



# Deliverable D2.8

Customized platform  
for Belgian Demo Case  
(Second Version)





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## Versions and Contribution History

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## List of abbreviations

BC	Black carbon
CO	Citizen Observatory
DC	Demo Case
GT2.0	Ground Truth 2.0
Ircel	Belgian interregional cell for Environment
MMM	Meet Mee Mechelen
PM	Particulate Matter
URTT	User Requirement Tracking Tool
VMM	Flemish Environmental Agency
WHO	World Health Organization



## 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.

In the Belgian demo case, the citizen observatory addresses environmental quality in Flanders. The demo case started its activities in Mechelen, Flanders' fifth biggest city in population numbers. The central challenge of this citizen observatory, as agreed with all stakeholders, is "Air pollution and noise disturbance have an impact on health, quality of life and social cohesion in all neighborhoods and villages of Mechelen". To work on this challenge, the citizen observatory has chosen the name *Meet Mee Mechelen*, to reflect that it reaches out to the whole city to join the initiative.

This document describes how, starting from the functional design and going through the technical design and integration of IT components, the fully functional platform has been developed. The platform is a further refinement of the first version of the Belgian demo case platform which was operational from September 2017. The web platform for this demo case is available online: <https://mechelen.meetmee.be/>.

# 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 WP2 <sup>1</sup> 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 of the Demo Case; develop standard integration between demonstration cases; and configure the technological platform in each demonstration case.

## 1.2 Purpose of the document

This document describes how, starting from the functional design and going through the technical design and integration of IT components, the fully functional platform has been developed. The platform is a further refinement of the first version of the Belgian demo case platform which was operational from September 2017.

The purpose of this document is to present the fully operational version of the platform for the Belgian DC Citizen Observatory that was developed jointly with end users during co-design sessions in 2017 and refined based on user feedback in 2018.

## 1.3 Structure of the document

The present document is divided into 4 sections in order to give a comprehensive overview of the customized platforms of each Demo Case.

Section 1 presents an introduction to the document, giving details about the background, the purpose and the structure of the document.

Section 2 summarises the Functional Design for the platform. It describes the results of the planning carried out by the co-design group that participates in the DC. The co-design group, through co-design work sessions, defined and validated the Vision, Mission and Objectives of the Citizen Observatory, the customized Functional Design and the Technical Design.

Section 3 presents the platform architecture validated by the co-design groups of the DC, 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 co-design group.

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<sup>1</sup> Ground Truth 2.0 - Environmental knowledge discovery of human sensed data, DoA extract FINAL for kick-off, 1.3.3. WT3 Work package descriptions

Finally, Section 4 presents and describes the platform, created based on the customized Functional Design and the feedback from the co-design group.

## 2. Summary of Functional Design for the platform of the Demo Case

During the co-design sessions, different activities were carried out to identify the challenge of the 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 the Citizen Observatory.

During the co-design process to form this citizen observatory, the first point to agree on was the environmental theme this case would address. From the choice for air quality and sound, the group continued to define the following vision, mission and objectives.

**Vision:** In Mechelen, all stakeholders cooperate in a sustainable and constructive manner to keep on improving the air quality and the soundscape.

**Mission:** The citizen observatory becomes an online and offline meeting place where we gather and build data, information and knowledge about air quality and ambient noise and make all accessible for everyone, to support policy making and initiatives for a better living environment.

**Objectives:**

- 1) To organize civilian campaigns on air quality, sound and perception of both topics in Mechelen as of September 2017.
- 2) To launch an online web platform (November 2017) where our measurement results are visualized together with public data and information and available as open data for joint analysis of these results.
- 3) To support and initiate from the platform, local initiatives, both online, offline and visible in the city, to improve air quality, reduce noise and thus support awareness raising and behavioural change towards sustainability in Mechelen in 2018.
- 4) To support an open and constructive dialogue between all parties involved in Mechelen from the start and expand the network of stakeholders into a true community.
- 5) To prepare the sustainable continuation of this CO after GT2.0 as of 2018.

The vision, mission and objectives are summarised in Figure 1 below.



Figure 1 Vision, mission and objectives

## 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 Functional design of the citizen observatories). A generic "Story Map"<sup>2</sup> 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)<sup>3</sup> to allow for easy tracking of their status and to identify the corresponding layer in the platform architecture.

<sup>2</sup> The generic Story Map is fully described in Ground Truth 2.0 "Deliverable D1.5, Functional design of the citizen observatories"

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

The story map of the Belgian demo case, as shown in Figure 2 below, has two headlines. Starting from new data collection efforts, together with existing knowledge and information, a local analysis of air quality and sound is made. This evaluation can support the policy making process and offers the CO community a structured way to interact with this policy process. To impact the quality of the local environment, we reach out to the audience at large using social media and local media. As second headline, the agenda of the CO is under constant evaluation to ensure it fits the ambitions and interests of the group. A CO should not only support the policy making process, but can also support proper implementation of existing policy and influence a broader policy agenda.

Supporting these main activities, there is need for functionalities which offer the opportunity to discover the observatory, join the community and offer activities to get to know the technology offered and experiment.



Figure 2 Story map Belgian demo case Meet Mee Mechelen

In order to explain which technological tools were selected to meet the user requirements (included in WP1) on the platform, an overview of these tools and their specifications are added below in the following sub-sections.

### 2.2.1 Tools for the development of the platform

#### Django

The web framework of the Belgian demo case platform has been set up using Django. Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. The platform uses a responsive web design to enable users to use it on their laptop, tablet or smartphone. Figure 3 below shows an overview of the home page of the platform.



Figure 3 Overview of the home page

Several pages are available on the web platform

1) Information on the CO and GT2.0

Short text about Meet Mee Mechelen, Ground Truth 2.0 and involved partners and stakeholders.

2) News items

Overview of all news items announcing future events and postings on past activities. Separate item for Gavagai Monitor.

3) Maps

Map viewer with the results of campaigns organized by Meet Mee Mechelen and official maps for the Flemish region.

4) Knowledge hub

Introduction to air quality and noise, indicators for both topics and links to relevant websites.

5) Tools offered to participate

Introduction and option to participate in air quality and noise monitoring using handheld air quality sensors, apps for sound monitoring and sound meters.

### Leaflet

To smoothly integrate interactive maps into the web platform, Leaflet was chosen (an example of an integrated map is shown in Figure 4). Leaflet is designed with simplicity, performance and usability in mind. It works efficiently across all major desktop and mobile platforms. Users can freely navigate through all maps showing air quality and noise data for Flanders.

