European Commission | Horizon 2020 European Union funding for Research & Innovation

CAPTOR

Collective Awareness Platform for Tropospheric Ozone Pollution

Work package	WP2
Deliverable number	D2.7.
Deliverable title	Release of Website
Deliverable type	DEC
Dissemination level	PU (Public)
Estimated delivery date	M9
Actual delivery date	30/09/2016
Actual delivery date after EC review	15/09/2017
Version	2.0
Comments	

Authors:
Teresa Schäfer, Bernhard Bauch, Ingmar Karner, Barbara Kieslinger, Sylvana Kroop (ZSI)

Project funded by the European Union's Horizon 2020 research and innovation programme under Grant Agreement N° 688110

Document History			
Version	**Date**	**Contributor**	**Comments**
V0.1	24/02/2016	Teresa Schäfer	Outline of contents
V0.2	21/03/2016	Teresa Schäfer, Bernhard Bauch, Ingmar Karner, Barbara Kieslinger, Sylvana Kroop (ZSI)	First version
V0.3	15/04/2016	All project partners; Florian Heigl, BOKU (external review)	Internal Review and feedback from external Citizen Science expert
V1.0	30/09/2016	Teresa Schäfer, Barbara Kieslinger, Ingmar Karner, Sylvana Kroop (ZSI)	Final version ready for EC review
V2.0	30/09/2017	Barbara Kieslinger, Teresa Schäfer (ZSI)	Final version after EC review

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List of Abbreviations

API	Application Programming Interface
APP	Application
CAPs	Collective Awareness Platforms
HTML	HyperText Markup Language
NGO	Non-governmental organisation
URL	Uniform Resource Locator
WP	Workpackage
XLS	Excel

Executive Summary

Description of the work

This deliverable described the CAPTOR website development. It presents the design process as well as the design strategy and finally, the project website itself. Core requirements were defined during the kick-off meeting, such as multilingual interfaces or the integration in the overall CAPTOR infrastructure and corresponding links.
The CAPTOR website has been launched in May 2016 in English and was extended by the multilingual versions one month later. The website is a core dissemination instrument of the project and is continuously updated.

Objectives

The objectives of this deliverable are to describe the process leading to the final project website as well as its technical development. The most important functions and features of the website were defined as:

- General project information
- Displaying the measurement network geo-located on a map
- Tools to share alerts and recommendations for citizens' health and safety
- Project activities and results
- Links and interfaces to related platforms

1. Introduction

In CAPTOR we aim to fight ozone pollution through the collaboration of citizens, policy makers, NGOs and researchers, by installing a low cost monitoring network for ozone pollution and stimulating mutual learning and solution finding with all groups involved.
Active communication to all involved target groups is therefore key for success. In CAPTOR's engagement plan (D4.1) the website is one of the main communication instruments – the first entry point for anyone interested in our project. The central website is a place to find regular project updates and news, as well as the data from the CAPTORS (our ozone measuring nodes) and the discussion around the collected data. The general website is also the entry point to the local CAPTOR platforms that support the local communities in their mother language.
For all stakeholders the understanding of the project aims, a transparent communication of planned steps and activities is vital. Citizens should easily grasp how they can engage with CAPTOR and what are current activities to participate; policy makers should understand what our activities aim for in their region; NGOs and grass roots activists should see how they can benefit from our approach for their own concerns; and related projects and interested researchers should easily understand potential synergies and links to each other's work.
To meet all these requirements a sound concept developed in collaboration with the different stakeholder groups is important. Therefore we applied a user-centred design process from the very beginning, which will be described in this deliverable. This collaborative approach helped us to define navigation structure and editorial content of the CAPTOR website.
Additional requirements were defined to cover sustainability and efficiency: the website needed to be low in costs, easy to implement and maintain, sustained by a big technical community, and provide open access to other tools and databases for later integration. Especially the visualisation of the data from the CAPTORS, the support of different languages, and the responsiveness for mobile devices have been added to the requirements. To address all these requirements the platform "Wordpress" was selected as a basis for the CAPTOR website and is described in more detail in the technical part of this deliverable.

2. Aim of this deliverable

This deliverable documents the conceptualisation and implementation of the CAPTOR website. It shortly introduces the user-centred development process, provides background information on the technical aspects of the website development and gives an outlook into future developments.

