



Deliverable D2.4

Customized platform

for Spanish Demo Case (First Version)



Deliverable Title	Customized platform for Spanish Demo Case (First Version)
Status	Final
Related Work Package	WP2 Enabling technologies
Deliverable lead	Starlab
Author(s)	Camille Pelloquin (Starlab), Cristina Montachini (Altran)
Internal reviewer (s)	Uta Wehn, Ellen Pfeiffer (IHE Delft), Alberto Masa (Altran)
Contact for queries	Camille Pelloquin, camille.pelloquin@starlab.es
Dissemination level	Public
Due submission date	31.08.2017 (M12)
Current submission	31.01.2018 (M17)
Project acronym	Ground Truth 2.0
Grant agreement number	689744
Funding scheme	H2020-SC5-2015-two-stage / Topic SC5-17-2015 / Innovation Actions
Abstract of Deliverable	<p>Ground Truth 2.0 (GT2.0) aims to demonstrate that sustainable Citizen Observatories (COs) are possible. This is done using the innovative approach of combining the social dimensions of citizen observatories with enabling technologies, so that the implementation of the respective citizen observatories in six Demo Cases is tailored to their envisaged societal and economic benefits.</p> <p>The Spanish Demo Case (SDC) aims for the creation of a Citizen Observatory that is constituted in a way that is sustainable over time, where phenological observations provided by the citizens in real time are collected, to form an information base that will allow influencing in public policy decisions in Catalonia, Spain. Its stakeholders have named their own Citizen Observatory “Segueix el Ritme de la Natura”.</p> <p>This report presents the first version of the platform for the SDC Citizen Observatory that was developed jointly with end users during co-design sessions.</p>

Versions and Contribution History

Version	Date	Modified by	Modification details
v.01	14.11.17	Alberto Masa, Cristina Montachini	Initial draft
v.02	26.11.2017	Uta Wehn	Restructuring, comments on report structure
v.02	27.11.2017	Ellen Pfeiffer	Review and comments
v.03	30.11.2017	Alberto Masa, Cristina Montachini	Fully revised draft
v.04	18.12.2017	Nicolas Luque	Update of technical contents based on reviewers feedback



Table of contents

Versions and Contribution History	1
List of figures	2
List of tables	2
List of abbreviations	3
Executive Summary	4
1. Introduction.....	5
1.1 Background.....	5
1.2 Purpose of the document.....	5
1.3 Structure of the document.....	5
2. Summary of Functional Design for the platforms of the Spanish Demo Case	6
2.1 Mission, Vision and Objectives of Segueix el Ritme de la Natura Citizen Observatory.	6
2.2 Functional Design	7
2.2.1 Tools for the development of the platform	7
2.2.2 Data collection and data aggregation	8
2.2.3 Monitoring and assurance of the technical performance of the platform	8
2.2.4 Standardization of data management	9
2.2.5 Enhanced Services	9
3. Platform technical design and integration of components of Segueix el Ritme de la Natura Citizen Observatory.....	10
3.1 Platform architecture and selection of technological tools to use.	10
3.2 Mock-up and feedback.....	13
4. Presentation and description of contents of Segueix el Ritme de la Natura Citizen Observatory platform (first version)	14

List of figures

Figure 1. Monitoring of the infrastructure	9
Figure 2. Architecture of the SRNCO platform (first version).....	10
Figure 3. Navigation flow of the website of SRNCO platform (first version).....	12
Figure 4. SRNCO logo	14
Figure 5. Menu of available functionalities	14
Figure 6. Natusfera Project SDC “Segueix el ritme de la Natura”	15
Figure 7. Head of the homepage of SRNCO website	15
Figure 8. Middle section of the homepage of SRNCO	16
Figure 9. Lower middle section of the homepage of SRNCO website site	16
Figure 10. Bottom section of the homepage of SRNCO website.....	17
Figure 11. Head of SRNCO Twitter page	17
Figure 12. Integral view of the homepage of SRNCO website.....	18

List of tables

Table 1. Necessary tasks to develop the first version of SRNCO from the mock-up.....	13
Table 2. Development of Technical Platform. Technical Design and integration of components.	19
Table 3. Summary of contents of each page of SRNCO website (first version).	25

List of abbreviations

CO	Citizen Observatory
SDC	Spanish Demonstration Case, Spanish Demo Case
SRNCO	"Segueix el Ritme de la Natura" Citizen Observatory, the Citizen Observatory of Catalonia, Spain
URTT	User Requirement Tracking Tool



Executive Summary

Ground Truth 2.0 (GT2.0) aims to demonstrate that sustainable Citizen Observatories (CO) are possible. This is done using an innovative approach combining the social dimensions of citizen observers with enabling technologies so that the implementation of the respective citizen observatories is adapted to the social and economic benefits anticipated.

The Spanish Demo Case (SDC) aims for the creation of a Citizen Observatory that is constituted in a way that is sustainable over time, where phenological observations provided by the citizens in real time are collected, to form an information base that will allow influencing in public policy decisions in Catalonia, Spain. Its stakeholders have named their own Citizen Observatory “Segueix el Ritme de la Natura” (SRNCO). This document describes how, starting from the functional design of the SDC, going through the technical design and integration of IT components, the first version of the SDC platform was developed.

1. Introduction

1.1 Background.

The Ground Truth 2.0 project will deliver the demonstration and validation of six scaled-up citizen observatories in real, operational conditions, with four European and two African demonstration cases. It will demonstrate the technological feasibility, the sustained use and the societal and economic benefits of such citizen observatories. The ultimate objective is the global market uptake of the concept and enabling technologies.

One of the main objectives of WP2¹ is to enable adequate customization, deployment and upscaling of the required technical solutions in each demonstration case. Considering the different starting points and the differences in the cases' requirements, the aim is to set up a technological architecture in each case, taking into account both common modules as well as particular ones.

