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Abstract: This document focuses on presenting a plan for organizing activities related to acquiring new users of the SnapEarth project groups, as well as the process of communication between project partners and users.

* Dissemination Level: *PU= Public, RE= Restricted to a group specified by the Consortium, PP= Restricted to other program participants (including the Commission services), CO= Confidential, only for members of the Consortium (including the Commission services)*

** Nature of the Deliverable: *P= Prototype, R= Report, S= Specification, T= Tool, O= Other*

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Glossary

SUG	SnapEarth User Group
EO	Earth Observation
DIAS	Data and Information Access Services
NGO	Non-Governmental Organisation
EU	European Union
WP	Work Package

Executive Summary

Establishment and involvement of user groups, user communities are the key element of exploitation strategy for SnapEarth. It forms the foundation for exploitation actions scheduled to take place during the project, like the workshops, business model development, etc. User groups will state the main driving force behind the widespread market adoption of SnapEarth and it is them who are the focus of this document.

Therefore, it will be very important to involve all project partners in building and managing user groups. We must properly understand their needs and use them to build SnapEarth services that will be tailored to their needs. Good communication and its transparency will facilitate the entire cooperation process between consortium partners and users.

This document focuses on presenting possible potential recipients of SnapEarth services, both public and private, and outside of them, where having information presented is related to the type of work or interests. Appropriate interest in the services we offer them, creating the right communication, presenting solutions and building an active community will ensure long-term, demand-based use of SnapEarth (both during and after the project).

The document also presents a plan of organization of activity and active involvement of project partners as well as recipient groups in the project.

It is important to maintain a continuous collaboration with user groups, contact them through available internet communication sources as well as during direct meetings, workshops, conferences and other events.

This document will be constantly updated, as new information will appear during the work that will allow us to reach wider and more accurate groups of recipients.

Project overview

The ambition of the SnapEarth project is to foster the Market growth of COPERNICUS by instigating the development of new EO applications by PROFESSIONALS who will make use of Earth Observation data to increase the added value of their offers vis-à-vis their own customers, and to develop general public awareness to EO data.

Although these professionals might not all be experts in image processing, they will be able to integrate SnapEarth services into their own business model and service processing for retrieving the EO based information they need for better servicing their customers and reinforcing their competitiveness.

Five of these professionals are an integral part of the consortium. They will bring their market knowledge and customers portfolio to develop new services based on the needs expressed by their customers.

⚒ This will be particularly the case of consortium leader **QWANT** who will develop the **EarthSearch Portal** service targeted to **General Public**.
   QWANT will boost COPERNICUS user uptake thanks to its innovative management promoting user privacy and data centre security.
   Indeed, today, EO data are freely available in very large quantities. However, the main obstacle to their use by the General Public is that these data are very complex to interpret by an inexperienced user and they are not currently highlighted by search engines. The news search abilities directly on the content of images (vectorized) instead of metadata will allow the general public to search easily for EO and thus spread awareness and innovation ideas for EO data usages. Thanks to deep learning methods combining both natural language processing and computer vision, any Earth Search Portal user will be able to express questions in natural language on images and get either a text response or an imagery response.

⚒ The same semantic search functionalities will also be offered by **CERTH** through the development of a dedicated **EarthPress service**: Information packages will be delivered to **Press professionals** including EO data and contextual information related to an event that can be depicted with EO imagery.
   One of the key aspects of EarthSignature is the ability to train models on new image datasets without having to use pixel by pixel annotated images. METU University, thanks to its expertise in weakly supervised learning and data-efficient deep learning, will implement a semantic segmentation method based on partially annotated data

⚒ A series of 3 additional business services, namely **EarthClimate**, **EarthFoodSecurity** and **EarthAgriculture** will also be developed by KAPITECH, ISARDSAT and CS-R.
   The **EarthClimate** service will be delivered to recipient groups related to: **decision-makers** (like cities, regional, national administration, road administration), **health organisation, climate organisations, climate research institutions, citizens**.
   The **EarthFoodSecurity** service will be delivered to targeted customers such as: **food security organisations, international development consultancies, water resources associations, NGOs, multilateral agencies, regional or national administrations, agropastoral associations, research institution**s.
   The **EarthAgriculture** service will be delivered to groups related to: **regional or national Administrations, agricultural policy decision makers, medium and large-scale farmers, agriculture organisations, agricultural research institutions** (such as universities)

Also, Qwant and CS Group will bring their strong know-how in big data technologies and distributed cloud computing by operating the SnapEarth platform services for giving the above Professionals the capability to address the challenge of the huge amount of Copernicus data to be managed and processed. SnapEarth will address the objective of the EC and the above-mentioned challenges with two innovative solutions: EarthSignature and SafeScale.