3. User-centred website development

As shortly described in the introduction of this deliverable, it was important for the development of the website to involve CAPTOR's target groups in the whole process. This helped to meet the real user needs with the offered content and proposed website structure. All the steps from conceptualisation to publishing of the first version of the website are shown in the following figure 1.

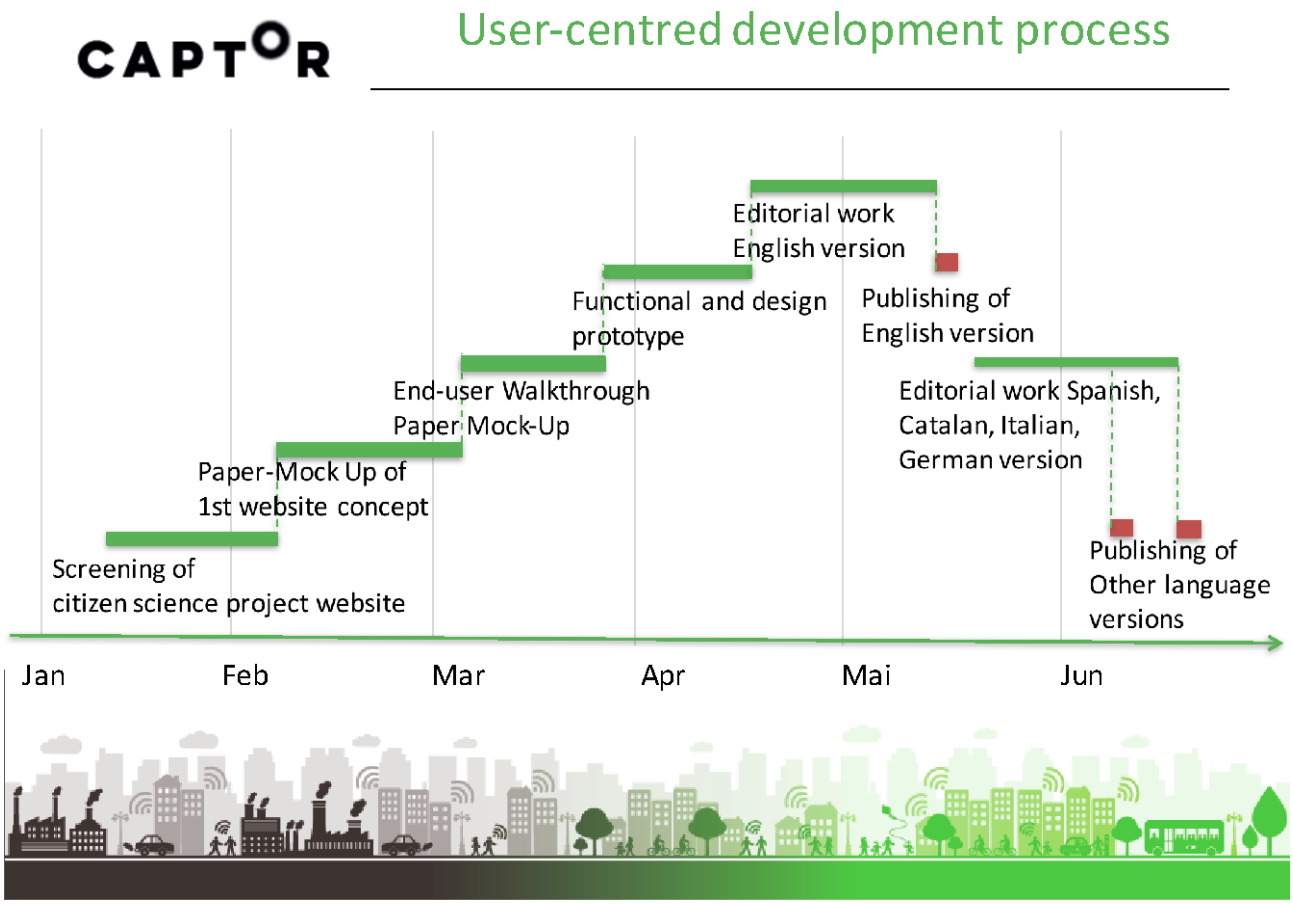

Figure 1: Timeplan of user-centred website development

The first step in the website development process was the screening of websites from related and successful citizen science projects. We wanted to learn from existing projects how they present and structure the information around their transdisciplinary collaboration processes.
Based on this initial screening a first concept was elaborated for CAPTOR and visualised via the MockUp Tool "Balsamique" (https://balsamiq.com/). This **"paper mock-up"** provided first suggestions about:

- which content to put on the CAPTOR Website and
- where and how to link to the CAPs (Collective Awareness Platforms), which were planned to work as Local Community Sites in the three participating countries.