Within this frame, the Task T2.1, Technical design and integration of components per demonstration case, will settle the specific requirements of each demonstration case, based on the user's requirements made during the work carried out as Task T1.3, Functional design. The Task T2.1 is being developed with the purposes of: make the technical design for each demonstration case; develop standard integration between demonstration cases; and configure the technological platform in each demonstration case.

1.2 Purpose of the document.

This document is one of the Task T2.1 outputs. It describes how, starting from the functional design of the SDC, going through the technical design and integration of IT components, the first version of SDC platform was developed.

1.3 Structure of the document.

Section 2 describes the results of the planning carried out by the community of stakeholders that participate in the SDC. They, through co-design work sessions, defined and validated the Vision, Mission and Objectives of SRNCO and the customized Functional Design for the SDC, following the guidelines proposed by WP1.

Section 3 presents the platform architecture validated by the CO community of the SDC, designed to satisfy the user requirements of the customized Functional Design, the selection of technological tools and the mock-up developed to obtain feedback from the community.

Finally, Section 4 presents and describes the website of the first version of SRNCO platform, created based on the customized Functional Design and the feedback from the community of the SDC.

¹ Ground Truth 2.0 - Environmental knowledge discovery of human sensed data, D0.A extract FINAL for kick-off, 1.3.3. WT3 Work package descriptions



2. Summary of Functional Design for the platforms of the Spanish Demo Case

During the co-design sessions with local stakeholders, different activities were carried out to identify the challenge of the Spanish Demo Case Citizen Observatory and to define the Mission, Vision and Objectives. Then, the functional design for accomplishing these premises was developed.

2.1 Mission, Vision and Objectives of Segueix el Ritme de la Natura Citizen Observatory.

The representatives of the Catalan stakeholders who are part of the co-design group validated, in the third co-design session, the Mission, Vision and Objectives of SRNCO, as presented below²:

Vision: "Segueix el ritme de la natura" will be, in the digital world, a place that allows citizens, managers and politicians to access and share phenological information. Such place will allow communication among stakeholders and will be sustainable in time.

Mission: The "Segueix el ritme de la natura" Observatory will be the place where phenological data, in particular that collected by citizens, will be stored and made accessible in real time, with the aim of influencing decision making.

Objectives:

1. To create an open citizen science platform dedicated to store, comment, share and disseminate facts, opinions and proposals about the effects of climate change on nature to influence decision-making related processes.
 - (a) To disseminate proposals related to the effects of climate change on nature and promote a space to discuss them
 - (b) To share opinions with other users regarding the effects of climate change on nature
2. To generate useful information for understanding the impact of climate change on nature, through data collection by citizens, following guided observation protocols,
 - (a) That allows sharing and validation the observations collected.
 - (b) That allows accessing to relevant information (data, studies, etc.)
 - (c) That motivate and promote relevant educational activities.
3. To establish synergies with existing platforms and to ensure that the Observatory becomes a single and full reservoir of Spanish information and linked organizations related to the effect of climate change on nature
 - (a) To share self-generated content as well as the observers' contributions.
4. To promote the sustainability of the Observatory beyond the end of the project.

² GT2.0-Deliverble 1.5 Functional Design of the citizen observatories, v2.0, 4.4.1 Challenge, mission, vision and objectives Spain, page 44.

2.2 Functional Design

In GT2.0, functional design is defined as a method to translate the stakeholders' requirements into design features (see D1.5). A generic "Story Map"³ was proposed to guide the development of a customized story map for each DC. It was also proposed that the user requirements are stored in a "User Requirement Tracking Tool" (URTT)⁴ to allow for easy tracking of their status and to identify the corresponding layer in the platform architecture.

Departing from the generic Story Map as reference point, the co-design group of the SDC, working in co-design sessions, developed their own Story Map⁵ and URTT from the perspective of the future users of the SRNCO, citizens, scientists and policy makers. The customized and validated entries in the URTT⁶ form the basis for the deployment of the platform architecture of SRNCO.

The functional design for the SDC platform focuses on the local impacts of climate change on nature. The first version of SRNCO platform is supported by existing technologies such as Natusfera and WordPress platforms, to build an active community to collect and validate phenological data and disseminate these data to influence climate-related decisions in Catalonia.

The SRNCO builds on two existing communities, integrated by highly-committed citizen scientists observing selected phenological variables along the year to record its states:

1. The FenoDato community that is currently collecting phenological data, focusing on a certain number of representative species. This community is coordinated by the Spain National Meteorology Agency.
2. The Fenocat community, coordinated by Meteocat, the Meteorological Agency of Catalonia.

The SRNCO platform is conceived as a central community portal, to give access to the different components of the technology supporting the observatory.

2.2.1 Tools for the development of the platform

WordPress

WordPress⁷ is a CMS (Content Management System) focused on the creation of any type of webpage. Originally it reached a great level of popularity in the creation of blogs, to become over time one of the main tools for the creation of commercial web pages. It is developed in PHP for environments running MySQL and Apache, under the GPL license and it is open source.

To operate, WordPress has been installed on an Azure cloud web (which is described below).

For SRNC, the following plugins have been set on WordPress that provide functionality to the user stories of the first stage.

- All in One WP Security: It is used for the security of the web page. Different configuration options can be controlled, such as include captcha in different registration sites, change the access path to access to the backend of the web, set options to avoid search engines.

³ The generic Story Map is fully described in Ground Truth 2.0 "Deliverable D1.5, Functional design of the citizen observatories".

⁴ The User Requirement Tracking Tool is described in Ground Truth 2.0 "Deliverable D1.6, Management and tracking tool of user requirements".

⁵ GT2.0-Deliverable 1.5 Functional Design of the citizen observatories, v2.0, 4.4.2 CO Story Outline Spain, pages 44-45.

⁶ GT2.0 WP1. Spain URTT.