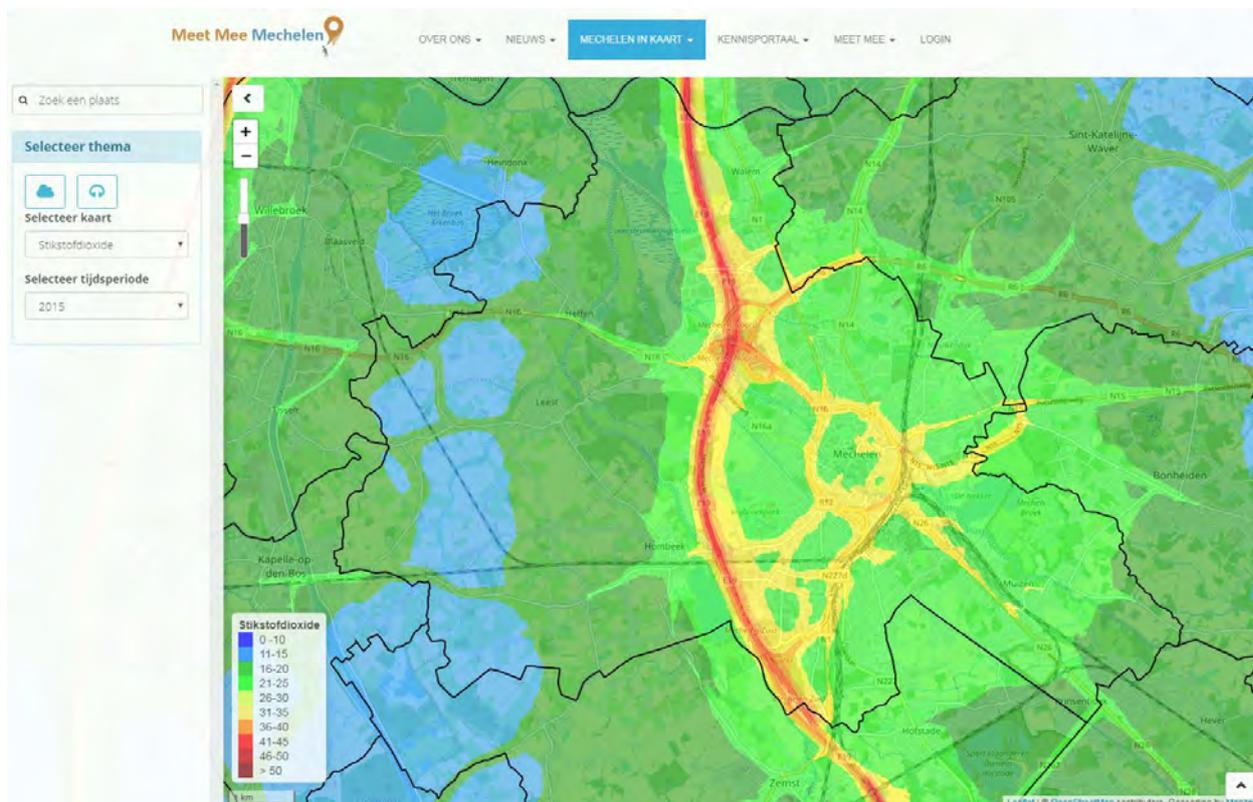


Figure 4 Example of an air quality map integrated into the *Meet Mee Mechelen* web platform

## 2.2.2 Data Collection and data aggregation

This sub-section elaborates in detail how field observations and measurements are linked to online databases and feedback systems (real-time tracking of data acquisition, data analytical tools, online continuous learning, etc.).

For that purpose, specialized software and hardware to support citizen observations are included; as well as the use of the mobile devices to capture explicit observations (collection of explicit observations by citizens following several strategies: direct observations through mobile app forms, etc.).

### Air Quality Sensors: AirQmap

Cyclists (and pedestrians) are exposed to traffic pollution while moving around in city centres and urban environments. The level of exposure can differ significantly from street to street. Fixed monitoring networks offer high quality data, but are unable to offer detailed street level exposure information. With *Meet Mee Mechelen*, air quality campaigns have been planned to measure the spatial variation in air quality. A variety of pollutants impacts air quality. Together with the co-design group, the choice has been made to investigate the spatial pattern of pollutant concentrations. VITO has developed the airQmap ([www.airqmap.com](http://www.airqmap.com)) technology to enable people with limited or no air pollution expertise, such as city personnel or volunteers, to carry out air quality measurements and to get a detailed view on the air quality at street level. The approach measures black carbon (BC). BC is the combustion related 'soot' component of particulate matter. The most important sources of BC are traffic and domestic heating. Exposure to black carbon is associated with cardiovascular and pulmonary diseases. BC is recognized by the World Health Organization (WHO) as a better indicator of harmful particulate substances from traffic than

undifferentiated particulate matter (PM) mass.<sup>4</sup> Therefore BC is a highly suitable component for drawing traffic pollution exposure maps.

The airQmap approach contains two parts: the first part is formed by easy to use measurement devices. This includes compact BC monitors (aethalometers), GPS and netbooks (shown in Figure 5 below) with software to transmit data and synchronize instruments. All the equipment is provided, a short training on their use and instructions on how to collect the data to get a reliable result. The second part is an automated data processing infrastructure, which constructs and updates the BC map. Processing steps include enhancement and validation of noisy second BC measurements and distorted GPS tracks (due to reflection of the GPS signal on high buildings), background correction and spatiotemporal data aggregation. Data are finally available as georeferenced file with temporal (two week periods) averaged BC concentrations.

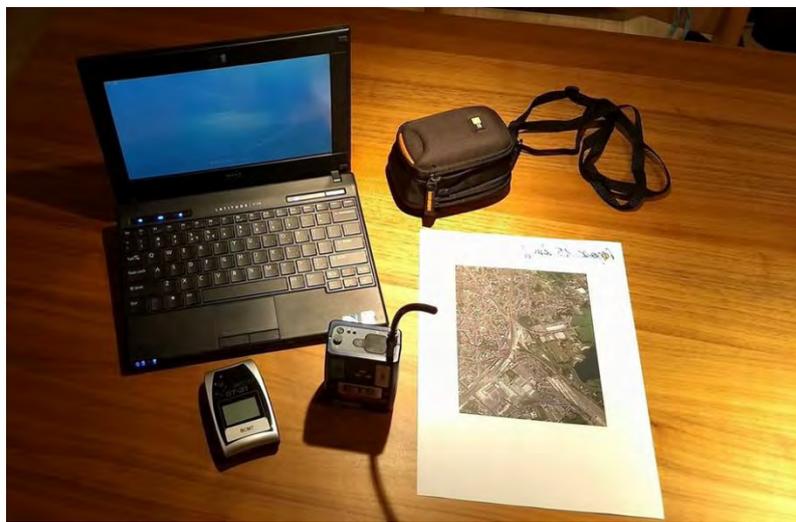


Figure 5 airQmap netbook, air quality sensor and GPS

### Sound meter

During the preparation of *Meet Mee Mechelen's* approach to collect valuable data on the sound levels in Mechelen, it was decided to use dedicated Sound Level meters. As a first step, an analysis of available sound level meters was made. Based on available reviews, the choice has been made to order several REED Instruments R8050 Sound Level Meter, Type 2, 30-100 and 60-130dB, +/-1.4 dB Accuracy (Figure 6). This meter is certified according to European Standard IEC 61672-2. As an example, the 2005 Control of Noise at Work Regulations state that a sound level meter should meet "at least Class 2 of BS EN 61672-1:2003 (the current instrumentation standard)". The choice for this meter is a balance between quality and affordability.

