

Cos4Cloud

Co-designing Citizen Observatories Services
for the European Open Science Cloud



Project coordinated by the ICM-CSIC and funded by Horizon2020, which has 15 partners in several European countries and Colombia.

Co-design of Citizen Science tools

Blanca Guasch, PhD
Science for Change

26/05/22



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 863463

COORDINATION



COLOMBIA



FRANCE



GERMANY



GREECE



NETHERLANDS



SPAIN



SWEDEN



UNITED KINGDOM





Citizen Science and Cos4Cloud



What is Citizen Science?



What is Citizen Science?



A bridge between science and society: **Citizens actively contributing to science.**



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A bridge between science and society: **Citizens actively contributing to science.**



Processes that empower citizens in order to offer **new perspectives and data** that wouldn't otherwise be known to science if these types of processes weren't used.



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There are many methodologies that can be used in Citizen Science processes. **Citizen observatories** and **co-design methodologies** are wonderful allies.





Citizen observatories

Co-design methodologies

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Co-design methodologies



Photo of Dio Hasbi Saniskoro in Pexels

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Photo of Lukas in Pexels

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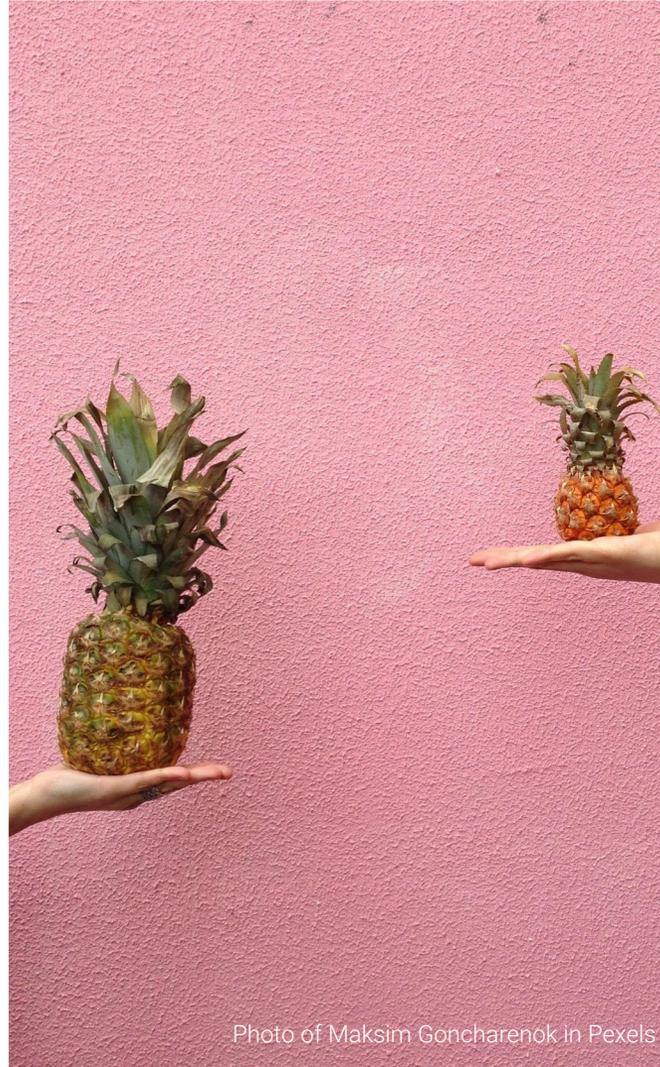
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Photo of Yan Krukov in Pexels

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Photo of Frans van Heerden in Pexels

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Photo of Thirdman in Pexels

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They make it possible to create a **common language** among the different stakeholders around a need, challenge or problem.



Need detected:

We need more data everywhere and at all times

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Possible observational solutions



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Advanced technologies



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Citizen observatories



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Global data repositories

Need detected:

We need more data everywhere and at all times

Challenges

Low interoperability/standardisation

Low data validation levels

Low technological capacity

Lack of recognition for citizens
contributing observations



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Solution

Co-designing and prototyping
new open technology services
→ Cos4Cloud

Cos4Cloud, a European project that drives Citizen Science technologies



Photo of Lex Photography in Pexels



Photo of Fauxels in Pexels

Cos4Cloud, a European project that drives Citizen Science technologies



Integrate Citizen Science into the **European Open Science
Cloud**



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Cos4Cloud, a European project that drives Citizen Science technologies



Integrate Citizen Science into the **European Open Science Cloud**



Provide **innovative user-centred services** to improve Citizen Science technologies



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Integrate Citizen Science into the **European Open Science Cloud**



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Facilitate **networking and knowledge management** processes among organisations, persons and initiatives that work in citizen observatories



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Contribute towards ensuring the **sustainability of citizen observatories**



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What does Cos4Cloud offer?



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These services focus on improving **interoperability**, data **quality** and **security** in data management within the different Citizen Science platforms.

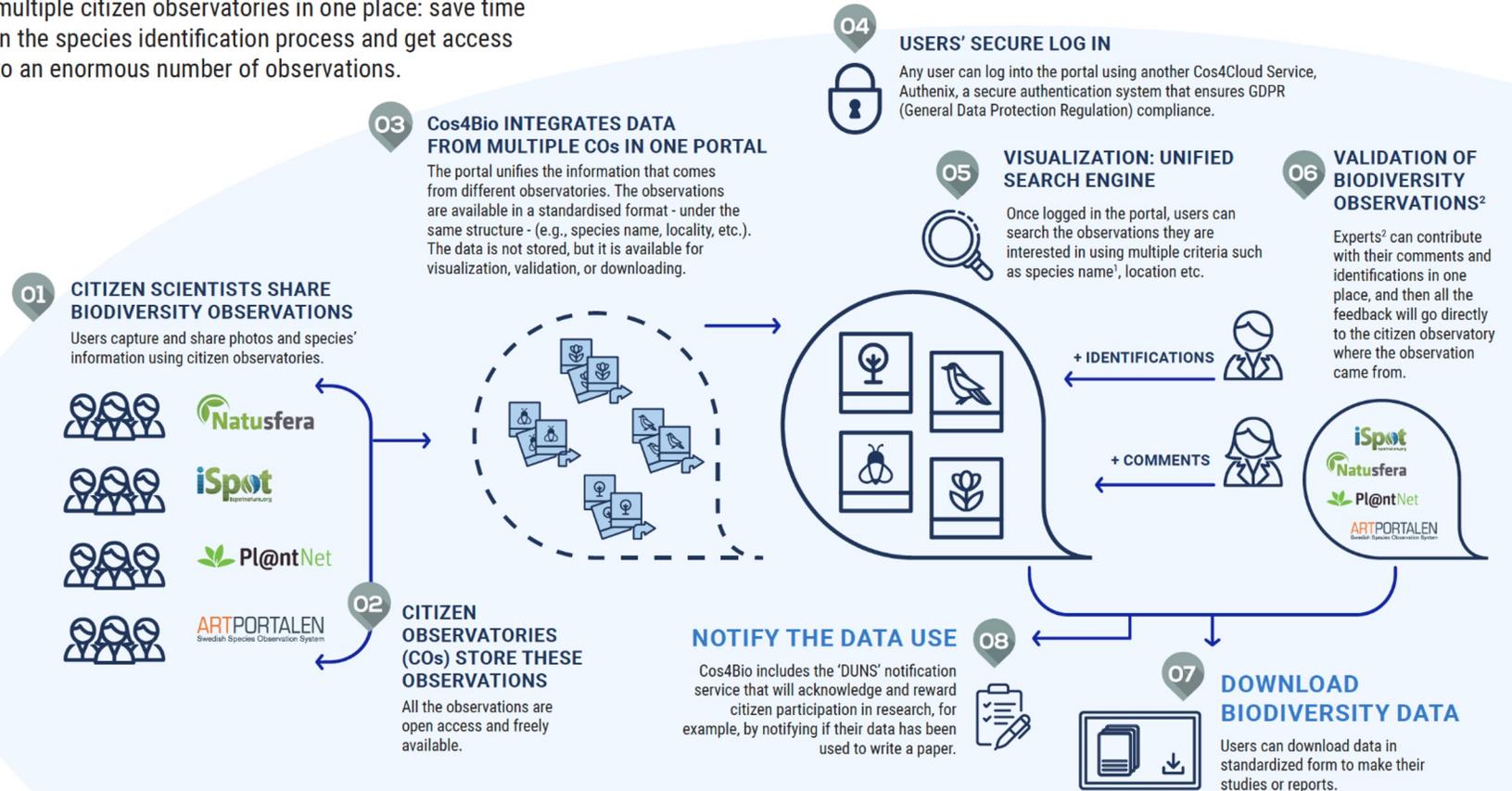


The 13 services

1. Cos4Bio
2. Cos4Env
3. DUNS
4. MOBIS
5. MECODA
6. FASTCAT-Cloud
7. FASTCAT-Edge
8. Pl@ntNet-API
9. AI-Taxonomist
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Cos4Bio Why should you use Cos4Bio?

A service that integrates biodiversity observations from multiple citizen observatories in one place: save time in the species identification process and get access to an enormous number of observations.

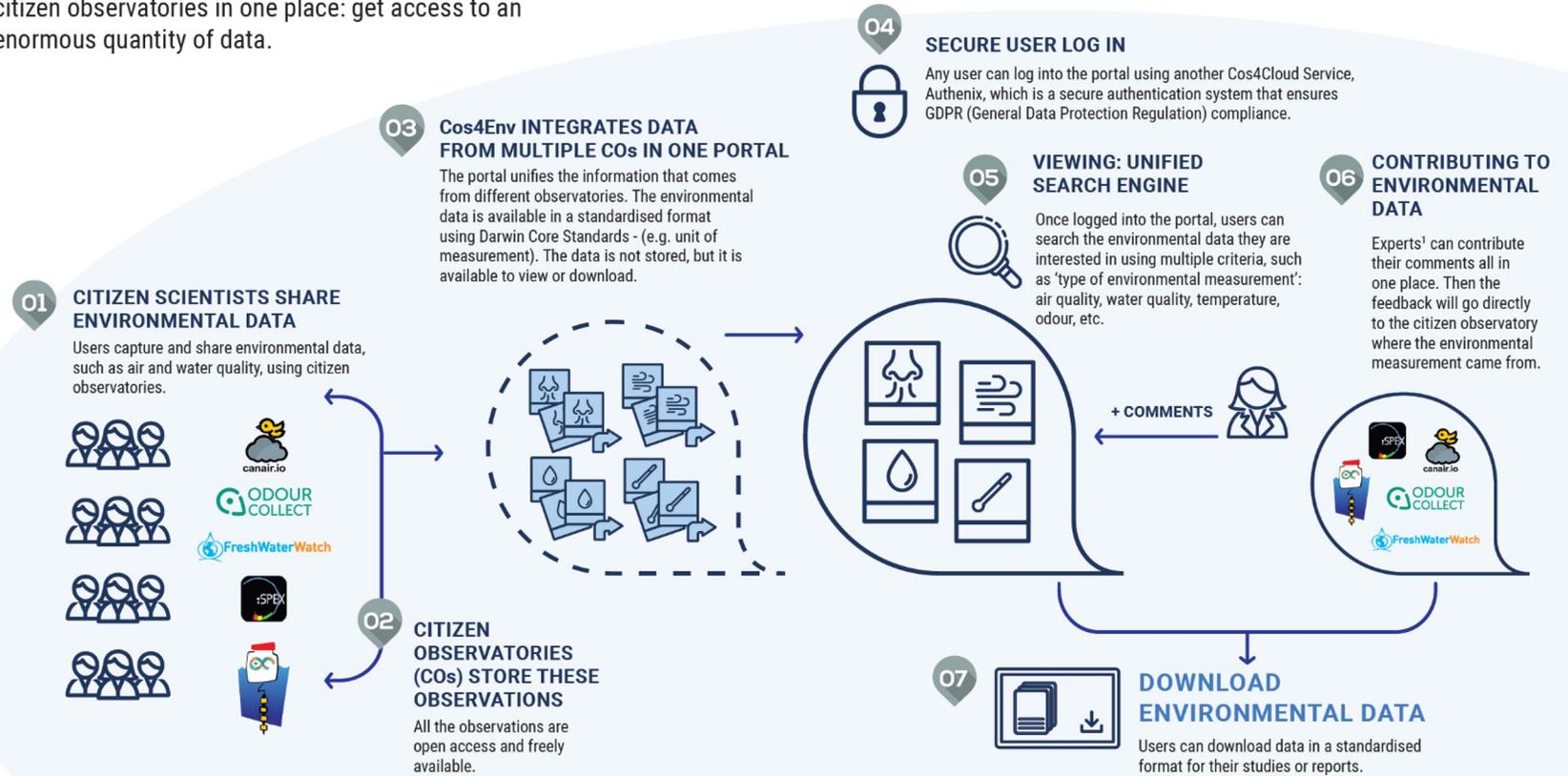


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A service that integrates environmental data from multiple citizen observatories in one place: get access to an enormous quantity of data.

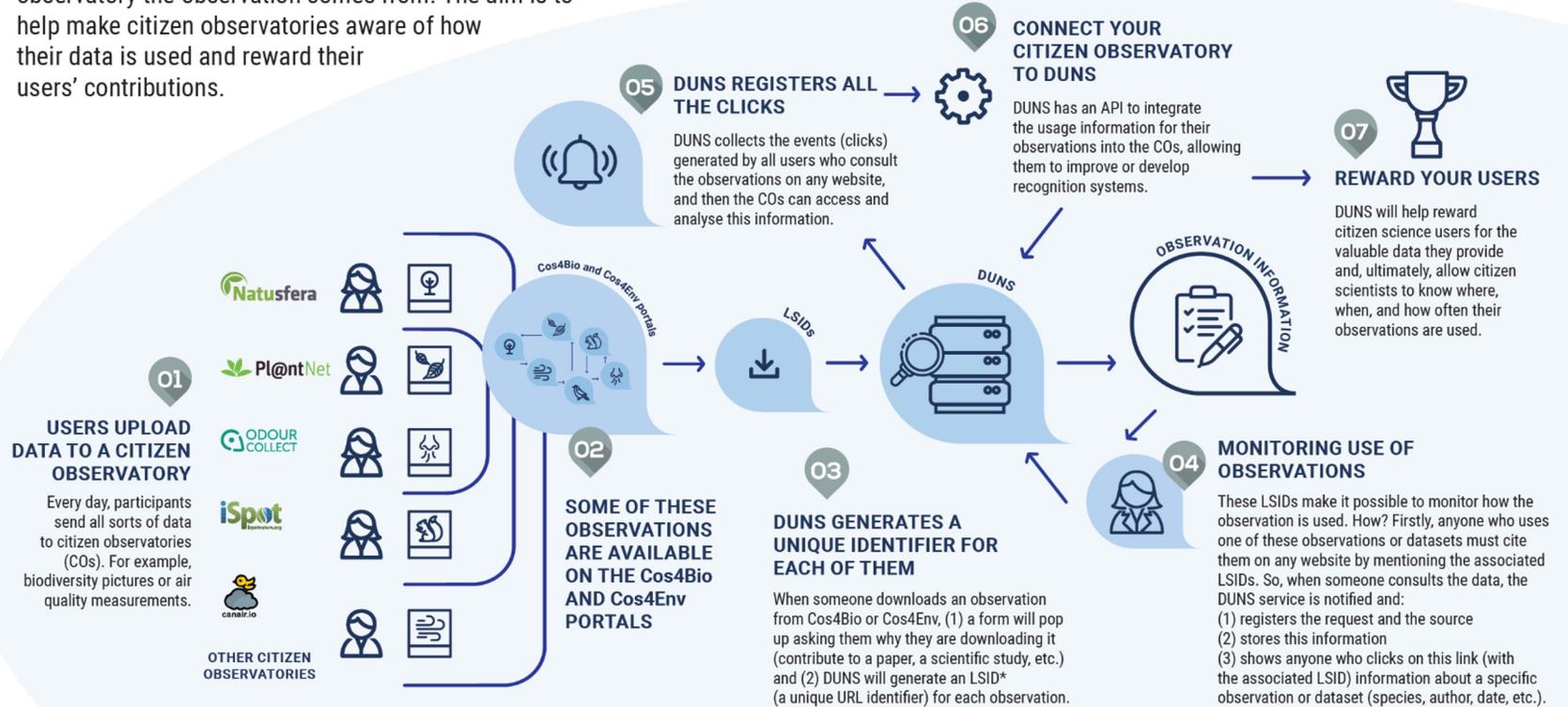


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DUNS Why should you use it?

DUNS is a centralised service to (1) register the use of citizen science observations downloaded from the Cos4Bio and Cos4Env portals and (2) make this information available to the citizen observatory the observation comes from. The aim is to help make citizen observatories aware of how their data is used and reward their users' contributions.

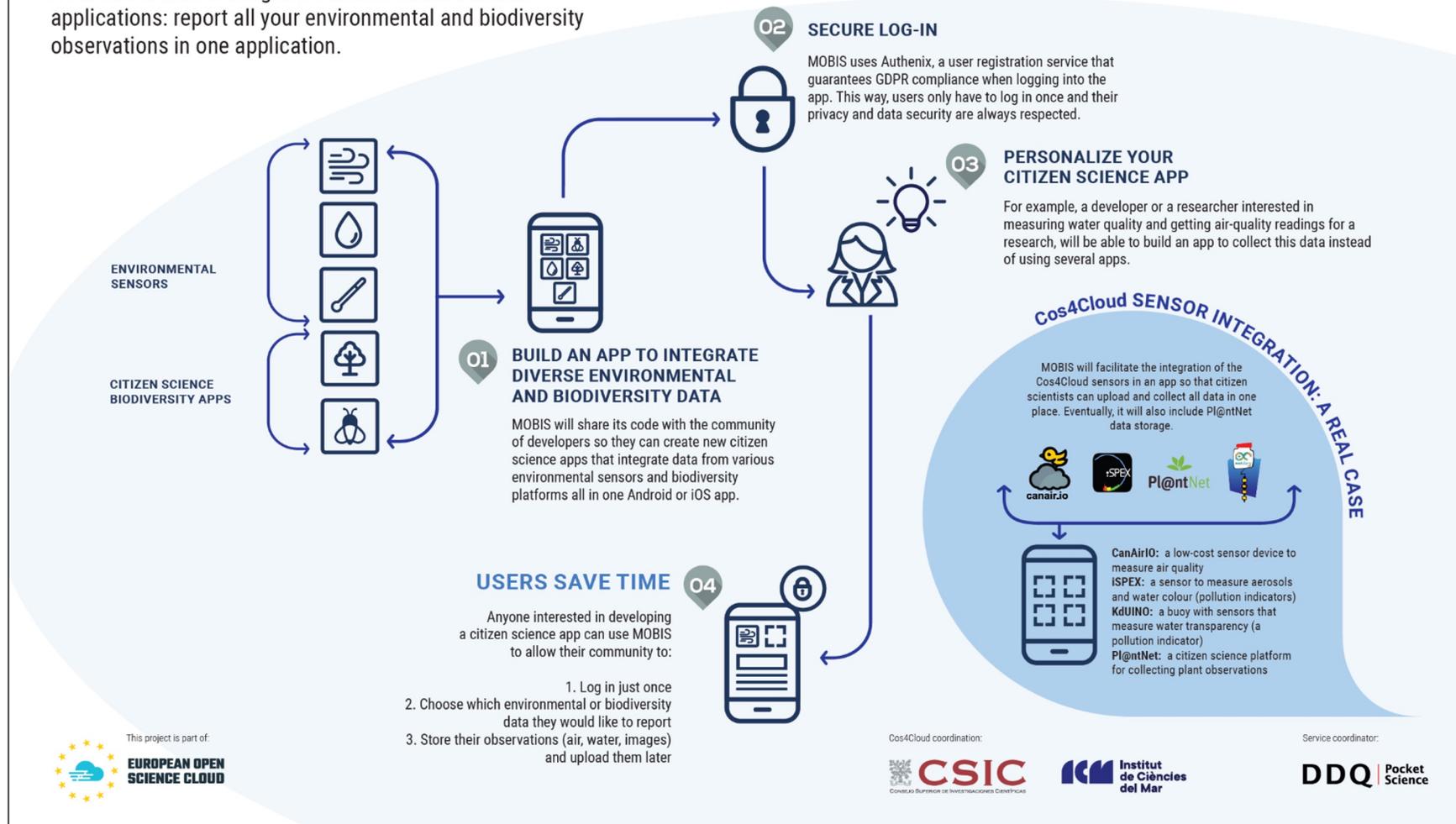


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MOBIS MOBILE OBSERVATION INTEGRATION SERVICE Why should you use MOBIS?

A service to create integrative citizen science mobile applications: report all your environmental and biodiversity observations in one application.

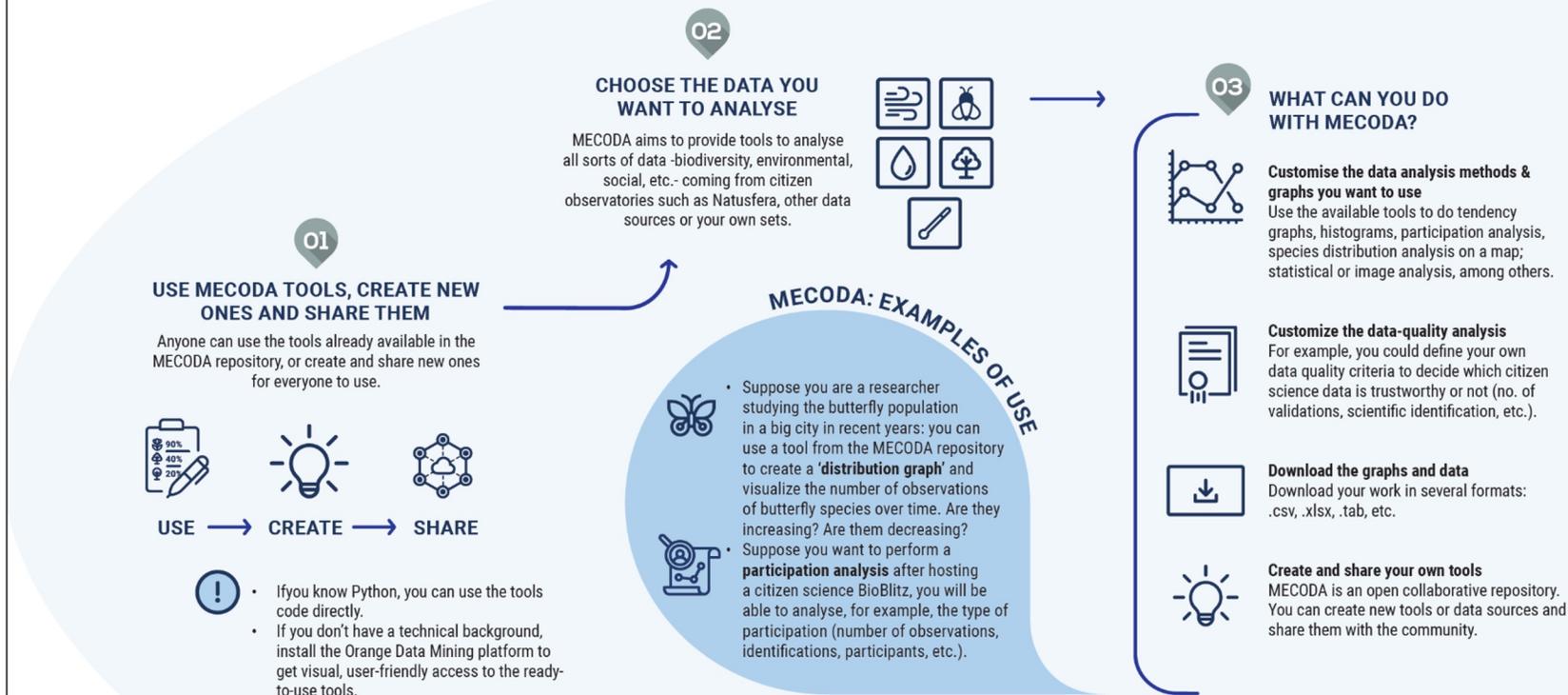


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MECODA Why should you use it?

MECODA is an online tools repository to facilitate the analysis and viewing of all sorts of citizen science data.



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FASTCAT-Cloud Why should you use it?

Upload and analyse all your nature videos and pictures on the FASTCAT-Cloud website: receive only information on relevant images and recordings of wildlife activity and quickly identify the species names using Artificial Intelligence (AI).