⁷ <https://wordpress.org/>



- Elementor: It is a plugin used for web pages layout, using different Drag and Drop components and customizing the configuration, avoiding modifying the CSS styles manually.
- MailMunch: It is a free plugin, which allows to subscribe and store information in a list that can be exported to a CSV format and opened it with Excel.
- Jetpack: It is a plugin that allows to make backups, social sharing, to have the WordPress features. Currently, it is being used to show the Twitter account on the main page.

Azure

Microsoft Azure is an open source and flexible cloud platform that allows compiling, implement and manage applications quickly, in a global network of data centres managed by Microsoft.

For the SDC the Standard S2 plan has been used:

The standard plan has been designed to implement production workloads. The integrated network load balancing functionality automatically distributes traffic between the versions. This plan also includes automatic scaling that can automatically adjust the number of versions of the virtual machine that are running to meet traffic needs. The standard service plan with Linux runtime environments support Web App for Containers.

2.2.2 Data collection and data aggregation

In the SDC, for the Data collection and data aggregation the **Natusfera** technological tool is used.

Natusfera is a platform for creating citizens science projects based mainly on recording species observation. It is a branch of the e-Naturalist platform.

The citizens with a user profile can provide tagged observations that might be accompanied by pictures. The system can add attributes on the species tagging that can be ideal to focus on a particular aspect like phenology.

2.2.3 Monitoring and assurance of the technical performance of the platform

The monitoring and assurance of the performance of the platform is made using the tools that Azure provides (Figure 1). These tools allow you to monitor, for example, the CPU, Free Space, and Disk Space.

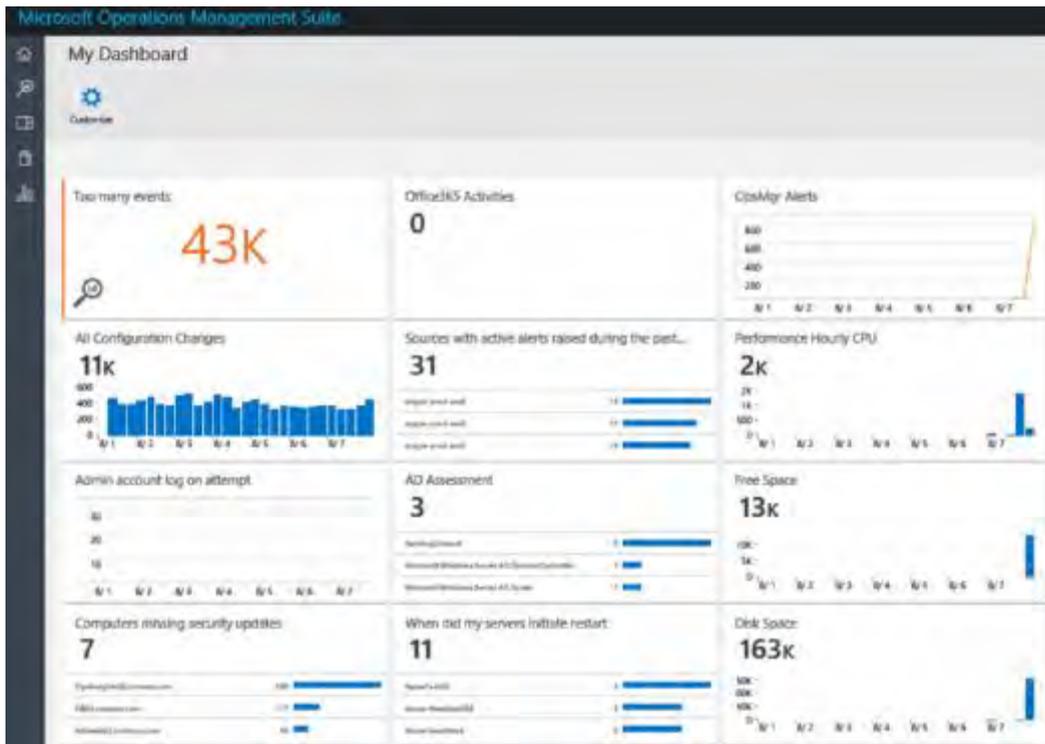


Figure 1. Monitoring of the infrastructure

2.2.4 Standardization of data management

To be implemented in the second version of the platform.

2.2.5 Enhanced Services

To be implemented in the second version of the platform.



3. Platform technical design and integration of components of Segueix el Ritme de la Nature Citizen Observatory

3.1 Platform architecture and selection of technological tools to use.

The definition of the architecture of the CO platform was made taking into account the SDC URTT⁸ and the proposals of D2.1⁹. The co-design group validated this in the third and fourth co-design sessions. Figure 2 is a schematic view of the architecture of this platform.