Data registered by the sound meter will be stored using Akvo Flow.

<sup>4</sup> <http://www.euro.who.int/en/health-topics/environment-and-health/air-quality/publications/2012/health-effects-of-black-carbon-2012>



Figure 6 REED Instruments R8050 Sound Level Meter, Type 2

### **Akvo Flow**

Ground Truth 2.0 partner Akvo offers Akvo Flow (<https://akvo.org/products/akvoflow>), which serves as data collection and monitoring tool for *Meet Mee Mechelen's* sound monitoring campaigns. Using a smartphone or tablet, Akvo Flow makes it simple to gather reliable, geographically referenced data that can be used straight away.

Within Flow, a questionnaire has been set up to ask participants to share their perception of the sound on the location where they are completing the questionnaire (see Figure 7). Together with a list of multiple choice questions, they have the option to share the result of a measurement using a sound meter. If a sound meter is not available, this field can be left blank or an estimate using a sound monitoring app such as Sound Meter or Decibel X can be added. Additionally, images of the sound source can be added as well.

← GT20 Geluidshinder v 2.0

LUCHTKWALITEIT SUBMIT

**1. Hoe ervaart u nu op uw huidige locatie het omgevingsgeluid?\***

helemaal niet gehinderd

een beetje gehinderd

tamelijk gehinderd

ernstig gehinderd

extreem gehinderd

**2. Wat is uw huidige locatie?\***

Lat \_\_\_\_\_

Lon \_\_\_\_\_

Height \_\_\_\_\_

Accuracy: unknown

CHECK GEO LOCATION

Figure 7 Screen shot of sound questionnaire in Akvo Flow

The data flow from Akvo Flow to the web platform is optimized so that collected data can be uploaded automatically. The screen shot below shows the web page that is prepared to show all data gathered. Currently, that page is already activated but the approach on noise is not to have data collection as first step to start *Meet Mee Mechelen's* activities on noise. Instead, it has been agreed to launch the topic with a debate on the current qualities and challenge. From this debate, we want to learn better what type of data should be collected as the research question we try to answer with a campaign is not yet clear enough.

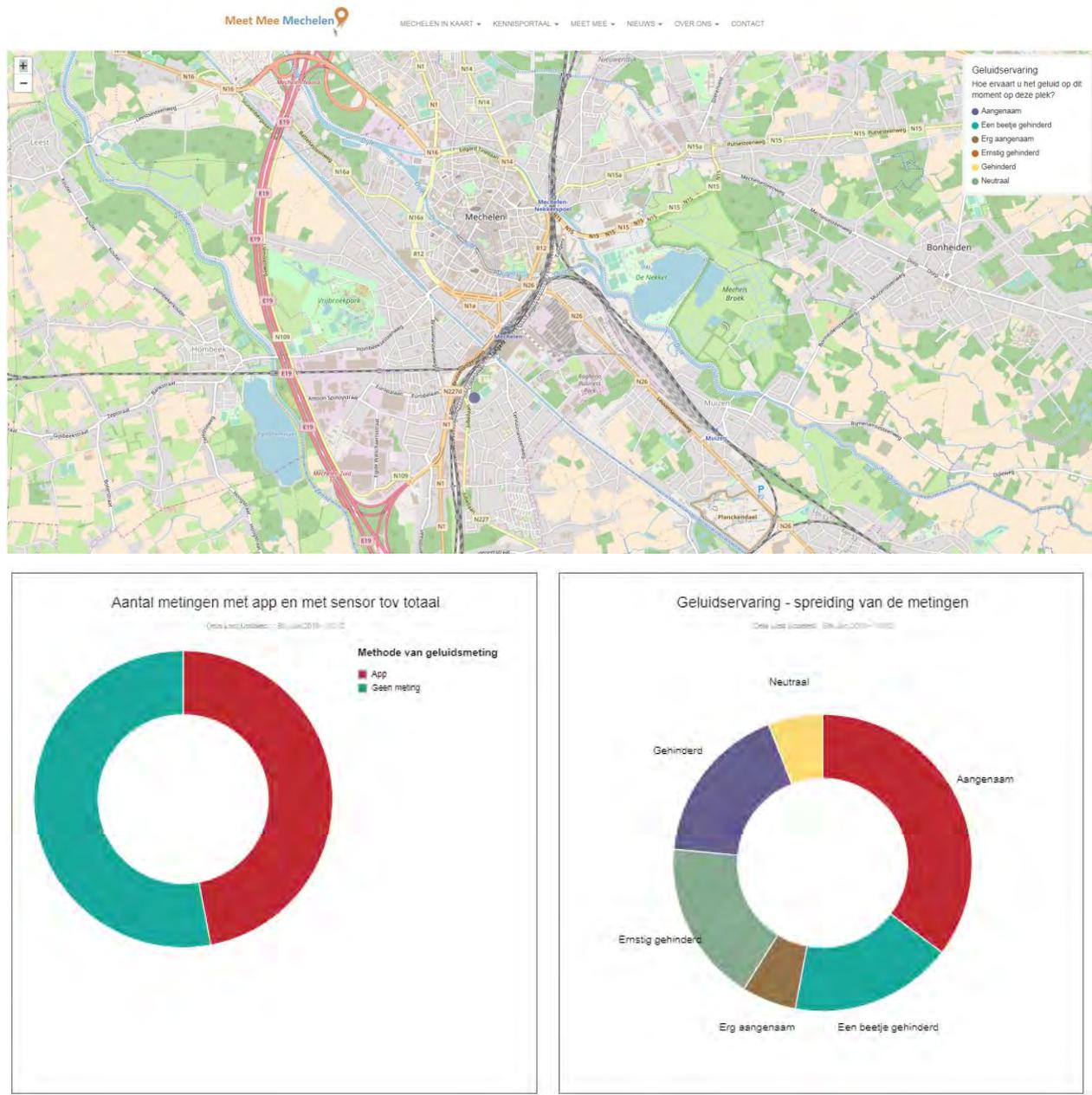


Figure 8 Akvo dashboard for data on noise including several maps and graphs to analyse the data collected by Meet Mee Mechelen.