Together with the paper-mock up **three scenarios were developed** (see Appendix of this document): one for citizens, one for political decision makers, one for researchers. Each scenario described the specific target group and a respective information need that should be addressed by the website. These scenarios served as initial starting points for "walking through" the paper mock-up. With this method we wanted to trigger a process of thinking aloud whether the information need was well covered and which potential additional needs should be addressed.

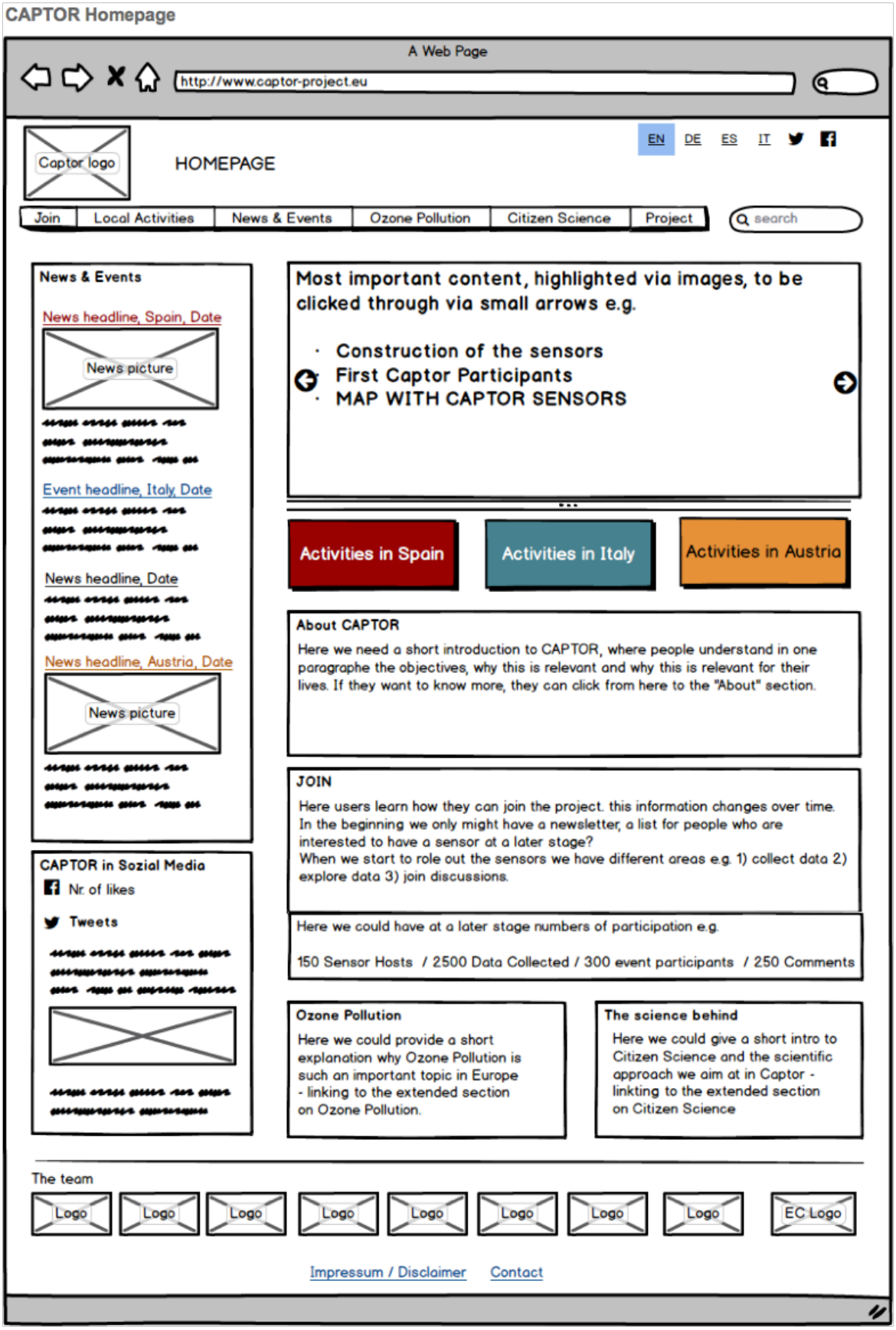

Figure 2: PaperMock-Up

The **scenarios and mock-ups** were then sent to the three partner NGOs (Legambiente, Ecologistas and G2000) in March 2016. The NGOs acted as **key informants**[1] **for citizens and political decision makers**, providing an in-depth knowledge of the target groups, their information needs and also barriers for active engagement. In addition, the mock-ups were presented to two experts in citizen science, who brought in their experience in involving citizens in scientific projects.

The outcomes from this initial involvement step were described in detail in D 2.1. "User Requirements for the CAPTOR platform" and led to an adaption of the navigation - and editorial concept.

The feedback process with the mock-ups also helped to define the scope of the general website and the CAPs or Local Community sites. It was defined that CAPs are the platforms that support the respective local testbed communities. CAPS are developed for the testbed in Austria and the testbed in Italy, in Spain an existing community platform called "Plataforma per la Qualitat de l'Aire" will be extended and used for this purpose. They are implemented in Wordpress, provide of the same look & feel