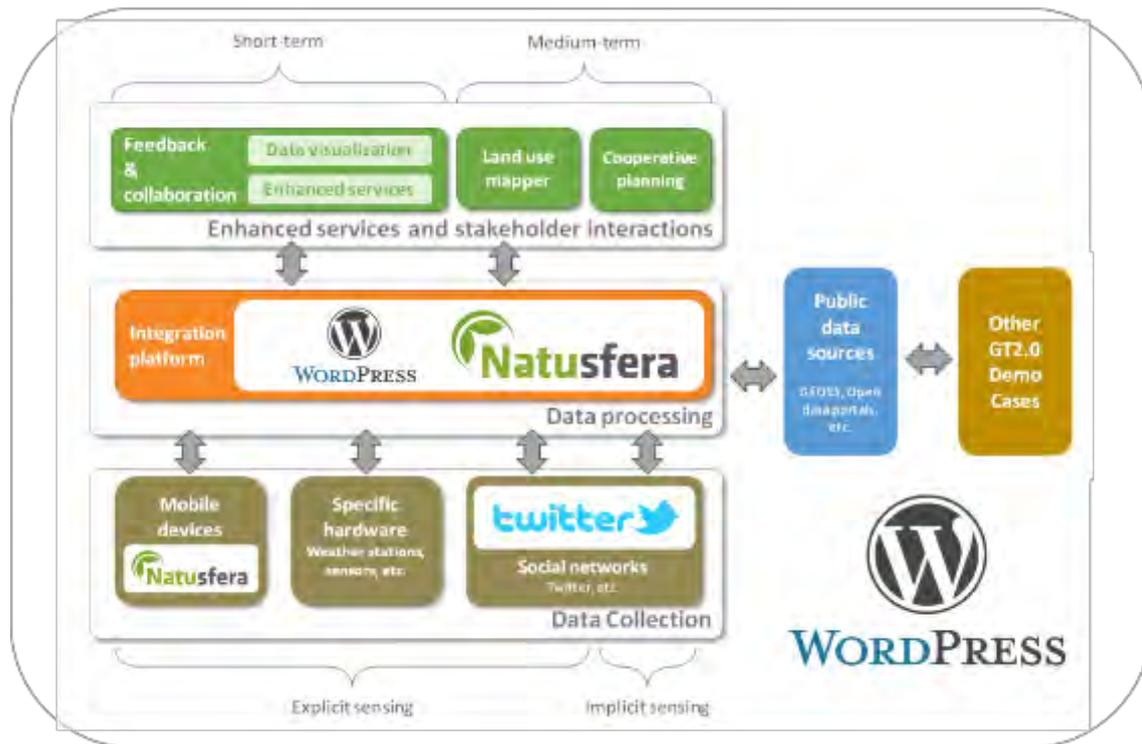


Figure 2. Architecture of the SRNCO platform (first version)

Two tools were selected for the implementation of the SRNCO platform first version: Natusfera and WordPress.

- Natusfera is a digital platform, open and easy to use, that requires no technical knowledge from those that want to record and share observations of nature, meet other naturists and learn about the natural world. People can register, download the app and start creating their own projects or virtual field notebooks. All users can help each other to identify species and to develop multiple projects. Natusfera offers many features to collect and validate local observations on desktop and mobile devices. It provides tools to build the community and allows information exchanges and

⁸ GT2.0-Deliverble 1.5 Functional Design of the citizen observatories, v2.0, 4.4.4 User-generated Story Map, Spain Demo Case, pages 47 - 48.

⁹ Ground Truth 2.0 Deliverable D2.1, Technical Design and Integration of Components.

knowledge, such as fora. It has tools to organize activities and meetings and to help regroup community members throughout the territory. The Natusfera platform has also tools to debate local outputs of the observatory and its use for influencing decision makers.

- WordPress is a free and open-source CMS based on PHP and MySQL for create websites, blogs or applications.

The selected architecture for the integration of components in the first version of the SRNCO platform meets 2 of the 3 sections: Data Processing and Data Collection through the implementation of the selected technological tools that give functionality to the Observatory.

Enhanced services and stakeholder interaction is linked with Data Processing including, in the first stage, the collaboration and integration through Natusfera technological tool that allows citizens to carry out observations and to interact with the SRNCO via the specific projects created in Natusfera to make occasional and recurrent observations in Catalonia.

The public data gathered by Natusfera is supported by gbif.es. GBIF—the Global Biodiversity Information Facility—is an open-data research infrastructure funded by the world’s governments and aimed at providing anyone, anywhere access to data about all types of life on Earth.

With regard to enhanced services and stakeholder interactions in the midterm, it is expected to implement it in the second stage. The development will be carried out by implementing in the WordPress technological tool everything related to the map integration and visualization among the other services of the Observatory.

The implementation of the specific architecture defined for the platform is completed, in the first version of the SRCNCO, with elements of Data Collection among which the use of mobile phones services through the Natusfera application that makes it possible to make real time observations, upload data and participate and disseminate in social networks such Twitter.

The interaction between the 3 sections of the specific architecture is dynamic and foresees a continuous updating of the SRNCO functionalities supported by the selected technological tools that allow the navigation flow in the Observatory.