- **EarthSignature**: aims to develop AI models so as automatically interpret content and label each pixel of EO images (incl. Copernicus data) according to predefined categories (CLC nomenclature level 2). These AI models will be used to produce datasets for **professionals**, and to index semantically the Sentinel 2 images above Europe. Thanks to EarthSearch, these AI models and indexed images will be available to EO service providers. The latter will be able to create datasets of pixel by pixel segmented images and to set-up and train processing chains using SnapEarth facilities. Thanks to the integration of EarthSearch index into Qwant facilities these services and EO images will be accessible by the general.

- **SafeScale**: The cloud infrastructure including computing management and security service of the SnapEarth project will be achieved by an innovative cloud-agnostic product named "SafeScale". SafeScale is led by CS SI and will be adapted to provide a facilitated access to the Data and Information Access Services (DIAS) platforms to any **service provider** willing to deliver Copernicus data-based services to its customers3. SafeScale is able to provide remote working environments tailored to the users' needs, and hosted into the most suitable DIAS platform. Such remote working environments will be scalable in terms of data storage and processing capability. SafeScale will act as a cloud brokering solution providing a performant, cost effective environment, also protecting users' investments in building own new services. For that purpose, EarthSelfService is the proposed **service dedicated to third parties** willing to use SafeScale solely, hence following a similar model as the DIAS but ensuring Cloud-provider independence.

In order to realize these objectives, users across Europe must be engaged in the project. Groups and communities of users of the SnapEarth, including citizens, private organisations, public organisations, networks, and others, have to know about the SnapEarth solutions and the possibilities that it offers.

The process should be carried out in an easy and accessible way. To lead to the spread of SnapEarth solutions, they must be informed and encouraged to become interested in SnapEarth solutions.

That is why active involvement of users in all phases of the project is very important. Firstly, for refining the SnapEarth platform and first pilot services requirements, which will be a part of the D2.2 SnapEarth Platform & Services User Requirements, and then for implementing interactive processes with users (service providers) and their end-users for benefiting from their experience, their true on-the-field datasets and feedback such as:

1) Define and revise the technical specifications of the developed SnapEarth platform.

2) Iteratively evaluate the project outcomes and use evaluation results for refining and improving the project outcomes.

Timeline

The work and involvement of SnapEarth recipient groups will be implemented throughout the entire duration of the project (30 months).

During this time, workshops with recipient groups will be organized. Each of the SnapEarth service leaders will be in constant contact with users. The SnapEarth website will be constantly updated with new information on project progress. Blog and social media will be additional communication tools between the consortium and the target groups.

Only such a nature of the organization of the work plan will allow to reach the right user groups in a proper way, have a significant impact on the progress of work on the services and will also allow for proper targeting of services to user groups.

Objectives of the user groups engagement strategy

How we define the end user?

An end user is defined as a person or group in a position to apply the information or tools being produced, evaluated, or transferred through a Science Collaborative project in a way that is of direct consequence to the ecological, social, or economic integrity of a reserve(s) and/or surrounding watershed(s). Examples of end users include, but are not limited to, reserve staff, and public, private or non-governmental decision/policy makers, including landowners, resource managers, land use planners, and educators at all levels.

End users should help define the focal issue, clarify the decision-making context, identify key stakeholders, and highlight current information needs.

At the time being, 40 end-users are interested by the SnapEarth services and 16 of them have signed a letter of interest. They have already confirmed their support of the SnapEarth proposal and their interest in participating in the SUG (SnapEarth User Group).