### Altran Vueforge Sense

Altran offers Vueforge Sense, an extremely low-consumption, sensing technology designed to turn smartphones into complex sensors (see Figure 9). This passive tracking app includes sound tracking. Once installed, users are constantly recording sound levels in their surroundings. The data will be used in addition to the active approach of Akvo Flow coupled to sound sensors. Collected data will build up to a fairly large dataset to get a sense of what sound environments are like, ranging from very quiet to loud environments. The app offers additional data to indicate the type of environment which is monitored, including signal coverage and speed.



Figure 9 Screen shot of Altran's Vueforce Sense app

### Gavagai Monitor

Gavagai Monitor collects all open online data. It not only reads all the information, but it also creates executive summaries, giving you instant insights to what is going on. A monitor has been initiated to track online media for air quality, sound, Mechelen and Meet Mee Mechelen (see Figure 10). Tracking is focused on media writing in Dutch and located in Flanders, including Twitter.

This monitor is integrated into the *Meet Mee Mechelen* web platform in the news section. It offers dynamic content to the website and an easy link to the on-going debate in Flanders related to air quality and sound.

The specific tracker for each topic uses key words for filtering the wealth of online content.



Figure 10 Gavagai monitor for *Meet Mee Mechelen*, tracking and analyzing air quality (*luchtkwaliteit*), sound (*geluid*), Mechelen and Meet Mee Mechelen

### 2.2.3 Monitoring and assurance of the technical performance of the platform

Google analytics is used to monitor usage of the website. Based on the analysers of how users are navigating through the website, improvements of the initial platform have been made. Examples are placing the most recent news items and twitter feed on the home page.

Technical performance is monitored by VITO's IT team using Site24x7 to monitor if the web platform is operating normally and notify if part of the services are malfunctioning. A review of page visits from December 2017 until June 2018 shows a total of 6468 page views during 1510 sessions by 929 users. During this period, a Facebook post with the results of the second air quality campaign created the largest peak in in hourly sessions with nearly 30 sessions during a single hour. Based on our experience we can assure that the service remains operational with up to at least a hundred simultaneous users. Significantly larger numbers of simultaneous users of our web service are expected to interrupt the service.

### 2.2.4 Standardization of data management

The data management differs for air quality and sound. Air quality is collected using sensors coupled to a GPS. Each combination is synchronized using a netbook which also has to be used to download data from the devices (USB connection) and upload all data to a server at VITO. All data are further processed using scripts (non-automated) to filter, aggregate and average the raw data to a qualitative set of georeferenced data. Data are currently stored at VITO's servers, integrated in the map viewer and will be published using our web platform as well as other options (GEOSS etc.). The city of Mechelen is launching an open-data

platform where the data will be available as well. The platform is built on CKAN open data portal software, and as such its respective metadata scheme applies.

Sound measurements data are managed using the tools in use, Akvo Flow and Vueforge Sense. An automatic coupling between the database of these apps and the web platform is integrated into the platform with the Akvo Flow Dashboard. Complete datasets of campaigns will be published using the website and other options (GEOSS etc.).

### **2.2.5 Enhanced services**

#### **Tygron Engine**

Tygron Engine is a stand-alone tool for collaborative planning through serious gaming. Using Tygron Engine a 3D environment for the demo case will be built where users can take measures, see effects, interact with each other and learn from a serious game how different stakeholders' views impact the policy process.

Tygron Engine is based on online multi user technology. Multi user impact sessions allow users to interact with other individuals, whether in partnership, competition or rivalry and provide them with not only data but also social communication.

### 3. Platform technical design and integration of components of the Citizen Observatory

#### 3.1 Platform architecture and selection of technological tools to use

This section explains the integration model: a description of how all the technical components are joined to address the functional needs. Thus, based on the user requirements collected in the functional design, and bearing in mind the different functionalities provided by each tool, the Demo Case has set up the list of tools and functionalities to be integrated or linked to the web platform.

From the functional design, a technical design linking the requested functionalities and matching it with our available tools has been made, as shown in Figure 11 below.

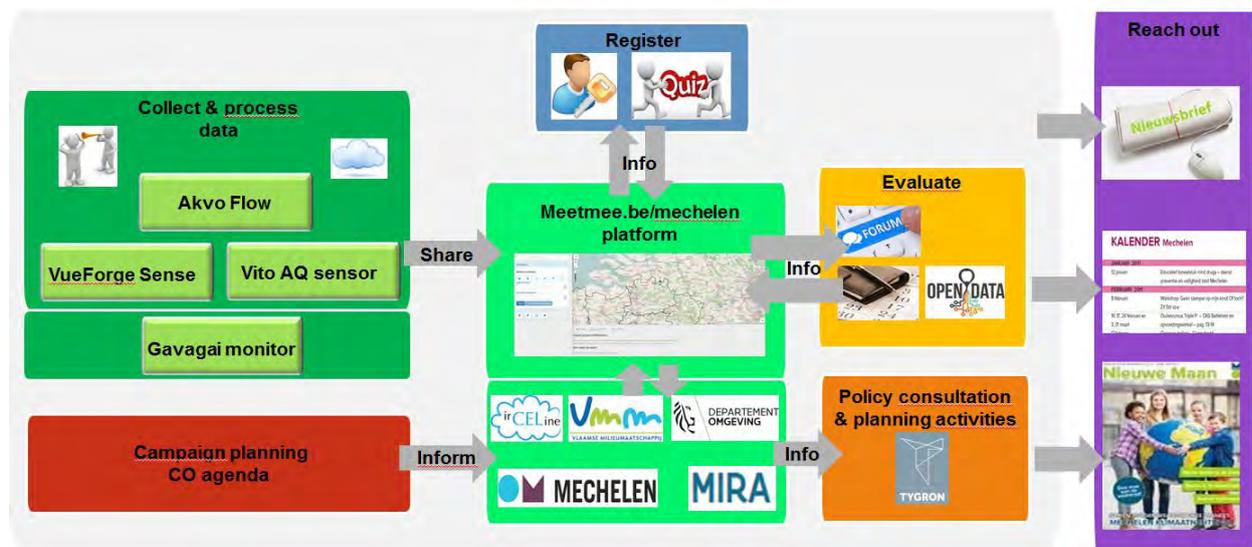


Figure 11 Technical Design of the Belgian demo case platform showing how the architecture is planned

Centrally, we have the web platform (<https://mechelen.meetmee.be/>) where all functionalities are linked together.