as the general website, but are the platforms to support the local communities in their mother language. They will provide access to the local CAPTOR news, the local measurement data and the discussions around this data from the local community – so they are the mutual learning platforms for those people already involved in our project in the three testbeds.

In a next step the website concept was implemented as **a functional and visually designed prototype in Wordpress** (www.wordpress.org). Therefore the initial design elements - the CAPTOR logo, the colour scheme and the key visual - served as basis to select an existing Wordpress theme, adapt this theme to the CAPTOR needs and amend it with the CAPTOR design elements.
The functional prototype was then filled with first content snippets for each of the main website categories and pages and sent to the whole consortium for further feedback on design and content.
It was also the basis to split up editorial work between partners and define which partner would stand in with his/her expertise to elaborate the website content.

The **website content was then edited in April 2016 and all partners have been involved** in this editorial work. The partners either added the content themselves to the website or sent it to the ZSI team to be added. In May 2016 the final proof reading was conducted by Global2000.

On the **18th of May 2016 the English version of the CAPTOR website was published** under **www.captor-project.eu.** In time for the „CAPs community workshop" organised by the European Commission on the 18th of May and the Citizen Science Conference, which started on the 19th of May and where CAPTOR was presented in two sessions.

[1] Marshall, Martin N. "The key informant technique." *Family practice* 13.1 (1996): 92-97.