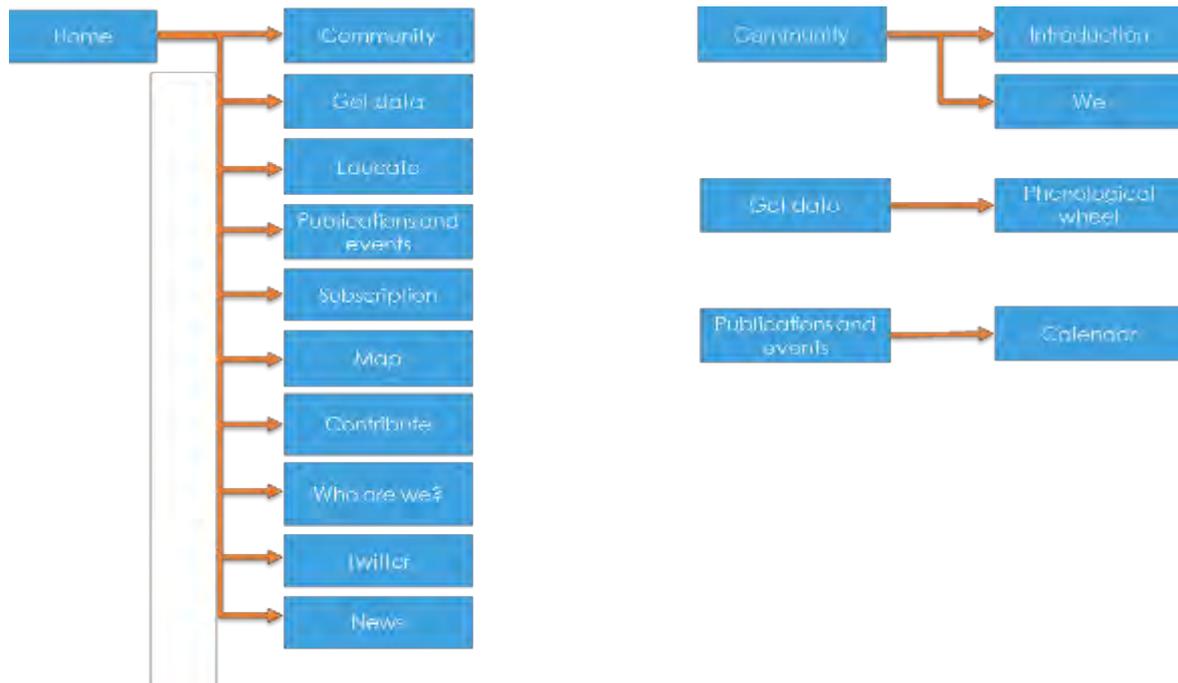


Figure 3. Navigation flow of the website of SRNCO platform (first version)

The navigation flow (Figure 3) was developed in compliance with the D2.1 Technical Design for the development of the first version of the SRNCO platform in which an entry flow is proposed to the SRNCO from the citizens' different profiles in which these users are guided in order to discover the Observatory and its functionalities.

- Point of contact of the citizens with the SRNCO Home from different perspectives of access and usage preferences, according to the user's preference towards the community; data recognition; educate; publications and events; subscription; space reserved to an observation map; contribute: through Natusfera technological tool; how are we; Twitter and news that will be developed according to the specific architecture essentially implemented from WordPress.
- The navigation point in the SRNCO through the access to Community and later access to the introduction and presentation of the space that present the institutions that compose the "we" section.
- The navigation point in the SRNCO through publications and events that later allows to link and access to the calendar of phenological and Observatory's events.

Thus, the navigation in the SRNCO is carried out according to the priorities defined by the co-design group, supported by the specific architecture of the platform and respecting the different perspectives of navigation and satisfying the navigation needs and platform connection.

3.2 Mock-up and feedback

During the fourth co-design session, the co-design group had the opportunity to examine the content of different platform prototypes. They tested the different pages that contain the user requirements. In this session, the co-design group defined the prioritized user stories tracked in the SDC UR TT for the first version of SRNCO. The user stories with priority 2 will be postponed for the final version of the platform.

The main feedbacks received during the prototypes evaluation period are summarized as follows.

1. The CO co-design group validated the contents and navigation flow of the website of SRNCO platform (first version). Figure 2 is a schematic presentation of the navigation flow of the validated prototype.
2. The validated prototype showed the concept of SRNCO platform as central co-design group portal for FenoDato and Fenocat. The mock-up showed also how the platform redirects to and receives outcomes from Natusfera.
3. A name for the CO was discussed and finally the name “Segueix el ritme de la natura” was coined and it was decided to register the internet domain ritmenatura.cat
4. The co-design group agreed on a list of tasks needed to complete the first version of the SRNCO platform. The Table 1 shows these tasks and the responsible organization.

Table 1. Necessary tasks to develop the first version of SRNCO from the mock-up

Task	Tools	Responsible
Register the internet domain ritmenatura.cat	MS Azure DNS	CREAF
Cloud Server Configuration	MS Azure	ALTRAN
Link-up of WordPress and Natusfera	WordPress Natusfera	STARLAB
Transfer mock-up contents to ritmenatura.cat	WordPress	ALTRAN
Generate the project “Segueix el ritme de la natura” within http://natusfera.gbif.es/ , with a section for occasional observations and another section for structured observations. Link-up the project to ritmenatura.com for direct access from this website.	Natusfera WordPress	ALTRAN
Design of SRNCO logo. Design of web style page for ritmenatura.cat. Validation of both designs with stakeholders.	WordPress	ALTRAN
Coordination, redaction and revision of content (texts and figures) of ritmenatura.cat website pages. Validation of contents with stakeholders.	WordPress	ALTRAN CREAF



4. Presentation and description of contents of Segueix el Ritme de la Nature Citizen Observatory platform (first version)

The first version of SRNCO platform was officially launched on the www on November 2017 in the domain <http://ritmenatura.cat/>.

The pages of the website are written in Catalan, one of the 2 official languages of Catalonia, which is the geographical space where the Spanish demo case is implanted.

The description of the SRNCO sections allows linking the implementation of the work carried out in the 3rd and 4th by the co-design group with the Technical Design implementation and the Functional Design to apply the selected technological tools according to the specific architecture of the platform.

The start of activities of the first version development of the SRNCO platform was exposed in the previous section through the Table1. Necessary tasks to develop the first version of SRNCO from the mock-up.

Subsequently, a monitoring of the proposed tools exercise allowed the connection of the Headlines and Sub headlines selected by the co-design group with the technological tools to be implemented in the first version of platform and for compliance with the identified functionalities. This is included in Table 2. Development of Technological platform. Technical Design and integration of components.

In the upper left corner of the homepage, we can see the SRNCO logo (Figure 4):



Figure 4. SRNCO logo

This logo has the same colours as the “Ground Truth 2.0” logo and the same symbol.

The home page of SRNCO presents clearly defined sections to contain information, data and the interaction sought by the SRNCO to attract the citizen participation.

Following from left to right, we could see the “menu” of functionalities (Figure 5) that are available in the first version of the platform:



Figure 5. Menu of available functionalities

The first version of the platform implements the Headlines and Sub headlines prioritized for the SRNCO. Supported by the specific architecture proposed and developed with the WordPress technological tool, they enable the functionalities identified in the 3rd and 4th sessions by co-design group. The home page and the menu section configure the starting point, from different user perspectives, for navigation in the SRNCO platform.