01 TAKE PICTURES AND VIDEOS OF NATURE WITH YOUR CAMERA TRAP

Place your camera in the field to record wildlife activity.



02 UPLOAD ALL PHOTOS AND VIDEOS TO THE FASTCAT-Cloud WEBSITE

You can upload all photos and videos in ordinary formats such as .jpg, .png, .mp4, .mov., etc.



03 SAVE TIME: DOWNLOAD ONLY THE IMAGES AND RECORDINGS WITH ANIMALS

FASTCAT-Cloud automatically filters out most unwanted pictures and videos, keeping images of animals. This saves you time as you don't have to delete empty recordings or photos.



04 CREATE YOUR OWN STATISTICS

FASTCAT-Cloud provides you with an API that allows you to automatically create your own statistics, e.g., how many different species have been sighted this week or how many times you have photographed a fox in the last 30 days.



05 IDENTIFY SPECIES NAMES EASILY

The FASTCAT-Cloud website uses bespoke AI to automatically identify species, which means that you will see the suggested species names for each image.



06 SHARE YOUR OBSERVATIONS ON CITIZEN SCIENCE PLATFORMS

Eventually, this service will connect with biodiversity citizen observatories. So, a citizen scientist that uses a camera trap will be able to easily upload images to some platforms such as iSpot, Artportalen, Natusfera and Pl@ntNet.



FASTCAT-Cloud: EXAMPLES OF USE AND BENEFITS

If you are a wildlife biologist or a person interested in animal conservation, you will:

- **Save time** in selecting the images you need to estimate animal populations or study their behaviour.
- **Download useful information** about your images such as species labels and bounding boxes containing animals.
- **Share wildlife images** with citizen science projects and help other researchers.

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FASTCAT-Edge Why should you use it?

Build your own smart camera trap to record videos and pictures of wildlife activity and quickly identify the species names.

01 ASSEMBLE YOUR ARTIFICIAL INTELLIGENCE (AI) CAMERA TRAP

Use the FASTCAT-Edge code and guide to set up your camera trap. This do-it-yourself (DIY) device uses Raspberry Pi, a single-board computer capable of executing our unique capture software, giving you all the smart functionalities of FASTCAT on your device.



02 SAVE TIME: CAPTURE ONLY ANIMAL IMAGES OR VIDEOS

This camera trap automatically filters out unwanted pictures and videos, keeping images of animals. This saves you time as you don't have to delete empty recordings or photos.



03 EXPORT IMAGES AND VIDEOS TO YOUR COMPUTER

Connect the camera trap to your PC and transfer images and videos, which will be automatically filtered (no need for additional software).



04 INTEGRATE FASTCAT-EDGE WITH A CLOUD SERVICE

The software that runs FASTCAT-Edge integrates easily with the sibling service FASTCAT-Cloud, which allows you to identify the species in your observations through AI and upload your observations to citizen observatories such as iSpot and through interfaces such as SensorThingsAPI plus.



FASTCAT-Edge: EXAMPLES OF USE AND BENEFITS

If you are a wildlife biologist or a person interested in animal conservation, you will:

- **Save time** in selecting the images you need to estimate animal populations or study their behaviour.
- **Capture thousands of animal photos and videos**, including small or fast animals that are often missed with standard camera traps.
- **Share wildlife images** with citizen science projects and help other researchers.
- **Design your own observation project around this camera trap:** FASTCAT-Edge acts as a general-purpose computer.

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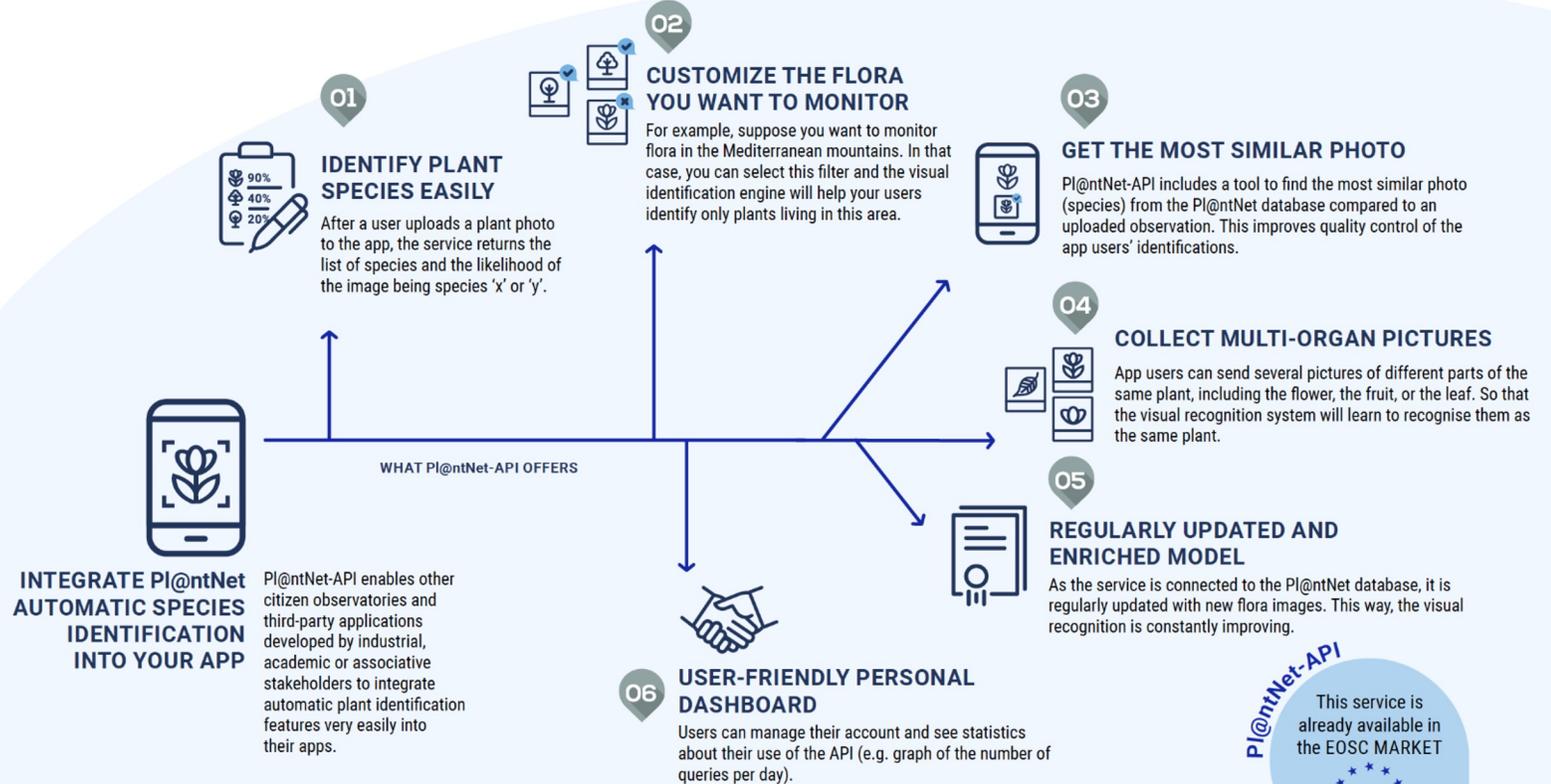
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Pl@ntNet-API

Why should you use Pl@ntNet-API?

Use Pl@ntnet-API to integrate Pl@ntNet's visual identification engine into your app and improve your users' experience.



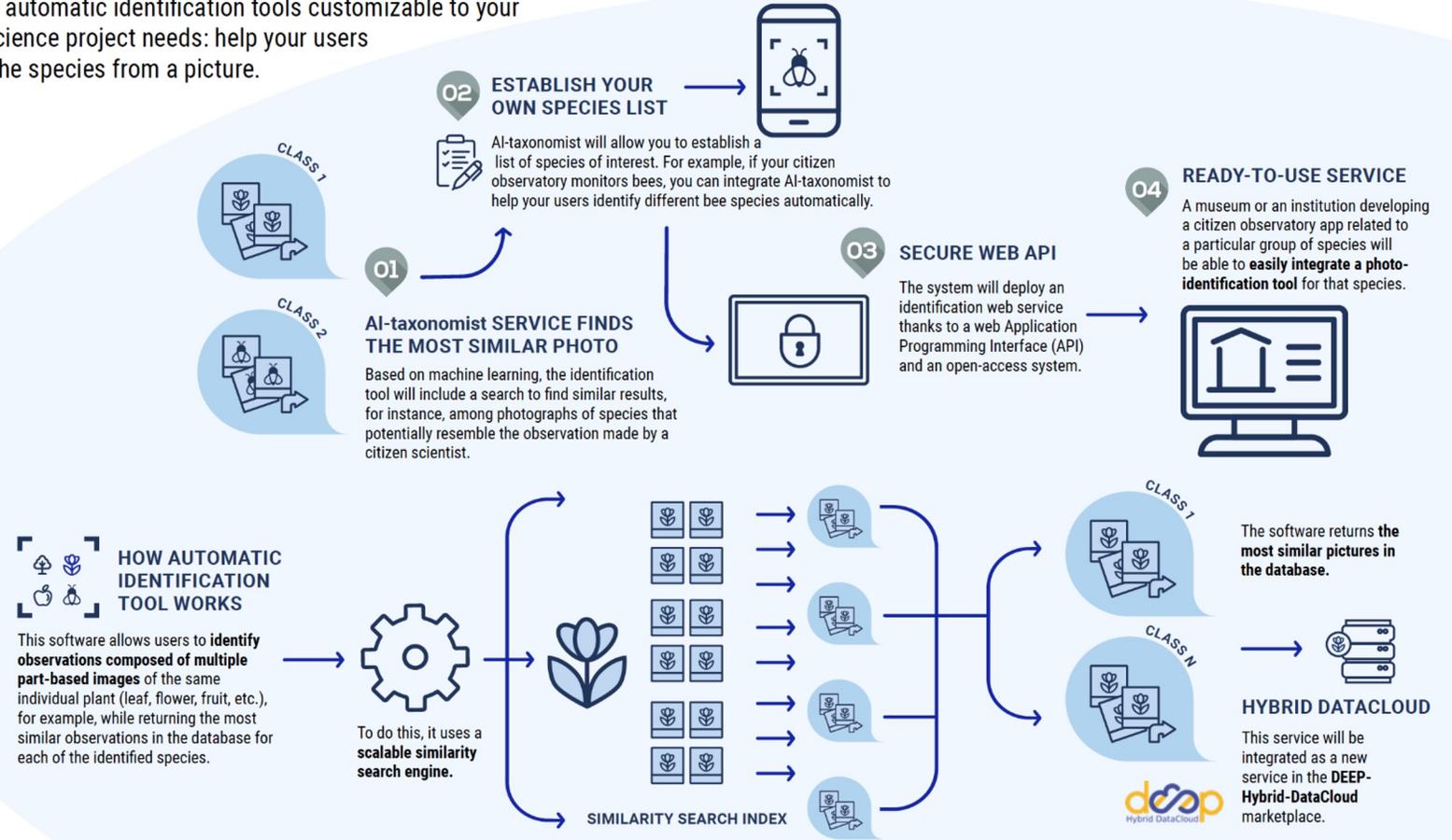
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AI-taxonomist

Why should you use AI-taxonomist?

Integrate automatic identification tools customizable to your citizen science project needs: help your users identify the species from a picture.



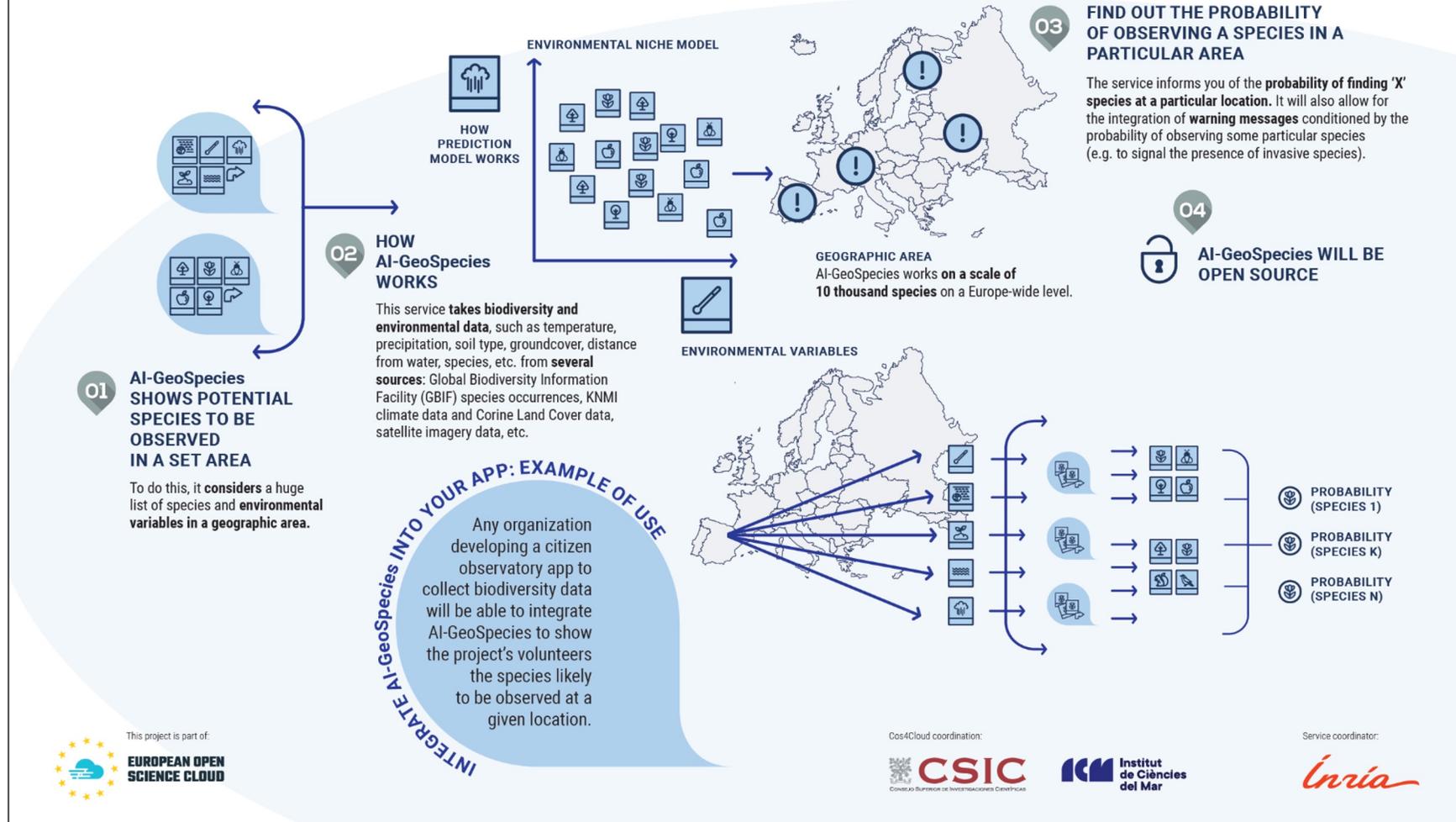
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AI-GeoSpecies

Why should you use AI-GeoSpecies?

Integrate artificial intelligence into your citizen science app to predict which species users will find in a particular area.

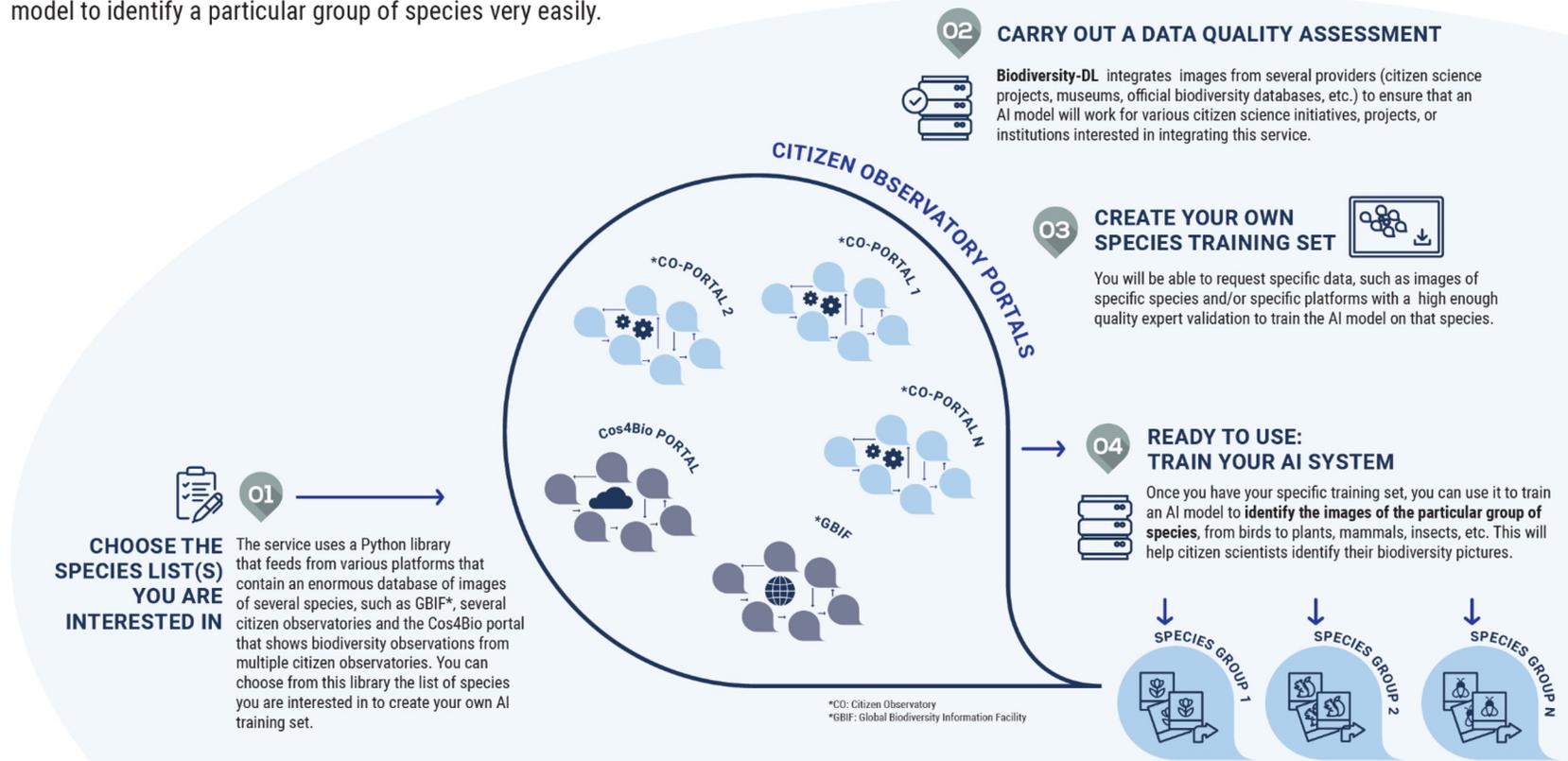


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Biodiversity-DL Why should you use Biodiversity-DL?

Create a training set on a particular group of living organisms for machine learning applications: any developer or data scientist working on a citizen observatory will be able to train an Artificial Intelligence (AI) model to identify a particular group of species very easily.

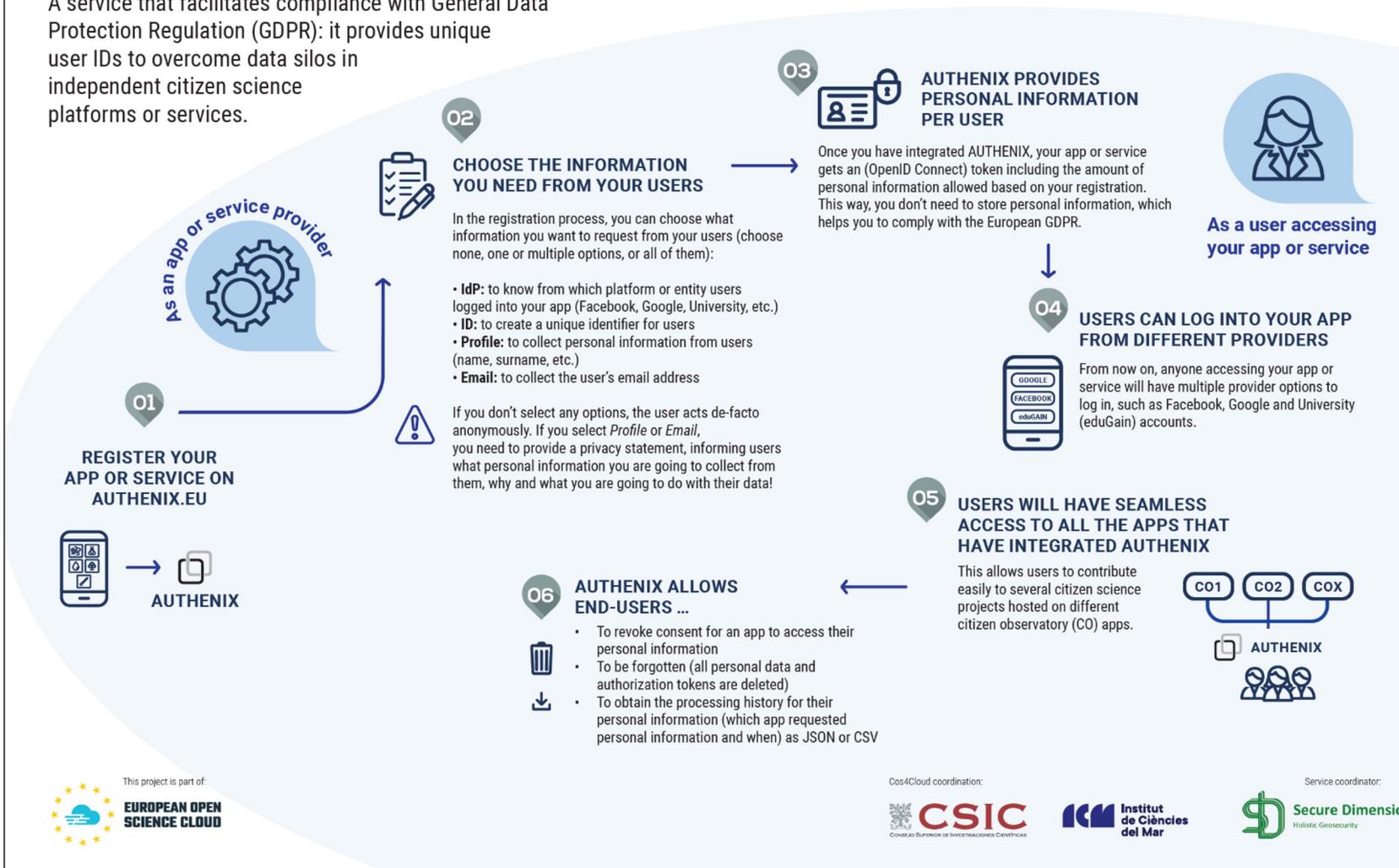


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AUTHENIX Why should you use it?

A service that facilitates compliance with General Data Protection Regulation (GDPR): it provides unique user IDs to overcome data silos in independent citizen science platforms or services.



