



# **Deliverable D5.4**

## **First Advisory Board Meeting**



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## Versions and Contribution History

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## List of abbreviations

AB	Advisory Board
CO	Citizen Observatory
EC	European Commission
GT	Ground Truth
MOOC	Massive Open Online Course
NGO	Non-Governmental Organisation
OSM	Open Street Map
PMT	Project Management Team
SME	Small Medium Enterprise
WP	Work Package

## 1. Introduction

### 1.1 Background of this document

The Ground Truth 2.0 Advisory Board provides strategic advice to the consortium during key milestones. The Advisory Board can help view the project from a broader and higher strategic perspective. This will allow for the entrance of new ideas and guarantee that the project is linked to the general public's interest. Concretely, the main tasks of the Advisory Board are:

- To ensure the link between the corresponding stakeholders and the Ground Truth 2.0 project deliverables and results (incl. dissemination);
- To advise on the market analysis, the potential business models definition and the identification of the market barriers for the Ground Truth 2.0 enabling technologies and services;
- To advise on dissemination activities/material about project results for relevant stakeholders, incl. policy makers and other EU projects;
- To disseminate information about the outputs and impacts of Ground Truth 2.0 to the stakeholder groups they represent and/or are linked to.

The members of the Advisory Board have been appointed strategically with a balanced composition in terms of gender, background and communities that they represent (e.g. GEO community, lobby, spatial planners, governments, citizen science community, etc.).

The thorough involvement of the Advisory Board is sought annually back-to-back with face-to-face PMT meetings. The first Advisory Board Meeting took place on Thursday 22 September 2016 in Delft, The Netherlands. The agenda of the meeting and its participants are presented in Annex 1.

### 1.2 Purpose and structure of this document

The purpose of these minutes is to capture the discussion of the meeting and to record the actions and decisions taken. The document starts with an overview of the Advisory Board members and an overview of the project. Next, the demo cases and work packages are presented in detail, each followed by a summary of the respective discussions that took place. At the end, a summary of the recommendations of the Advisory Board and an action list are provided.

## 2 Minutes

### 2.1 Introduction of Advisory Board Members

**Mr. Henk van der Kamp** is Vice-President of the European Council of Spatial Planners (ECSP). He is Dutch by origin but currently lives in Ireland. The ECSP is an umbrella organisation covering 25 countries. There are differing views of what spatial planning is. Therefore, twice per year, the ECSP comes together to seek a common understanding. In 2013, the ECSP adopted a Charter of European Planning. Mr. van der Kamp will report back to the ECSP executive committee about the Ground Truth 2.0 project.

**Mr. Gregory Giuliani** works at the Institute of Environmental Sciences, an inter-faculty entity of the University of Geneva, Switzerland. He is involved in topics such as earth observation (EO), geometrics and spatial data infrastructure (SDI). He sees potential links for GT2.0 with EO groups. He would also like to bring citizen science into GEO. Mr. Giuliani also works at the UN Environment Programme (UNEP) where he leads all activities related to data sharing with the UNEP platform. Citizen science will be an important topic for UNEP.

**Ms. Barbara Anton** works at the European secretariat of ICLEI, Local Governments for Sustainability. This is a network of cities all around the globe. ICLEI's approach is both politically and technically; they speak on behalf of their members vis-a-vis global organisations, but they also support their members with sustainability issues by providing training and organizing workshops and conferences. Ms. Anton works in the team "Sustainable Resources, Climate and Resilience", hence her interest in GT2.0. She is particularly interested in city planning and participative arrangements and therefore in the demo cases that are connected to municipalities.

**Ms. Liselott Sjödin Skarp** works at the Swedish Species Information Centre in Uppsala which is part of SLU University. Ms. Skarp works as a manager for the species programme, trying to provide knowledge for species conservation. Much of her work is related to data infrastructure. Since 1990, SLU has its own observation system for birds and plants, which today contains over 53 million observations. Ms. Skarp is also involved in Swedish Life Watch. She looks forward to the outcomes of GT2.0 and urges to work together as much as possible.

**Ms. Claire Papazoglou** is the Executive Director of Birdlife Cyprus, a conservation NGO. Prior to that, she worked in Brussels for 9 years for Birdlife International. In her current position she deals a lot with data, especially from citizen science, because birds are very popular. Increasingly, habitat loss and degradation are becoming a big threat for birds. She is interested in GT2.0 because of how you can 'ground truth' remote sensing.

### 2.2 Introduction to Ground Truth 2.0 by the Project Director

Dr. Uta Wehn is Associate Professor of Water Innovation Studies at UNESCO-IHE and Project Director of Ground Truth 2.0. Her background is in Computer Science as well as the social sciences (Science, Technology and Innovation Policy Studies). She is very interested in the role of science in society. Besides Ground Truth 2.0, she coordinates another H2020 project called AfriAlliance.

The title of the Ground Truth project stems from a long standing discussion, dating back to the 90s, when Geographic Information Systems (GIS) came up. These systems contain different layers of truth, but whose truth? And how are the truths from local communities represented? These type of questions resulted in the discourse on “Ground Truth”. The 2.0 derives from the fact that we live in the digital age where citizens have new means to contribute their ground truth.

The subtitle (Environmental knowledge discovery of human sensed data) alludes to the fact that the project’s understanding of citizen science goes way beyond data collection. Rather, GT2.0 has a more comprehensive understanding of citizens’ role in science, and also in policy making and knowledge creation.

### **H2020 Call**

Ground Truth 2.0 is funded under the H2020 Call “Growing a Low Carbon, Resource Efficient Economy with a Sustainable Supply of Raw Materials”, under the topic “Demonstrating the concept of Citizen Observatories”. A total of 52 proposals were submitted, and GT2.0 was one of the four that got selected!