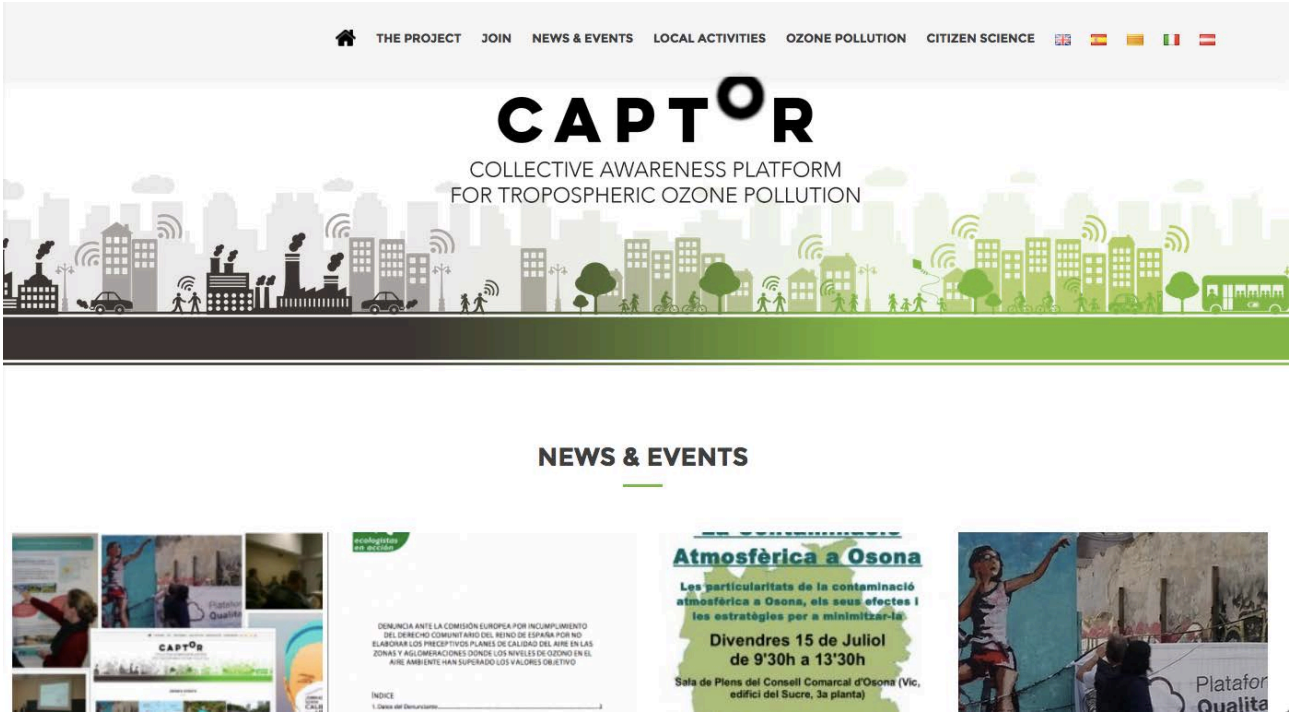

Figure 3 CAPTOR Website captor-project.eu (screenshot from 5th of September 2016)

In May and June the English Version was translated to Spanish, Catalan, Italian and German and implemented in Wordpress. **The Spanish, Catalan and German versions were published on the 15the of June, the Italian version on the 30th of June**.

4. Technical documentation

4.1 Overview

The following technical overview describes the different parts or sub-systems that are used in the CAPTOR technical infrastructure. The diagram shows how these pieces are connected, who is responsible for developing it and who is providing content in the CAPTOR project.