Contribute: It proposes the engagement of the citizens with the SNRCO and to make observations. The Natusfera technological tool has been configured specifically with the SDC projects and it allows making nature observations in Catalonia.

The integration of Natusfera allowed to configure the projects of the SDC in a specific way. In a general project the SRNC is presented (<http://natusfera.gbif.es/projects/ritmenatura-cat-segueix-el-ritme-de-la-natura>); a specific subproject to carry out occasional observations (<http://natusfera.gbif.es/projects/ritmenatura-cat-observacions-ocasionals>) and a specific subproject to make recurrent observations (<http://natusfera.gbif.es/projects/ritmenatura-cat-observacions-recurrents>) that allow the citizens to make contributions and access to open monitoring data of nature in Catalonia.

The view presents a large picture of the citizen observatory, followed by a map. There is a link to a form where citizens can share their observations.

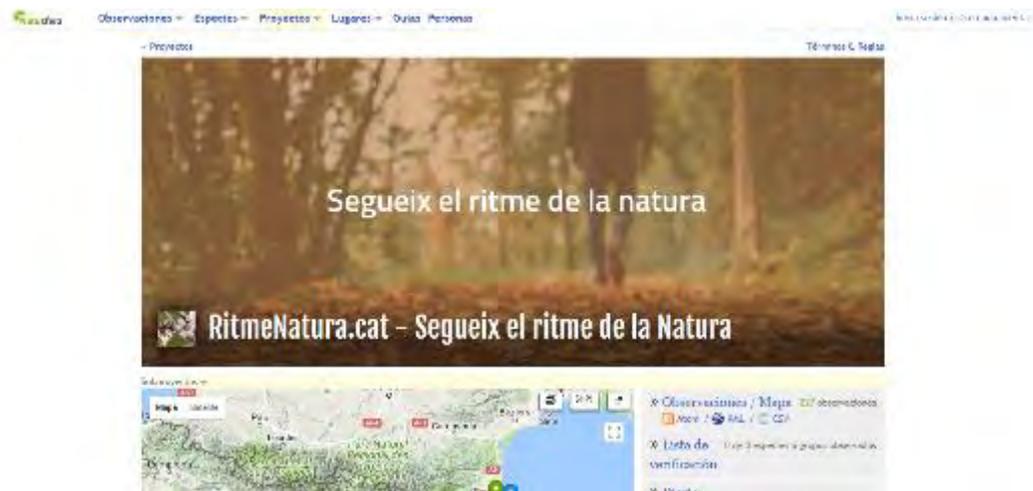


Figure 6. Natusfera Project SDC “Segueix el ritme de la Natura”

Who are we?: The citizens of the platform access to this section to know the purpose of the SRNCO and the concept of phenology adopted by the SDC co-design group.

The sections “contribute” and “who are we” are shown in Figure 7 below.



Figure 7. Head of the homepage of SRNCO website

What do we do?: This section is prepared to host an explanatory video that will allow to discover the value of the contributions.





Què fem?

La fenologia és l'observació dels canvis estacionals en les plantes i els animals, tals com la floració, l'aparició d'insectes i la migració de les aus. Els canvis en els ritmes de la natura donen molta informació als científics sobre els efectes que el canvi climàtic produeix sobre els ecosistemes naturals, però calen sèries temporals llargues, homogènies, validades i ben repartides geogràficament per tot el territori. Es necessiten ciutadans amants de la natura que vulguin aprendre a fer observacions fenològiques i ajudar els científics a estudiar els impactes del canvi climàtic sobre les plantes, els animals i els éssers vius en general.

Figure 8. Middle section of the homepage of SRNCO

The lower middle section of the homepage includes news presenting a twitter feed (@RitmeNatura) and upcoming activities and other communications.



Figure 9. Lower middle section of the homepage of SRNCO website site

Subscribe: This is a subscription space to the SNRCO. In the first version of the platform, citizens are asked to insert their name and email address to contact them shortly.

Introduction: It is a space for the presentation of the Vision, Mission and Objectives of the SRNCO, validated by the co-design group. Brief introduction to GT2.0 project.

We: Presentation of the institutions of the co-design group with members of institutions dedicated to phenology, climate change, public policy managers and citizens. It also presents a point of navigation to the web pages of the institutions that make up the SDC.

Get data: In the first version of the platform, a phenological Wheel is presented to make observations of nature following the seasonal rhythm of nature.

Educate: Space to be developed in the second version of the platform.

Publications and events/Calendar: Space for the dissemination of activities related to the phenology and the events of the SRNCO.

Map: Space to be developed in the second version of the platform.

Footer: Overview of demo case partners.



Figure 10. Bottom section of the homepage of SRNCO website

A link from the SRNCO to @RitmeNatura Twitter [<https://twitter.com/ritmenatura>] was specifically set up for the SDC dissemination Figure 11.