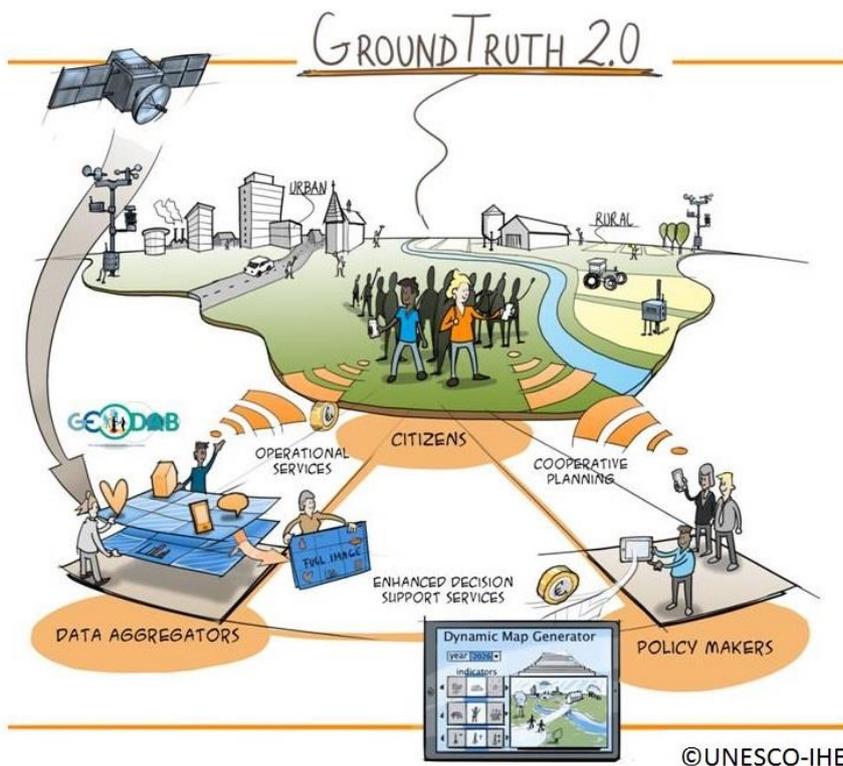
The EC has funded Citizen Observatories (COs) previously under the FP7 scheme which was very much focused on providing technologies. One of those FP7 projects was WeSenseIt, in which UNESCO-IHE took part.

The EC took a different approach in its new call which is much more focused on innovation that can feed into policy industry and society at large. The EC has made it very clear that it’s not looking for R&D, but for upscaling and demonstration. They want proof that COs actually work in real life conditions. Any data collected should *complement* data from existing systems (e.g. Copernicus). The EC is also particularly looking for concrete impacts, such as lowered costs, better decision making, empowerment of citizens, job creation and market uptake.

### **Approach**

Citizen observatories are more than “people simply collecting data”. Some of the partners already know this from previous experience. Keeping people involved is a challenge. Not just in the collection of data, but also in the interpretation, etc.

Ground Truth 2.0 distinguishes between 3 types of actors involved in the COs: citizens, data aggregators (commercial and scientists) and policy/decision makers. There needs to be something in it for all these actors in order to sustain a CO. For example, when you have a weather station in your backyard, you want improved forecast services in return. The relationships are circular rather than linear. This is nicely visualised in the illustration below which UNESCO-IHE had designed during the project proposals. The citizens are clearly at the centre and the feedback loops between the 3 core actors are closed.



Ground Truth 2.0 has two main objectives:

- Demonstration of societal and economic benefits of citizen observatories.
- Global uptake, not just of the technologies but of the concept as such.

These are boiled down to 7 more specific objectives.

GT2.0 takes a so-called socio-technical approach. From WeSenseIt, the partners learned that there is a need to take into account the social dimensions (incentives, barriers) in combination with the enabling technologies. GT2.0 also adheres to the Living Labs Principles. These principles are about taking testing and experimenting in real life contexts (out of the laboratories). Users are involved much earlier in the process: in the co-design stage and as partners, not as mere testers.

### Demonstration cases

GT2.0 has six demonstration cases: four in Europe, two in Africa. Why that many? A lot of initiatives and ideas were brought to the table by the consortium partners. The six selected are very diverse and the policy readiness differs per case. That provides a good opportunity to show that COs really work in a variety of conditions. GT2.0 has a particular hypothesis regarding the two African cases: COs can help leap-frogging to smart natural resources management. COs could be a way for Africa to skip some steps that we went through in Europe when it comes to natural resources management.

## Technological architecture

The technological architecture is modular and consists of three layers:

- Data collection (explicit & implicit)
- Data processing
- Enhanced services and stakeholder interaction

Explicit data collection is when citizens explicitly contribute data. Implicit data collection is when people are feeding data without realizing it, such as on social media. Through social media mining or analysing other text sources, these implicit data can be analysed and included in the CO.

The consortium has a range of different apps, platforms, sensors and social media already that can be deployed, via Akvo, Gavagai, VITO, HydroLogic and EarthWatch. GT2.0 will also engage in serious gaming (Tygron), which can allow visualizing the views and perceptions of different stakeholders. This can show clashes and can pave the way for compromises and solutions.

## Project management

The project is divided into five Work Packages:

- WP1: Social dimensions
- WP2: Enabling technologies
- WP3: Business development
- WP4: Dissemination and communication
- WP5: Project management.

One might wonder where the demo cases are in this list. A conscious decision has been made to not tuck them away in the WPs. The cases will *draw on* the WPs. This means that there is a matrix structure between the WPs and the cases.

The consortium partners consist of SMEs/industry, research/academia and NGOs.

- SMEs/industry: Gavagai, Altran, Starlab, Upande, HR, Tygron
- Research & academia: UNESCO-IHE, SU, CREAM, Vito
- NGOs: Akvo, WWF, EarthWatch, Tahmo

## Planning

Immediately prior to the AB meeting, GT2.0 had its official kick-off meeting. In preparation, a 160-page Inception Report had already been drafted in which the proposal was translated into a concrete implementation plan. There are 26 Deliverables and 6 Milestones due in the first year, so this project has to be run at an incredible pace. The partners will get on with the demo cases and their methodologies immediately, so that the COs can be rolled out.

## Discussion

Mr. Van Der Kamp: One of the biggest problems in spatial planning was the fact that it was top-down. This seemed most logical at the time. However, it proved to be unworkable. Today's citizens want to be involved. The whole idea of *cooperative* planning is that it can be defined in consensus. When the data are actually coming from citizens, they will be less inclined to object to certain plans. This insight saves a lot of time and money.

Ms. Papazoglou: something to bear in mind for the social scientists in the project is the notion of governance. Many northern countries seem to take their notion of governance as normal. However, in other countries it doesn't work like that, e.g. because of corruption. You have to take the local context into account. Uta agrees and explains how GT2.0 is handling this: during the co-design phase, the local stakeholders will be invited to express whether certain technologies make sense and which ones don't. GT2.0 is not about rolling out a blueprint or standard concept; the COs come in all shapes and sizes, taking local contexts and decision making into account.

Ms. Sjödin Skarp: after the project finishes, how will the results and COs be maintained? Uta explains: a number of measures have been planned. A basic measure is that the project website will be maintained for five years after the project, to guarantee online presence. Second, the EC is keen on linking previous projects and sister-projects with each other, which also adds to the longevity and long term visibility of GT2.0. Barbara asks how this is done concretely. There will be regular workshops in Brussels, such as at the end of November. Another upcoming opportunity is the INSPIRE conference next week in Barcelona. Most important for the sustainability is the business development aspect. GT2.0 will work on a sustainable business model for each CO, so that they are self-sustained. That's also why the project will spend a long time to understand the stakeholder incentives.

Mr. Giuliani: wonders if capacity building materials will be produced. This is indeed the case, such as MOOCs. Also, the African demo cases can be seen as capacity building in themselves.

