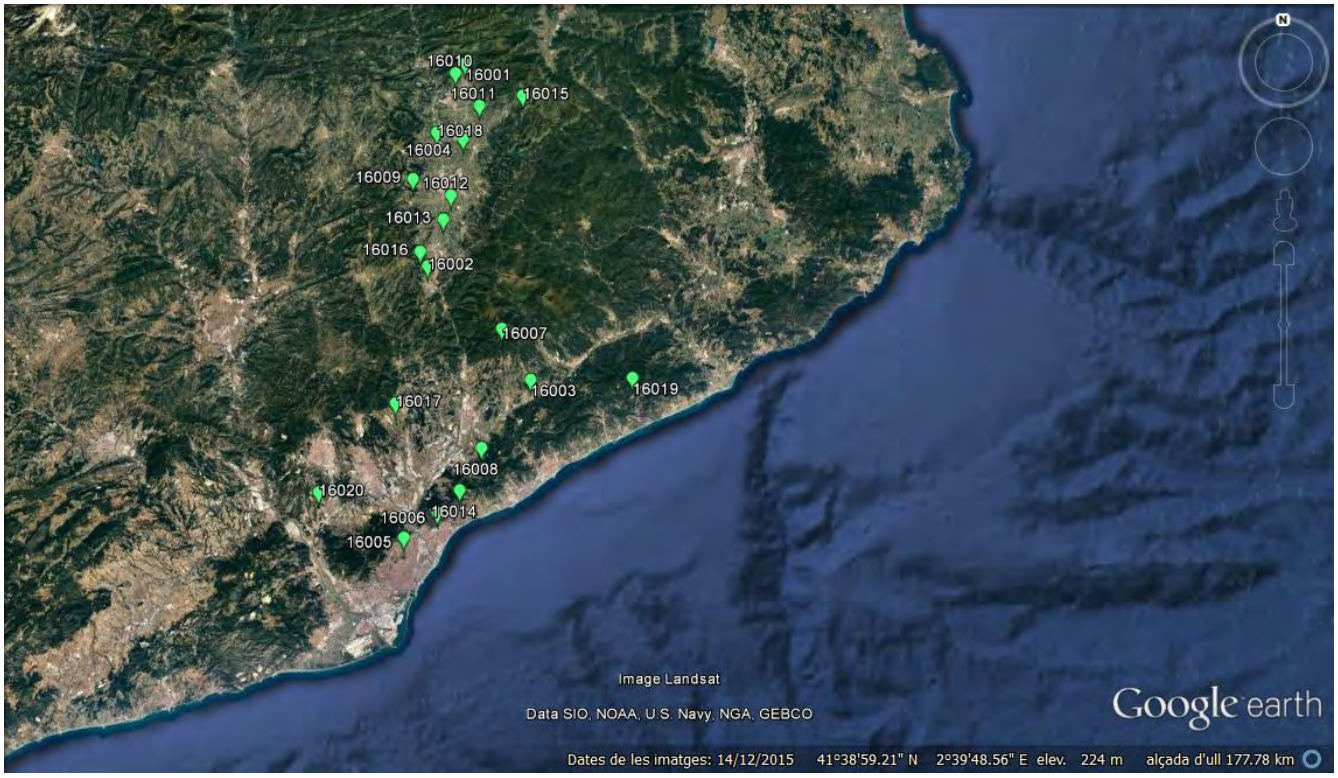

Figure 8: Map with the installed captor nodes

Figure 9: Captors installed at volunteer's homes

Figure 10: Presentation of CAPTOR at Osona (Catalonia, Spaihn), July 15th 2016.

7. Conclusions

In this deliverable, we have provided a common engagement and monitoring plan that can be used to coordinate the involvement of citizens, NGOs and political stakeholders during the different phases of the project and to guarantee the correct flexibility for Italian, Spanish and Austrian test bed areas.

We have provided first a short introduction into state-of-the-art on citizens' motivations in citizen science. Then, we have introduced the concrete plans that we have developed for CAPTOR to engage diversified stakeholders in collaboration and mutual learning. Finally, we have described the specific steps take for the first campaign that is being developed in the Catalonian testbed. This experience has provided us with very useful insights about the difficulties and opportunities that this type of campaigns offers.

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Annex

Phases of the project and engagement levels activities

Timeline		**Target to involve**			
Phases of the project	**Period of the years**	**Roles Makers**	**Roles Host**	**Roles Observers**	**Role Innovators**
I	Jan 2016-Sep 2016	yes	yes	partially	
II	Oct 2016-May 2017	yes	yes	yes	partially
III	June 2017-May 2018	yes	yes	yes	yes
IV	June 2017-Dec 2018	partially	yes	yes	yes