The 13 services

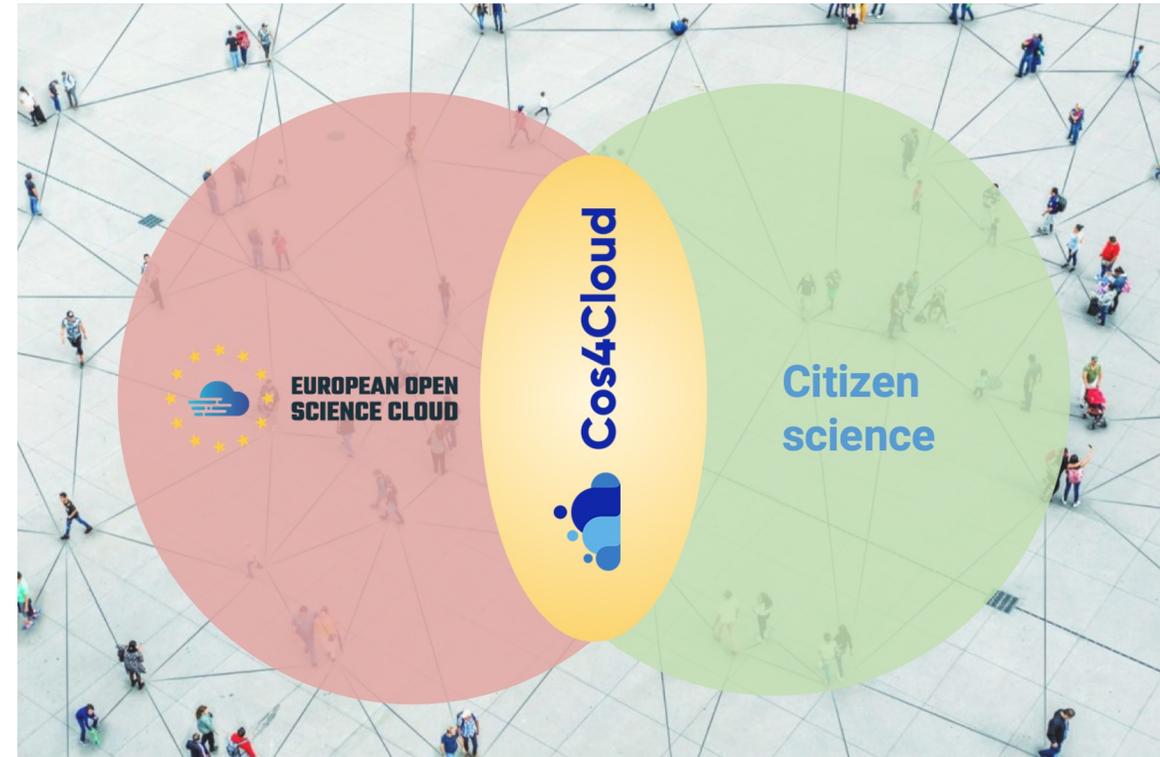
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STApplus Why should you use it?

STApplus is an extended data model for the SensorThing API* to standardise citizen science data and make it accessible, interoperable and reusable: make your citizen observatory interoperable and able to exchange and reuse its data.

[work in progress]

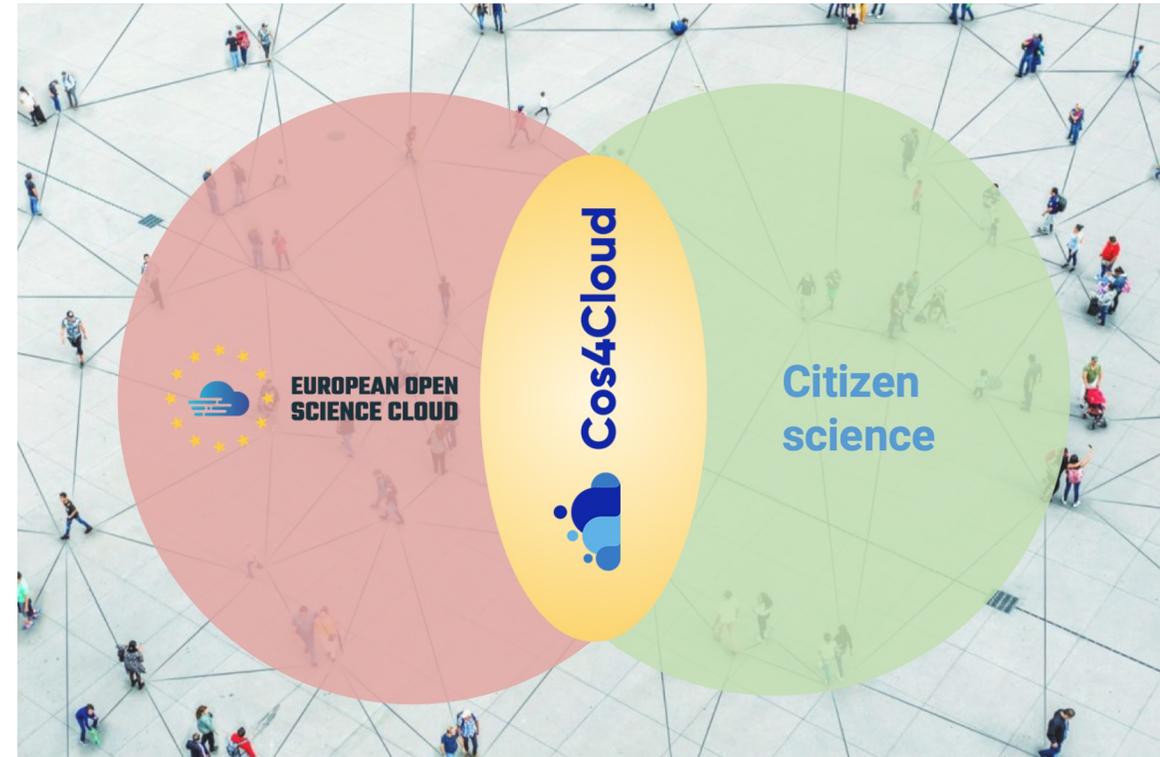
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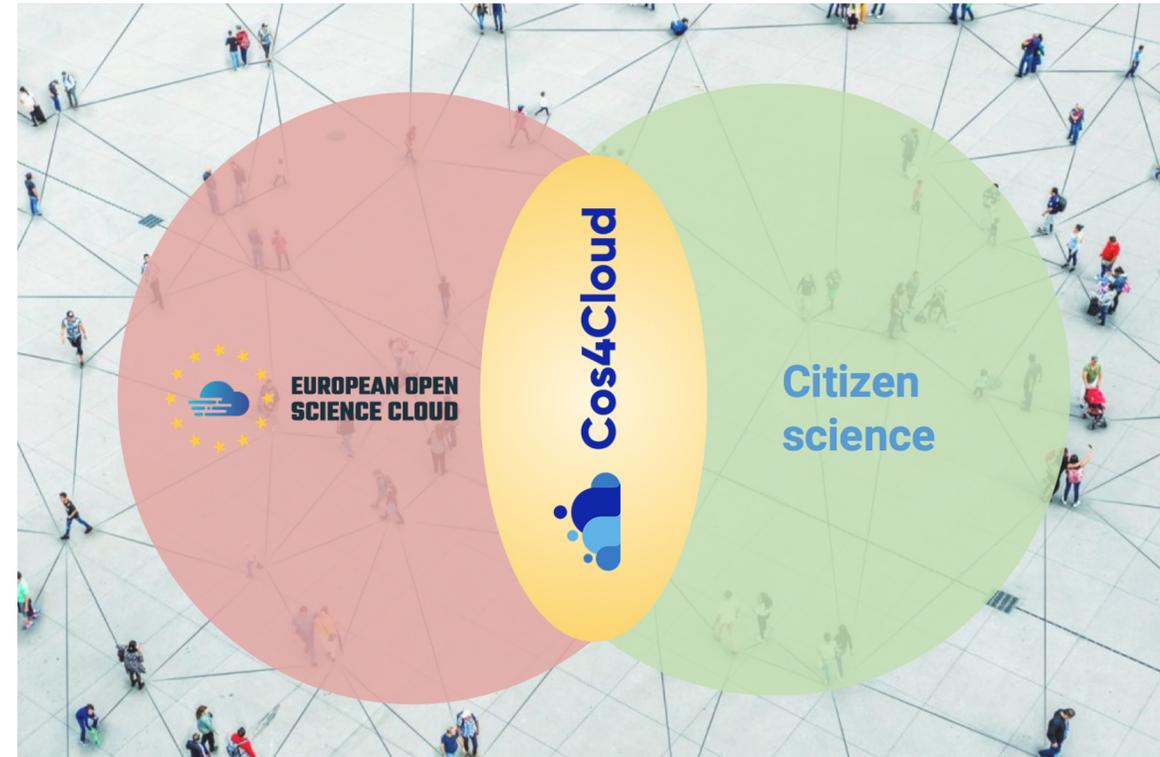
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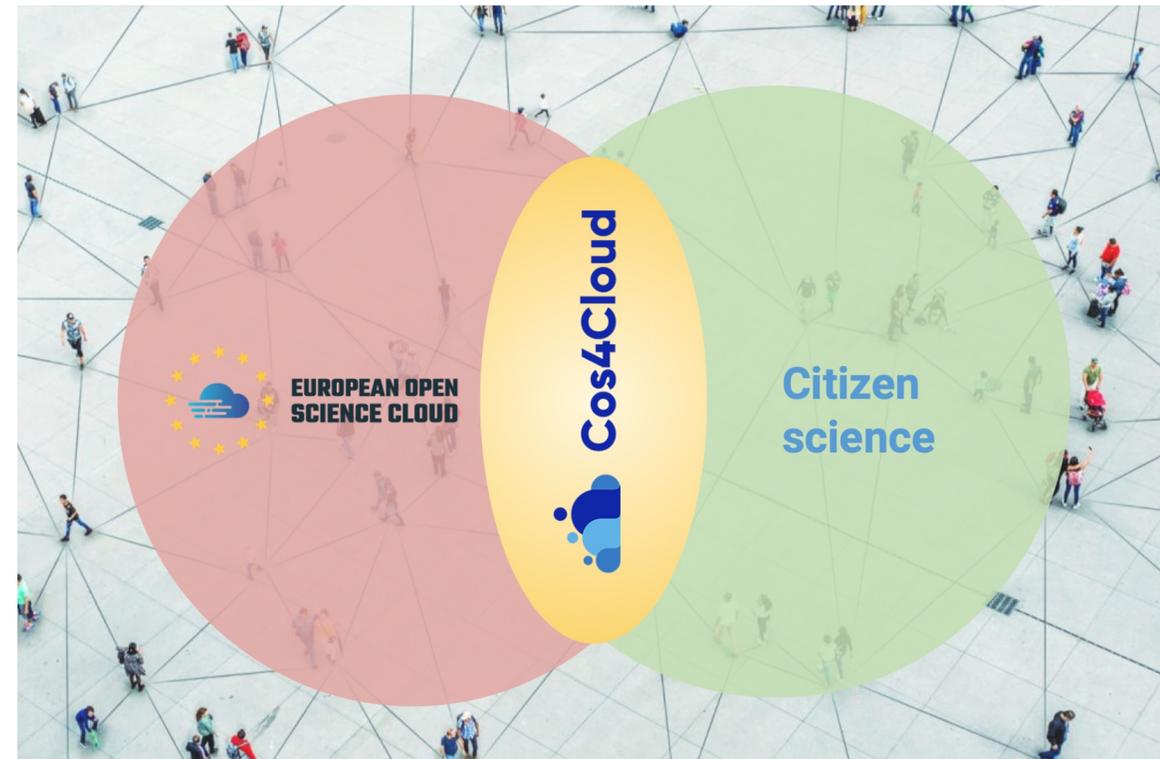
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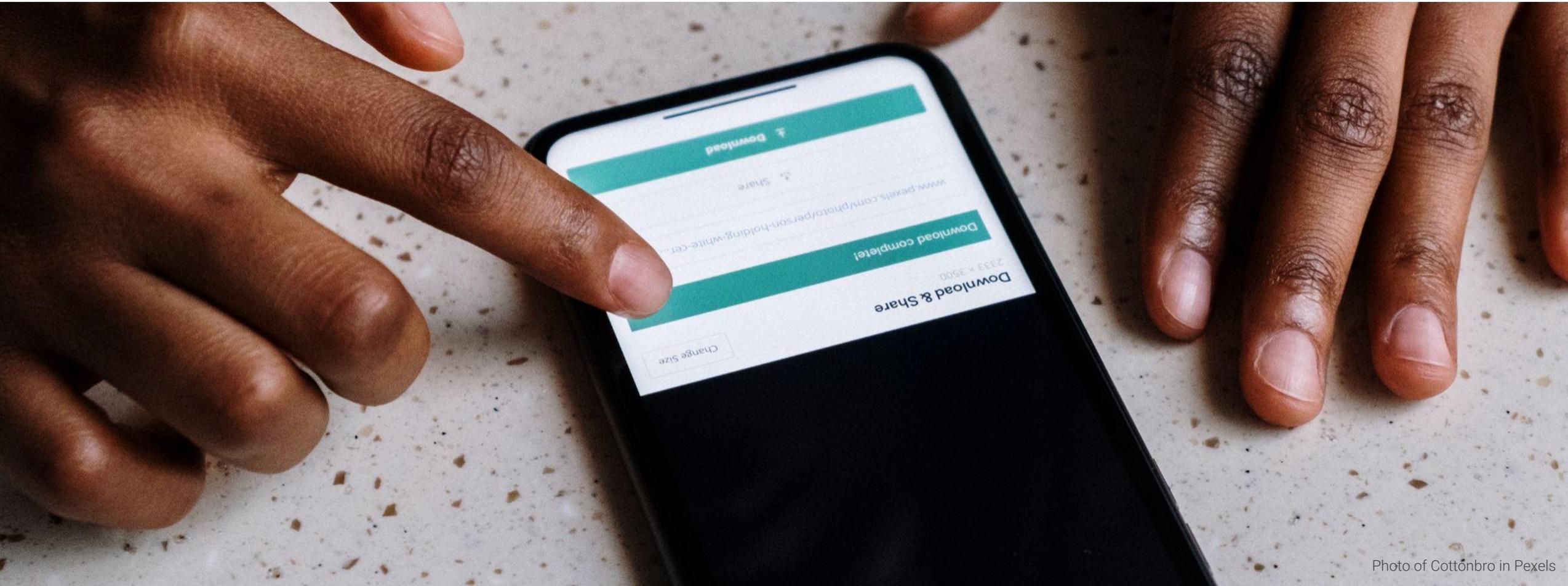
The EOSC makes it possible to **store, manage, analyse and reuse data** of all kinds for research, innovation and educational purposes.



The 13 services developed within the framework of the Cos4Cloud project will be uploaded to the EOSC as modules, so that **any existing Citizen Science observatory can choose and install the technology services it needs** to improve its functionalities.



How can Cos4Cloud benefit your Citizen Science community?





Principles of co-design





Definition of co-design

Co-design is a **creative approach** that enables a wide variety of people to contribute towards **formulating and solving a problem**.

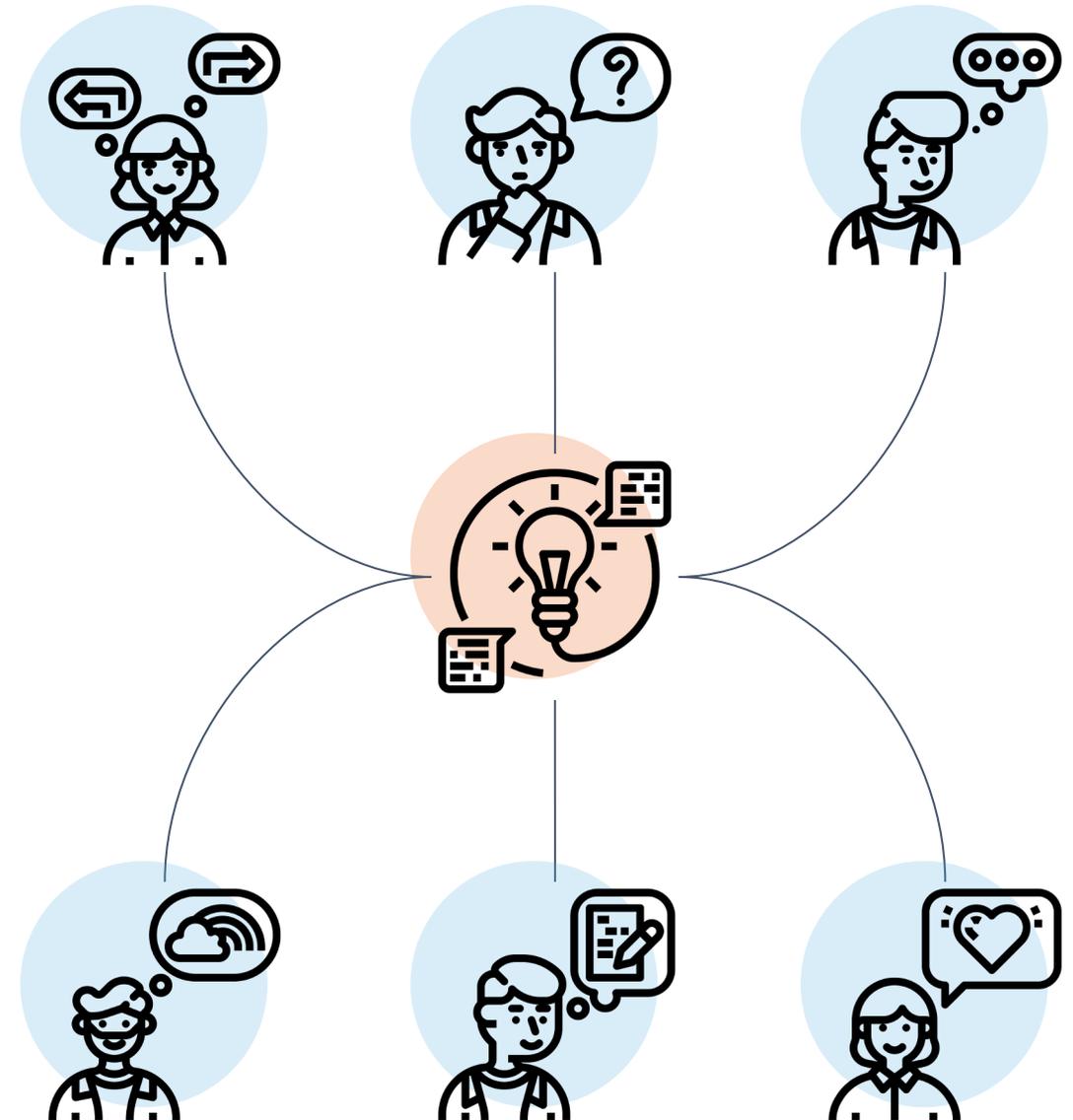
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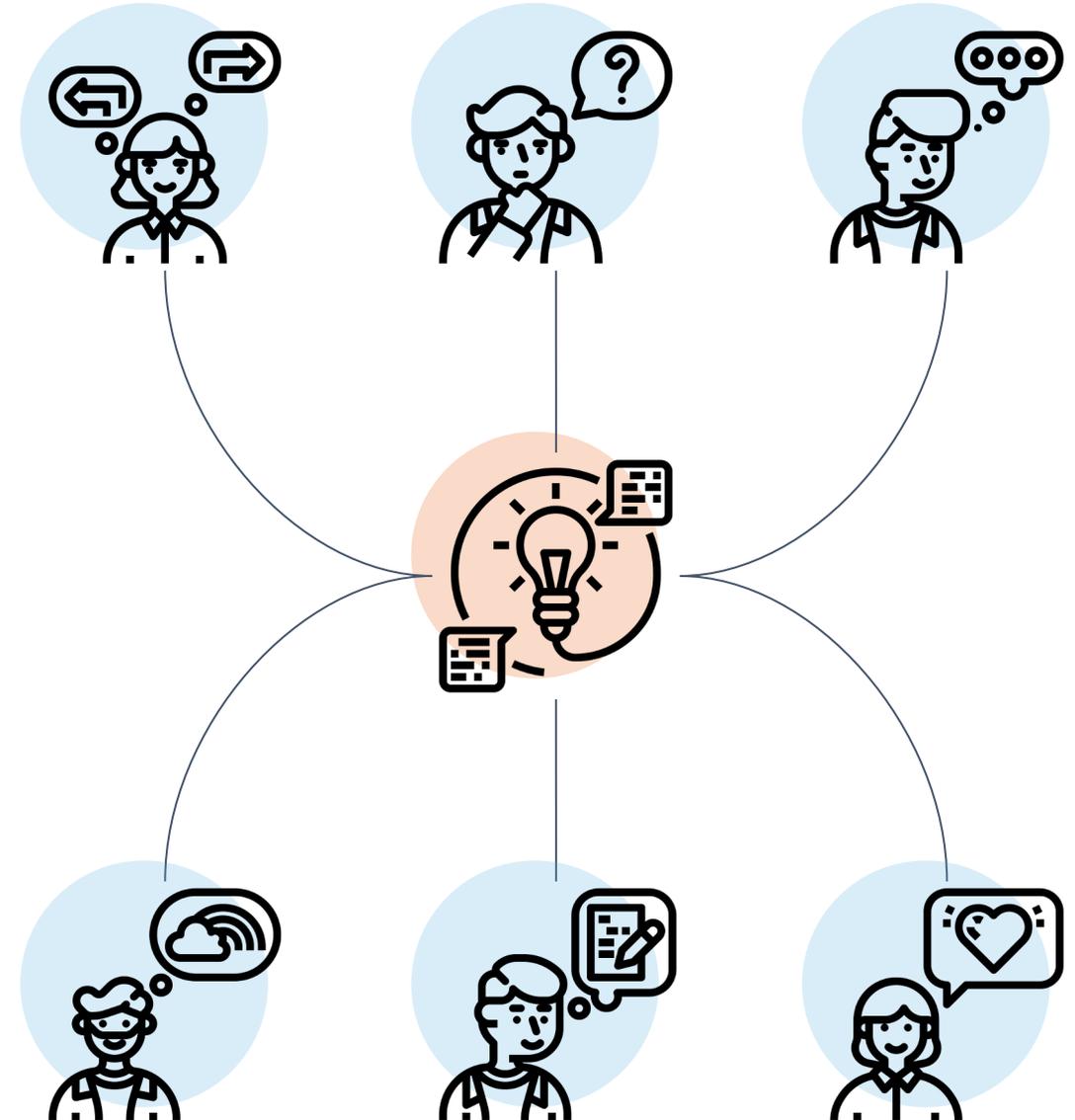
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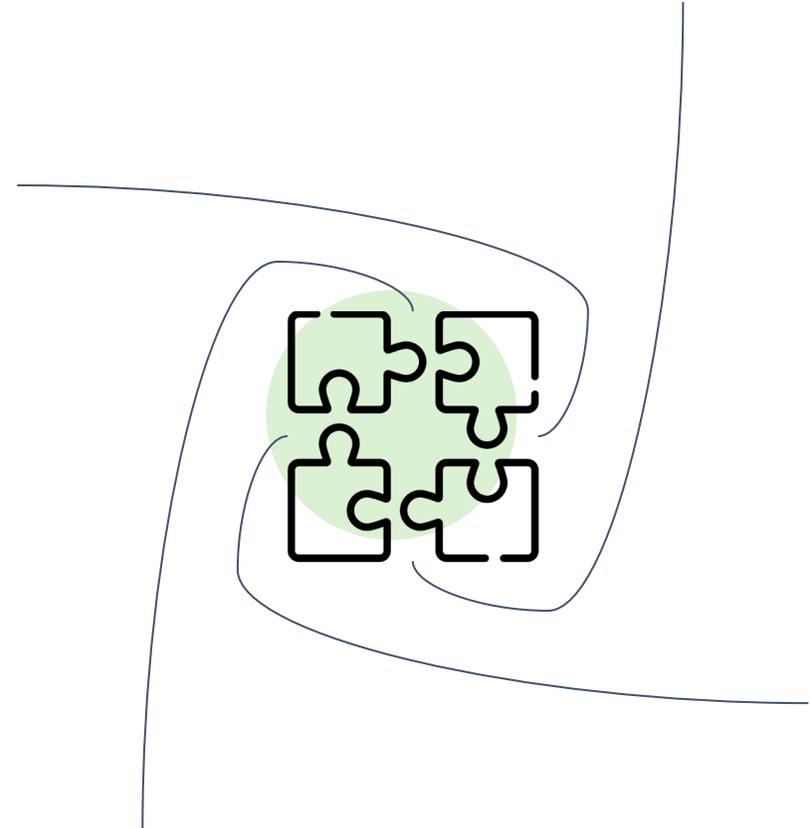
Co-design is a **creative approach** that enables a wide variety of people to contribute towards **formulating and solving a problem**.

It is characterised by reflecting a **fundamental shift** in the conventional designer-user relationship. It goes beyond asking for or receiving user feedback, in order to let people **build and collaborate equitably** to solve a particular challenge or need.



Pillars of co-design

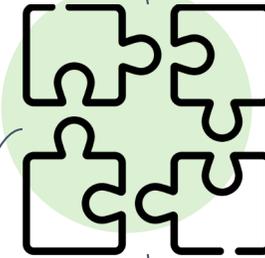
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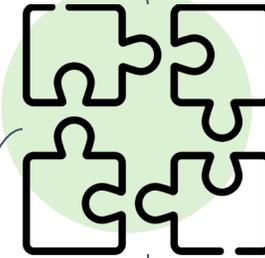
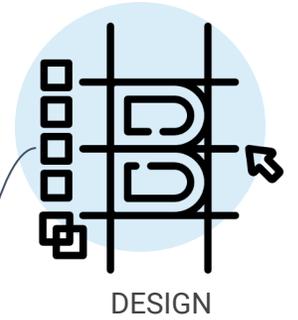
- Innovation.