## 2.3 Demonstration cases

Each demo case leader presents his/her respective demo case. After all six had their turn, we will know their differences in terms of stakeholders, ambitions, level of technology, etc., the floor is open for questions and suggestions.

### **Belgium - Environmental quality of life in Flanders - VITO**

Flanders, the Northern region of Belgium, is one of the most urbanized and densely populated in the world. This leads to pressure on the environmental quality. This demo case aims to improve dialogue between citizens and decision makers by creating a webplatform where they can share information on the local living environment, specifically on air and water quality, noise, waste and open space. VITO has been involved in environmental quality for a long time, e.g. through EveryAware and the PASTA project.

The LNE (Flemish administration, dept of environment, nature and energy) is on board in the demo case as the policy makers of the stakeholder triangle.

The webplatform will be based on [www.leefkwaliteitvlaanderen.be](http://www.leefkwaliteitvlaanderen.be). Relevant technologies from the consortium partners (such as Gavagai, Altran, Akvo and Tygron) will be integrated in the platform. Through the platform, local problems can be signaled, better monitored, be put on the political agenda and improved. Two cities have been selected for piloting: Mechelen and Hooglede.

For communication and dissemination, VITO is involving BBL: Bond Beter Leefmilieu. This is an environmental umbrella organisation in Flanders with members like WWF and Greenpeace representing a total of 200.000 citizens.

### **The Netherlands – Water availability in climate-proof management and planning – HydroLogic Research**

The demo case is presented by Tim Knippers who is the HydroLogic Research project manager. This case is about excessive rainfall. Climate change is resulting in excessive local rainfall, causing severe floods, in urban areas especially. Accurate rainfall information and geo-information is needed. However, the national rainfall monitoring networks are modest in size and the number of official monitoring stations is very limited.

Therefore, this case is about improving high resolution rainfall products, so that effective flood resilience policies and practices can be put in place. There are already some products available that are up for consideration for integration, such as the Met Service, WOW NL and Weather Underground. The stakeholders that are involved are the citizens of Rivierenland (an area in the Netherlands with 1 million inhabitants), the policy makers of Waterschap Rivierenland and the associated partners KNMI and Het Weer Actueel. This case will also use OpenStreetMap (OSM) and social media, the latter to create heatmaps of tweets that were related to rain or flooding at a specific moment in time.

### **Sweden – Integrated natural resource management - Stockholm University**

This case is about water quality, land use and biodiversity loss. A lot of data already exist. For example, Swedish initiatives are Lantmateriet (3dswe.se), VISS and geodata.se. However, these data are very dispersed and disconnected from decision making. Also, these data generally stem from public authorities, so the citizens voice is not included. Therefore this case is very much aimed at co-creation and real impact on policy making.

This demo case will be piloted in an in-depth case study within the Skarpnak municipality, as well as in several rural settings across Sweden. The intention here is to cover both longitudinal data on a mature case for citizen observatories, as well as look at scaled up demonstrations of them across urban-rural settings. From the consortium, SU is exploring to make use of the FreshWater Watch Platform, Akvo tools, Gavagai technologies and the Tygron Engine.

### **Spain – Preparing for climate change - Starlab**

This demo case is presented by Camille Pelloquin from Starlab. He is not the actual demo case leader but represents Laura Moreno/Elizabeth Gill. Starlab's work generally is about remote sensing and space technology. The demo case is about phenological observations and climate change. In Catalonia, temperature increase and rainfall decrease are having a noticeable effect on nature. Phenological records (e.g. bird migration, shifts in crop calendar) can be a useful signal. There are already initiatives related to phenological observations, but they are disconnected. Therefore this demo case is aimed at fostering all these existing initiatives.

The citizens that will be involved include hikers, farmers and weather enthusiasts. Land-use maps will be provided to guide them to the best spot for observations. The data will be linked and compared with meteorological data from the Meteorological Service of Catalonia and with satellite observations to create an integrated Near Real Time observation network. FENOCAT (the phenological network of Catalonia) is among the data aggregator stakeholders.

Understanding climate change on local phenological phenomena will help improve local policies and practices and, as such, will increase agricultural productivity, decrease fire risks and save (irrigation) water.

### **Kenya – Biodiversity conservation - UNESCO-IHE**

This case is led by Hans van der Kwast from UNESCO-IHE. He will work closely with Upande and Tahmo.

In order to manage the Mara National Reserve (in the South of Kenya) and to create sustainable business opportunities for its citizens and tourists, the Narok county government needs reliable biodiversity data. These are currently lacking. This demo case brings together a lot of stakeholders, some of whom have already expressed their support and cooperation. At the data collection level, they include local citizens, tour operators, tourists, staff of conservation organisations, etc. At the policy making level, they include the Kenya Meteorological Service, the African Conservation Center, the Masai Mara National Reserve, the Kenya Wildlife Service, and more. This case is different from the other cases because the tourists are likely to be engaged only once instead of permanently.

The Ground Truth 2.0 citizen observatory will build on Upande's VirtualKenya platform which will be expanded into a true CO. It will also be expanded with an app for visitors, tour guides and drivers that they can use offline and synchronize when back in their lodges. In addition, meteorological data are collected by Tahmo to predict species distribution. Hans envisions the lodges to have big screens in their lobby showing all observations and refreshing every 10 minutes or so.

### **Zambia demo case – Sustainable natural resource management - WWF Zambia**

Mwape Sichilongo is the leader of this demo case and starts by thanking the AB for their comments so far, which he can very much relate with (the capacity building, the corruption, etc).

This demo case is about sustainable natural resources management in the south of Zambia, a semi-arid area close to the Kalahari desert. It is aimed at improving citizen participation in the measurement of land-use changes, particularly through a) wildlife sightings; b) human-wildlife conflict; and c) agricultural activities. These data are important for the recognition of wildlife and tourism as viable livelihoods, and for conservation-based development. The link between wildlife conservation and livelihoods is tenuous. Sometimes, wildlife conservation is perceived as hindering; e.g. one elephant stepping on a farmer's land can endanger his food security for the entire year.

A monitoring system has already been put in place, but it is paper-based. It is in the process of being digitalized and expanded into a true CO. The citizens will be organized in two Community Resource Boards (CRB) representing 24 village Action Groups. They have been elected by the community and will act as co-managers and coordinating body of the CO. The decision making stakeholders are the governmental departments of forestry, wildlife and agriculture. The collected data will be aggregated and visualised to stimulate discussion between communities and decision makers.

### **Discussion**

Mr. Van Der Kamp: would like to make a point about the issue of **participative democracy**. It is worthwhile to make a distinction within the decision makers, between the actual decision makers and the representatives. Make sure that you don't forget the people that have been elected to represent the citizens, because they might feel left out when you create a direct link between the citizens and decision makers. Uta agrees and explains that the project is prepared for that. The larger issue at stake is the implications of the digital age for democracy.