Figure 11. Head of SRNCO Twitter page



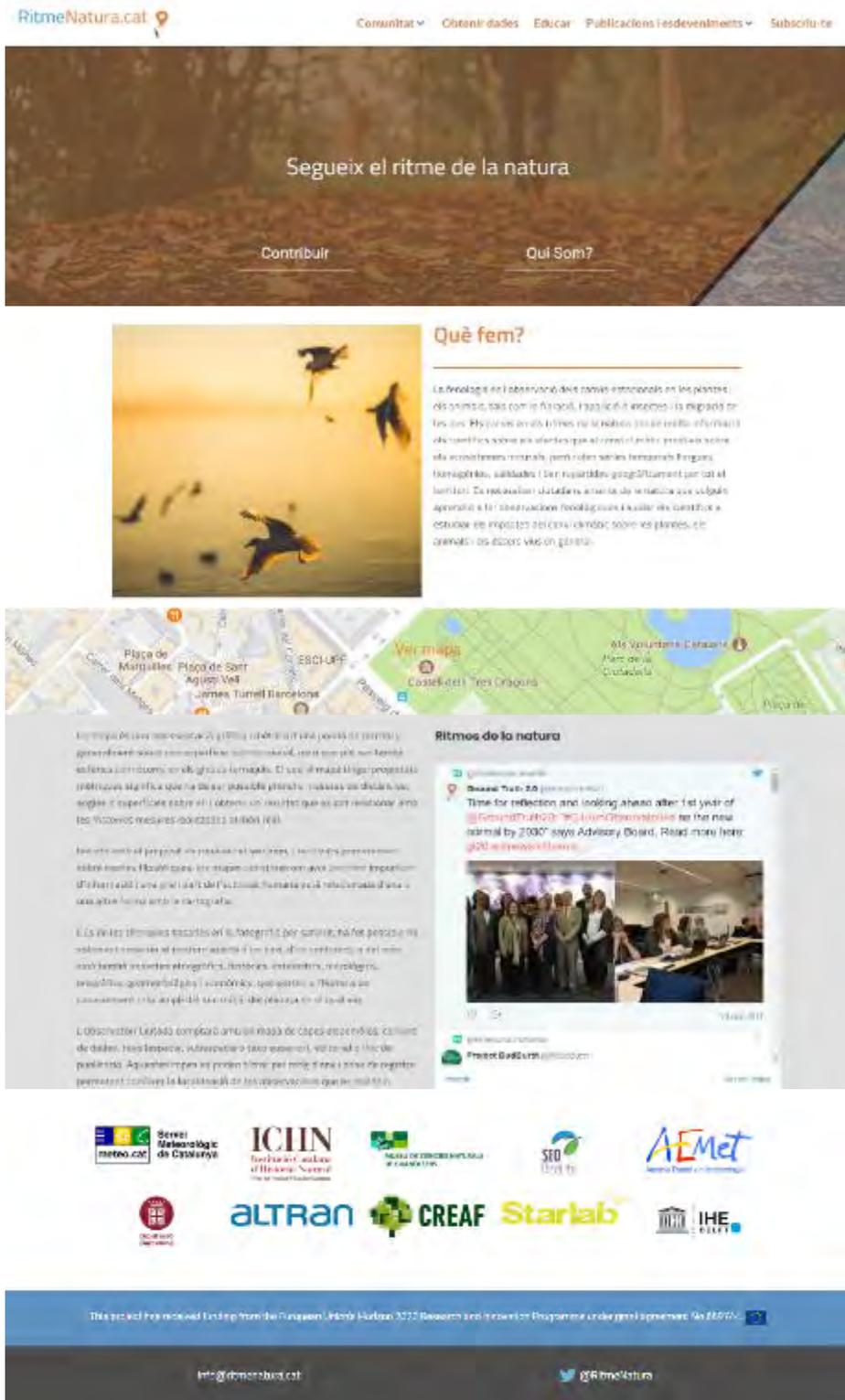


Figure 12. Integral view of the homepage of SRNCO website

Table 2. Development of Technical Platform. Technical Design and integration of components.

FIRST VERSION PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
DISCOVER THE OBSERVATORY	Read portal/info pages	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Watch videos	no	final platform	NA	NA
	Play games/do quizzes	no	final platform	NA	NA
	Access public data/materials	yes	NA	Word-Press (Api Natusera)	http://ritmenatura.cat/contribuir/
	Take guided tours	no	final platform	NA	NA
JOIN THE COMMUNITY	Register account/agree terms	yes	NA	Word-Press (plugin)	http://ritmenatura.cat/solicitud-suscripciones/
	Provide information required for user assessment/verification	no	final platform	NA	NA
	Create profile & link to other users	no	final platform	NA	NA
	Choose notifications channels	no	final platform	NA	NA



FIRST VERSION PLATFORM IMPLEMENTATION					
HEAD-LINES	SUBHEAD-LINES	YES/NO	WHY NOT?	TOOL	WHERE?
SUBMIT AND PROCESS DATA	Submit open observations for exploration and discovery	yes	NA	Word-Press (Api Natusfera)	http://ritmenatura.cat/contribuir/ http://natusfera.gbif.es/projects/ritmenatura-cat-segueix-el-ritme-de-la-natura
	Send notifications to “go and observe”	yes	NA	Word-Press (plugin)	http://ritmenatura.cat/contribuir/
	Submit observations according to research protocols and instructions	yes	NA	Word-Press (plugin)	http://ritmenatura.cat/roda-fenologica/
	Add tags and meta-data	no	final platform	NA	NA
	Provide comments on observations	yes	NA	Word-Press (Api Natusfera)	http://ritmenatura.cat
	Integrate external data sets	yes	NA	Word-Press (Api Natusfera)	http://natusfera.gbif.es/projects/ritmenatura-cat-observacions-ocasionals http://natusfera.gbif.es/projects/ritmenatura-cat-observacions-recurrents

FIRST VERSION PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
SUBMIT AND PROCESS DATA	Validate/process scientifically	yes	NA	Word-Press (Api Natusera)	
EVALUATE RESEARCH ACTIVITIES OR POLICY/ STEWARDSHIP RESULTS	Rate and review activities	no	final platform	NA	NA
	Launch or respond to surveys	no	final platform	NA	NA
	Post or review results data	no	final platform	NA	NA
	Discuss results	no	final platform	NA	NA
TRAIN AND LEARN	View instruction videos	no	final platform	NA	NA
	Access/download manuals and field guides	yes	NA	Word-Press (plugin)	http://ritmen-atura.cat/roda-fenologica/
	Test knowledge	no	final platform	NA	NA
	Create and get feedback on test submissions	no	final platform	NA	NA