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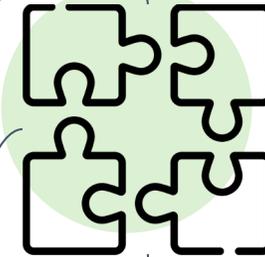
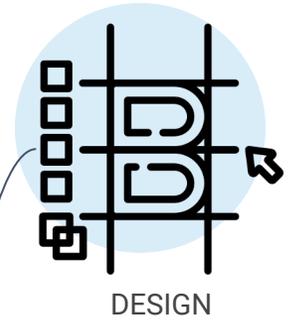
- Innovation.
- Design.



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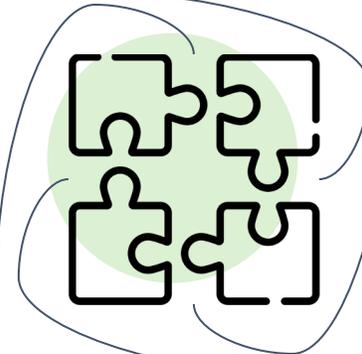
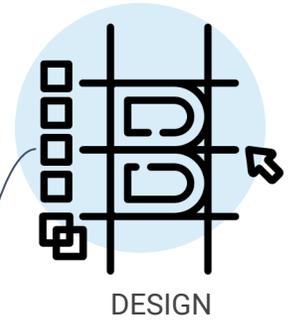
- Innovation.
- Design.
- Social values and considerations.



Pillars of co-design

There are **four factors** that are always found in any co-design or co-creation activity:

- Innovation.
- Design.
- Social values and considerations.
- Participation and democratisation.



Roles and tools

In a co-design process, users are considered to be **experts** on their own experience, and their needs and concerns become central to the creative process.

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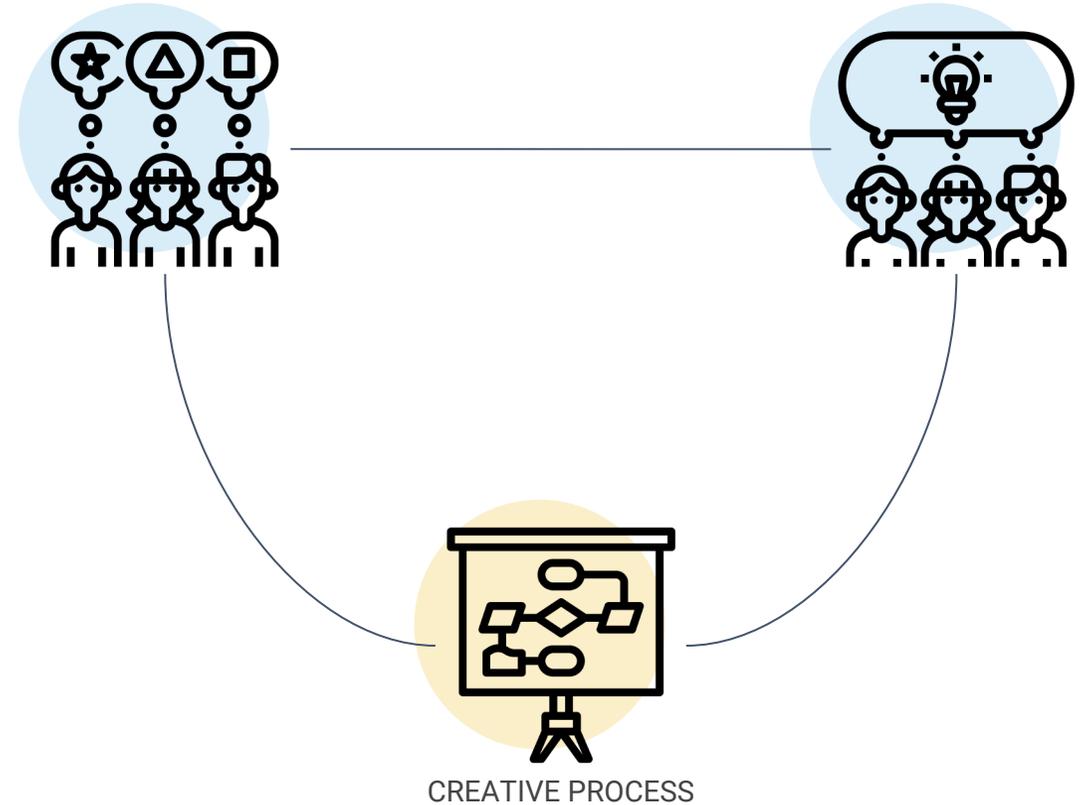
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Roles and tools

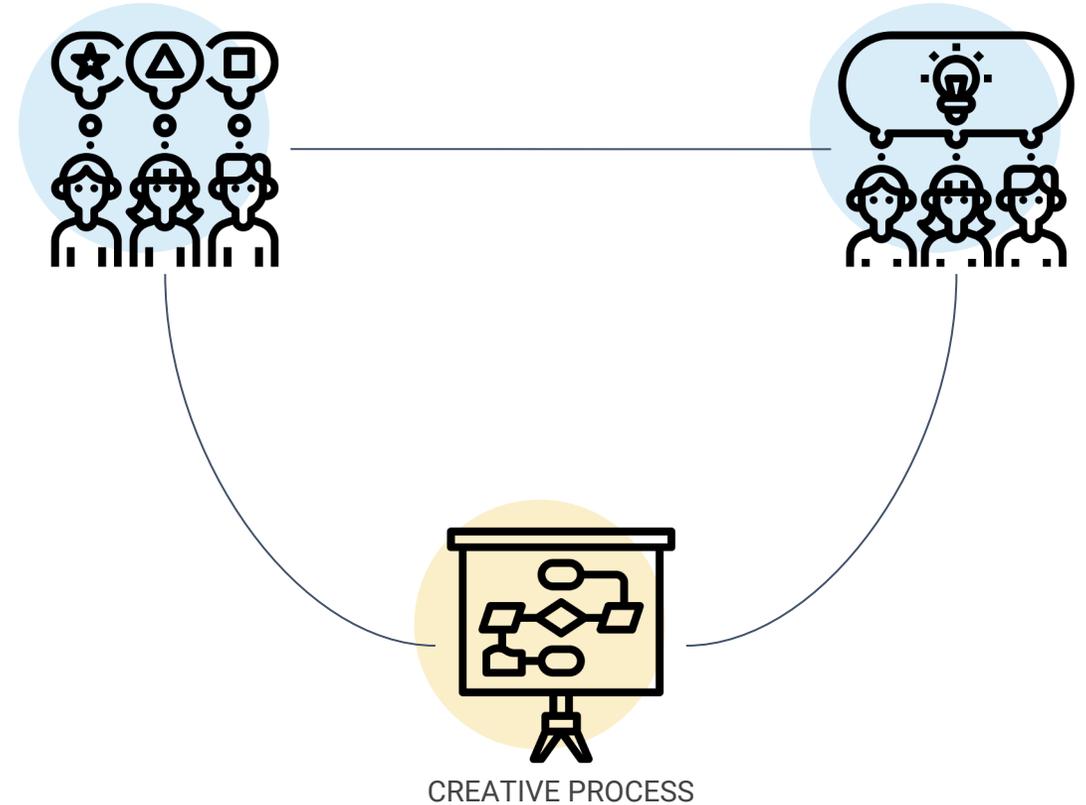
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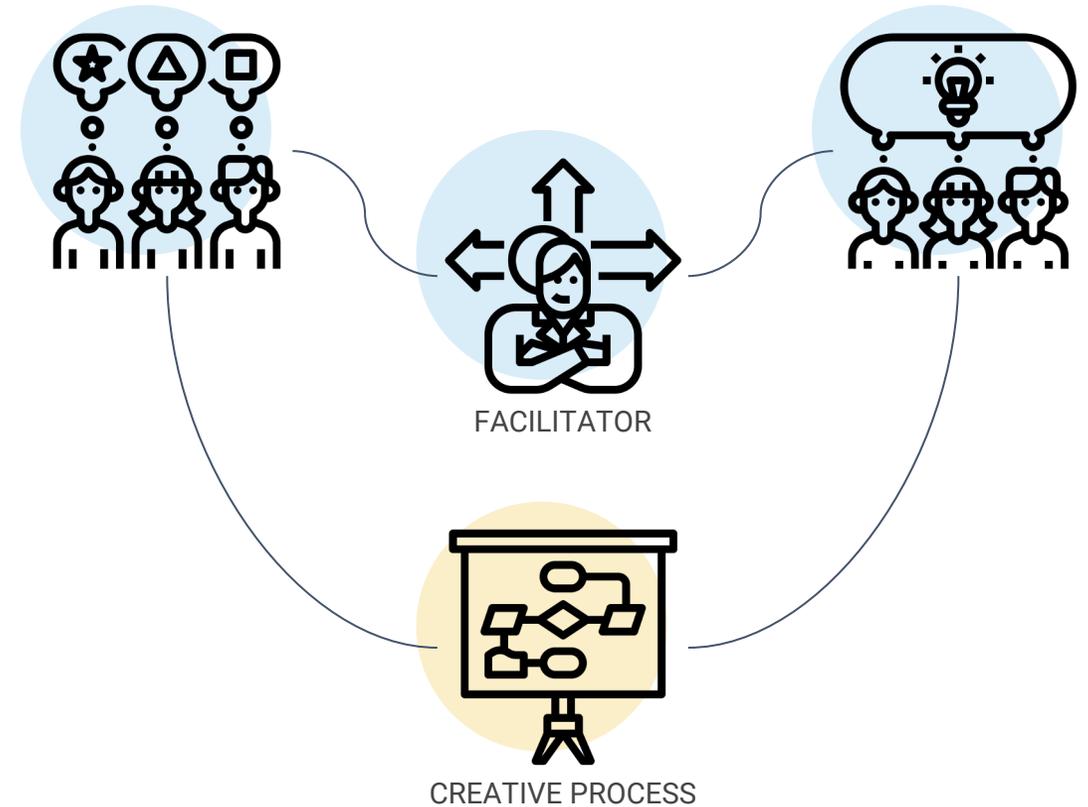
In order to moderate and invigorate participation, a **facilitator** is needed in any co-design process.



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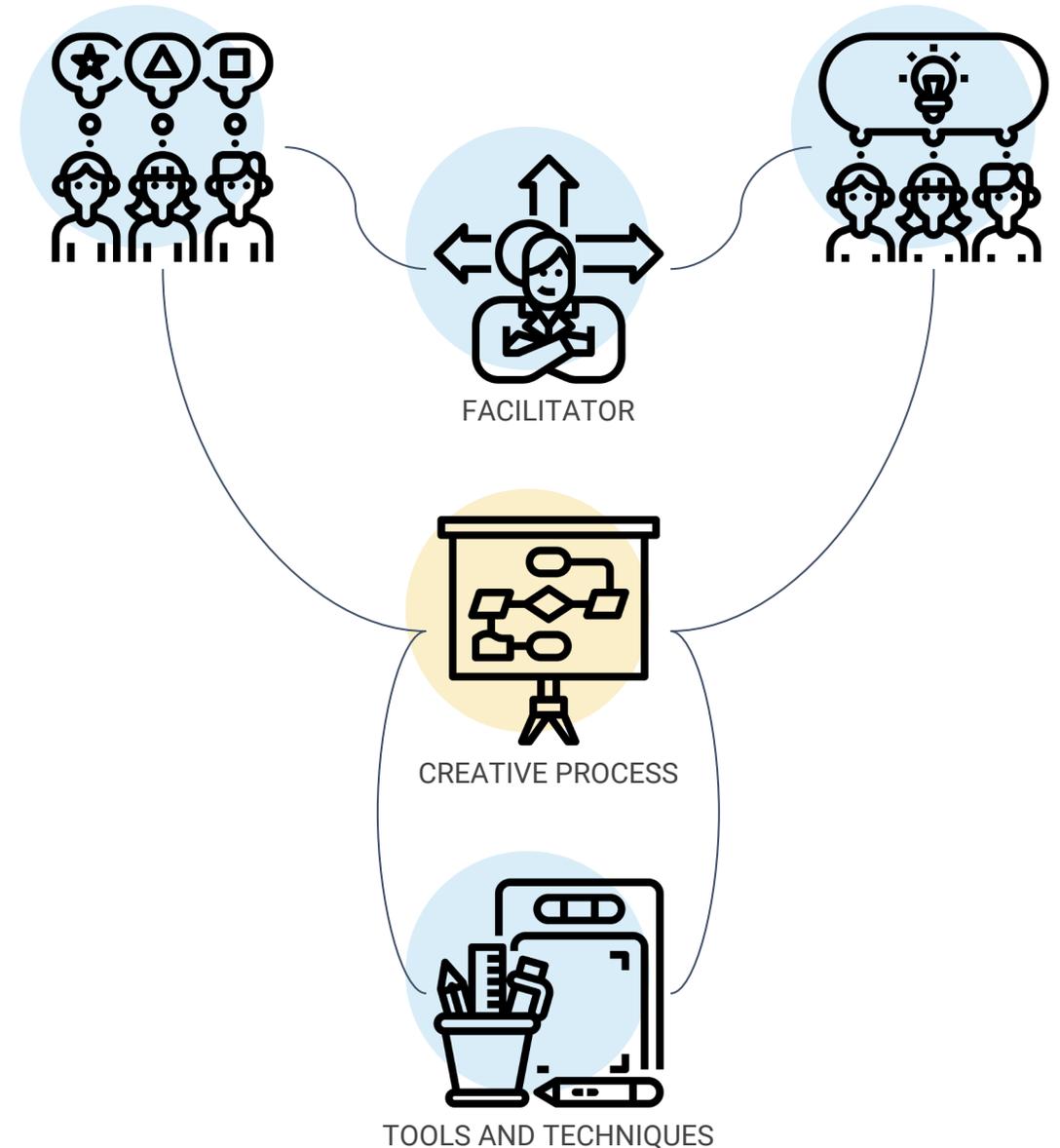


Roles and tools

In a co-design process, users are considered to be **experts** on their own experience, and their needs and concerns become central to the creative process.

In order to moderate and invigorate participation, a **facilitator** is needed in any co-design process.

There is a wide range of available **tools and techniques** to support the co-design processes.





Methodology of co-design



The co-design process in Cos4Cloud

The methodology proposed for the co-design of Cos4Cloud services was defined at the start of the project, and includes seven phases:



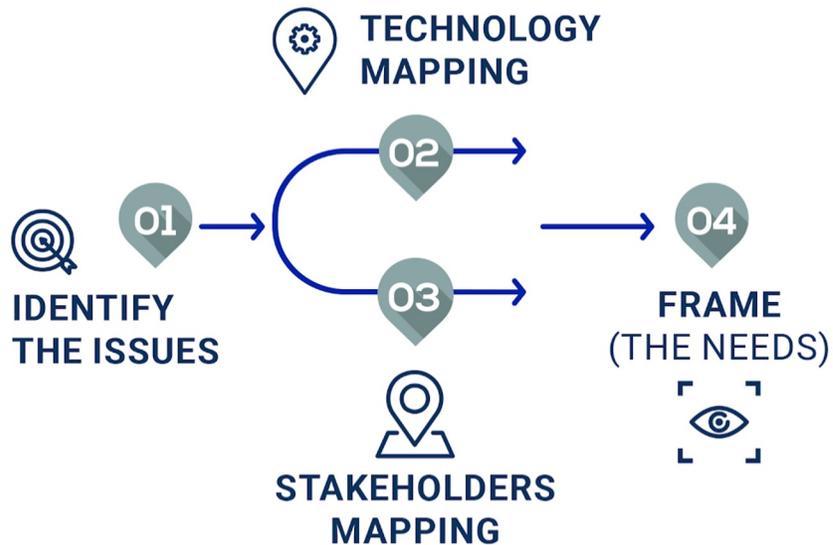
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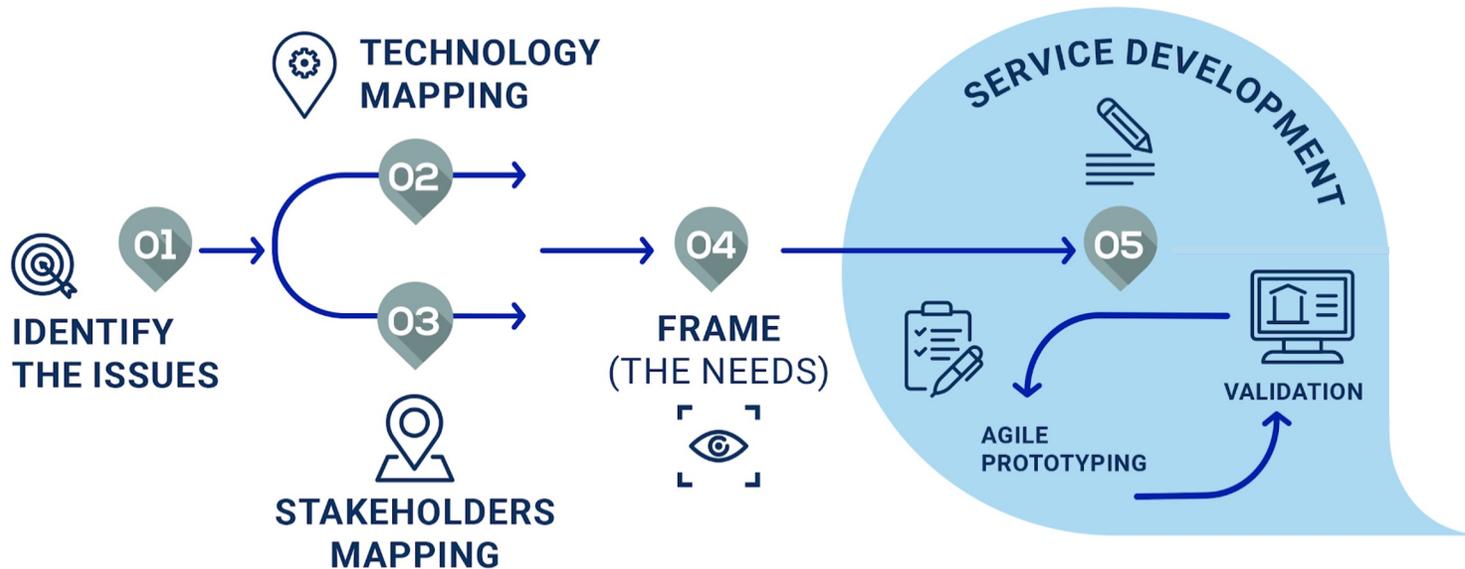
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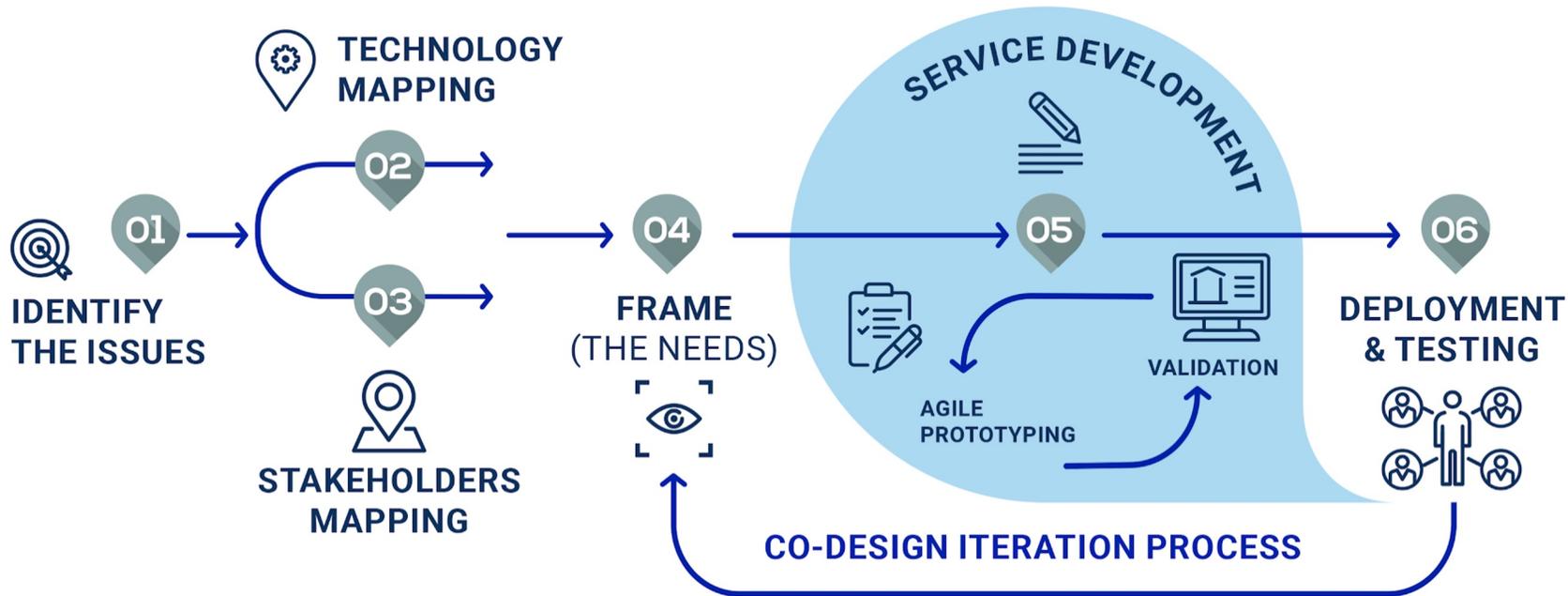
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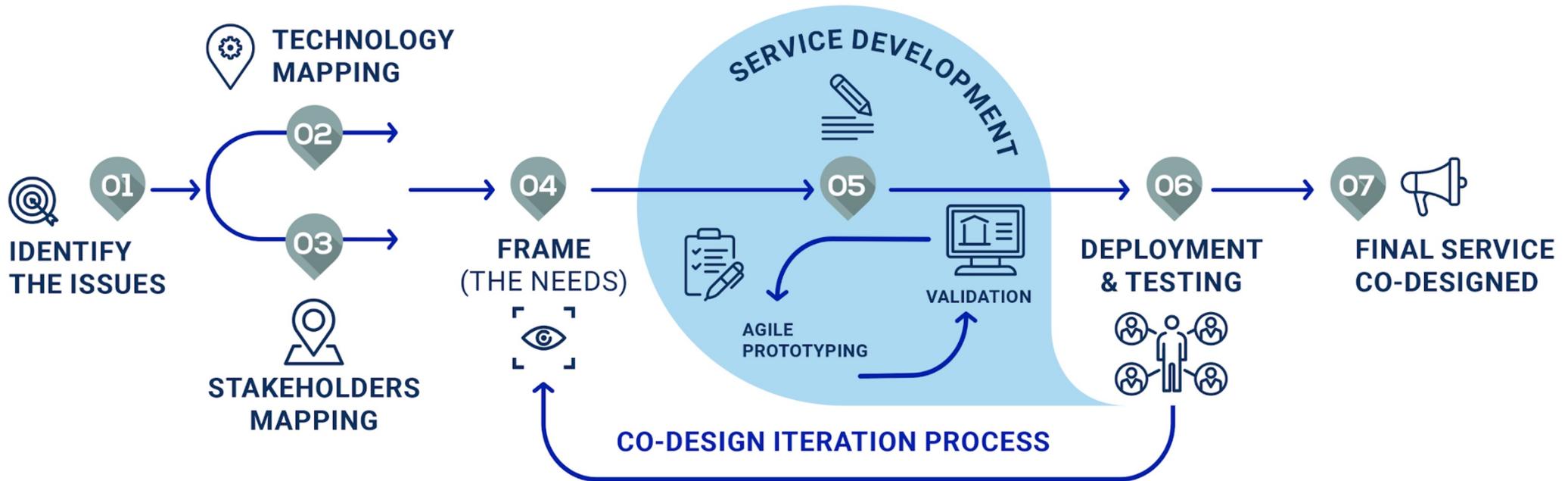
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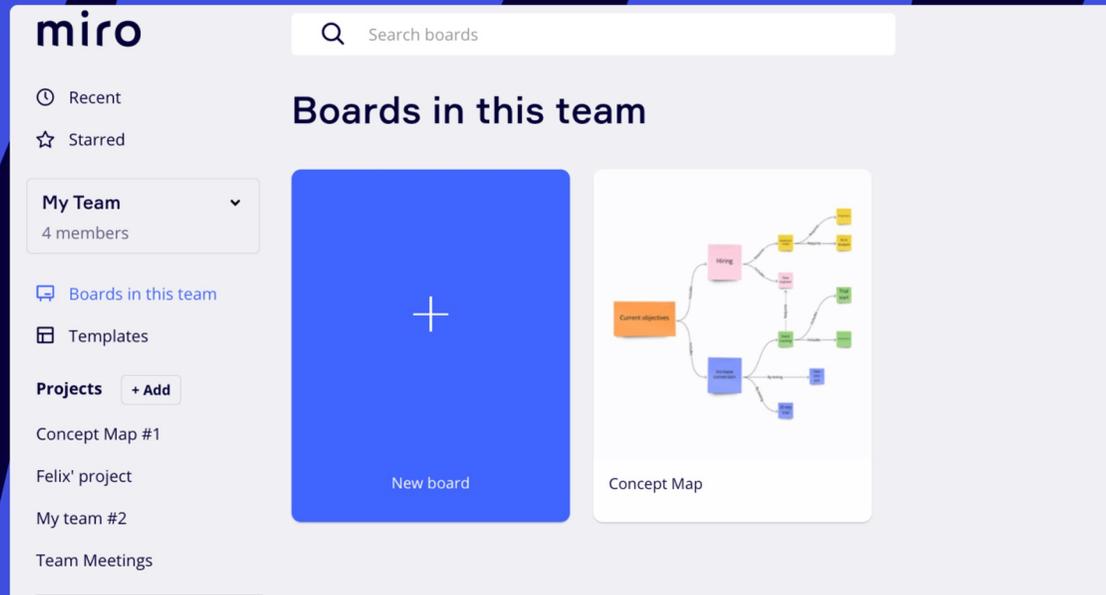
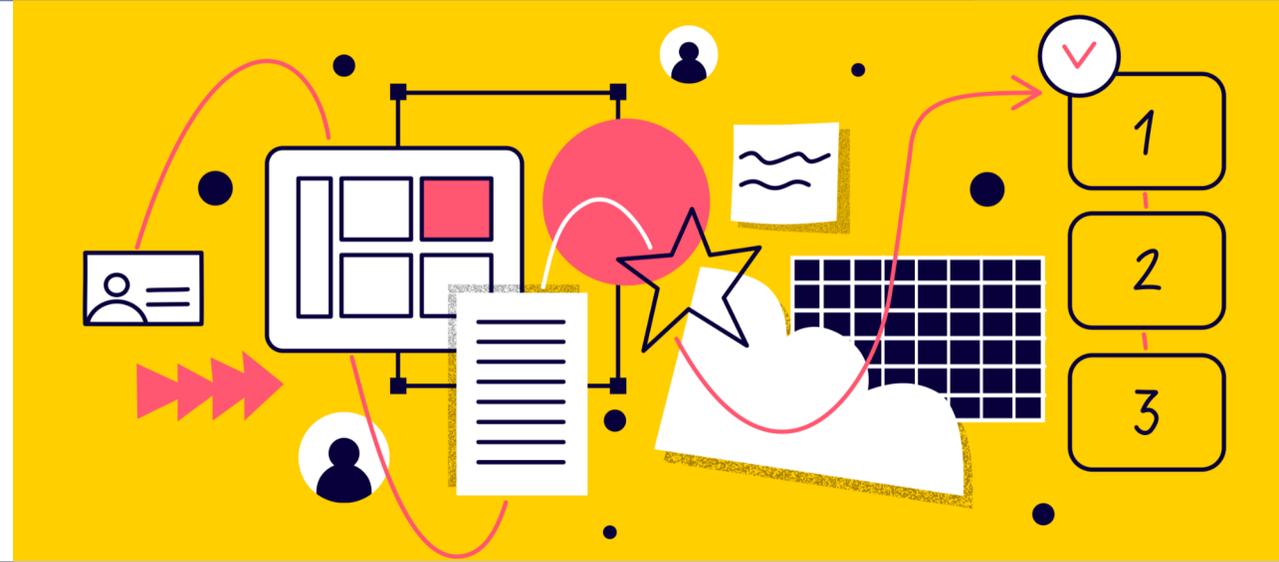
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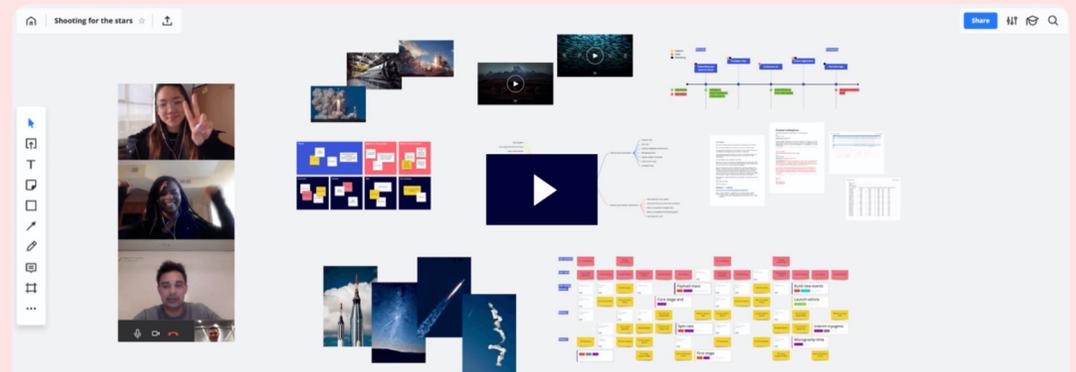
The Miro platform