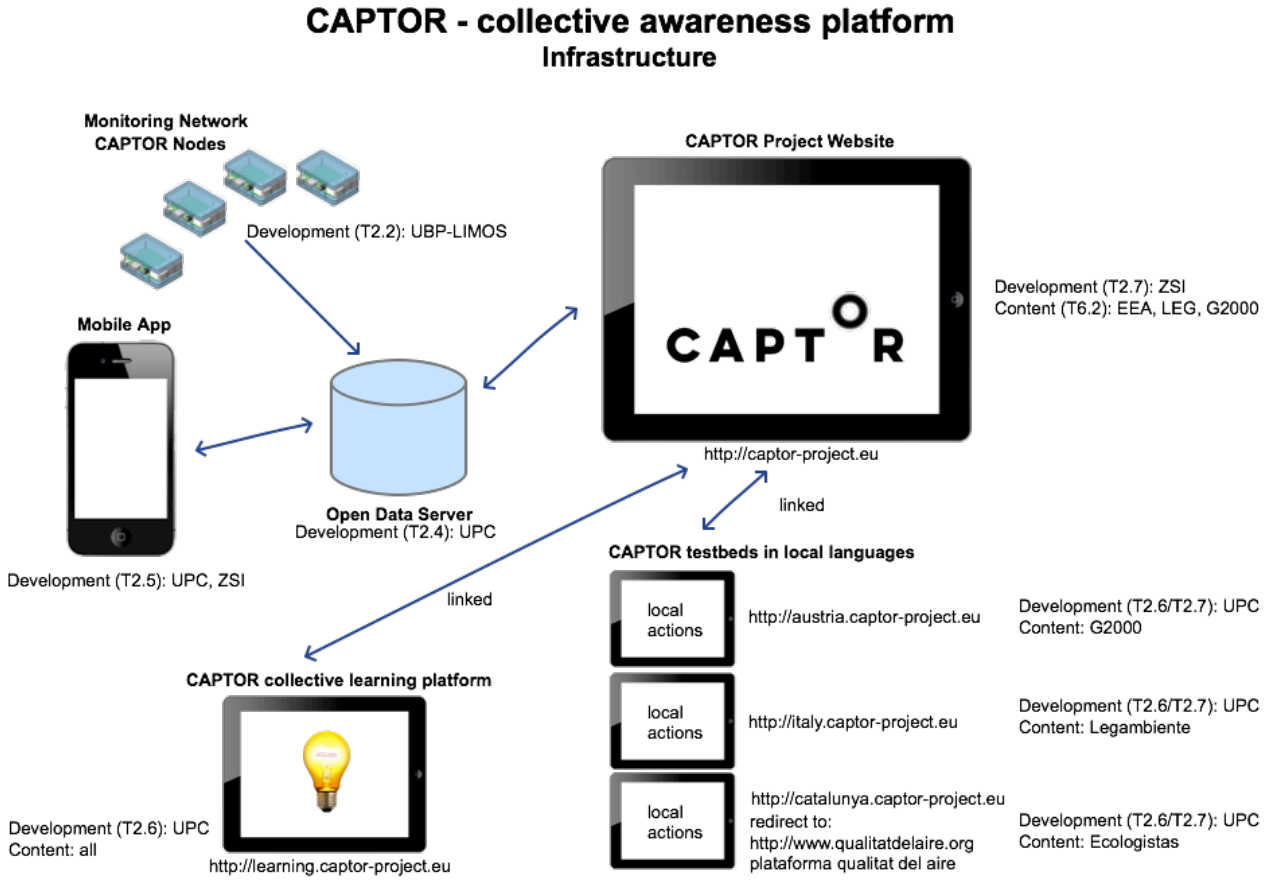

Figure 4: Technical overview

4.2 Technical Website development

For the project website we've chosen to use Wordpress, a widely used open-source blogging software, as a content-management system.
It is well known nowadays and the backend is quite easy to use, which was an important requirement, because there are several editors in the project that do not have technical experiences.
It comes with a bunch of handy plugins that helped us to setup-up the website with all needed features without implementing those from scratch.

The most important features are:

a. responsive theme
b. multi-lingual content and website structure
c. flexible startpage

ZSI provided an "Editor-"account for every project member. With these accounts all partners are able to publish news and events on the platform without any needs of moderation or technical support.

4.2.1 Responsive theme

The custom-made CAPTOR Wordpress theme is based on an existing responsive theme.
This means the website is fully functioning and adopting on different end-user devices like tablets

and smartphones.
The theme also provides basic functions for having multiple sections for different content on the start page.

4.2.2 Multi-lingual content and website structure

A requirement for the website was to have content available in five different languages: English, German, Italian, Spanish and Catalan.
We use two multi-lingual plugins to make all content on the website translateable into these five languages. It's not only the content itself that is translateable, also the navigation structure and all static text fragments are translateable.
For each of the languages covered a partner is responsible and coordinates the translation and publishing process individually.

Navigation structure:
The navigation consists of menu items to: the 6 main topics (the project, join, news & events, local activities, ozone pollution, citizen science), a link to the homepage, and links to the other language version. Each main topic is then split up into subpages that can be directly access via submenu items. An overview of the navigation structure is shown in the following figure 5.