This group of users will be the first to cooperate with leaders responsible for individual SnapEarth services. They will be active participants in the process of creating user requirements. Services leaders will be responsible for collecting and consolidating users' needs under T2.2.

In the next stage, when the SnapEarth services will be more and more advanced, we will invite more users. The ideal moments for such activation will be workshops, direct meetings, information in the press and on social media channels.

The strategy regarding the involvement of SnapEarth user groups focuses primarily on users and their communities. The solutions to be developed must be feasible and implemented by the consortium.

To be able to effectively engage the community of SnapEarth users, we need to engage specific people who use services on a daily basis that facilitate their work and allow easy and accessible use of data. This method will enable us to effectively acquire potential users of SnapEarth services.

Our goal is to build such a community of engaged users who belong to various types of organizations, institutions and independent recipients, who are located in all 6 countries where the consortium partners are located, as well as to expand throughout the EU.

We can engage SnapEarth users through extensive activities related to dissemination and exploitation activities. An example of such activities is the organization of workshops, where SnapEarth service leaders will involve user groups in various stages of task implementation and will be in close contact with stakeholders. An equally important tool aimed at acquiring new users will be events aimed at disseminating information about SnapEarth services, conferences, events, fairs. Another example is the Blog, where users will be able to comment on current information. They will be in constant contact with consortium partners. Another tool for disseminating information will be newsletter, which will contain the most important information about the project and its progress.

This combination will allow reaching the largest audience possible, increasing awareness of the proposed services as well as stimulating the inflow of new recipients to the SnapEarth space.

An extremely important aspect is the involvement of each partner in the process of building proper relationships with user groups and animating them the right way. It is very important for the consortium to provide potential groups of users with information related to technical aspects, but also to those that easily and transparently determine the possibilities of services and show the simplest path to obtain the necessary information. It should be borne in mind that the recipients of SnapEarth services will be not only users with extensive technical knowledge, but also users who will use information obtained from services only on the basis of specific guidelines.

It is extremely important to provide the most important information about the proposed solutions in a detailed manner and showing all the necessary possibilities to create use cases for these solutions. Only in this way will we be able to encourage the market to use SnapEarth services, in particular companies that, as part of their activities, would be able to increase production capacity, reduce data acquisition costs and obtain specific information that is their area of interest.

Also, attracting public organizations and institutions such as NGOs, regional authorities, associations, institutions related to the environment, agriculture, government agencies, ministries etc. has a significant impact on the entire project implementation process and subsequent development after completion.

User communities will be a key element of the business model that will be created during the project. It should be borne in mind that services offered by SnapEarth must refer to the right economic situation and be presented in an accessible way.

We will actively cooperate with users, track their experience throughout the duration of the project.

The exploitation process

The exploitation process is aimed at ensuring the continued relevance of SnapEarth outputs after the end of the project. The first part of the exploitation process is closely linked to the dissemination activities carried out in WP7.

The SnapEarth exploitation process includes two key parts:

1. identification and engagement of user groups, including lead users, and this will be also a part of the WP7 - Dissemination & Exploitation as part of the T7.1 – Dissemination & Communication
2. development of the business model for the key types of user organisations and business plans for the Service and Pilots as part of the T7.2 – Business Planning for Services and Pilots and T7.3 – Economic viability of SnapEarth Platform.

As part of engaging new, potential users of SnapEarth services, apart from those who expressed their commitment in the first phase of the project as SUG, we will actively search for new SnapEarth recipients. For this purpose, we envisage additional activities that will allow us to approach the topic as widely as possible.

Table below outlines the main actions corresponding to the exploitation strategy.

Lp.	Actions	Description
1	Identify major business players. Identify relevant user groups on Internet. Identify various professional or semi-professional entities. Task mainly done on the national level by partners. However, as far as possible, searches can be carried out in other EU countries to increase the reach of potential recipients of SnapEarth solutions.	An extremely important aspect is to involve the widest possible group of users of SnapEarth solutions. These are primarily groups located in the EU. However, it is also possible to extend groups to other regions, such as Africa, where services such as those proposed by SnapEarth can become a very interesting tool for everyday work. You should search for all possible groups interested in solutions. Groups that work with data on a daily basis that need information presented on SnapEarth services.
2	Develop business model for various organisations and SnapEarth Pilot and Services.	The business model will be based on the necessary market analysis and discussions with potential user groups. Only in this way can we prepare the right business approach and provide the right revenue models for individual SnapEarth services. Business models will be prepared for a period of 5 years after the end of the project, which will allow for a broad business perspective.