These phases came into being using a **digital platform** called Miro, which makes it possible to create **whiteboards** where all kinds of elements such as geometric shapes, text boxes, sticky notes, images, drawings, videos, etc. can be used.

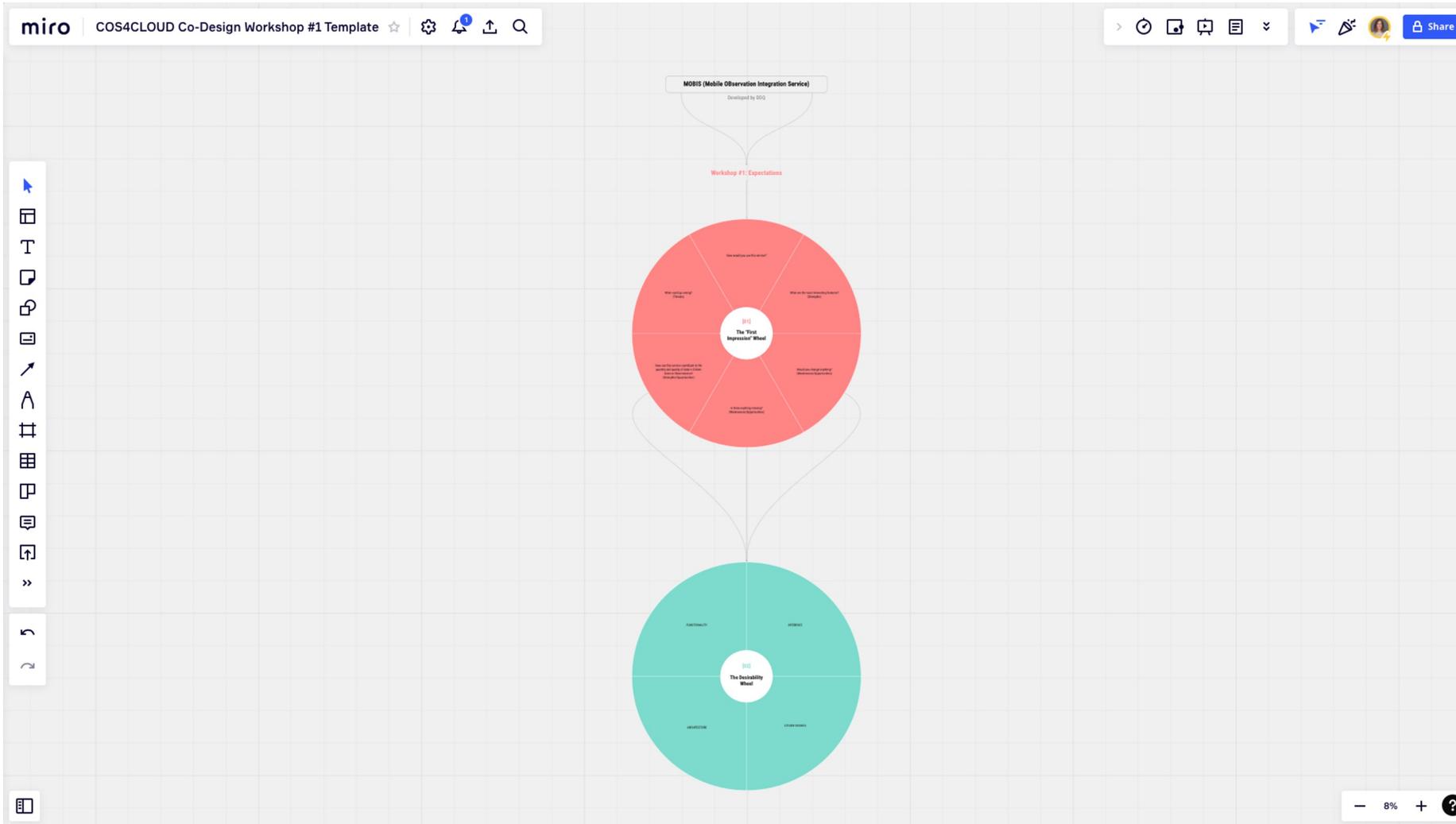


miro

The Online Whiteboard for easy collaboration



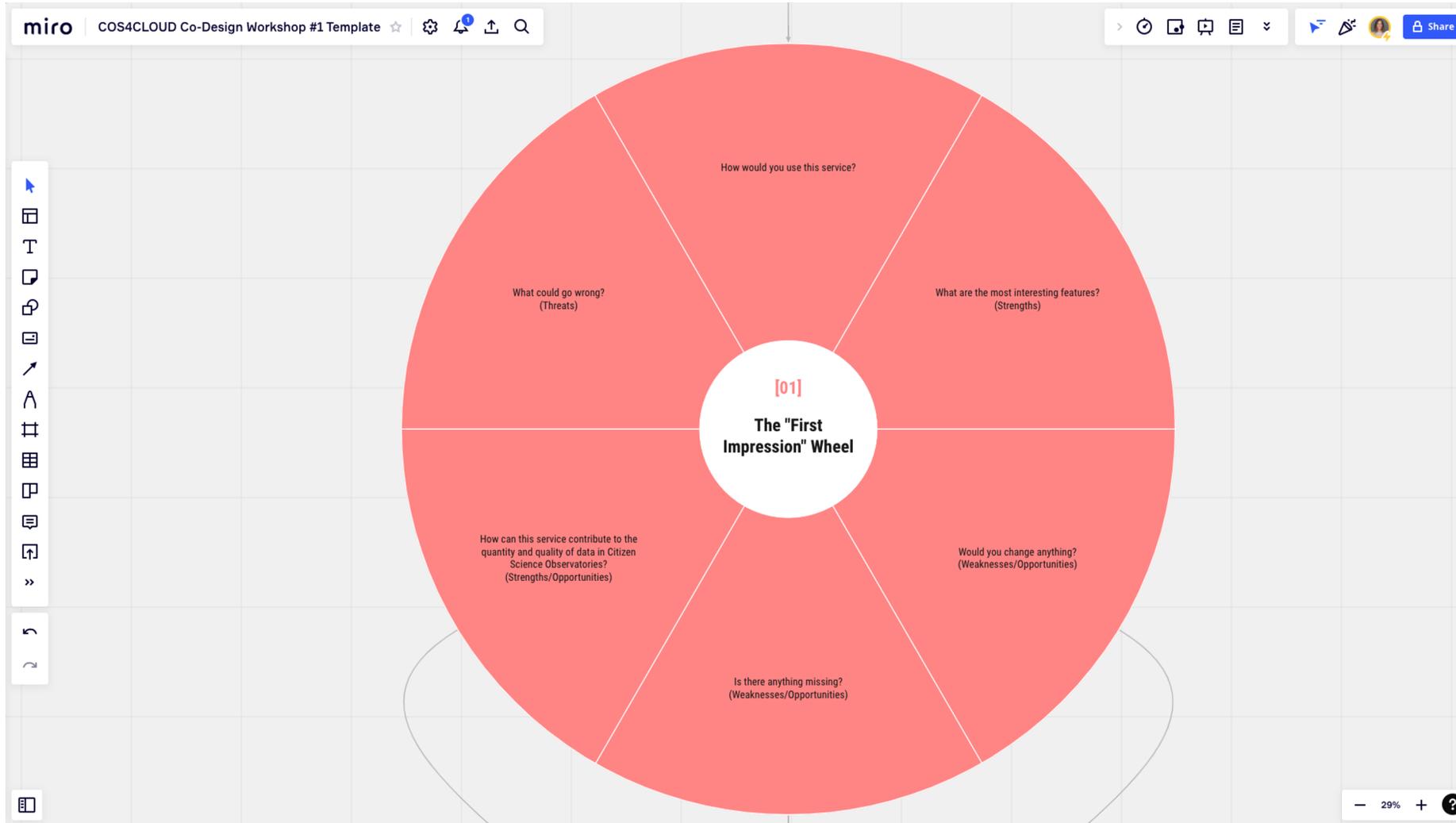
“Wheels” methodology



Template:

- Underdeveloped service.
- Very open topics of conversation.
- Allows for both abstract and specific comments.
- Based on the SWOT analysis and desirability study.

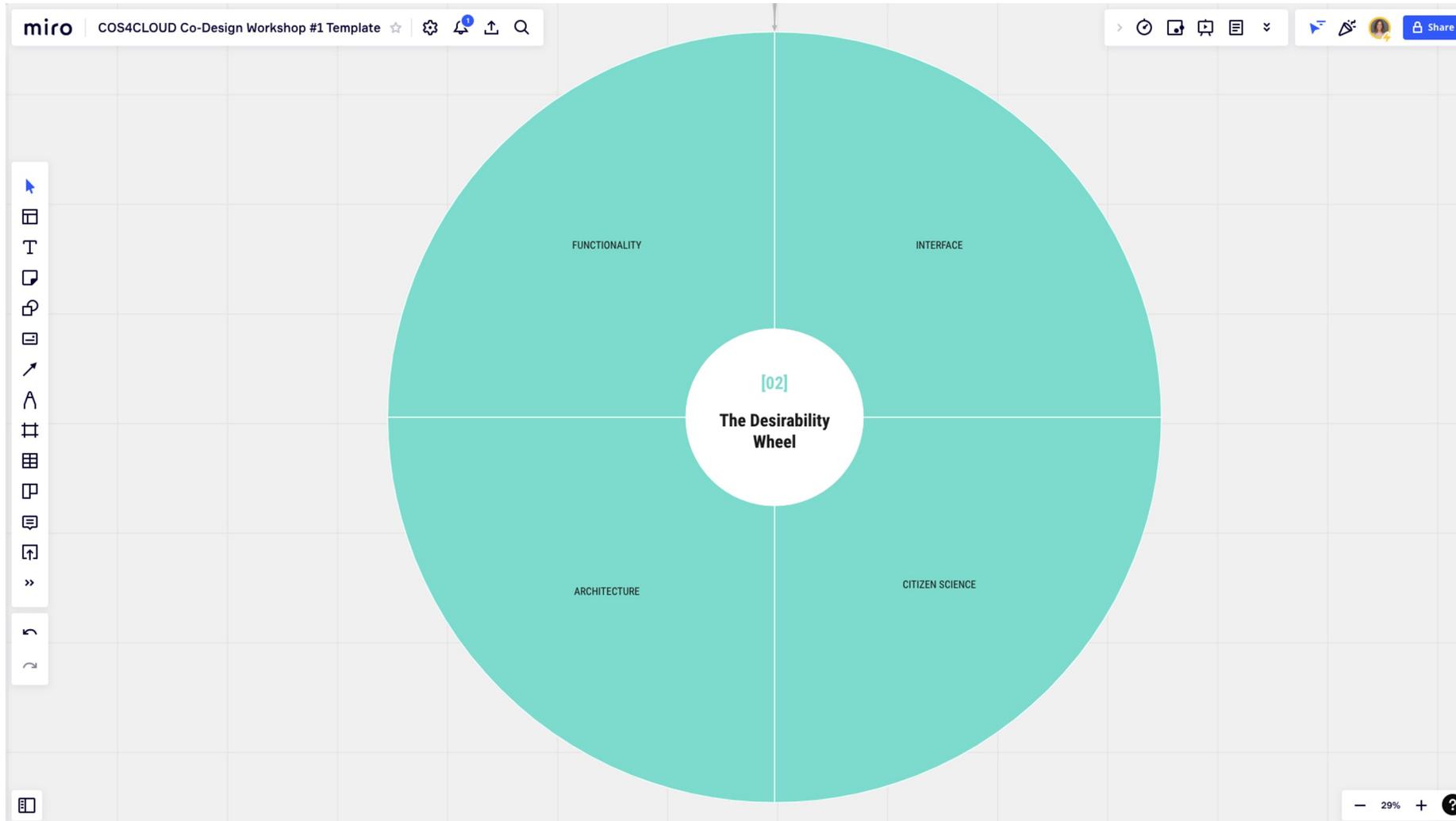
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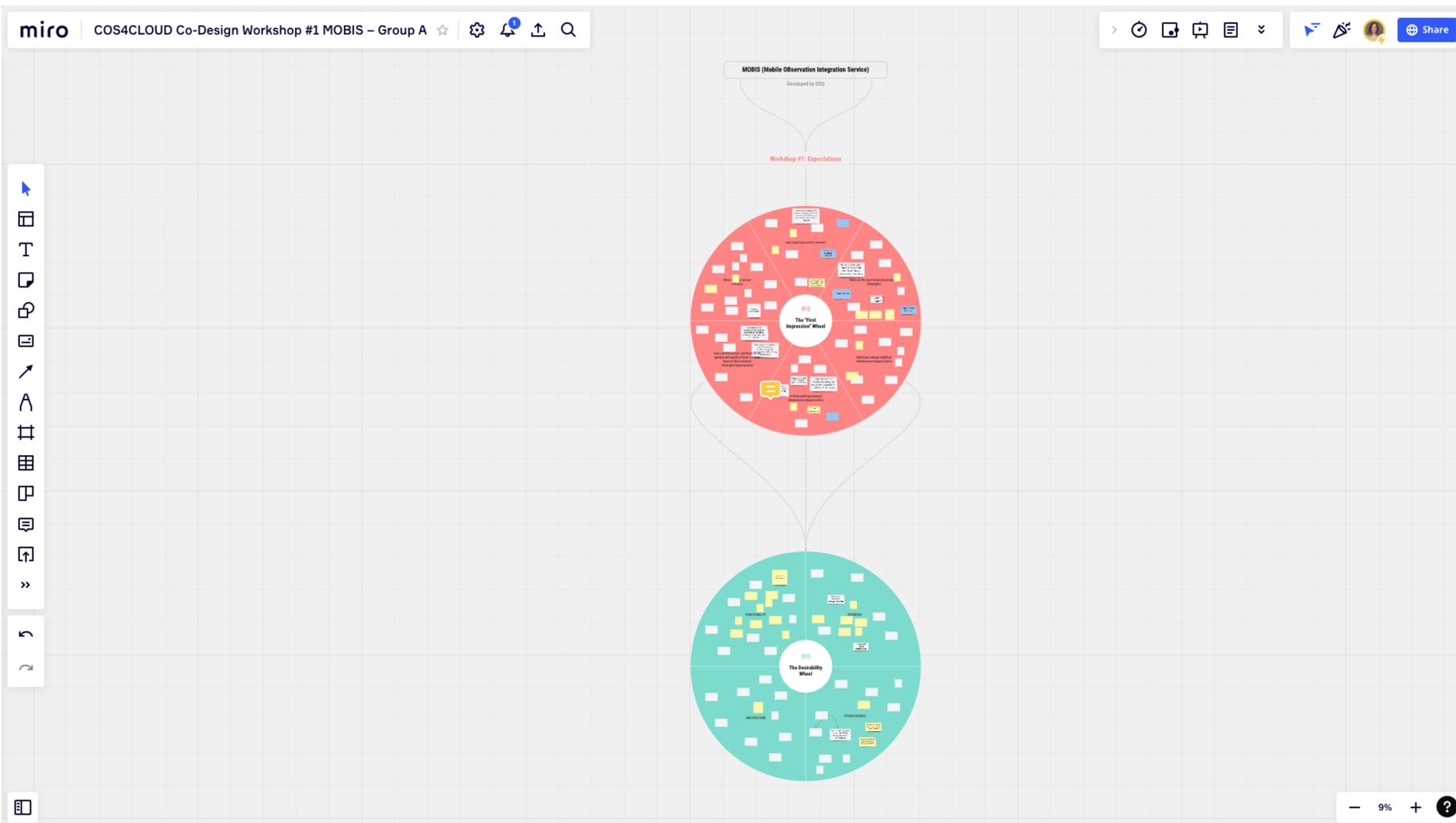


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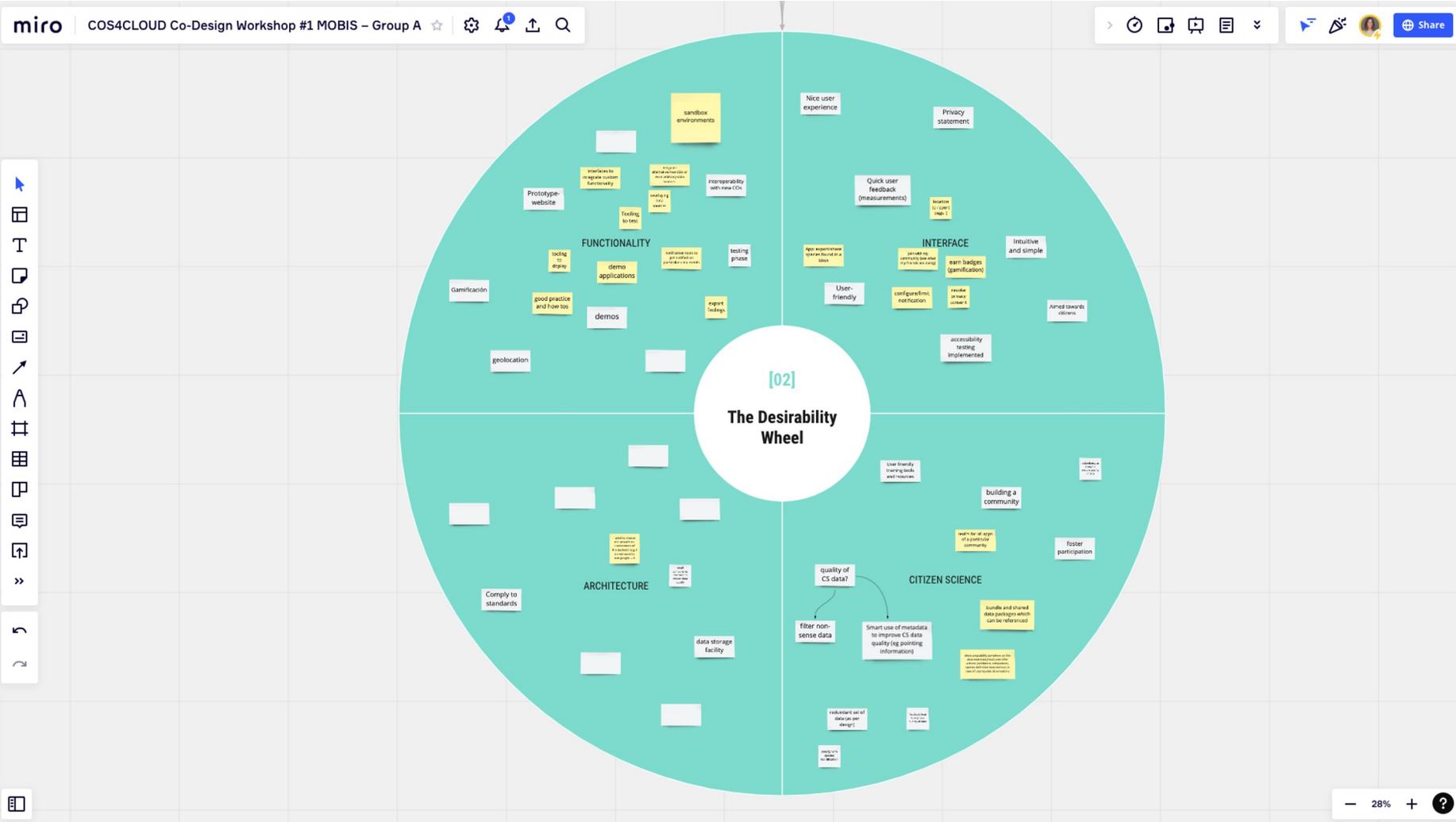