Several tools are offered to collect and process data:

- 1) Akvo Flow: independent mobile app, automated data integration into platform
- 2) Vueforge Sense: independent mobile app, automated data integration into platform
- 3) VITO AQ sensor (airQmap): stand alone devices, integration of processed data into platform
- 4) Gavagai monitor: full integration into webplatform

Data, reports and infographics from a range of partners are integrated to enable the website to be a knowledge hub for air quality and sound in Mechelen. Currently, the website shares data and reports from VMM (Flemish Environmental Agency), Ircel (Belgian Interregional cell for Environment), City of Mechelen, VITO, Departement Omgeving (Flemish Department for Environment).

For communication from the citizen observatory, several media are used including the website, twitter, Facebook and email. A twitter with *Meet Mee Mechelen's* messages is included under 'news' to offer a fast way to integrate reporting from activities. Discussion is currently mainly offline but can continue using social media. Besides online media, the local city magazine (*Nieuwe Maan*) and activity calendar are used to reach out to a broader audience.

The overview of the pages on the web platform reflect the different ways to interact:

- Home
- Maps of Mechelen
  - Information
  - Analyse your environment
  - Share your opinion
  - Akvo Flow Dashboard
- News
  - Twitter Feed
  - News
  - Gavagai monitor (to be added)
  - Calendar
- Knowledge hub
  - Air Quality
  - Sound
- Join us
  - Akvo Flow
  - VITO AQ Sensor
  - Vueforge
- About us
  - Meet Mee Mechelen
  - Ground Truth 2.0
  - Partners

The architecture of the web platform had been completed into the first version of <https://mechelen.meetmee.be/>, further integration of the data collected by apps and the Gavagai monitor has been added in 2018.

### 3.2 Mock-up and feedback

This section lists the feedback obtained during the mock-up session, including the main tasks for the development of the first version of the platform. This feedback is received from the co-design group, including members from all stakeholder groups, during a specific session organized at the end of June 2017. The tasks to be performed after the feedback from the mock-up is summarised in Table 1.

- The CO co-design group validated the contents and navigation flow of the website of the MeetMee.be platform.
- As interest in Mechelen (and Flanders) might be broader than current topics, the web platform has been structured to be easily expandable to cover more topics.
- Most users expect a layered approach with a straight-forward presentation of material and background documentation for experts.
- Users expect to be able to use the platform using a variety of devices, the platform has therefore been made responsive.
- All activities and tools should be bundled on a single location.

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

Task	Tools	Responsible
Register internet domain Meetmee.be, Meetmee.be/Mechelen and Mechelen.meetmee.be	Django	VITO
Set up architecture of the web platform	Django	VITO
Design Logo of Meet Mee Mechelen	PowerPoint	VITO
Write content for the website, select suiting images	Content management	VITO
Integrate publically available data and reports	Content management	VITO
Integrate data as maps (map viewer)	Leaflet	VITO

## 4 Presentation and description of contents of the Citizen Observatory platform (Updated version)

The first version of Meet Mee Mechelen platform was launched on the worldwide web together with the launch of the citizen observatory on Sunday 17 September 2017: <https://mechelen.meetmee.be/>. In 2018, additional functionalities have been added to the website and some content has received a new place to improve the user experience.

All information on the web platform is available in Dutch. An overview of the different pages on the platform was provided in section 3.1.

The logo of the citizen observatory is styled similar to GT2.0's logo and used on all pages.

Following from left to right, we could see the 'menu' of functionalities that are available in the first version of the platform. The following screen shots yield an overview of the pages:

**About:** Short introduction of all partners (Figure 12).

The screenshot shows the 'Meet Mee Partners' section of the website. On the left, a navigation menu is visible with the following items: OVER ONS, Ground Truth 2.0, **Meet Mee Partners** (highlighted), and Contact. The main content area is titled 'Meet Mee Partners' and lists several partners:

- MECHELEN** (Stad Mechelen): Represented by a purple and blue logo.
- Leefmilieugroep Mechelen-Zuid**: Represented by a green logo with trees.
- Natuurpunt**: Represented by a green logo with a tree and a bird.
- Fietzersbond**: Represented by a green logo with a bicycle wheel.
- IHE Delft**: Represented by a blue logo with a building facade. Description: "IHE Delft is een kennis- en opleidingscentrum dat zich richt op onderwijs, onderzoek en capacity building projecten op het gebied van watertechnologie, waterbeheer, milieu, volksgezondheid en overheid. IHE Delft verleent volledig geaccrediteerde MSc in de wetenschappen en begeleidt PhDs. Het is de grootste internationale postdoctorale wateropleidings- en onderzoekfaciliteit ter wereld. Sinds 1957 hebben meer dan 15,000 water specialisten uit meer dan 160 landen een postgraduaat gevolgd aan dit instituut. IHE Delft is betrokken bij tal van onderzoeks- en capaciteitsontwikkelingsprojecten over de hele wereld. Het instituut is gevestigd in Nederland."
- vito**: Represented by a colorful logo. Description: "VITO, de Vlaamse Instelling voor Technologisch Onderzoek, is als toonaangevende Europese onderzoeks- en technologiecentrum uitgegroeid tot een knooppunt van kennis op het vlak van energie, duurzame chemie, gezondheid, materialen en landgebruik. VITO ontwikkelt innovatieve producten en oplossingen, waarbij de nieuwste kennis en technologieën worden vertaald in praktisch toepasbare realisaties. Hierbij zijn het vrijwaren van het leefmilieu en het duurzaam gebruik van energie en grondstoffen prioritair. VITO's expertise op het gebied van milieumodellering omvat diverse onderwerpen"

Figure 12 Meet Mee Partners section

**Calendar:** The separate overview of activities with links to register or find more information (Figure 13) is fused into the news section, as a separate calendar proved not to be an advantage.