Another point coming from Mr. Van Der Kamp is about **data validation**. How do you make sure that the data are actually truthful? Mr. Sjödin Skarp reflects from her experience. At SLU, there are five basic principles for reporting observations. One of them is: no anonymous reporting. That way, it is self-sorting. However, you can't truly verify people's identities. There are security measures in place when people set up an account, but there is no checking IDs. Hans adds that in the Kenya case, they are considering using social media sign up systems & authentications. As such, you can see the consistency of people's identity across social media platforms. This also has a judicial advantage to it: the identity issue is between the person and the social media platform.

Another way of looking at the issue of data validation is by taking the example of OSM. OSM has a huge community of peers who are acting as validators. Another example of peer-validation is Wikipedia. With that size of validation, the errors wash out. Ms. Sjödin Skarp suggests you might need *expert* validation in addition to that.

Ms. Papazoglou expresses her concern about the participation of the older generation. A lot of data collection is done via smartphones, which is likely to attract the younger generation. The older generation needs to have their voice heard too. Uta argues it doesn't have to be like that. In WeSenseIt, loads of elderly people participated because they are very concerned about the topic. They received a training about the use of smartphones. Young people might have so many apps, that they don't even remember. Ms. Sjödin Skarp adds that at SLU, they had a lot of help from NGOs, don't forget them.

Mr. Van Der Kamp wonders about the **commercial application**. Except for the Kenya case, he didn't see much (yet) about it in the presentations. Will there be a commercial follow up with private enterprises? Uta explains that it has not been so prominent yet for a reason. The business is not a selection criteria to start working on the cases. However, in the long run it is certainly very important. There is a dedicated Work Package for that. A presentation will take place after lunch. Ms. Sjödin Skarp adds that even though this project has specific ambitions with the demo cases, there might be other purposes that they can be used for, i.e. a win-win situation. Also, non-observations should be taken into account.

Ms. Papazoglou has been listening to the presentations from a wider angle and wonders about the **readiness** of all stakeholders to have COs. The policy makers and authorities might not see the need. It will be a huge shift for them, affecting the way they work. They might have difficulties to understand the complexity of COs and might lack the right attitude and capacity to really participate. It is a valid point. Uta responds by explaining how it will be addressed. The project will engage in dialogue with all stakeholders in the co-design process, trying to get their readiness from all stakeholders early on. Also, she thinks this is a trend not to avoid; they will need to do it anyway. So they might as well take this opportunity and join.

Ms. Sjödin Skarp agrees that it is important to build a good relation with the decision makers/authorities, also because they often tend to finance the part of the CO that they can use. Uta agrees and explains that the business model is flexible.

Ms. Anton makes a point about the **power relationships**. Participation is always seen as something positive in itself. But we have to consider that not everybody may be sincere; some might be promoting their own interests. She gives an example of Tempelhof Airport in Berlin, which is used for recreation. There were plans to put housing there, but people objected. We will see in 3 years whether the GT2.0 COs really had an impact and an added value or that it was a lot of 'trouble'. Uta explains how the project is building on prior work and is using theories from political science. Participation comes in many different forms and has different dynamics. Also, it is not just about authorities allowing people to participate, but also about people *claiming* participation.

Mr. Van Der Kamp responds to the example of Tempelhof. He argues that the problem is probably not so much with politicians not agreeing with the citizens, but with politicians getting surprised. They have gone through standard procedures, they organized community meetings and all of a sudden there are action groups protesting against their plans. The politicians should find out at an earlier stage what opinions people have. They could have seen, for example, on Twitter that people are using Tempelhof for recreation and that they are having nice BBQs there. This knowledge will also benefit the financial side; communities are more likely to co-finance an initiative when they have been involved since the beginning.

Mr. Giuliani is impressed by the diversity and quality of the demo cases. He agrees with the data quality and validation issues put forward. Related to that, he wonders how the data and data quality will be communicated. How will GT2.0 advertise the data sets? Hans responds by explaining that the project is involved in GEOSS at a high level, through Joan Masó. GT2.0 wants to advocate for the GEOSS Data Management Principles and is looking to respect them throughout the lifetime of the project. In addition, GT2.0 will look into other standards for data quality. Tim adds that it could be an idea to indicate in the final product which data sets have been used. When people see that their data set is not used, it might motivate them to improve the quality of their input.

It is asked whether GT2.0 will contribute to Copernicus and INSPIRE directives, such as the flood directive. Tim responds that in the Dutch demo case, the Water Boards will communicate on a national and European level with the directives. Uta adds that in the Italian case study of WeSEnselt, COs were used as a pilot, but are now adopted as a *must* for river basin management plans. GT2.0 can aim for something similar, tapping into those different policy discourses.

## 2.4 Work Packages

### **Work Package 1: Social Dimensions - UNESCO-IHE (WP1 leader: Uta Wehn)**

WP1 aims to provide the basis for co-designing and co-creating COs via a sound understanding of the social context. This WP also aims to validate and combine the results from all 6 demo cases into guidelines and recommendations.

It all starts with the stakeholder analysis of each of the demo cases. Who are the stakeholders at the start? How do they evolve over time? And how do they relate to each other? In parallel, this WP will do an analysis of the incentives & barriers. After those two analyses, the stakeholder engagement will be started. How do we get the stakeholders actually on board? You need to approach them differently. WP1 distinguishes between three main strategy stages: 'Testing the water', 'Scaling up' and 'Maintenance'.

Then the actual implementation can begin with the co-design. What are the users' needs? This activity is carried out within the LivingLabs principles approach and feeds into the next steps: the functional design and impact analysis. There's also a distinct task on the economic impact. There's also a broader impact assessment, which includes social aspects and institutional aspects. In the end, this WP draws on all separate results which feed into the guidelines, to bring together all the lessons learned that have been captured.

### **Work Package 2: Enabling Technologies - Altran (WP2 leader: Alberto Masa)**

This WP is lead by Altran. The Altran Group consists of more than 30.000 consultants or so-called „innovation makers“. The main objective of this WP is to customize, deploy and upscale the required technical solutions for each demo case. The four key drivers of this WP are:

- Integration. No new software will developed. A lot of partners already have good software.
- Data: This WP will gather all data from each case in a centralized repository. Other data from external sources will be added.
- Enhanced services:
- Standardization: if we want the data to be reused, they must be standardized as much as possible.

This WP will begin with the integration of software components for each demo case. Altran will ensure that all data are consolidated properly.

Another objective of this WP is the development of the Land Use Mapper. Land use is about residence, agriculture, etc. Land use maps are essential for many things we do, such as for planners, spatial decisions, hydrological models, etc. However, currently there are some problems with availability and consistency. Altran wants to improve the availability of land use data. The demo cases will be used to calibrate the algorithms.