“Wheels” methodology



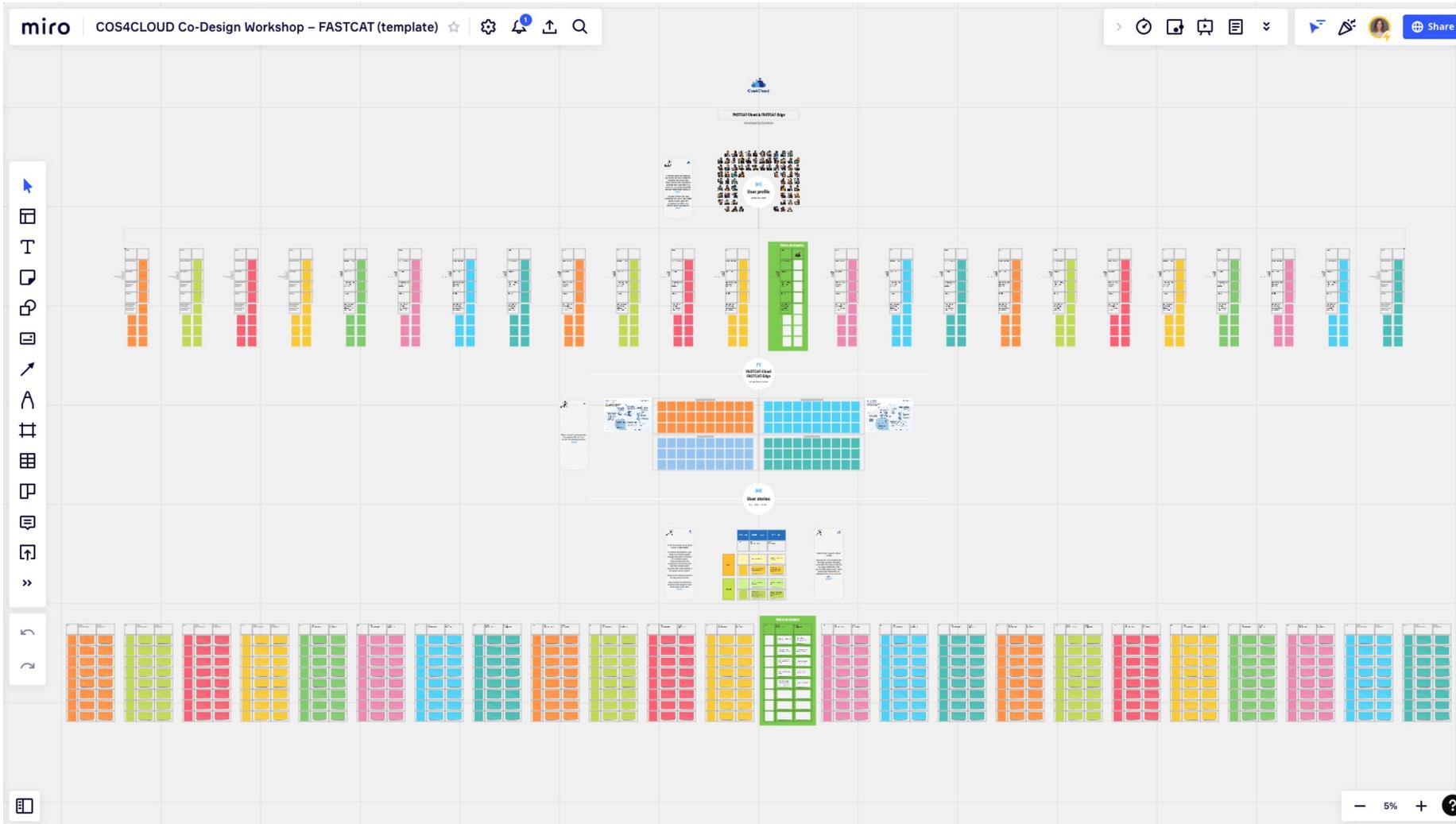
Example:
MOBIS

“Wheels” methodology



Example:
MOBIS

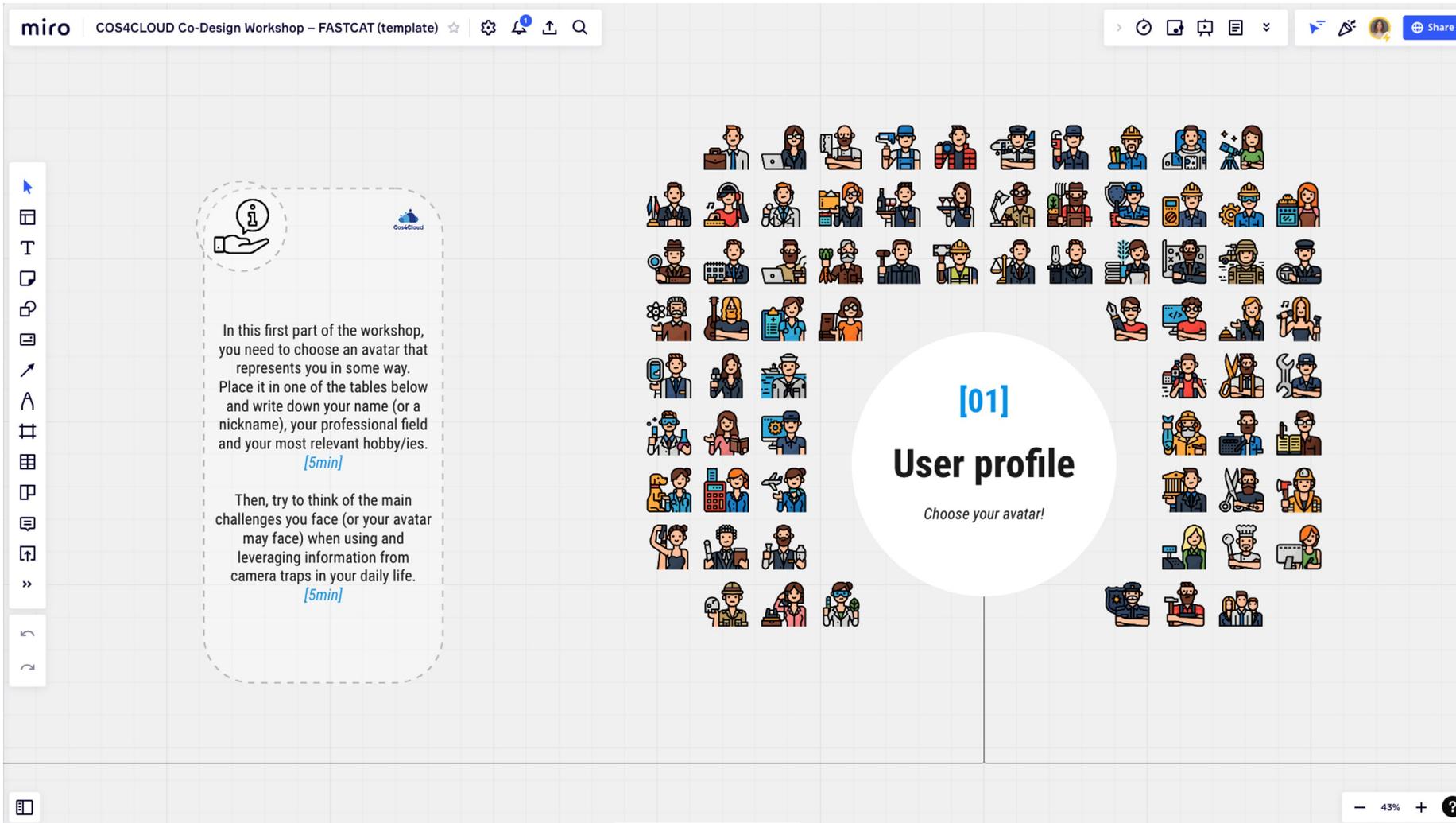
“User Stories” methodology



Template:

- Well-developed service.
- More closed topics of conversation.
- Lets participants make very specific contributions.
- Based on the affinity diagram, user journey maps and user stories.

“User Stories” methodology



miro | COS4CLOUD Co-Design Workshop – FASTCAT (template) ☆ ⚙️ 🔔 ⬆️ 🔍

Share

[01]
User profile
Choose your avatar!

In this first part of the workshop, you need to choose an avatar that represents you in some way. Place it in one of the tables below and write down your name (or a nickname), your professional field and your most relevant hobby/ies. [5min]

Then, try to think of the main challenges you face (or your avatar may face) when using and leveraging information from camera traps in your daily life. [5min]

43%

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“User Stories” methodology

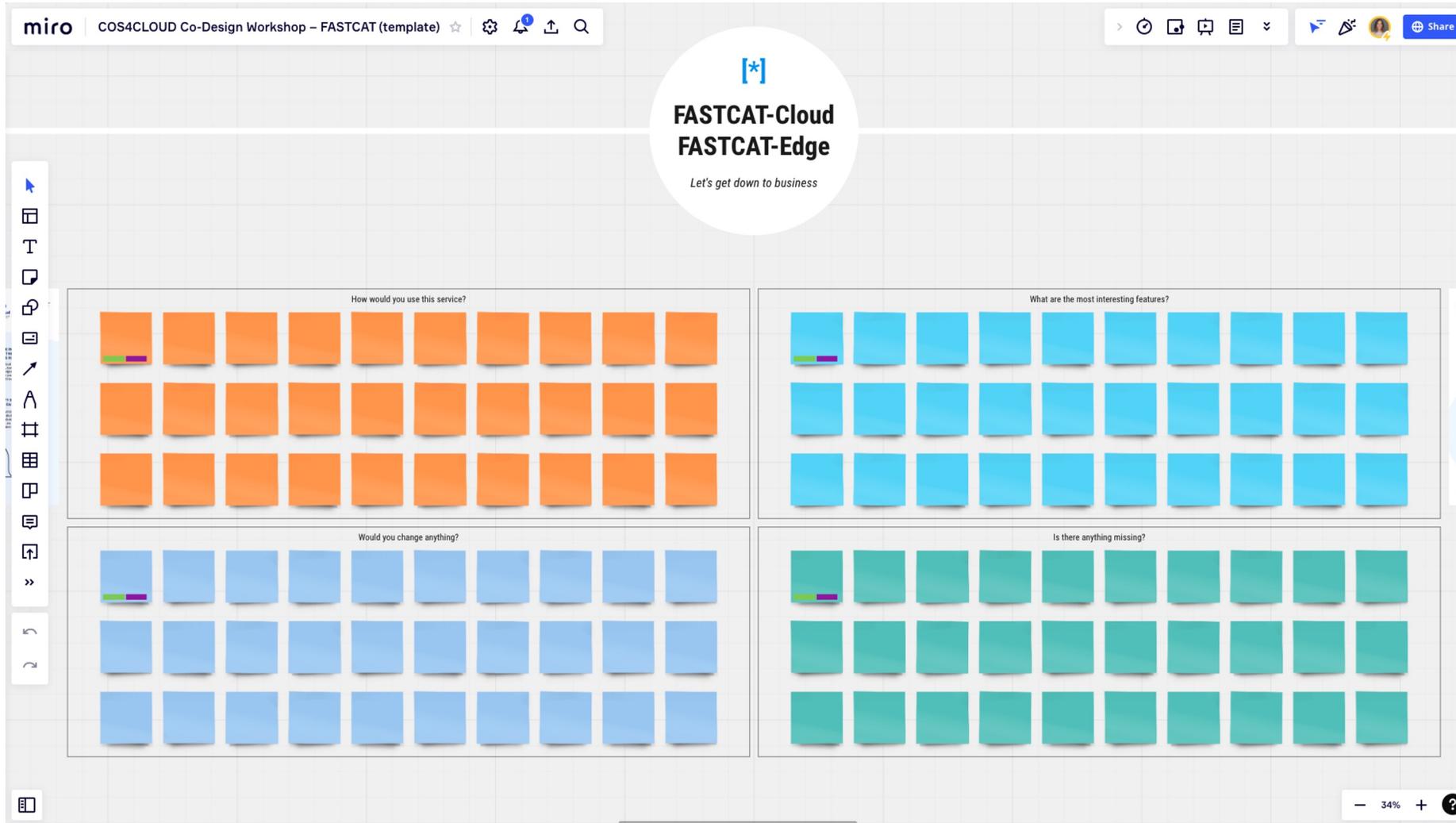
THIS IS AN EXAMPLE

Avatar	
Name/ Nickname	Susan
User profile	General public
Professional field/ Background/ Expertise	Owner of a plant shop
Hobbies	Capturing wildlife activity in the mountains near to my hometown
Main challenges in leveraging information from camera traps	I always lose a bit of time choosing the pictures from my camera trap that actually captured an animal
	I would like to share my pictures with other people to contribute to research
	I would like to drive conversations and build community around my pictures
	I would like to get help from experts when I am not able to identify species
	I would like my camera traps to take pictures from when an animal passes by so the animal doesn't have time to "escape" from it

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“User Stories” methodology



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“User Stories” methodology

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User stories

As a ... I want ... so that ...

In this second part, we are going to work on **user stories**.

In software development, a user story is an informal, natural language description of features of a software system. They are written from the perspective of an end user and they help software teams document their understanding of the system and its context.

Stories do not need to be perfect but they need to be clear.

Take a moment to read the two templates and examples of user stories given in this table. *[5min]*

	WHO – role	WHAT – change	WHY – value
	As a ...	I want... I have the need to...	so that... in purpose of...
Example 1	As a <user/role>	I want <to do something>	so that <I can benefit from something>
	As a camera trap user,	I want a faster and more sensitive camera trap	so that I don't loose the opportunity to take a picture of a fast animal
Example 2	As a <person>	I have the need to <do something>	in purpose of <a particular scope>
	As an researcher,	I have the need to automatically obtain stats about the number of observations and type of species per a given time	in purpose of controlling changes in population of species

Now it's time for you to tell your stories!

According to your user profile, the challenges you face leveraging information from camera traps and the suggested features in the previous grid, what are your needs and wishes? What would you ask/require the service to do and why? *[20min]*

- 37% + ?

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“User Stories” methodology

THIS IS AN EXAMPLE

As a...	I want... I have the need to...	so that... in purpose of...
Camera Trap User	A faster and more sensitive camera trap	...not losing the opportunity to take a picture of a fast animal
Camera Trap User	...experts that identify the species in my pictures	...I can get clarification when I am in doubt
Camera Trap User	...trained algorithms that identify the species in my pictures	...I can get clarification when I am in doubt
Camera Trap Community Leader	...build conversations around pictures that users provide	...I can dynamize the community I lead
Researcher	...automatically obtain stats about the number of observations and type of species per a given time...	...I can control changes in population of species

Template:

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“User Stories” methodology

miro | COS4CLOUD Co-Design Workshop – FASTCAT (Group A)

User Name	Profile	Expertise	Hobbies	Main Challenges	Tasks / Solutions
Jose	DCSP	Zoologist & project manager	outdoor	Maximize amount of info recovered from camera traps	Run Mammalnet project, learning tool
Jess	Researcher	Biological monitoring equipment and data science research	Camera trap and monitoring equipment, programming, big data	Main challenges in leveraging information from camera traps	Image quality, identification of species
Marc	Investigator	Environmental science	Hiking	Main challenges in leveraging information from camera traps	Knowing the amount of battery left, whether going to the field, Create a database with video data/tracks
Alex	Citizen Scientist	Computer Science	Everything with Sports Music	Main challenges in leveraging information from camera traps	Excess of data that takes time to filter
Mark	Data scientist	Data science in computer science, machine learning, data science, statistics	Outdoor activities	Main challenges in leveraging information from camera traps	Image quality, Unsorted camera data
Manoj	M.Sc. Student	wildlife monitoring, ecological studies	working with wild animals	Main challenges in leveraging information from camera traps	filter out empty images, capture speed for different animals

FASTC
FASTC

24%

Example:
FASTCAT-Cloud and FASTCAT-Edge

“User Stories” methodology

miro | COS4CLOUD Co-Design Workshop – FASTCAT (Group A) ☆ ⚙️ 🔔 ⬆️ 🔍

FASTCAT-Cloud
FASTCAT-Edge

Let's get down to business

How would you use this service?

- Let's work out of the box and collect macroinvertebrates to the "Three Things" sensor FASTCAT Edge
- upload existing image data that is not yet fully catalogued
- Cleaning previous images set to particular location/archive of images/coordinates
- Upload camera trap images
- Analyse images
- to look at existing images/data
- Share images
- Processing approximately 75,000 unsorted images FASTCAT Cloud
- Monitoring moth and mammal populations FASTCAT Cloud
- Programmatically (using API, not web app)
- Possibly to help monitor for invasion of new species
- automatic learning of predator/prey for fast-track managers
- For research on conservation success
- Use to monitor greyed squirrel population in Scotland
- To safe time when reviewing pictures aimed at obtaining wildlife records
- To avoid problems regarding full SD cards
- observe garden animals
- As a private user
- Via pipeline from existing platform that collates image data

What are the most interesting features?

- Plug and play software (Rpi image)
- Novel triggering
- Data retrieval (via server)
- capture only wanted images (invertebrates)
- get info about the captured animals
- Annotation (bounding boxes)
- Species classification
- Good price
- Annotation and automatic image file file upload/review from the user interface from the camera/receiver
- species ID
- Return only relevant images
- Ability to have a tailored network for the species in city area expected to be captured
- cleaning up your images
- Filtering the images and removing the ones without any animal
- Generating a table that summarizes the most direct results

Would you change anything?

- Better comm API documentation (how uploading via s3)
- Send results to sensor things api v1.1 by default
- user setup should be very easy to encourage non-technicals
- ongoing tech support?
- Acoustic recognition (not just image?)
- Low light (night-time) imaging
- Ability to do long exposures (Rpi pro camera board can take up to 1 minute)
- Are best match and top 3 for instance matches returned? FASTCAT Cloud
- ability to log that bait has been set and auto reset when bait is gone
- Is feedback from users about AI classification allowed? YES

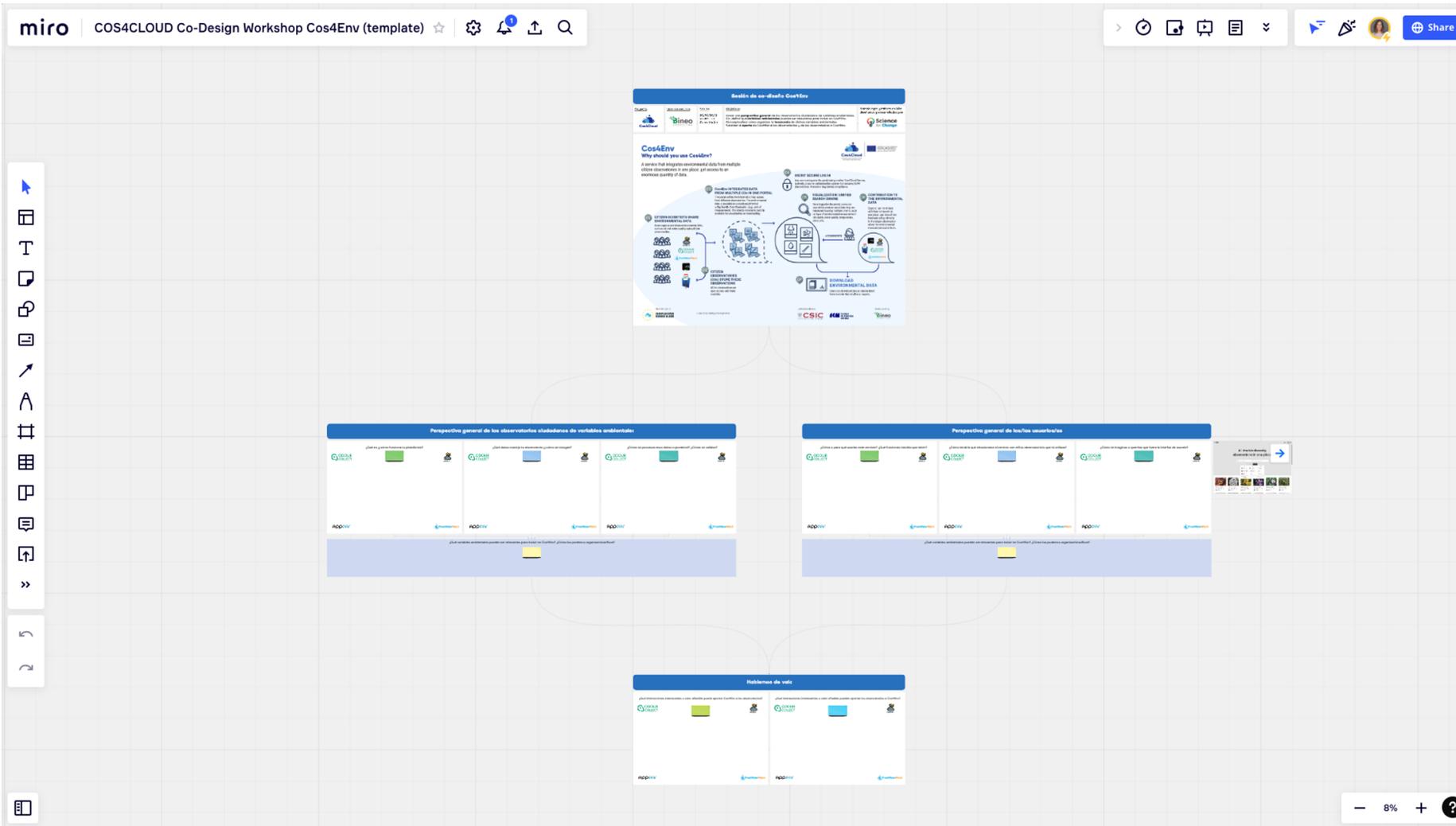
Is there anything missing?

- estimate distances (e.g. between animals and cameras)
- Waterproof case model (eg 3d print or hardware parts list)
- Security features unclear
- Solar power potential?
- perform further image analysis from platform structure etc.) to tag distinct animal individuals
- Wider detection zones: user-driven
- Automatically extract best still image from video
- upload from mobile phone
- What about nocturnal images accuracy?
- what about detection without fear for invertebrates?
- Can I check that the system logs errors and state of individual sites and just summaries?
- camouflage features for different ecosystem environments

- 34% + ?