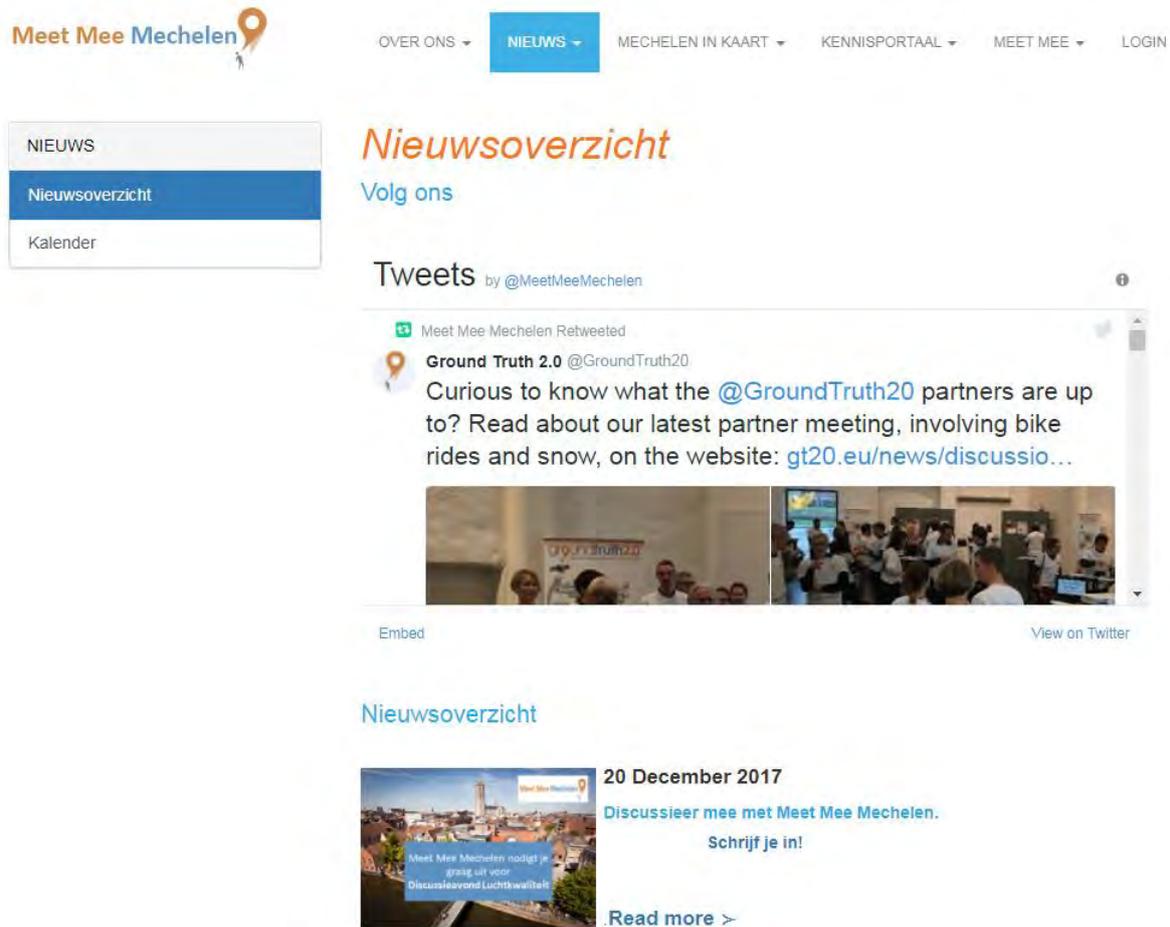


Figure 13 Calendar section

**Maps of Mechelen:** Information, analyse your environment on maps and leave your opinion. Description of all maps are added, background information is available referring to other websites (Figure 14). Here, visitors can investigate the results of our Meet Mee Mechelen campaigns.

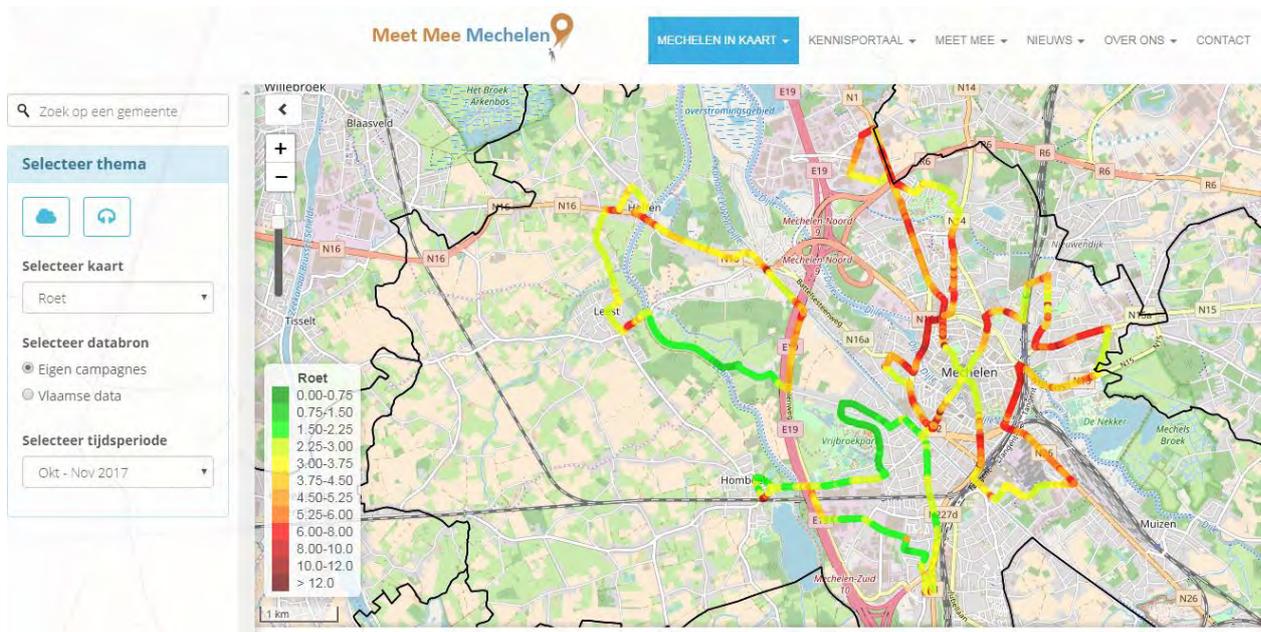


Figure 14 Maps of Mechelen

**Knowledge hub:** Topic specific discussions, linking air quality and sound to impact on quality of life, additional information etc. (Figure 15).



**Impact op onze leefkwaliteit**

NO<sub>2</sub> is een bruinrood gekleurd toxisch gas dat slecht ruikt en irritatie aan de luchtwegen kan veroorzaken. Zowel korte periodes van hoge concentraties, als langdurige blootstelling aan lage concentraties zijn schadelijk voor onze gezondheid. NO<sub>x</sub> dragen eveneens bij aan de vorming van fijn stof. Verder spelen NO<sub>x</sub> een belangrijke rol in de milieuverzuuring en smogvorming. De belangrijkste bron van NO<sub>x</sub> in Vlaanderen is het verkeer. NO<sub>2</sub> is dus een goede indicator voor verkeersgerelateerde luchtverontreiniging. De NO<sub>2</sub>-concentraties in Vlaanderen kennen een dalende trend door afnemende luchtverontreiniging.