### **Work Package 3: Business development - Starlab (WP3 leader: Laura Moreno)**

This WP is led by Starlab, working closely together with business consultant Nina Costa. The main objective is to build sustainable business models that will allow to bring the GT2.0 products to the market. This WP will begin with a market analysis, thereby building on the stakeholder analysis of WP1.

Starlab will use classic methodological tools, such as the business model canvas. They will also develop an Exploitation Roadmap. All along, this WP will define KPIs for monitoring purposes.

#### **Work Package 4: Communication & dissemination - CREAM (WP4 leader: Joan Masó Pau)**

The three main objectives of this WP are:

- To raise awareness about GT and increase the level of engagement among target audiences
- To provide the COs with communication and engagement tools to promote their activities to society and policy makers
- To provide regional authorities with access to and training on the GT technologies, results, methods and guidelines.

Concretely this WP consists of a variety of tasks, activities and steps. For example: online presence. Joan is proud to be able to say that there already is an initial website. The coordinator wanted to have online presence from day 1 of the project. So he took the information that we already have. The url is: [www.gt20.eu](http://www.gt20.eu). There is also a section about citizen science in general because not everybody is familiar with the concept.

Another activity is to create a calendar of networking activities that integrates the main events over the next years. Furthermore, 3 separate communication toolkits with promotional materials will be developed for GT2.0, the COs and the Land Use Mapper.

In terms of capacity building, this WP will organize 2 MOOCS. It will also make sure that the GT results feed into the curriculum of for example TAHMO's school2school programme. Another very important task is to engage with relevant initiatives such as GEOSS and INSPIRE. In OGC, there is a new Working Group on citizen science, CREAM got the opportunity to chair that. The new GEOSS Data Management Principles will probably be approved in the next plenary meeting in Russia. GT2.0 is planning to make use of them.

Based on a set of indicators, progress in communication efforts will be monitored and the dissemination plan will be updated accordingly.

#### **Discussion**

Mr. Giuliani express his concern about the (lack of) **bandwidth and internet connection** in Africa. Uta explains that the project takes a modular, flexible approach in terms of the variety and composition of technologies used. Furthermore, consortium partner Akvo has experience with this as its core business is in the global South. Also, Kenya and Zambia can learn from and help each other. Still, Ms. Papazoglou wonders if there will be a possibility to work offline. Also, she suggests to allow people to use computers rather than mobile phones. She points out that a lot of birdwatchers use computers. Alberto will certainly consider and see what comes out of WP1. Ms. Skarp wonders if there can be responsive web pages. Alberto is open for the suggestion. However Hans argues that if there is already a dedicated app, it doesn't really make sense to create a responsive website on top. Nevertheless, it should be understood that each demo case will have an online platform (website) beyond the data entry.

Mr. Van Der Kamp points out that the term 'co-design' can have multiple meanings. In the planning community, co-design means strategy. Please be aware and avoid ambiguity. He also wants to make a point about the data validation: perception matters. Take noise as an example. The interesting thing with noise is that it is perception-based. Uta responds by explaining that the Gavagai text analysis tool is very useful in this regard. It monitors noise (sentiment) rather than specific individual observations. Uta adds that co-design in GT2.0 refers to the process of jointly designing the observatories, not strategies.

Ms. Sjödin Skarp has a question about standardization within the Land Use Mapper. Will the basic land functionalities be fixed in terms of **classification**? We discussed that we'll look at the requirements of the stakeholders from the demo cases, but also from the planner. Henk van der Kamp will consult the planning community on what commonly used land-use classes are desired for planning purposes.

Ms. Anton asks where the citizen input fits into the decision making planning process, because planning processes generally have official procedures and steps. To what extent is GT2.0 analysing those kind of decision making procedures? Uta explains that this will be taken into account in WP1, in the stakeholder and impact analysis.

Ms. Anton also stresses the importance of **ownership**. Over the next 3 years, all stakeholders have a role to play. But at the end of the day, will one of them be interested and ready to keep the CO going? She thinks that it is very important to identify the future host/owner at the beginning of the project and to build a close relationship. Uta explains how she has got very similar advice from the business developer that she hired in WP3. This business developer is taking a 'services-perspective': who will be willing to pay for the CO service? WP3 will already start its activities in month 6, so not just in the last year. So, Ms. Anton's point is very valid and well-noted.

Joan has a question for Ms. Sjödin Skarp. Her species observation system is similar to what the Spanish demo case is trying to do. Except, this case only requires observations in particular seasons and not throughout the entire year. And the policy impact is particularly difficult in this case. What is her take on that? Ms. Sjödin Skarp: we cooperate with national agencies and the phenological network in Sweden. So we know that the data will be used. So her advice is to speak to those in the governmental and political arena who may have an interest.

Ms. Papazoglou explains how there has been a strategic decision to shut her database down and to integrate it into other databases. However, this database was not set up to analyze anything, but because people find it *fun* to put data in. She stresses that both needs should be served. Uta finds this a very nice, concrete example of what GT2.0 means / does with its enhanced services: we need to enhance what the users want.

A last point is made about **data access policies**. There is a need to clarify that at the beginning when people start putting the first data in. Uta explains how GT2.0 is addressing this through the ethics review that the EC has done. The issue has also been flagged during the kick-off.

## Logo

The logo for GT2.0 has been crowdsourced via [ontwerpvoorgeld.nl](http://ontwerpvoorgeld.nl), a Dutch platform where basically anyone can view the instructions and create a design accordingly. The platform has a global reach. There are also international equivalents. The designer of the winning logo will get paid at the end. The AB has reviewed a pre-selection of 6 logos. Uta and Joan will pass their feedback on to the designers.

## Questions to the Advisory Board

The WP and demo case leaders now get the opportunity to ask questions to the AB.

Uta: how can we best reach the different communities that you represent? Where do you meet? How do we best showcase GT2.0? How can we best package what GT2.0 has to offer? Mr. Van Der Kamp sees a number of opportunities with regards to the spatial planning community:

- Give a presentation to the ECSP General Assembly
- The ECSP Biennale. The last one in Dublin was specifically about technology and planning. The next one will be in June 2017 in Paris.
- Every two years, there are Planning Awards. A good demonstration case of GT2.0 could possibly be awarded.
- He suggests also to think of the governance and political dimension, not just the professional planners. For example, the covenant of mayors.

Ms. Anton: a first step should be to define your message: What is the attractiveness of GT2.0 for the particular ICLEI audience?

- ICLEI has 3 yearly European conferences that might be an opportunity;
- The city of Montreal will host the ICLEI World Congress 2018;
- The Cities of the Future programme is hosting a conference in Sweden in 2017 themed “Embrace the Water”.

Ms. Papazoglou advises to speak with the European Environment Agency. They are particularly interested in land use changes. She can also provide contacts at the bird platform.