3	Active participation of user groups, motivation and creating good conditions for their participation.	An example of such activities may SUG meetings, where each user will be able to present their experiences, insights, and lively discussion will be held about the requirements for individual services and their functionality. If possible, user participation in conferences, significant publications, publications in posts, etc.
4	Conduct workshops for the SUG and new users.	Participation in such workshops is significant for the project. Thanks to these meetings, we will be able to learn about users' requirements, discuss necessary functional issues, learn more about their opinions. They will be able to present their approach, tell about their work and how they use data on a daily basis and for what applications. Thanks to this, we will be able to test our services even more, as well as directly improve them. Such workshops will also allow us to further achieve the required goal regarding the approach to the business model.

Identification and Engaging of the User Groups

The involvement of SnapEarth User Groups in the process of creating requirements for the proposed SnapEarth services is a key element of the exploitation strategy. Thanks to the commitment of users, we can develop appropriate standards and adapt products to their requirements. The technical and substantial knowledge of users will allow us to create the right requirements for the SnapEarth services that will be tested by them at a later stage of work.

At the very beginning of creating the project outline, the consortium prepared the first list of user groups relevant to specific SnapEarth services. Some of these users also expressed their interest through letters of support.

The SnapEarth project will constantly evolve, which is why acquiring new service recipients during the project is a very important aspect. They will be the next potential recipients/ customers of the services. Cooperation at the next stages of the project with both first and new user groups will require the appropriate involvement of each partner and leader responsible for individual SnapEarth services.

Below is a list of SUG that have been identified for each SnapEarth service:

EarthSearch Portal service targeted to **General Public**

EarthPress service: Information packages will be delivered to **Press professionals**

EarthClimate service will be delivered to recipient groups related to: **decision-makers** (like cities, regional, national administration, road administration), **health organisation, climate organisations, climate research institutions, citizens**.

EarthFoodSecurity service will be delivered to targeted customers such as: **food security organisations, international development consultancies, water resources associations, NGOs, multilateral agencies, regional or national administrations, agropastoral associations, research institution**s.

EarthAgriculture service will be delivered to groups related to: **regional or national Administrations, agricultural policy decision makers, medium and large-scale farmers, agriculture organisations, agricultural research institutions** (such as universities)

EarthSignature: the AI models will be used to produce datasets for **professionals**

SafeScale: will be adapted to provide a facilitated access to the Data and Information Access Services (DIAS) platforms to any **service provider** willing to deliver Copernicus data-based services to its customers.

An extremely important aspect is the involvement of each partner in the country of consortium's partners. This is important because communication in a given country will always be facilitated by direct local contact. Language restrictions can always affect the possibility of acquiring new users, which is why it is so important for representatives in a given country to get involved in activities that promote, disseminate and bring together user communities.

In order to engage new users, consortium members will use their own networks, at both national, regional and local levels. They will be responsible for proper communication with key people in individual organizations, institutions. They will build new user communities to provide information on the presented services to the widest possible group of users. And this will be one of the most important stages of the SnapEarth exploitation plan.

Partners will also build the SnapEarth community among partner organizations, during events, through a website on which the blog will operate and all other possible communication tools.

We propose four main actions that should be taken to involve the user community in the SnapEarth project:

Building the brand of the project, its capabilities, visibility - every information about the project, every new success, every event related to the implementation of work in the project should be communicated to groups of recipients through available communication sources. Such information will provide the necessary details, allow users to be involved in each stage of the project and become familiar with the progress of tasks. Visit conferences, major trade fairs where you can build brand awareness and disseminate information. Provide information about the project during business meetings, internal communications, contact potentially interested entities. Ask users what technical problems they collide about, what topics they are interested in, try to give examples of solutions and try to explain the possibilities of solving the problem.