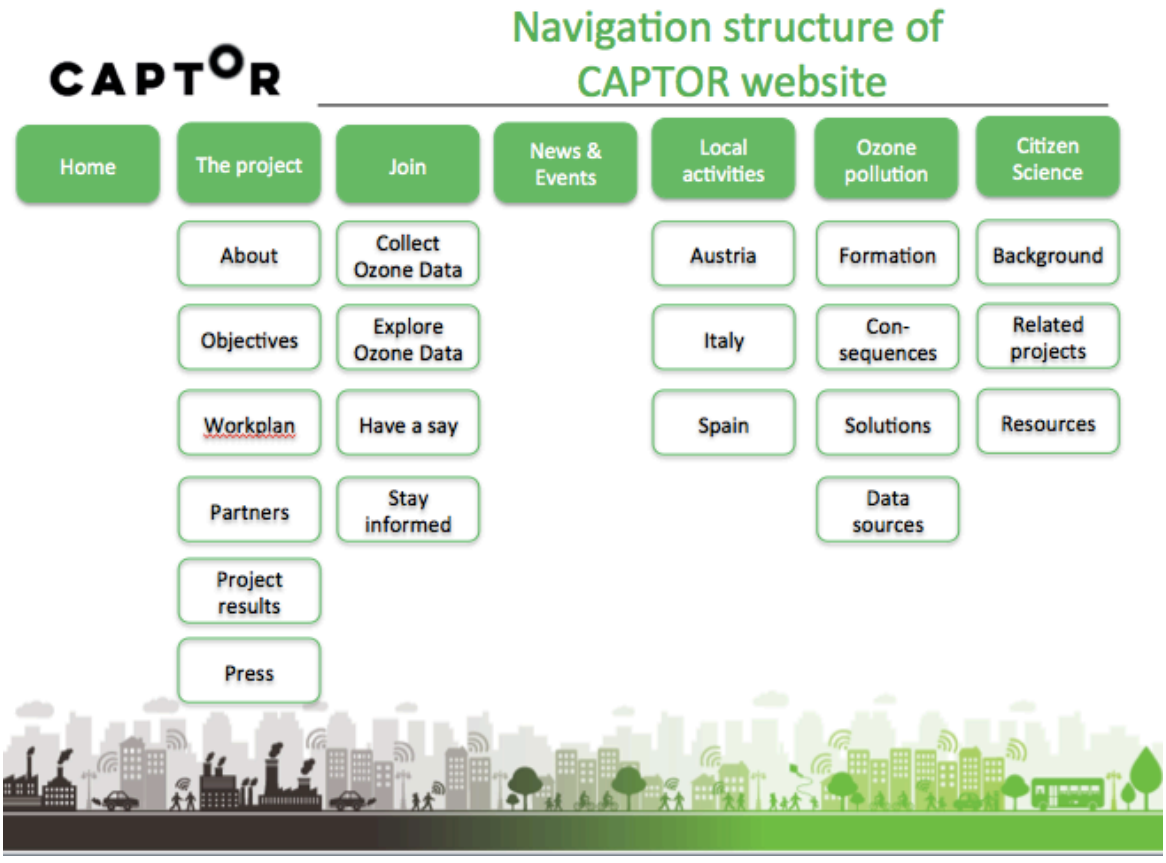

Figure 5: Navigation structure

4.2.3 Flexible start page

The landing page provides its visitors the most important content:

- the latest entries in the News & Event section,
- a brief project description leading the users to the "Join" section,
- two twitter feeds showing tweets from the project itself and tweets from topics related to the project and
- a list of the project partners.

4.2.4 Hosting and Security

ZSI runs a flexible and secure server setup based on open-source software only.
We use Debian Linux for our servers' infrastructure and a virtualisation solution with containers separated by type of service.
The database server wordpress connects to runs in a separate container than the webserver.
For all our servers we do regular in-house and off-site backups in Germany.

5. Website editing plan

5.1 News & events

The consortium defined a plan to continually update the website with project news and events.
This plan foresees that "news and events" are always formulated by the respective partner who is involved or concerned with it (e.g. the news about a workshop is written by the partner who organised the workshop). They are edited in the partner's mother tongue as well as in English, optionally sent to the ZSI team, who then adds it to the website, or added by the respective partner and distributed to the other partners to be translated implemented.
It was defined that news should be at least in English, but ideally we aim for all news being translated to all languages.

5.2 Social media

The CAPTOR consortium also created it's own twitter account @captor_air.
Twitter feeds from captor_air are directly published on the CAPTOR homepage, as well as twitter feeds from projects related to CAPTOR. Twitter feeds can be edited by all consortium partners.
Connections to the facebook accounts of the involved partners will be further explored.