FIRST VERSION PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
TRAIN AND LEARN	Develop personal competencies	no	final platform	NA	NA
USE KNOWLEDGE HUB TO UPLOAD OR ACCESS EXISTING DATA, INFORMATION AND SERVICES	Search/Browse observatory data	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Browse observatory database	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	View maps and visualizations	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Upload existing data and information	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Use CO knowledge hub	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Use enhanced services	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
INFLUENCE BROADER POLICY AGENDAS	Participating decision makers	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
REACH OUT AND RAISE AWARENESS	Share contents on social media	Yes	NA	Word-Press (plugin)	http://ritmenatura.cat https://twitter.com/ritmenatura

FIRST VERSION PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
REACH OUT AND RAISE AWARENESS	Create, send or read newsletters	no	final platform	NA	NA
	Download information/promotion materials	Yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Launch or take part in online campaigns	Yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Find/join/promote offline activities	Yes	NA	Word-Press (plugin)	http://ritmenatura.cat
DISCUSS AND SET THE CO AGENDA FOR RESEARCH AND NATURAL RESOURCE MANAGEMENT	Post concerns/ideas in discussion fora	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Take part in (live) online discussions	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Organize offline activities	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Interpret exploratory data and set internal agenda	yes	NA	Word-Press (plugin)	http://ritmenatura.cat/calendari/
	Develop a shared vision	yes	NA	Word-Press (plugin)	http://ritmenatura.cat



FIRST VERSION PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
SUPPORT IMPLEMENTATION OF PLANS AND POLICES WITH MONITORING AND INFORMATION SHARING	Communicate new policies/plans	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Access info how to comply/participate	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Create, promote or find offline activities	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Track progress of activities	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Monitor status of a resource	no	final platform	NA	NA
	Encourage compliance and facilitate communication with formal authorities	yes	NA	NA	http://ritmenatura.cat
PARTICIPATE IN POLICY CONSULTATIONS AND DESIGN PLANNING ACTIVITIES	Post policy drafts and request feedbacks	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Provide feedback on policy drafts	yes	NA	Word-Press (plugin)	http://ritmenatura.cat
	Organize/Invite to offline activities	no	final platform	NA	NA

FIRST VERSION PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
PARTICIPATE IN POLICY CONSULTATIONS AND DESIGN PLANNING ACTIVITIES	Report on results of the planning process	no	final platform	NA	NA
	Platform features to co-design mutually	no	final platform	NA	NA

Table 3. Summary of contents of each page of SRNCO website (first version).

Page ¹	Content ^{2,3}	Spain Story Map ⁴ Headline - User card
<i>Pàgina d'inici</i> [Home page]	Links to all website pages and platform functionalities.	H1. Discover the observatory - 1.1. Read portal and info pages
<i>Introducció</i> [Introduction]	Brief introduction of GT 2.0 project and link to the project website. SRNCO Vision, Mission and Objectives.	H1. Discover the observatory - 1.4. Access public data/materials
<i>Nosaltres</i> [We]	Brief description of the SRNCO participating organizations and link to the website of each one	H1. Discover the observatory - 1.4. Access public data/materials
<i>Roda Fenològica</i> [Phenological wheel]	A request is made to people to participate in the observatory, making phenological observations and using "phenological wheels" as register tools, to follow the nature rhythm.	H3. Submit and process data - 3.1. Submit open observations for exploration and discovery
<i>Educar</i> [Learning]	Page in development. It will be incorporated in the platform final version.	H5. Train and learn
<i>Calendari</i> [Calendar]	Ads of public events (meetings, work sessions, conferences and so on) related to nature and climate change, for the next months and year.	H11. Reach out and raise awareness - 11.9. Find/join/promote offline activities



<i>Subscriu-te</i> [Subscribe]	Registration as user of platform functionalities reserved for registered users. In the first platform version there is no functionalities for registered users. Anyway, a voluntary registration is opened in order to initiate a database of users. Name and e-mail address is asked in the first platform version. The database of users fulfil the UE regulations on data protection.	H2. Join the CO community - 2.1. Register account and agree terms
<i>Qui Som?</i> [Who are we?]	Brief description of what is looking for the SRNCO. Description of the meaning of phenology for the SRNCO co-design group.	H1. Discover the observatory - 1.4. Access public data/materials
<i>Contribuir</i> [To contribute]	Call citizen participation in the observatory project "Segueix el ritme de la natura" for occasional as well as recurrent observations. (http://natusfera.gbif.es/projects/ritmenatura-cat-observacions-ocasionals and http://natusfera.gbif.es/projects/ritmenatura-cat-observacions-recurrents)	H3. Submit and process data - 3.1. Submit open observations for exploration and discovery - 3.5. Submit observations according to research protocols and instructions

Page ¹	Content ^{2,3}	Spain Story Map ⁴ Headline - User card
<i>Què fem?</i> [What we do?]	What are doing and what will do the community members. This area of the main page will hold a video explaining the value of citizen observers' registries.	H1. Discover the observatory - 1.4. Access public data/materials
<i>Ver mapa</i> [See map]	Page in development. This page will give access to georeferenced data and information in the SRNCO database and in the library of the Natusfera web. It will be incorporated in the platform final version.	H4. Use CO to upload or access existing data, information and service - 4.3. View maps and visualizations
Twitter panel in homepage	This panel displays the last tweets received in the twitter account of SRNCO (@RitmeNatura, https://twitter.com/ritmenatura), in order to show the contributions and opinions of the community in real time.	H11. Reach out and raise awareness - 11.1. Share contents on social media

Notes to Table 3.

¹. The Catalan page name is written in italics; its English translation is written between square brackets.

². Abbreviations:

GT2.0, Ground Truth 2.0 project

SRNCO, "Segueix el ritme de la natura" Citizen Observatory of Catalonia, Spain

³. All the pages, with the exception of homepage, have Search function

⁴. See "GT2.0-Deliverable 1.5 Functional Design of the citizen observatories", v2.0, 4.4.4 User-generated Story Map, Spain Demo Case, pages 47-48