Don't make promises you can't keep - an extremely important aspect is to try to meet the requirements that users set for us. However, these goals can only be achieved if we can meet them. You must determine if the user requirements are met by the consortium. If you do not have the right answer, then you must discuss the query with the SnapEarth consortium. It is also important from the point of view of building responsibility, and that users who support us in improving the given solution must be treated at a high level.

Allow you to maintain the right direction of discussion on blogs, in social media - it is very important that each user can speak freely and be able to ask questions for which he is looking for answers. Only in this way can the user get the answer to the sought solutions, and at the same time will allow to attract more advanced users to the discussion.

Motivate the user community - among the users there may be potential future business partners, potential collaborators. Remember that the project will also allow us to increase the number of employees in the future, and contacts with potential groups of users become a great example where we can both establish contact and motivate a potential candidate for an employee. Organize meetings with users. Each visible element of activity will mobilize potential users and increase their number.

Inform current and potential users about the benefits of participation in the project, about the planned stakeholders' activities during the project lifetime, and other added values which will encourage users to work with SnapEarth partners.

Data protection – please inform users about the rights we apply. If you contact a user, ask him if he would like their contact information to be included in our database of potential users. The collected data will be used only to contact the user. We do not use data other than the project purpose.

Key performance indicators

As part of the implementation of tasks in the SnapEarth project, we proposed achieving a set of necessary performance indicators in order to properly implement the tasks and direct the progress of work in the right direction. The table below presents the proposed KPIs, which were included in the Dow.

Actions	Key performance indicators description	Planned value
Workshops, hackathons, events	Number of service providers reached through the hackathons and application camps	**min 50**
	Each of the business pilots have organized workshops with at least n-key customers.	At least **15**
	Workshops organised by the project to collect user requirements, discuss **SnapEarth** specifications and present the project results	At least 6 (**2** workshops to capture initial need and collect feedback after first use of SnapEarth and **4** workshops in relation with each of the Pilot).
	Organise n-iterations of demonstration, and pilot evaluation of SnapEarth outcomes enabling revision and refinement of the project activities and results.	At least **2**
Communication and dissemination	Number of end-users reached and contacted through the dissemination and communication	Min **250**
Business model	Different use cases when designing and developing the **SnapEarth** system for ensuring that end-users are provided with an efficient system for their operational needs.	at least **4** (the 4 pilots)
	Number of users of **SnapEarth** services	**Min 100** at the end of the project, and **500** 3 years after

Animation of the SnapEarth User Group

The animation of the SUG will be carried out though dedicated workshops, meetings, online surveys, social media and/or user forum or blog to capture ideas, needs, constraints and feedbacks.

This is an extremely important aspect of the organization's plan in the project. Thanks to such activities the SnapEarth consortium is able to develop the most optimal functional and business models for individual services and pilots.

WORKSHOPS

As part of the animation activities, we plan to organize **two workshops with user groups**. The first workshop will take place during the sixth month of the project. It will be the optimal time when the first comments, information, requirements will be already analysed by our partners. Until then, we will be in constant contact with the SUG to verify the necessary requirements.

During this first workshop the necessary information will be presented, which will be developed in cooperation with SUG, and the results of the SnapEarth project will be discussed. Both partners, SUG and new recipients will be able to participate. This workshop will allow us to evaluate all the comments and requirements applied. They will also allow groups of users to present themselves to be able to learn more about them and verify their requirements.

We would like users to become part of our community, and with their knowledge, experience and specific needs will be able to indicate the right directions for the development of services and platforms. We want to actively support our users, promote them internationally, and activate them together.

The second workshop will take place during the 14th month of the project. This will be the next stage of verification of the work carried out under the project and presenting the progress in creating SnapEarth services.

The first workshop is foreseen in France, it will include online presence. The location for the second workshop will be taken during the first workshop.

In addition to the above two workshops, additional **4 workshops** will be organized (in Romania, Greece, Spain and Poland), during which the platform's capabilities will be promoted as well as the individual 4 pilot services will be presented separately. During these workshops you will be able to obtain the necessary information about specific service, as well as be able to join the process of creating a website and collecting requirements. Workshops will be organized by individual leaders of given Pilots. These workshops will also be a good time to conduct analysis with experts.