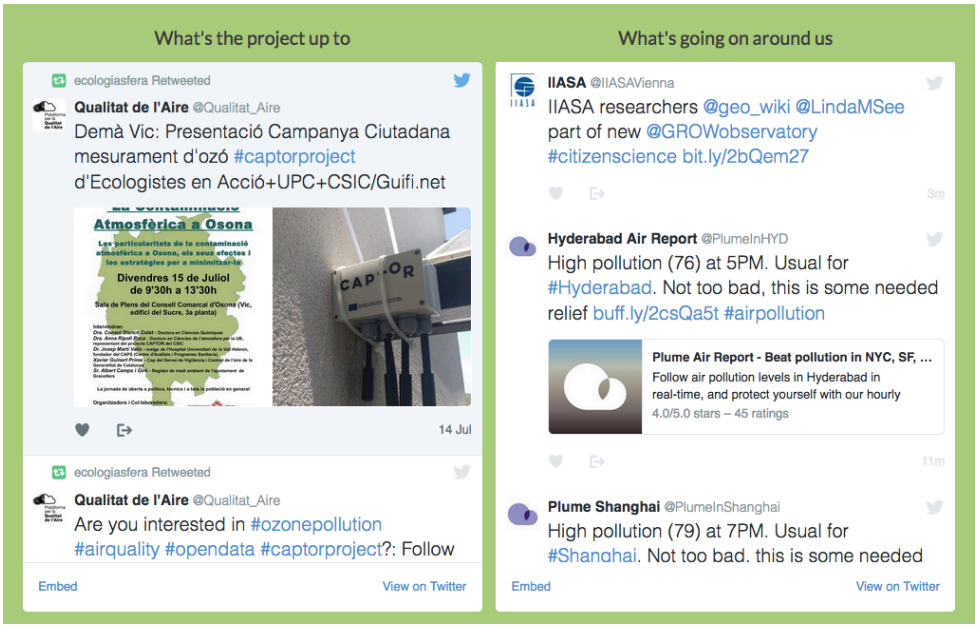

Figure 6: Integration of twitter feeds

6. Outlook

The CAPTOR Website will be continually updated and further developed.

The main new feature that will be added before summer 2017 at the latest is the visualisation of the ozone measurement data coming from the CATPORs in the three test beds. The aim is to provide an overview of collected data in a map view and then provide the details of each specific measurement point. This visualisation will be both, part of the CAPTOR App and the websites (general and local ones). In addition to that all collected measurement data will also be provided via xls-sheet to interested researchers.

By the end of 2016/beginning of 2017 the CAPTOR Website will also provide access to the local CAPs and highlight the usage of the CAPTOR App.

Appendix A

Collection of user requirements for the Website, the local community platforms and the APP

1. Introduction of CAPTOR paper prototypes

For the presentation of the prototypes we suggest to use scenarios that provide an idea which users access our online portals with what kind of information needs:

Scenario 1: Volunteer, who is interested in participating as a host of a sensor or data collector

Imagine you are a citizen from Veneto region. You read about the CAPTOR project in the local newspaper and you are interested to participate. In this case you could go to the local CAPTOR community platform ….

Now talk the participants through this scenario and the prototype for the local CAP from Italy. Show him where he would find all the information about how to participate, the benefits and outcomes from this participation, the connection to other Italian sites and the connection to the wider CAPTOR network (main website)…

Scenario 2: Volunteer, who is interested in being informed about daily Ozone pollution data and wants to follow discussions or get updates from the project

Imagine you are a citizen from Lombardy and your daughter told you that she learned about the CAPTOR project in school. Now you want to download the Captor APP to be regularly informed about Ozone pollution in your region and to participate in ongoing discussion around that. In this case you could download the CAPTOR App …

Now talk the participation through this scenario and the prototype of the CAPTOR App. Which information could she find in the App? What could she do in the App? How could she stay updated?

Scenario 2: Local political stakeholder, wants to get an idea about the discussions of citizens and how to react on that.

Imagine you are a local political decision maker and hear about the CAPTOR activities and a growing number of involved citizens in your region who worry about the Ozone pollution. You want to get more information about CAPTOR, the ongoing discussions and solutions that are discussed. In this case you could go to the local CAPTOR community platform and the general CAPTOR website …

Now talk the participation through this scenario and the prototype from the local CAPTOR community platform and the general website. What would he/she find here?

2. Questions after the introduction of CAPTOR prototypes

- What do you like about planned CAPTOR online activities that were just presented to you?
- What did you not like and do you have suggestions on how to improve this?
- What do you think are the most important questions that we should answer for volunteers on our website, local platforms and the App?
- Which features do you think are most important for volunteers?
- What could we do to motivate their active participation?

- Do you think we should offer different content for different target groups (e.g. schools)? All in local language?

- What do you think are the most important questions that we should answer for political decision makers on our website, local community platforms and the App?
- Which features do you think are most important for political decision makers?
- What could we do to motivate their active participation?