Ms. Sjödin Skarp argues that there is a lot going on at the national level with regard to land use. In Sweden, for example, is the 3Dswe project. So she suggests each partner to look at the national level. Another suggestion is the EC Habitat Directive.

Uta: this project has a matrix structure of demo cases cutting through the WPs. She'd like to seek the AB's advice on the methodology for this structure. They demo cases need to be managed but they also need to be free to develop at their own pace.

Mr. Giuliani responds: another project had a similar structure and was not successful. However, a big difference with this project is that the demo-case partners in GT2.0 are also involved in the WPs. Mr. Van Der Kamp wonders if the demo case leaders could be the same persons as the WP leaders. However, these roles are already assigned and this can't be changed. Ms. Papazoglou stresses the importance of good communication. Uta agrees and explains the structure that is in place to address this: the demo case leaders are part of the PMT and there will be regular Skype calls with that PMT. Ms. Anton argues that the website should feature the cases prominently. Uta confirms. The GT2.0 website serves as a portal to each demo case website.

Hans asks Mr. Giuliani what the opportunities for GT2.0 are in the GEOSS arena. Next week, there will be a workshop related to the GCI API's. The deadline for registration was yesterday, but Mr. Giuliani will anyway give the link to Alberto. These workshops are held quite regularly, the next one will probably be in November. Also, Mr. Giuliani recommends to have a look at the list of events of the GEO work programme. Joan tells about the citizen science community portal, this is a part of the GEOSS portal specialized in the subset of citizen science data. It is a window shop where you can discover citizen science related things.

## Final words

Everybody agrees it was a fruitful, interesting meeting and everybody is very grateful.

Uta thanks the consortium partners, and especially the Advisory Board members for their effort to travel to Delft for a 1-day meeting. The discussion was held at the higher strategic level that she was hoping for. She expresses the hope that the AB members can act as ambassadors of GT2.0. She is pleased to hear they are so passionate about the project. She calls upon them to let her know when they see any opportunity; the consortium is happy to come and give a presentation. Please follow /like GT2.0 on social media. We will meet again next year in Brussels probably, but we will be in touch before.

## 3 Recommendations & actions

### 3.1 Summary of recommendations by the Advisory Board

- In each demo case, bear in mind the local context
- Enhance what the *users* want
- Bear in mind the importance of cooperative planning
- Participative democracy: don't forget the people's representatives when you create a direct link between citizens and decision makers
- Make sure that the older generation of citizens participate in the COs
- Consider the data collection offline, via computers and/or via a responsive web page
- Be prepared for a lack of readiness, willingness and capacity from the decision makers side
- Make sure to analyze the decision making procedures in each demo case
- Be aware that in the planning community, co-design also means "strategy".
- Data collection & validation: perception matters
- Consider a mix of data validation e.g. through peer validation and expert validation
- Standardization: think through the (fixed?) functionalities in terms of classification
- Identify the future owner of the CO at the beginning of the project and build a close relationship
- Make sure to link up with the H2020 sister projects
- Seek collaboration with GEOSS, Copernicus, Inspire and national citizen science initiatives
- Develop a proper data access policy
- Feature the demo cases prominently on the GT2.0 website
- Pay attention to capacity building

### 3.2 Actions for GT2.0

Ref.	Action item	Who	Due by
AB2016.1	Include the events that the AB members have mentioned in the GT2.0 internal calendar	Kim	asap
AB2016.2	Share the names of the WP & demo case leaders with the AB	Meike	Done
AB2016.3	Include AB recommendations in the Inception Report to address them in the respective WPs	Uta	31 October 2016

## Annex 1 - Agenda & Participants

Time	Topic	Chair / Speaker
09:00-09:15	Welcome	Uta Wehn
09:15-09:30	AB member introduction	All AB members
09:30-10:15	Overview of GT2.0, year 1 milestones & agenda for the day	Uta Wehn
10:15-10:45	Coffee break & poster session	
10:45-11:45	Demonstration cases	SU, VITO, Starlab, WWF, UNESCO-IHE, HR
11:45-12:45	Discussion on demonstration cases	Uta Wehn
12:45-13:45	Lunch (UNESCO-IHE restaurant)	
13:45-14:45	WP1-WP4 presentations	Altran, Starlab, CREAM, UNESCO-IHE
14:45-15:30	Discussion	
15:30-16:00	Coffee break & logo feedback	
16:00-16:45	Discussion	Uta Wehn
16:45-17:00	Wrap up	Uta Wehn

Name	Organisation	
Advisory Board		
Gregory Giuliani	UNEP-GRID	
Henk van der Kamp	European Council of Spatial Planners	
Barbara Anton	ICLEI	
Clairie Papazoglou	Birdlife Cyprus	
Liselott Sjödin Skarp	ArtDataBanken	
WP & demo case leaders	Organisation	Role
Alberto Masa	Altran	WP 2 leader
Ester Manzano	Altran	WP 1 contributor
Joan Masó Pau	CREAF	WP 4 leader
Camille Pelloquin	Starlab	Deputy WP 3 leader & deputy Spanish demo case leader
Somya Joshi	SU	Swedish demo case leader
Tim Knippers	HydroLogic Research	Dutch demo case leader
Stijn Vranckx	VITO	Belgian demo case leader
Mwape Sichilongo	WWF Zambia	Zambian demo case leader
Hans van der Kwast	UNESCO-IHE	Kenyan demo case leader
Uta Wehn	UNESCO-IHE	Project Director & WP 1 leader
Meike Remmers	UNESCO-IHE	Project Assistant

Mr. Pontus Westerberg (UN-HABITAT) was absent and apologized for not being able to participate.

## Annex 2 - PowerPoint presentation

# Ground Truth 2.0: From citizen-based data collection to joint knowledge creation

**Dr. Uta Wehn**

Associate Professor of Water Innovation Studies

UNESCO-IHE

**Ground Truth 2.0 Project Director**



Call – Growing a Low Carbon, Resource Efficient Economy with a Sustainable Supply of Raw Materials  
H2020-SC5-2014/2015

Topic: Demonstrating the concept of 'Citizen Observatories'  
SC5-17-2015

Specific challenge:

New *in-situ* observatories ('Citizen Observatories') based on citizens' own devices ...can **strengthen environmental monitoring capabilities**,

...to **reduce investment and running costs** of in-situ observations and monitoring applications and solutions,

...involve **novel partnerships** between the private sector, public bodies, NGOs and citizens.

...depends on further development and testing in **real conditions, wider deployment and commercialisation** by the private sector and greater user acceptance.

...requires **leveraging emerging technologies**, data and information sharing, developing services and **actively engaging in governance at all levels and scales in the domain of environment**.

...calls for innovative approaches and tools to handle complexity, interactions and interfaces and to **facilitate knowledge transfer, assessment, valuation, uptake and exploitation of data and results** for policy, industry and society at large.