Dates and locations for the above 4 workshops will be determined in due time and announced through all information channels.

If additional workshops are needed, the consortium will decide how they can be carried out properly and what form should be appropriate. It is possible for the workshops to be prepared in the form of online meetings.

A **global workshop set up in Brussels** at the end of the project, where all users involved in the pilot tests will be proposed to participate, and with other service providers representatives will be invited to attend. In this final conference, the main project findings and the roadmap of the future exploitation prospects will be disclosed. A global workshop will be held in April or May 2022.
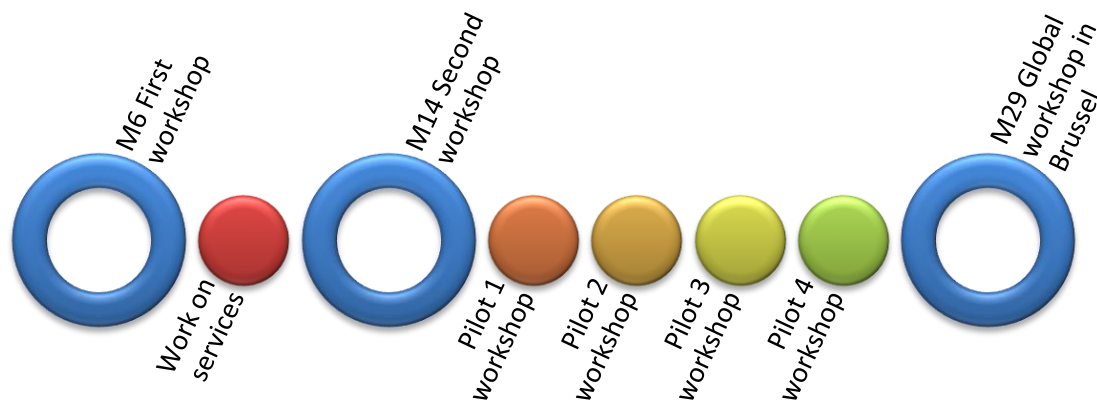
A pre-workshop survey will be carried out prior to each workshop using the adequate survey tool so as to understand the information/knowledge level of the participants, allowing for appropriate preparation and a clear focus for each workshop.

A concise preparatory package of materials will be prepared for each workshop including relevant input from each SnapEarth service leader for which feedback is needed in a user-friendly form that's conducive for gaining input.

Key points from the workshops will be registered by the persons designated in the project.

EMAILING

Direct contacts in the form of **emails** will also be a very important aspect of user group animation. Partners will work very closely with users to ensure the highest level of collaboration.

ONLINE SURVEYS

An additional aspect that will ensure the right path of cooperation and exchange of insights and will allow for a proper collection of requirements from users will be **online surveys**. This will ensure proper verification of the necessary requirements provided by users. Questionnaires will be sent no more than once a month. In special cases, leaders will contact their users to clarify information. Results would be evaluated

by the Communication leader. Any use made of survey results will be presented in aggregated form. No identifiable personal information will be shared publicly unless explicit written consent is received.

ONLINE DISCUSSION AND EXCHANGE FORUM

The **project's website, blog** and **social media profiles** will also be an additional element engaging user groups to activate and inform about the progress of work. It will be an open source for constant contact with project partners as well as for active commenting on information that will appear on relevant portals. These services will be updated on a regular basis.

Actions for the partners

All partners of SnapEarth have been assigned PMs in WP2 Users Involvement & Requirements Consolidation. This means that all partners will be requested to participate in various activities relating to WP2. The number of PMs assigned to exploitation efforts for each partner varies, and is outlined in the Description of Work document. Following on that allocation, each partner is asked to participate in the following activities:

- Identification of the groups of users in their local, regional or national context.
- Contacting those groups of users and establishing a good communication between the SnapEarth partners and users.
- Maintaining SnapEarth presence in those groups over the whole duration of the project.
- Preparation of the workshops dedicated the global knowledge about the project solutions as well as the Pilots services
- Active participation in social media, support for the communication and dissemination leader in ongoing activities.
- Active participation in discussions on the project blog available on the website
- Project partners should strive to achieve established KPI.