Figure 15 Knowledge hub section

**Join our campaigns:** Overview of options to participate in data collection efforts and presentation of tools (Figure 16). Visitors can sign up here to use one of our apps and receive download instructions in their mailbox if they wish to register and start monitoring.

MEET MEE
Akvoflow
VITO AQ Sensor
VueForge

## Meet Mee

### Onze aanpak

Met een enthousiaste groep Mechelse burgers en organisaties willen we een **ontmoetingsplaats** worden. We verzamelen data en informatie over luchtkwaliteit en omgevingsgeluid. Hiermee willen we **samen** initiatieven voor een **betere leefomgeving** ondersteunen.



### Onze plannen

1. Organisatie **burgermeetcampagnes** rond luchtkwaliteit & geluid
2. Informatieve **website** met onze meetresultaten en toegankelijke informatie.
3. Ondersteunen en opstarten van **lokale initiatieven** om luchtkwaliteit te verbeteren, geluidshinder te verminderen en duurzaamheid te ondersteunen in Mechelen.
4. Ondersteunen **open** en **constructieve dialoog** tussen alle betrokken partijen in Mechelen. We worden een hechte community.

### Jouw rol?

- Aansluiten bij de overleggroep?
- Samen meten?
- Linken naar jouw organisatie?

Figure 16 Join our campaigns section

**Footer:** Overview of demo case partners, funding from EU H2020, project coordinator (Figure 17).

MECHELEN

ALTRAN

IHE DELFT

vito

Fietzersbond

akvo.org

Gavagai

TYGRIJN

natuurpunt

MEET MEE MECHELEN  
OVER ONS  
CONTACTEER ONS

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No.689744.

[Terms of use](#)

Volg ons:

#MeetMee

Project Coordinator:

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Figure 17 Footer

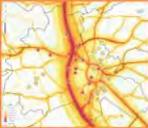
**News:** Presenting a twitter feed (@meetmeemechelen) and upcoming activities and other communications (Figure 18).



Figure 18 Twitter page @MeetMeeMechelen

Figure 19 below shows an overview of the homepage of the Meet Mee Mechelen platform.





## Mechelen in kaart

Ontdek de verschillende aspecten van je eigen leefomgeving aan de hand van kaarten en grafieken.

Luchtkwaliteit & Geluidshinder

Analyseer

## Meet Mee

**Onze aanpak**

Met een enthousiaste groep Mechelse burgers en organisaties willen we een ontmoetingsplaats worden. We verzamelen data en informatie over luchtkwaliteit en omgevingsgeluid. Hiermee willen we samen initiatieven voor een betere leefomgeving ondersteunen.

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4. Ondersteunen open en constructieve dialoog tussen alle betrokken partijen in Mechelen. We worden een hechte community.



Neem deel



## Leer meer over je leefomgeving

Wat weet je al over luchtkwaliteit en geluid in Mechelen?

Ontdek ons Kennisplatform

## Wilt u actief meewerken aan een betere leefomgeving?

Contacteer ons



MEET MEE MECHELEN  
OVER ONS  
CONTACTEER ONS

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 809744

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Figure 19 Integral view of the homepage of Meet Mee Mechelen

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

PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
<b>DISCOVER THE OBSERVATORY</b>	Read portal/info pages	yes	NA	Django (webpages)	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>
	Watch videos	no	NA	NA	NA
	Play games/do quizzes	no	NA	NA	NA
	Access public data/materials	yes	NA	Django (webpages)	<a href="https://mechelen.meetmee.be/c/Kennisportaal/">https://mechelen.meetmee.be/c/Kennisportaal/</a>
	Take guided tours	no	Not yet applicable	NA	NA
<b>JOIN THE COMMUNITY</b>	Register account/agree terms	yes	NA	Django (plugin)	<a href="https://mechelen.meetmee.be/r/contact/">https://mechelen.meetmee.be/r/contact/</a>
	Provide information required for user assessment/verification	no	All information available for all visitors	NA	NA
	Create profile & link to other users	no	Not yet applicable	NA	NA
	Choose notifications channels	yes	NA	Twitter, Facebook and portal	Twitter, Facebook and portal

PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
<b>SUBMIT AND PROCESS DATA</b>	Submit open observations for exploration and discovery	yes	NA	Akvo Flow and Vueforge Sense	<a href="https://mechelen.meetmee.be/c/Meet%20Mee/">https://mechelen.meetmee.be/c/Meet%20Mee/</a>
	Send notifications to “go and observe”	yes	NA	Email invitations	<a href="https://mechelen.meetmee.be/contact/">https://mechelen.meetmee.be/contact/</a>
	Submit observations according to research protocols and instructions	yes	NA	WordPress (plugin) and Akvo Flow App and Vueforge App	<a href="https://mechelen.meetmee.be/c/Meet%20Mee/">https://mechelen.meetmee.be/c/Meet%20Mee/</a>
	Add tags and meta-data	no	Not yet applicable	NA	NA
	Provide comments on observations	yes	NA	Facebook page	<a href="https://www.facebook.com/MeetMeeMechelen/?ref=bookmarks">https://www.facebook.com/MeetMeeMechelen/?ref=bookmarks</a>
	Integrate external data sets	yes	NA	Django (webpages)	<a href="https://mechelen.meetmee.be/kaart">https://mechelen.meetmee.be/kaart</a>

PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
<b>SUBMIT AND PROCESS DATA</b>	Validate/process scientifically	no	Offline activity	NA	NA
<b>EVALUATE RESEARCH ACTIVITIES OR POLICY/ STEWARDSHIP RESULTS</b>	Rate and review activities	no	Offline activity	NA	NA
	Launch or respond to surveys	yes	NA	Akvo Flow	<a href="https://mechelen.meetmee.be/c/Akvoflow/">https://mechelen.meetmee.be/c/Akvoflow/</a>
	Post or review results data	Yes (no direct integration into platform)	NA	Offline, Facebook, Twitter, Email	Offline, Facebook, Twitter, Email
	Discuss results	Yes (no direct integration into platform)	NA	Offline, Facebook, Twitter, Email	Offline, Facebook, Twitter, Email
<b>TRAIN AND LEARN</b>	View instruction videos	no	Not yet applicable	NA	NA
	Access/download manuals and field guides	no	Currently shared in other ways (email, prints, links)	NA	NA
	Test knowledge	no	No need to integrate into platform	NA	NA
	Create and get feedback on test submissions	no	Not yet applicable	NA	NA

PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
<b>TRAIN AND LEARN</b>	Develop personal competencies	no	No need to integrate into platform	NA	NA
<b>USE KNOWLEDGE HUB TO UPLOAD OR ACCESS EXISTING DATA, INFORMATION AND SERVICES</b>	Search/Browse observatory data	yes	NA	NA	<a href="https://meetmeemechelen.marin.vito.be/kaart">https://meetmeemechelen.marin.vito.be/kaart</a>
	Browse observatory database	yes	NA	NA	<a href="https://meetmeemechelen.marin.vito.be/kaart">https://meetmeemechelen.marin.vito.be/kaart</a>
	View maps and visualizations	yes	NA	Django	<a href="https://mechelen.meetmee.be/kaart">https://mechelen.meetmee.be/kaart</a>
	Upload existing data and information	yes	NA	Django	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>
	Use CO knowledge hub	yes	NA	Django	<a href="https://mechelen.meetmee.be/c/Kennisportaal/">https://mechelen.meetmee.be/c/Kennisportaal/</a>
	Use enhanced services	yes	NA	Tygron Engine	<a href="http://www.tygron.com/">http://www.tygron.com/</a>
<b>INFLUENCE BROADER POLICY AGENDAS</b>	Participating decision makers	Yes (offline)	NA	Personal interaction and email, twitter	NA
<b>REACH OUT AND RAISE AWARENESSES</b>	Share contents on social media	Yes	NA	WordPress (plugin)	<a href="https://twitter.com/MeetMeeMechelen?lang=nl">https://twitter.com/MeetMeeMechelen?lang=nl</a> <a href="https://www.facebook.com/MeetMeeMechelen">https://www.facebook.com/MeetMeeMechelen</a>

PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/ NO	WHY NOT?	TOOL	WHERE?
<b>REACH OUT AND RAISE AWARENE SS</b>	Create, send or read newsletters	no	Not yet applica ble	NA	NA
	Download information/promotion materials	Yes	NA	Django (links)	<a href="https://mechelen.meetmee.be/c/Kennisportaal/">https://mechelen.meetmee.be/c/Kennisportaal/</a>
	Launch or take part in online campaigns	no	Not yet needed	NA	NA
	Find/join/promote offline activities	Yes	NA	Django, Twitter and Facebook	<a href="https://mechelen.meetmee.be/c/Nieuwsoverzicht/">https://mechelen.meetmee.be/c/Nieuwsoverzicht/</a> <a href="https://twitter.com/MeetMeeMechelen?lang=nl">https://twitter.com/MeetMeeMechelen?lang=nl</a> <a href="https://www.facebook.com/MeetMeeMechelen">https://www.facebook.com/MeetMeeMechelen</a>
<b>DISCUSS AND SET THE CO AGENDA FOR RESEARCH AND NATURAL RESOURCE MANAGE MENT</b>	Post concerns/ideas in discussion fora	yes	NA	Facebook and Twitter	<a href="https://twitter.com/MeetMeeMechelen?lang=nl">https://twitter.com/MeetMeeMechelen?lang=nl</a> <a href="https://www.facebook.com/MeetMeeMechelen">https://www.facebook.com/MeetMeeMechelen</a>
	Take part in (live) online discussions	no	No need	NA	NA
	Organize offline activities	yes	NA	Django	<a href="https://mechelen.meetmee.be/c/Nieuwsoverzicht/">https://mechelen.meetmee.be/c/Nieuwsoverzicht/</a>
	Interpret exploratory data and set internal agenda	Yes (offline)	NA	Personal offline interaction	NA
	Develop a shared vision	yes	NA	Django	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>

PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
<b>SUPPORT IMPLEMENTATION OF PLANS AND POLICIES WITH MONITORING AND INFORMATION SHARING</b>	Communicate new policies/plans	yes	NA	Django	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>
	Access info how to comply/participate	yes	NA	Django	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>
	Create, promote or find offline activities	yes	NA	Django	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>
	Track progress of activities	yes	NA	Django	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>
	Monitor status of a resource	yes	NA	Django & Leaflet	<a href="https://mechelen.meetmee.be/kaart">https://mechelen.meetmee.be/kaart</a>
	Encourage compliance and facilitate communication with formal authorities	yes	NA	NA	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>
<b>PARTICIPATE IN POLICY CONSULTATIONS AND DESIGN PLANNING ACTIVITIES</b>	Post policy drafts and request feedbacks	Yes (mostly offline)	NA	Django and dedicated events	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>
	Provide feedback on policy drafts	Yes (mostly offline)	NA	Django and dedicated events	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>
	Organize/Invite to off-line activities	Yes	NA	Twitter feed and news item and calendar	<a href="https://mechelen.meetmee.be/">https://mechelen.meetmee.be/</a>

UPDATED VERSION PLATFORM IMPLEMENTATION					
HEADLINES	SUBHEADLINES	YES/NO	WHY NOT?	TOOL	WHERE?
<b>PARTICIPATE IN POLICY CONSULTATIONS AND DESIGN PLANNING ACTIVITIES</b>	Report on results of the planning process	no	No current need	NA	NA
	Platform features to co-design mutually	no	No current need	NA	NA

Table 3 Summary of contents of each page of <https://mechelen.meetmee.be/> website (updated version)

Page	Content	Belgian Story Map Headline - User card
<i>Meet Mee Mechelen</i> [Home page]	Links to all website pages and platform functionalities. Most recent news item and twitter feed as dynamic content on the home page.	H1. Discover the observatory - 1.1. Read portal and info pages
<i>Mechelen in Kaart</i> [Maps of Mechelen]	Analyse your environment on maps. Check the results of our campaigns.	H1. Discover the observatory - 1.4. Access public data/materials H4. Use CO to upload or access existing data, information and service - 4.3. View maps and visualizations
<i>Kennisportaal</i> [Knowledge hub]	Access all documentation and links to additional information.	H4. Use CO to upload or access existing data, information and service - 4.3. View maps and visualizations
<i>Meet Mee</i> [Join us]	A request is made to people to participate in the observatory and join campaigns. Users can receive download instructions for apps after registration.	H3. Submit and process data - 3.1. Submit open observations for exploration and discovery - 3.5. Submit observations according to research protocols and instructions
<i>Nieuws</i> [News]	Ads of public events (meetings, work sessions, conferences and so on), twitter feed, news items, calendar	H11. Reach out and raise awareness - 11.1. Share contents on social media - 11.9. Find/join/promote offline activities
<i>Over ons</i> [About]	Brief introduction of MMM and all partners of the Belgian case, GT 2.0 project and link to the project website. Contact page.	H1. Discover the observatory - 1.4. Access public data/materials
<i>Contact</i> [Contact]	Contact details and option to leave a message	H2. Join the CO community - 2.1. Register account and agree terms
<i>Login</i> [Login]	A registration has been prepared but currently not shown as we do not have additional content once a user logs in. Registration for the apps is on the respective pages.	H2. Join the CO community - 2.1. Register account and agree terms