Example:
FASTCAT-Cloud and FASTCAT-Edge

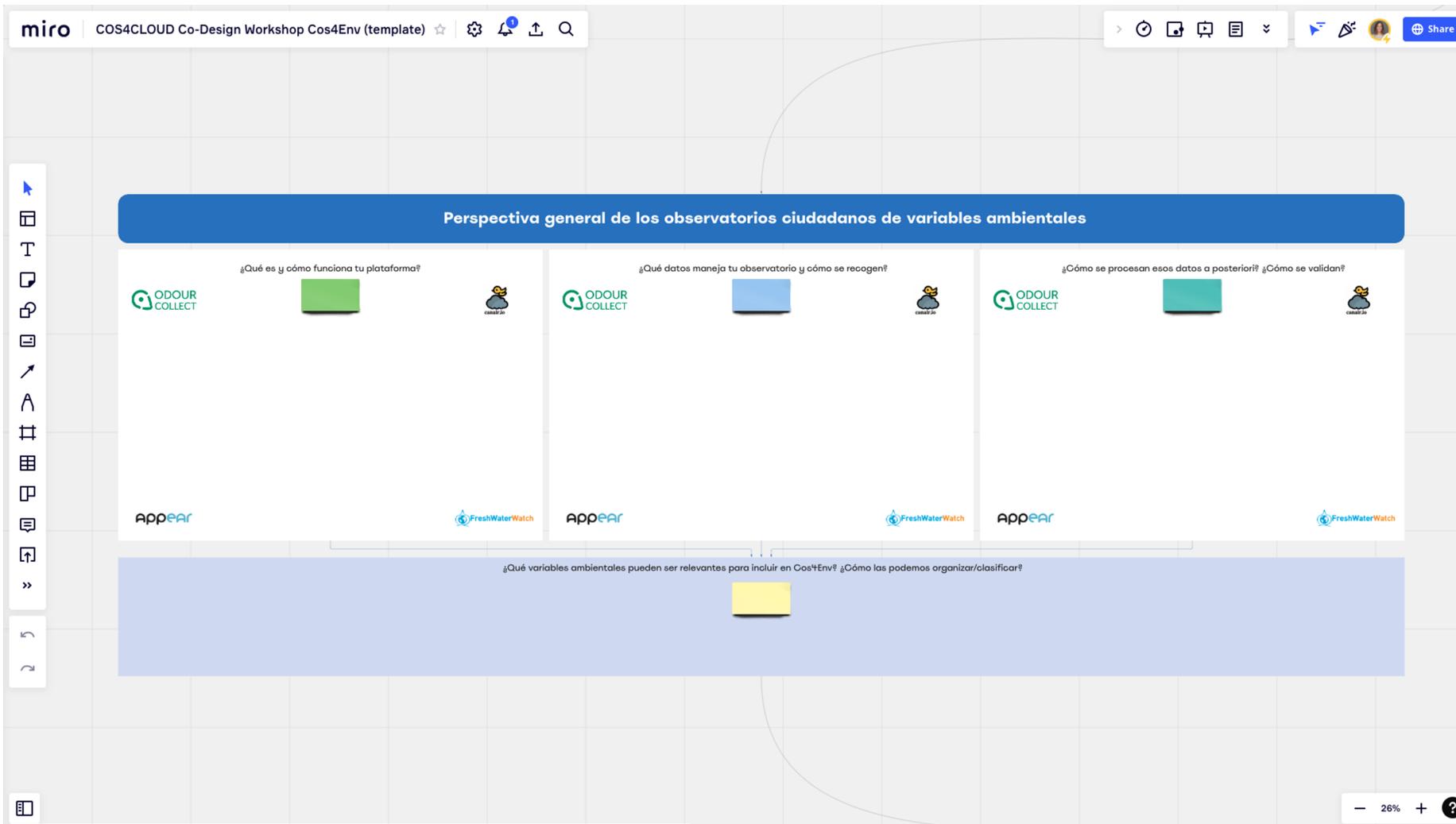
“Parallel Boards” methodology



Template:

- Very underdeveloped service.
- Very closed topics of conversation for observatory leaders while very open for users.
- Data collection by the service leader + Collection of requirements by users.
- Based on a question-and-answer format, like an interview.

“Parallel Boards” methodology



miro | COS4CLOUD Co-Design Workshop Cos4Env (template) ☆ ⚙️ 🔔 📄 🔍

Perspectiva general de los observatorios ciudadanos de variables ambientales

¿Qué es y cómo funciona tu plataforma?

ODOUR COLLECT

¿Qué datos maneja tu observatorio y cómo se recogen?

ODOUR COLLECT

¿Cómo se procesan esos datos a posteriori? ¿Cómo se validan?

ODOUR COLLECT

APPPEAR

FreshWaterWatch

APPPEAR

FreshWaterWatch

APPPEAR

FreshWaterWatch

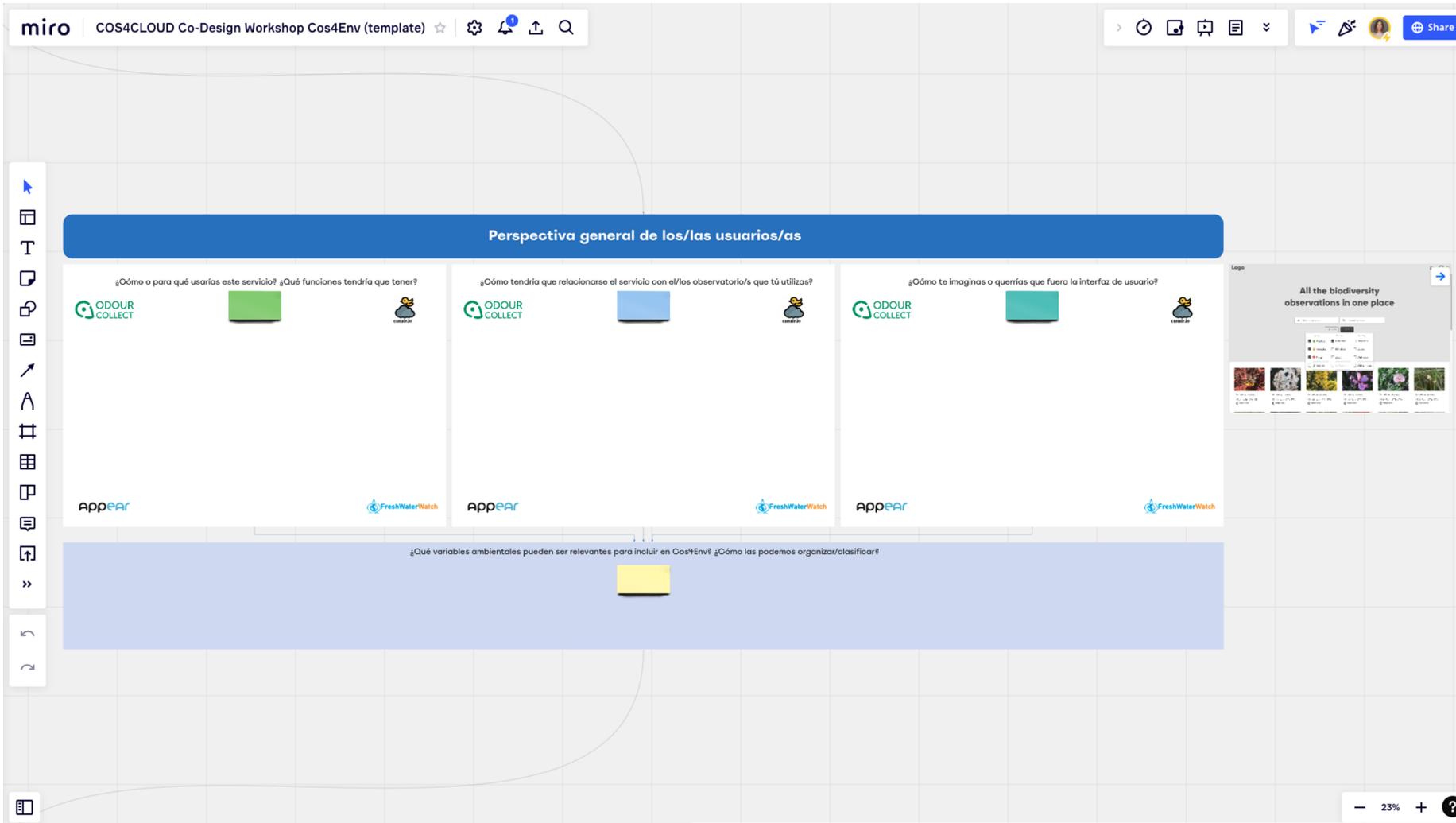
¿Qué variables ambientales pueden ser relevantes para incluir en Cos4Env? ¿Cómo las podemos organizar/clasificar?

26%

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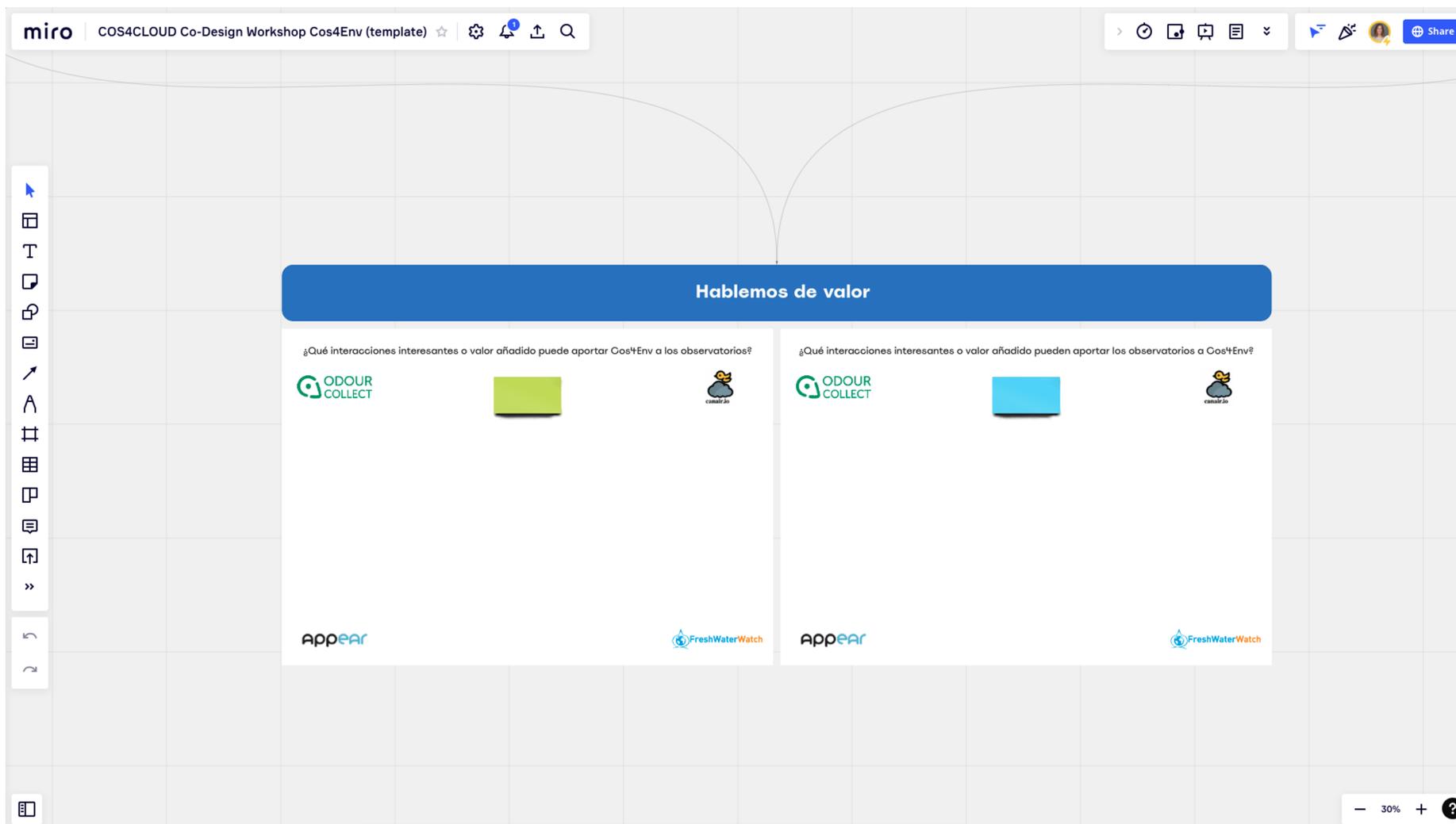
“Parallel Boards” methodology



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“Parallel Boards” methodology



The screenshot shows a Miro board titled "COS4CLOUD Co-Design Workshop Cos4Env (template)". The main content is a central blue box titled "Hablemos de valor" (Let's talk about value). Below this title are two parallel boards, each with a question in Spanish:

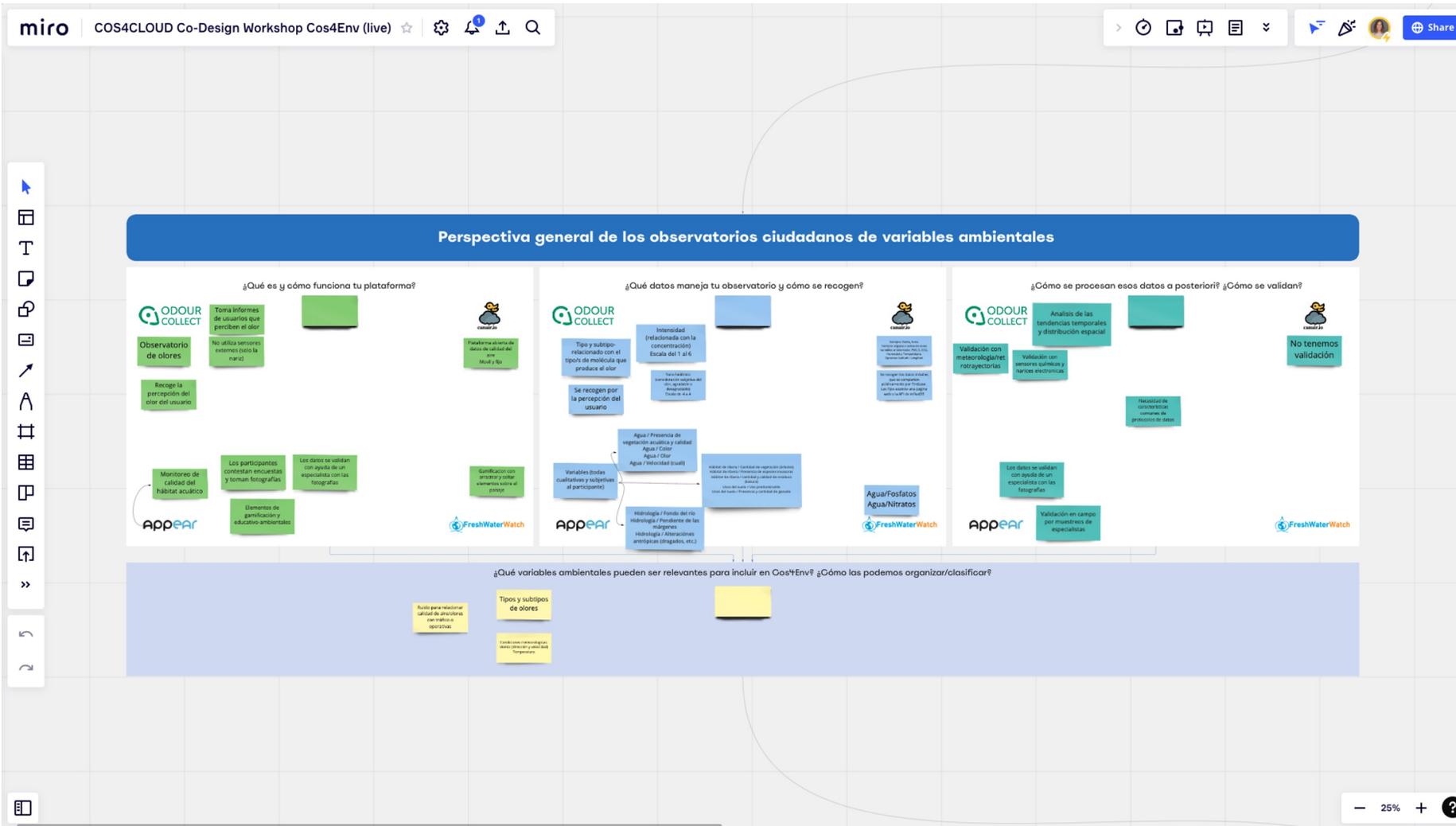
- Left Board:** "¿Qué interacciones interesantes o valor añadido puede aportar Cos4Env a los observatorios?" (What interesting interactions or added value can Cos4Env bring to the observatories?). It features logos for ODOUR COLLECT, FreshWaterWatch, and AppEAR, and a green rectangular placeholder.
- Right Board:** "¿Qué interacciones interesantes o valor añadido pueden aportar los observatorios a Cos4Env?" (What interesting interactions or added value can the observatories bring to Cos4Env?). It features logos for ODOUR COLLECT, FreshWaterWatch, and AppEAR, and a blue rectangular placeholder.

The boards are connected by curved lines, indicating a flow or relationship between the two perspectives. The Miro interface includes a toolbar on the left and a top navigation bar with various icons and a "Share" button.

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“Parallel Boards” methodology



Example:
Cos4Env

“Parallel Boards” methodology

miro | COS4CLOUD Co-Design Workshop Cos4Env (live) ☆ ⚙️ 🔔 📄 🔍

▶ ⌚ 📄 🗨️ 📄 ⌵ ▶ 🎯 🗨️ 👤 🌐 Share

Perspectiva general de los/las usuarios/as

¿Cómo o para qué usarías este servicio? ¿Qué funciones tendría que tener?

¿Cómo tendría que relacionarse el servicio con el/los observatorio/s que tú utilizas?

¿Cómo te imaginas o querías que fuera la interfaz de usuario?

¿Qué variables ambientales pueden ser relevantes para incluir en Cos4Env? ¿Cómo las podemos organizar/clasificar?

Variables Ambientales:

- Ruido:** Contaminación lumínica
- Hábitat:** Uso del suelo, Residuos, Calidad de la vegetación
- Olor:** Contaminación lumínica, Carácter, Tono hedónico, Cobertura vegetal
- Aire:** Índice calidad del aire, Temperatura del aire, Humedad, Dirección del viento, Velocidad del viento, CO2
- PM2.5, PM10:** Especificar cómo se está midiendo esta calidad del aire
- Color / Olor:** Contaminantes visibles (espejitos, espuma)
- Agua:** Índice de calidad agua, Temperatura del agua

Example:
Cos4Env

“Parallel Boards” methodology

The screenshot shows a Miro board titled "Hablemos de valor" (Let's talk about value). It contains two parallel boards, each with the question: "¿Qué interacciones interesantes o valor añadido puede aportar Cos+Env a los observatorios?" (What interesting interactions or added value can Cos+Env bring to the observatories?).

Left Board: This board features several sticky notes and logos. At the top left is the "ODOUR COLLECT" logo. A central sticky note says "Incluir IA y algoritmos" (Include AI and algorithms). Below it are notes: "Tener tus datos en Cos4Env te da visibilidad" (Having your data in Cos4Env gives you visibility), "Divulgación" (Dissemination), "Tus datos trascienden más" (Your data transcends more), "Confiar en los datos y en las aplicaciones/observatorios" (Trust in the data and in the applications/observatories), "Reportar quienes/cuántas personas han descargado datos" (Report who/how many people have downloaded data), and "Construir know-how" (Build know-how). Logos for "appear" and "FreshWaterWatch" are at the bottom.

Right Board: This board has a simpler layout with the "ODOUR COLLECT" logo at the top left. It features sticky notes for "Datos" (Data), "Contenido" (Content), and "que sea una plataforma VIVA" (that it is a VIVA platform). Logos for "appear" and "FreshWaterWatch" are at the bottom.

Example:
Cos4Env



Other formats

Other formats



Virtual workshops
of co-design



Tweetathon



Debate forums



Open meetings



Collaborative
mapping

Other formats



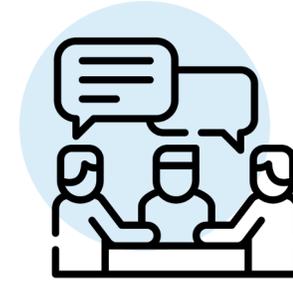
Virtual workshops
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Tweetathon



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Open meetings



Collaborative
mapping



Courses and
training



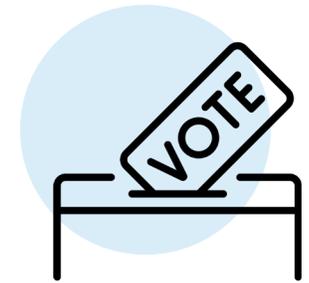
Webinars



Mail exchanges
with users



Exchanges via app
with users



Voting platforms



Reflections and conclusions





People-centred design



People-centred design

In all phases of the co-design process, we have considered **user requirements** as the basis, as well as a source of possible improvements for the services. Why?

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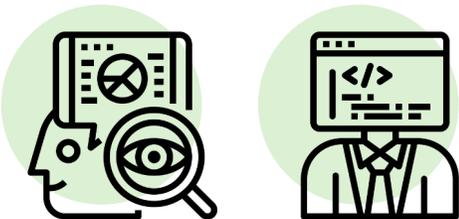
- To design for **people** and their **needs**, and make their everyday tasks easier.



People-centred design

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- To design for **people** and their **needs**, and make their everyday tasks easier.
- To maintain **consistency** and **simplicity** through a natural dialogue with users.



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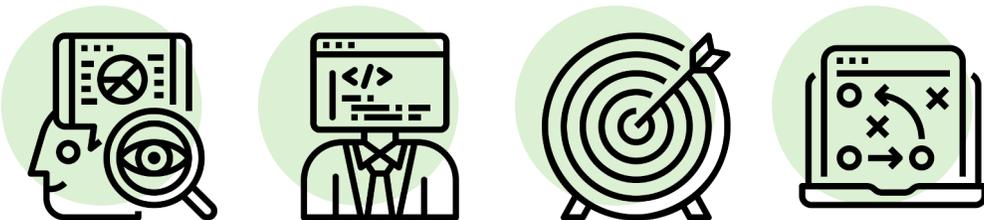
- To design for **people** and their **needs**, and make their everyday tasks easier.
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- To receive adequate **feedback** from those who will use the service and, therefore, to implement adequate **solutions**.



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- To design for **people** and their **needs**, and make their everyday tasks easier.
- To maintain **consistency** and **simplicity** through a natural dialogue with users.
- To receive adequate **feedback** from those who will use the service and, therefore, to implement adequate **solutions**.
- To provide adequate browsing mechanisms and, as a result, maximise **usability**.

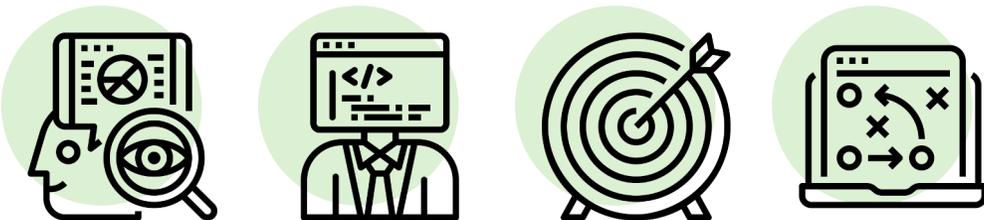


People-centred design

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- To design for **people** and their **needs**, and make their everyday tasks easier.
- To maintain **consistency** and **simplicity** through a natural dialogue with users.
- To receive adequate **feedback** from those who will use the service and, therefore, to implement adequate **solutions**.
- To provide adequate browsing mechanisms and, as a result, maximise **usability**.

During the co-design workshops, we took into account that there were people who were very technically oriented while there were others who were not. Therefore, we took the following **responsibilities and considerations**:



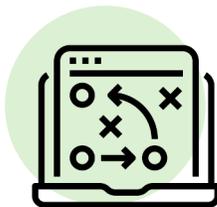
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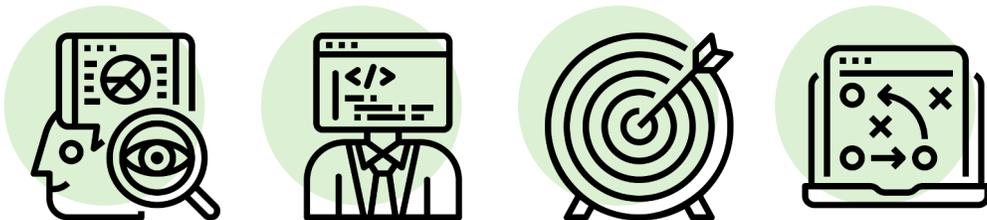
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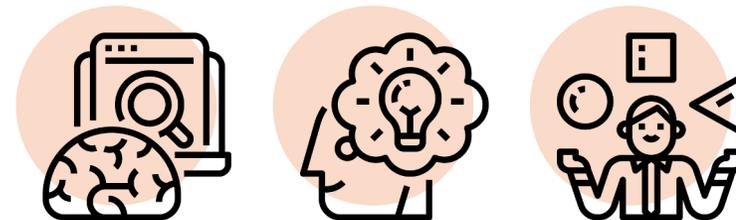
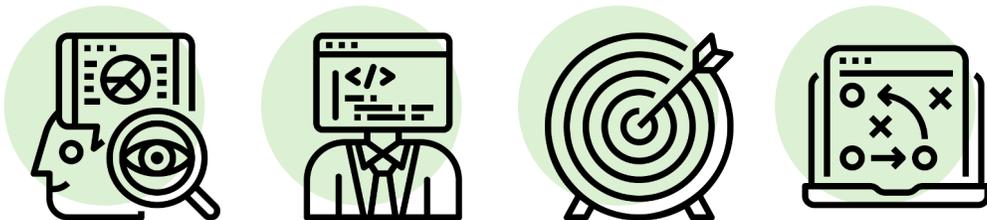
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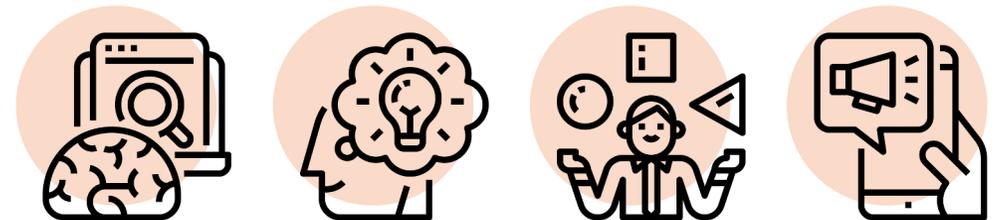
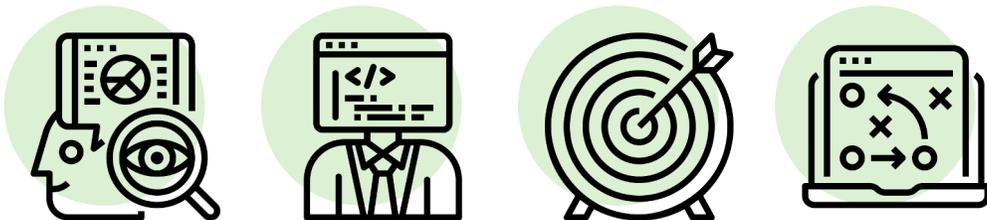
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- To acknowledge **any idea** as a **good idea** for co-creation, even if it may be dismissed later on.
- To keep users **informed** about future developments in the project to grow the community.