Call – Growing a Low Carbon, Resource Efficient Economy with a Sustainable Supply of Raw Materials  
H2020-SC5-2014/2015

Topic: Demonstrating the concept of 'Citizen Observatories'  
SC5-17-2015

**SCOPE OF PROPOSALS:**

- **scale up, demonstrate, deploy, test** in its entirety and **validate** in real-life conditions the system proposed for Citizen Observatories the effective transfer of environmental knowledge for policy, industrial, research and societal use with a **focus on the domain of land cover/land use, both in rural and urban areas** strong **involvement of citizens and citizens' associations** together with the industrial sector, in particular **SMEs**

... **data** collected should complement those from existing systems (e.g. the Copernicus Land Service) and surveys, including national surveys

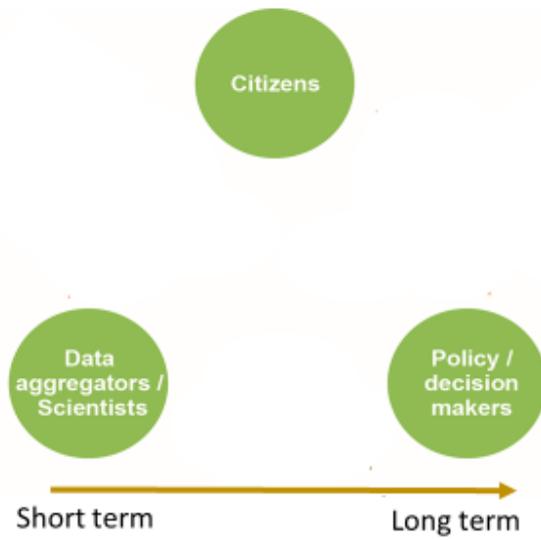
**EXPECTED IMPACT:**

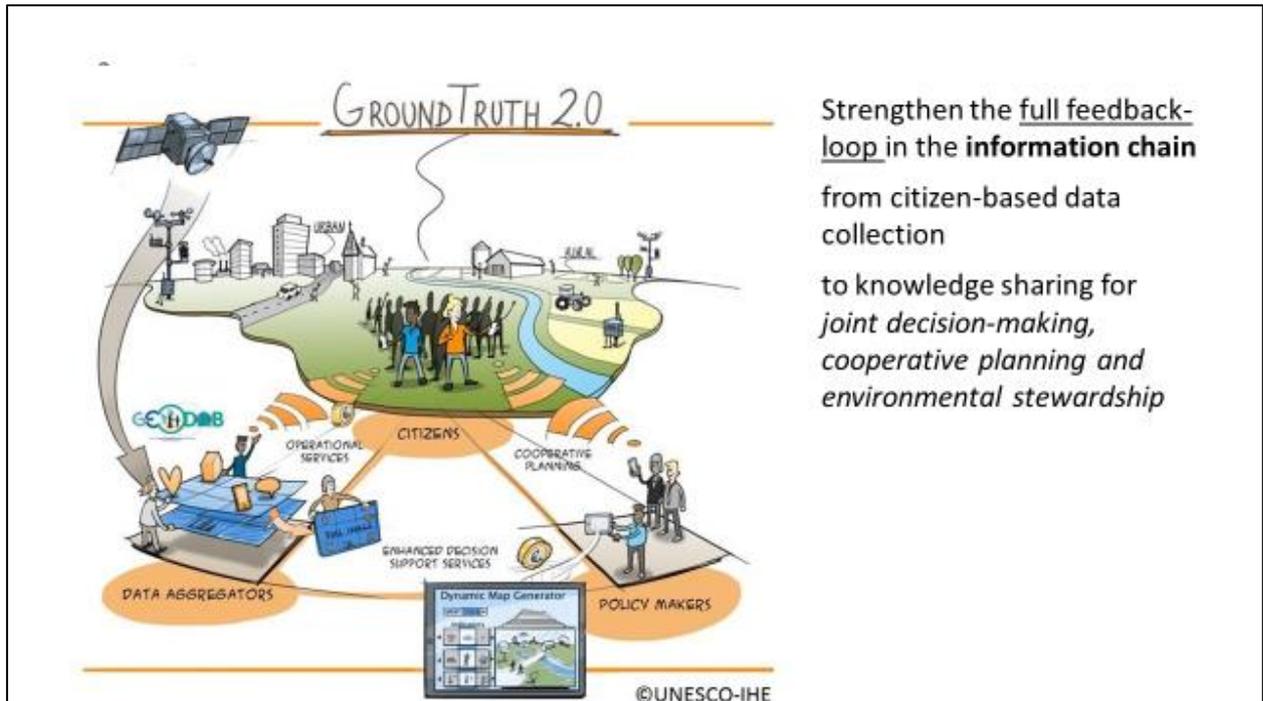
1. Lowered cost and extension of the in-situ component of the GEOSS and Copernicus initiatives.
2. Better **decision-making** through the **empowerment and active role of citizens and citizen's associations** in environmental monitoring, co-operative planning and environmental stewardship, with special impact on land resources management.
3. Enhanced implementation of **governance** and **global policy objectives**.
4. Increased deployment and **market uptake** of innovative in-situ monitoring techniques.
5. Increased **European role in the business** of in-situ monitoring of the environment.

## Citizen observatories



## Concept





## Objectives

- 1. Demonstration of societal and economic benefits of citizen observatories**
- 2. Global uptake**

Overall & specific objectives

1. Demonstration of societal and economic benefits of citizen observatories	2. Global uptake
<ul style="list-style-type: none"> <li>- To <b>engage citizens</b> in large-scale data collection and maintain their active and continuous engagement in the observatories for cooperative planning and environmental stewardship</li> <li>- To <b>customise, test and validate interoperable and scalable technologies</b> for large scale citizen-based data collection that lower costs compared to existing data sources</li> <li>- To provide technologies and approaches that <b>address concerns about the use of citizen-sensed data</b> in terms of privacy, trust and accountability</li> <li>- To <b>improve land-use mapping</b> in terms of availability of land-use data, consistency of time series of land-use maps and accessibility to land-use information.</li> <li>- To <b>empower citizens' active role</b> in planning, decision making and governance which results in the improved management of environmental issues</li> <li>- To <b>ensure the long-term sustainability</b> of the citizen observatories</li> </ul>	<p>To <b>create business opportunities and market access</b> (EU and worldwide) for the Ground Truth 2.0 partners as well as other European companies</p>