Innovation in the process

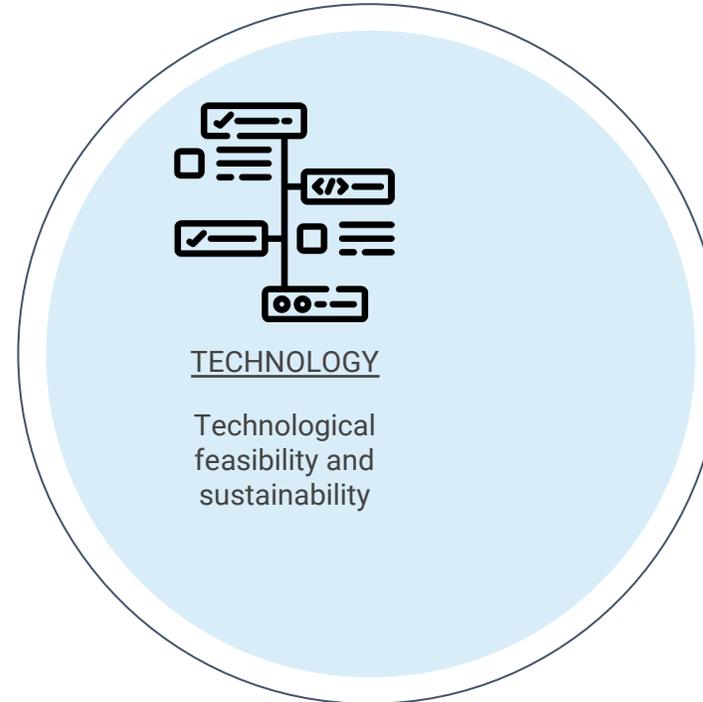
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Through the co-design methodology in Cos4Cloud, we focus on achieving **innovation** and **meaning** in the design of the project's 13 services, making every effort to meet **technological**, business and **human** interests:

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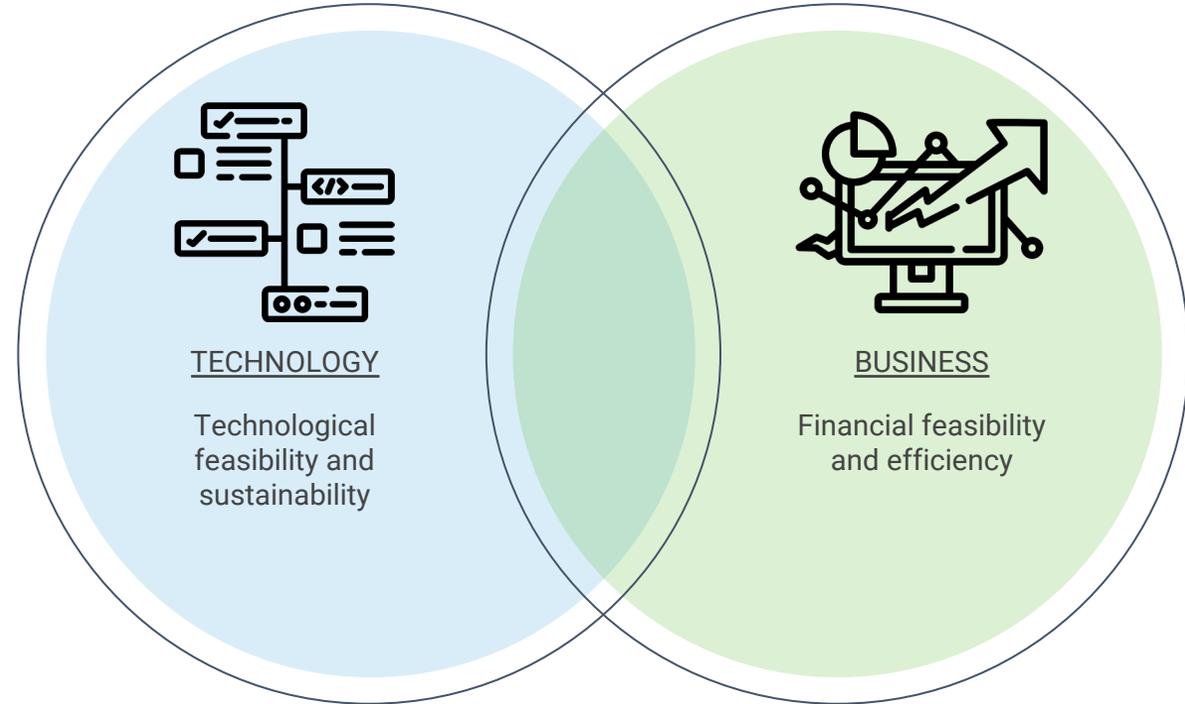
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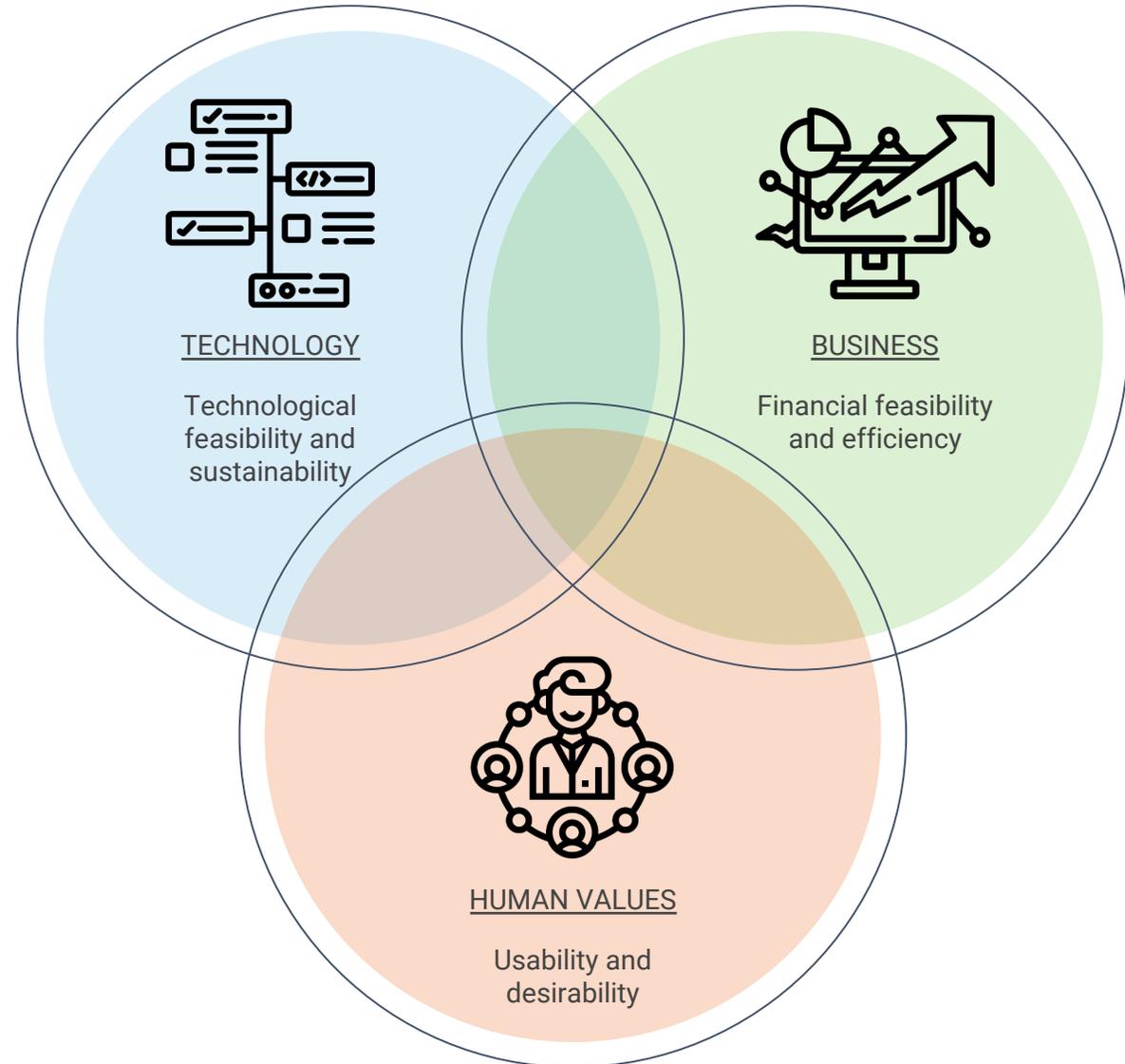
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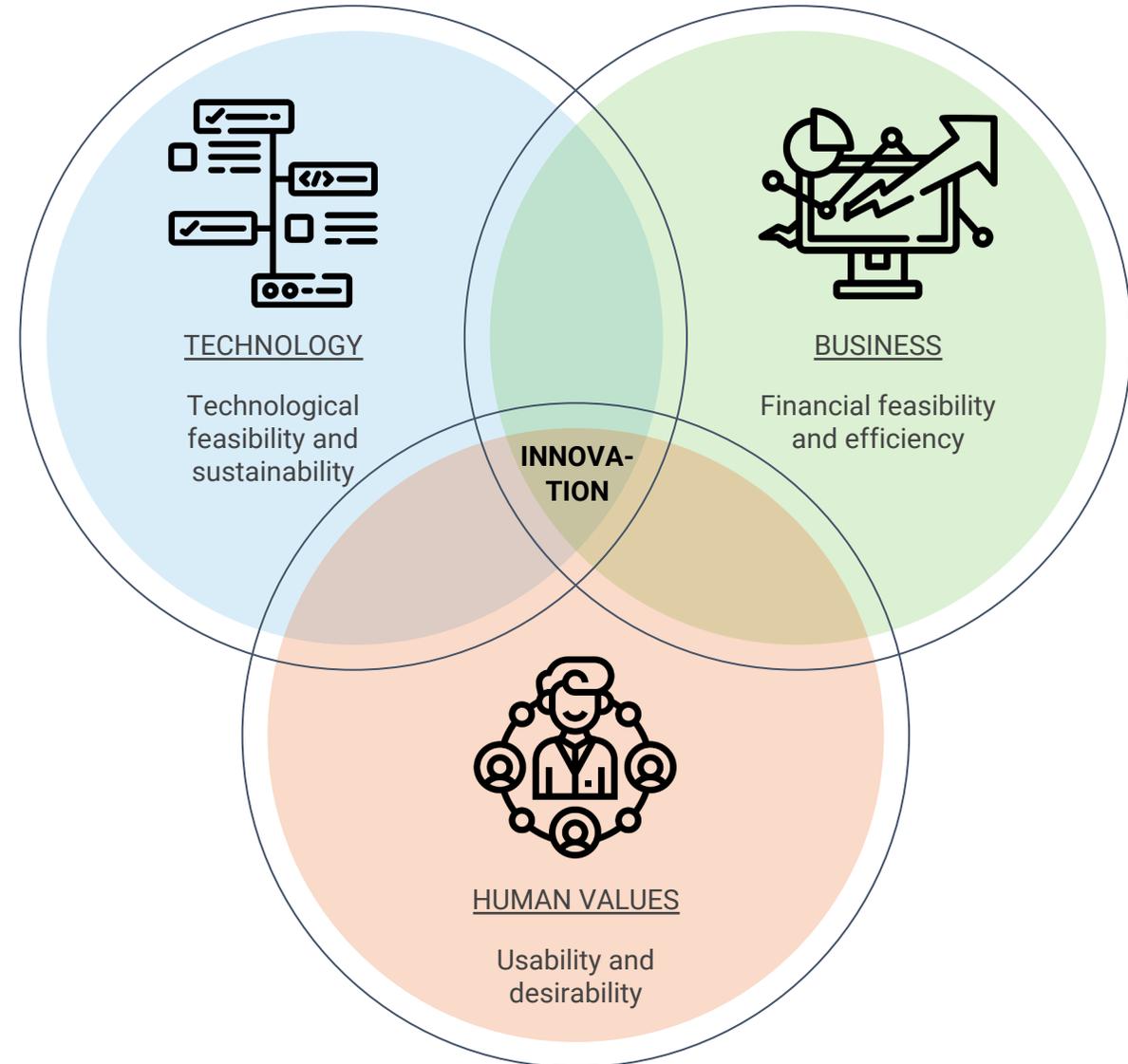
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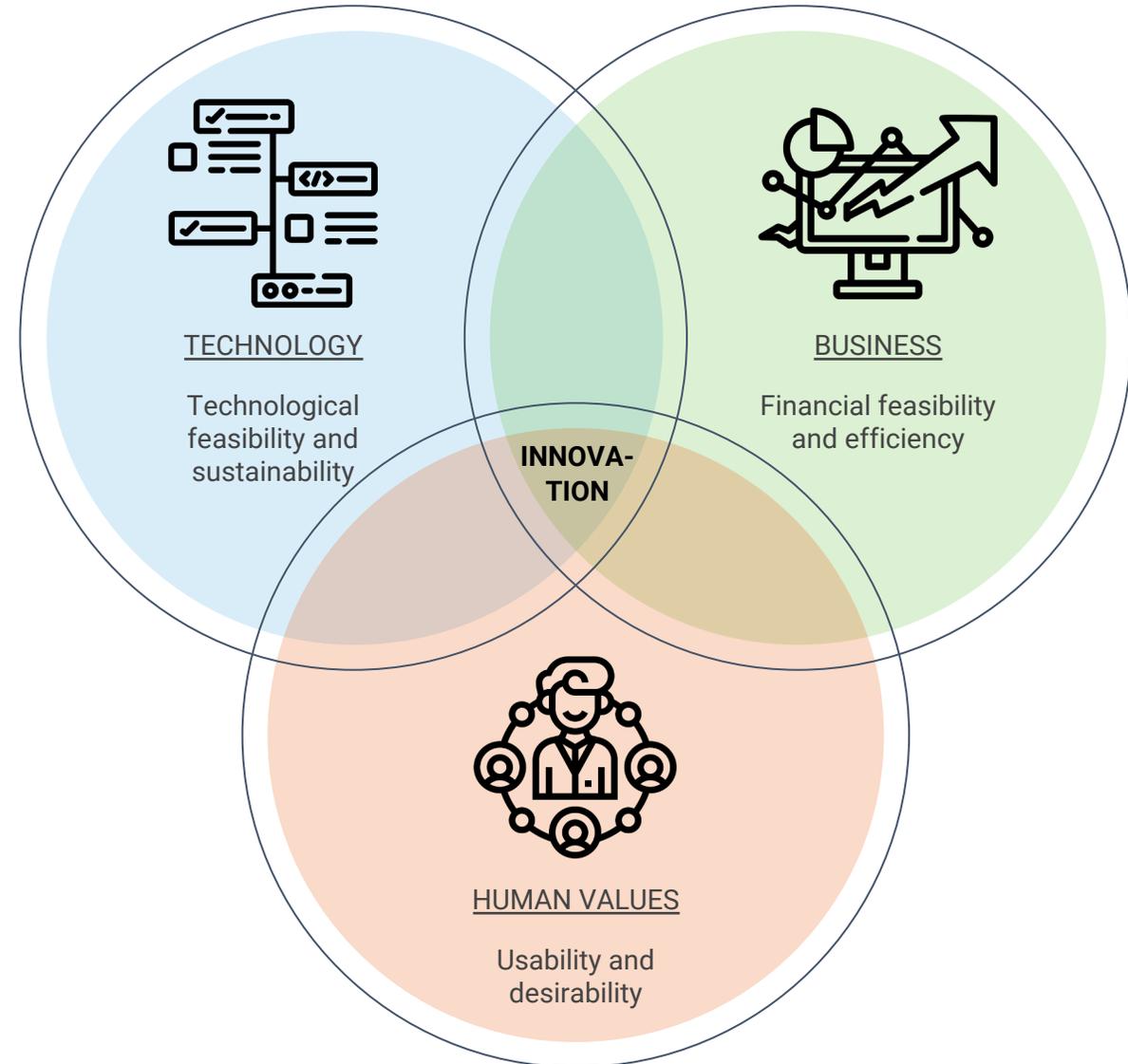


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Through a clear and accessible **methodology**, **creativity** and **empathy** as working tools and **technology** as a goal, we have applied co-design in Cos4Cloud to include the user's perspective in developing the services and thus achieving innovation.





And to conclude...



The co-design team

Coordination



Jaume Piera

Coordinator

Tenured Scientist at Marine Science
Institute (ICM) CSIC and associate
researcher at CREAM.



Karen Soacha

Leader of WP5 (Services in
practice), Researcher

Researcher, PhD student at Marine
Science Institute (ICM) CSIC

Engagement



Sonia Liñán

Leader of WP8 (Communications)
and WP9 (Ethics), Citizen
engagement coordinator

Communication and citizen
engagement at ICM-CSIC



Ángela Justamante

Co-leader of the communication
plan strategy, branding definition,
press officer and social media
channels management

Communication technician at CREAM

Methodology



Blanca Guasch

Co-design co-leader, applying
Design Thinking methodologies to
co-create the Cos4Cloud services
with a variety of stakeholders

Co-design Strategic Officer at Science
for Change.



Alex Amo-min_opt

Alex Amo

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IT & Data Officer, Security & Privacy
specialist and Project Manager at
Science for Change.

Join the Cos4Cloud community :)



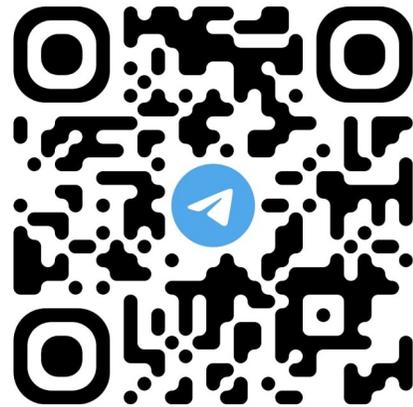
We'll keep you informed about workshops, events, activities and news related to the co-design and testing process for the services.



You can join by filling in
this **form**:



And/or join our
Telegram channel:



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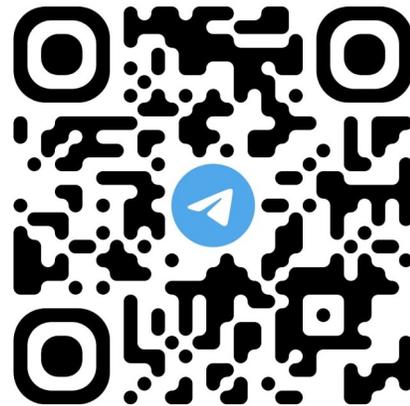
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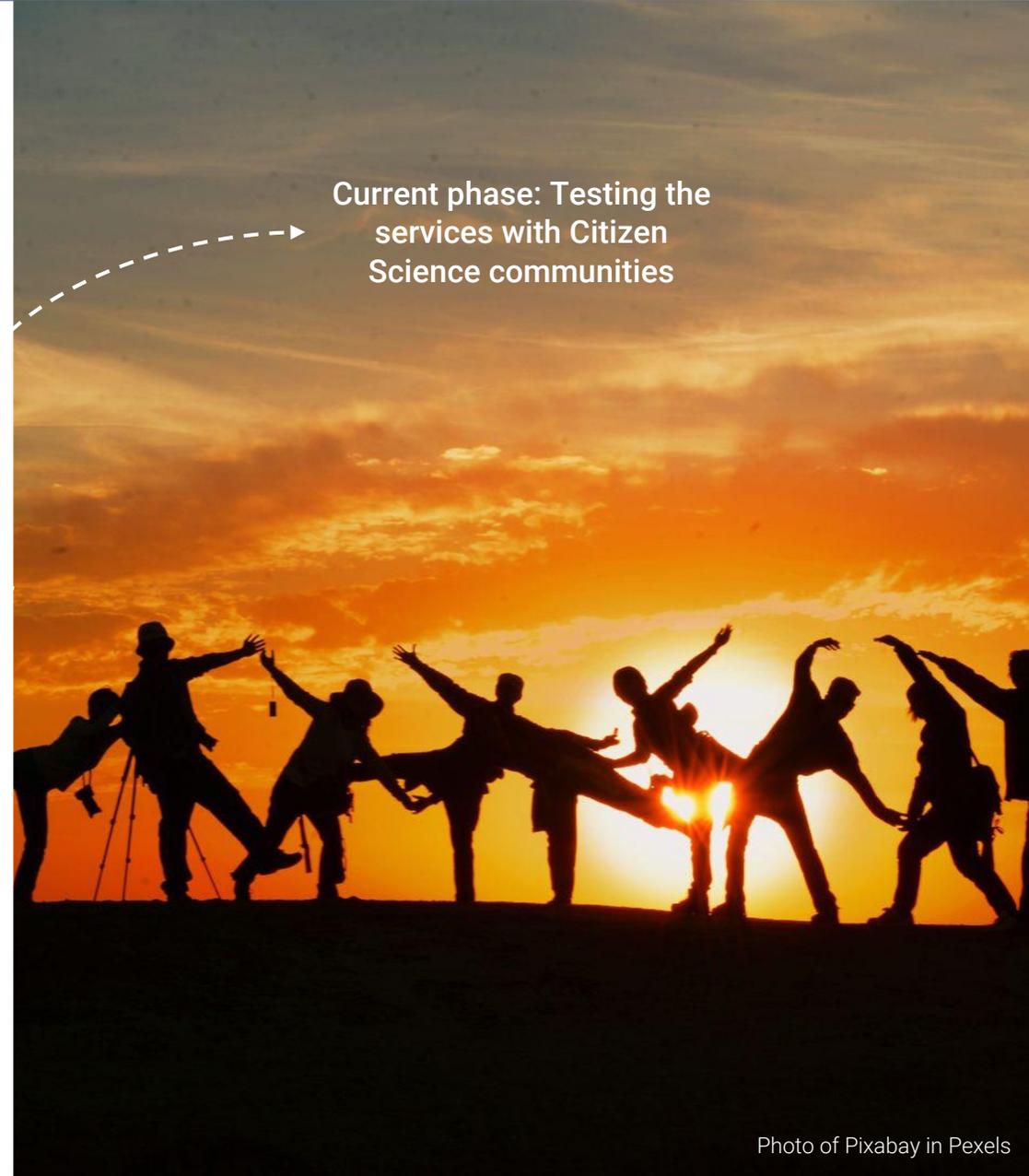
You can join by filling in
this **form**:



And/or join our
Telegram channel:



Current phase: Testing the
services with Citizen
Science communities



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[Cos4Cloud](https://www.youtube.com/Cos4Cloud)



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coordination@cos4cloud-eosc.eu



Web

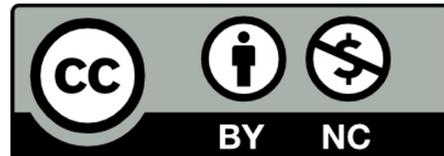
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