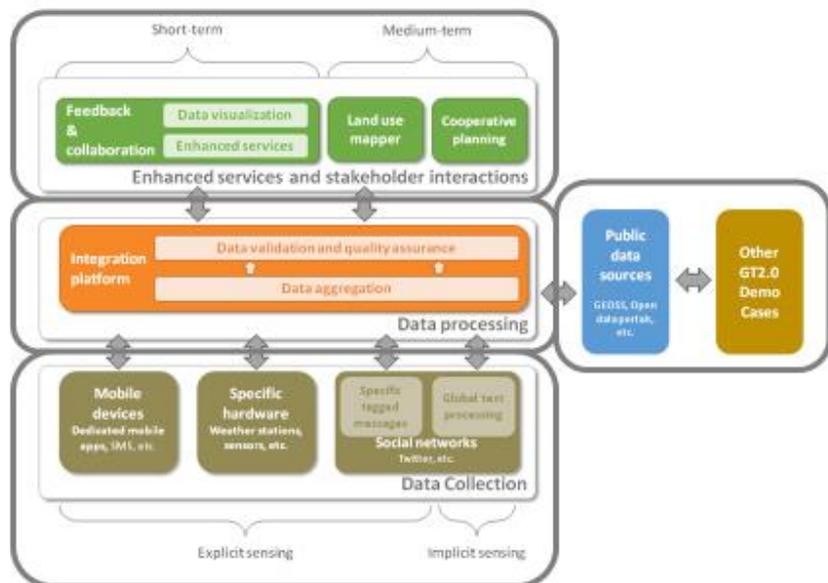


### Demonstration Cases

Belgium	Spain	NL	Sweden	Kenya	Zambia
Environmental quality of life in Flanders	Preparing for Climate Change	Water availability in Climate-proof Management and Planning	Integrated natural resource management	Biodiversity conservation	Sustainable natural resource management
Air and water quality, noise, waste and open space	Phenological data, i.e. flowering, breeding, and migration	Hydrological information	Nutrient pollution of land and water	Biodiversity data (game spotting, etc.)	Wildlife sightings, human wildlife conflict and agricultural activities

*African cases: leapfrogging to smart natural resources management?*

### Architecture



Data collection

Via Apps, platforms, sensors and social media

HydroLogic

Land Use Mapper

Dashboards

Smartphones

akvoFlow

Gavagai

altran

EarthWatch

CREAF

GAVAGAI MONITOR

TAHMO

UNESCO-IHE

SOCIAL MEDIA

#FenoDato

altran SENSE

Data processing

Integration platforms to gather, analyse & fuse data from heterogeneous sources & integrate with GEOSS

sentilo

HydroLogic

vito

Your data + Other data = Combine data sets = See the whole picture

akvo Lumen

Land Use Mapper

GEO DAB

UNESCO-IHE

CREAF

Enhanced services and stakeholder interactions

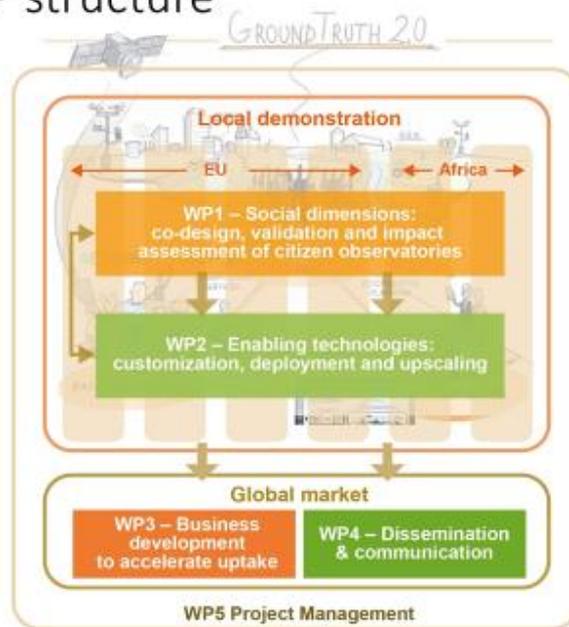
## Visualisation & community



## Serious gaming



## WP structure

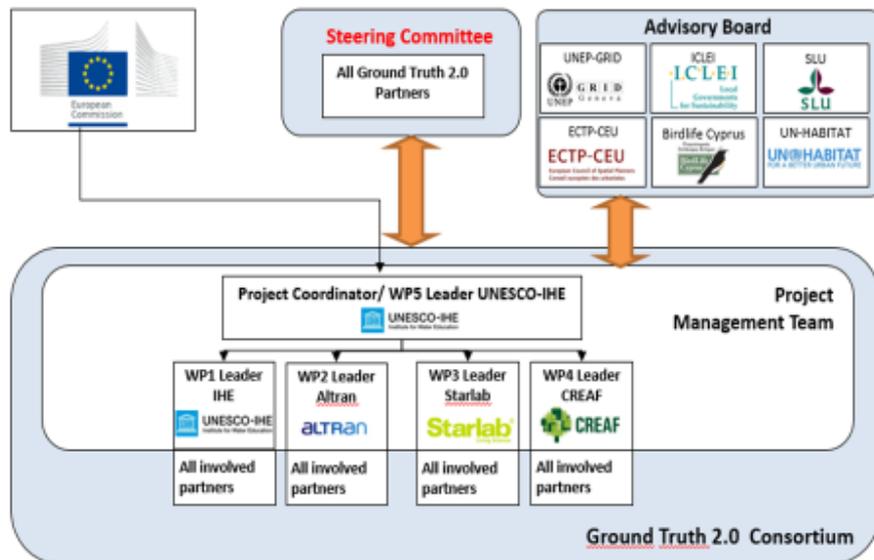


## Ground Truth 2.0 Consortium



Ground Truth 2.0

## Management structure



## Year 1

### Deliverables

- WP1: 5
- WP2: 7
- WP3: 0
- WP4: 3
- WP5: 4 + 7 (ethics)

### Milestones

- MS1 (M4) – *Successful project start*
- MS2 (M6) – *Baseline measure of stakeholder interactions*
- MS3 (M6) – *Outreach package complete*
- MS4 (M8) – *Initial stakeholder analysis & functional & technical design complete*
- MS5 (M12) – *Platforms ready in all cases (short term feedback)*
- MS6 (M12) – *Methodologies for validation & impact assessment ready*

Time	Topic	Chair/Speaker(s)
9:00 – 9:15	Welcome	Uta Wehn
9:15 – 9:30	Advisory Board member introductions	All AB members
9:30 – 10:15	Overview of GT2.0 & year one milestones, agenda for the day	Uta Wehn
10:15 – 10:45	Coffee break – meet the consortium (posters)	
10:45 – 11:45	Ground Truth 2.0 Demonstration Cases	SU, VITO, Starlab, WWF, UNESCO-IHE, HR
11:45 - 12:45	Discussion on Demo Cases	Uta Wehn
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16.00 – 16.45	Discussion	Uta Wehn
16.45 – 17:00	Wrap up	Uta Wehn

## Poster challenge

- Mission & competence of the partners organisation is cristal clear



- It's role in Ground Truth 2.0



- Design: layout/styleColours



### Rules:

2 stickers of each colour per person

Can be allocated as desired (separately or on one poster)

## Thank you

Dr. Uta Wehn

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