“1st Open Annual Workshop on Future ICT”

The Golden Age Hotel of Athens

May 25th, 2022

“Humans in the loop: Humans as sensors and humans as actuators”

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University of West Attica

Presentation is based on two H2020 project results

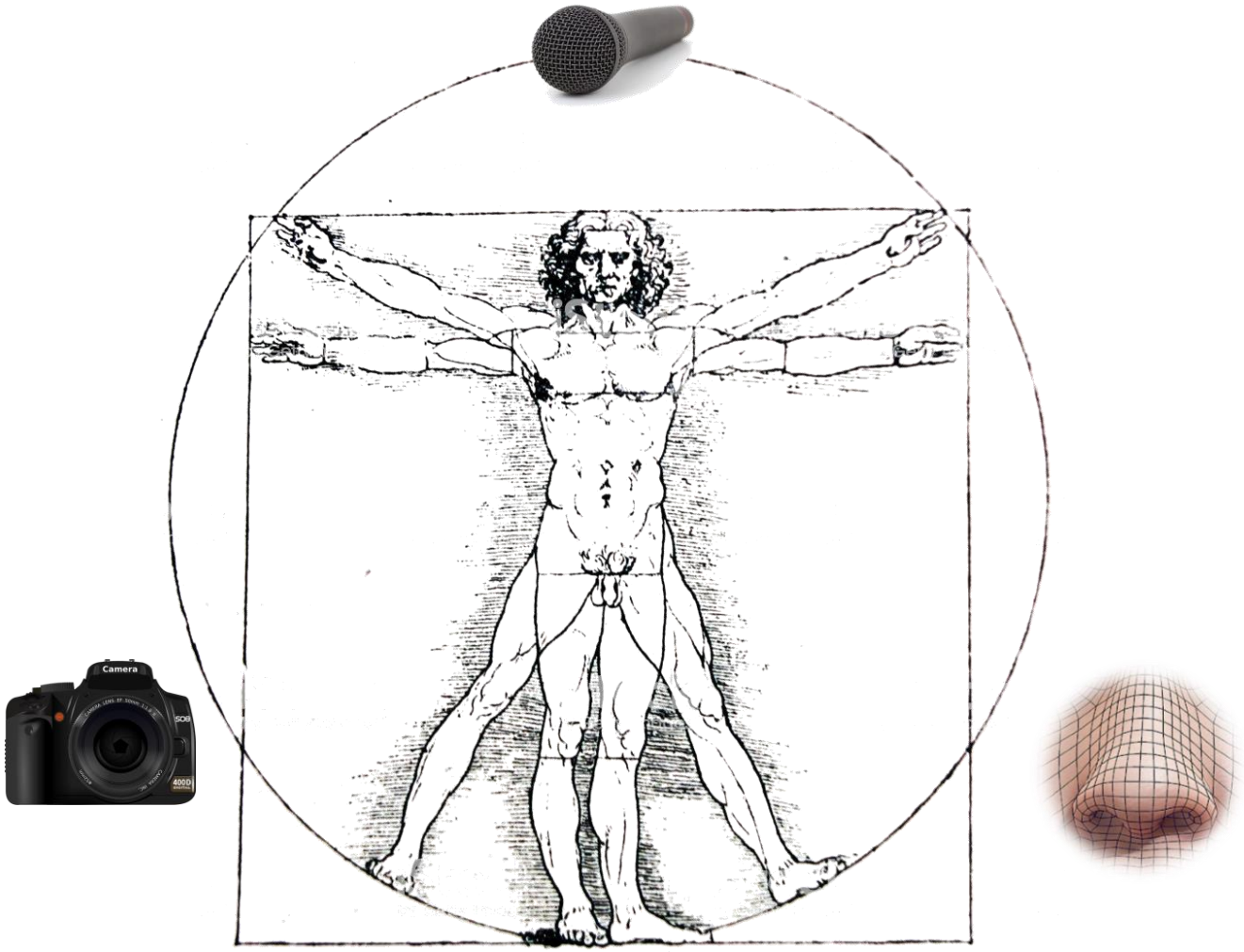
STORM

EUNOMIA

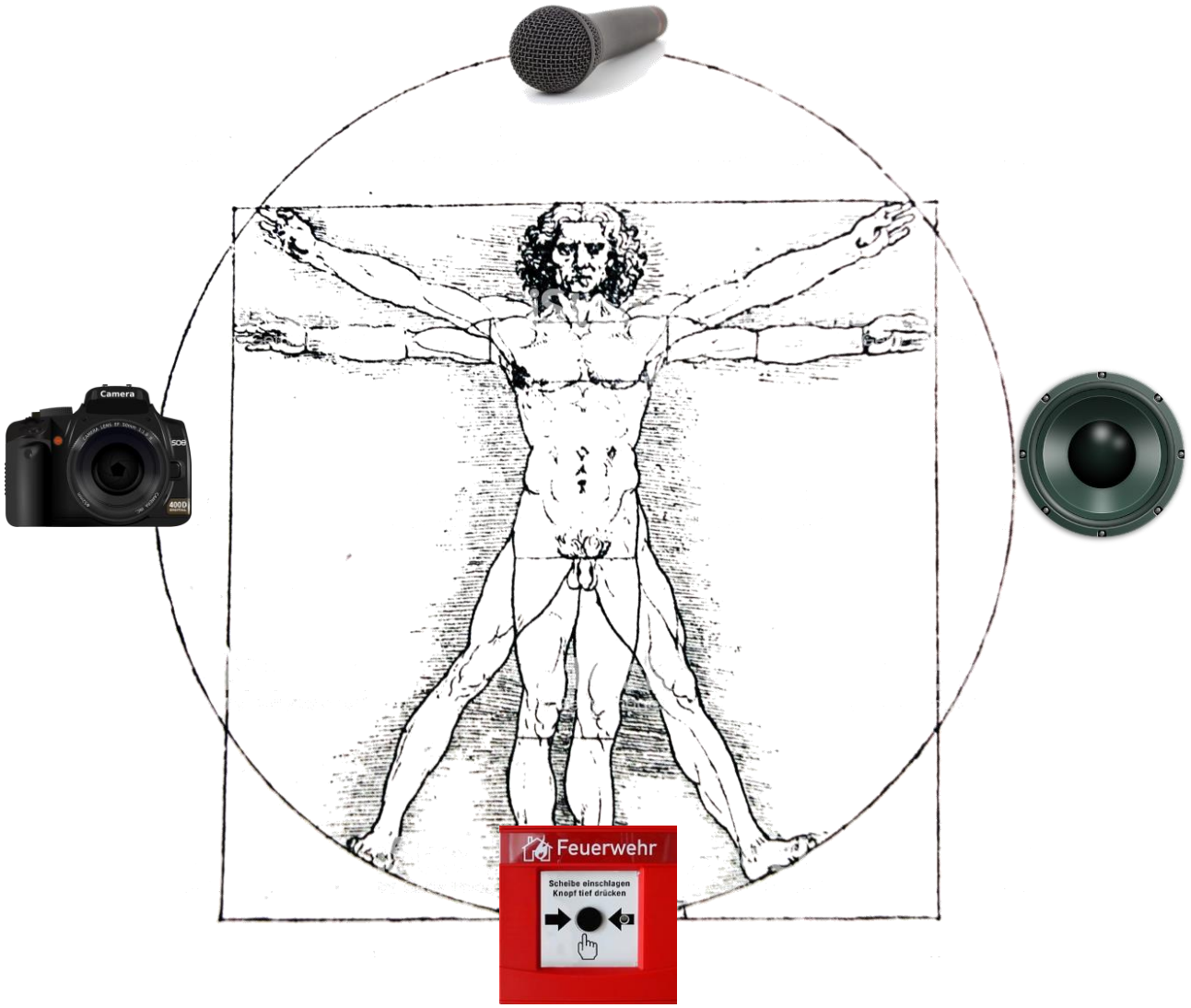
ASSESS • TRUST • SHARE

Funded by the Horizon 2020 Framework Programme of the European Union

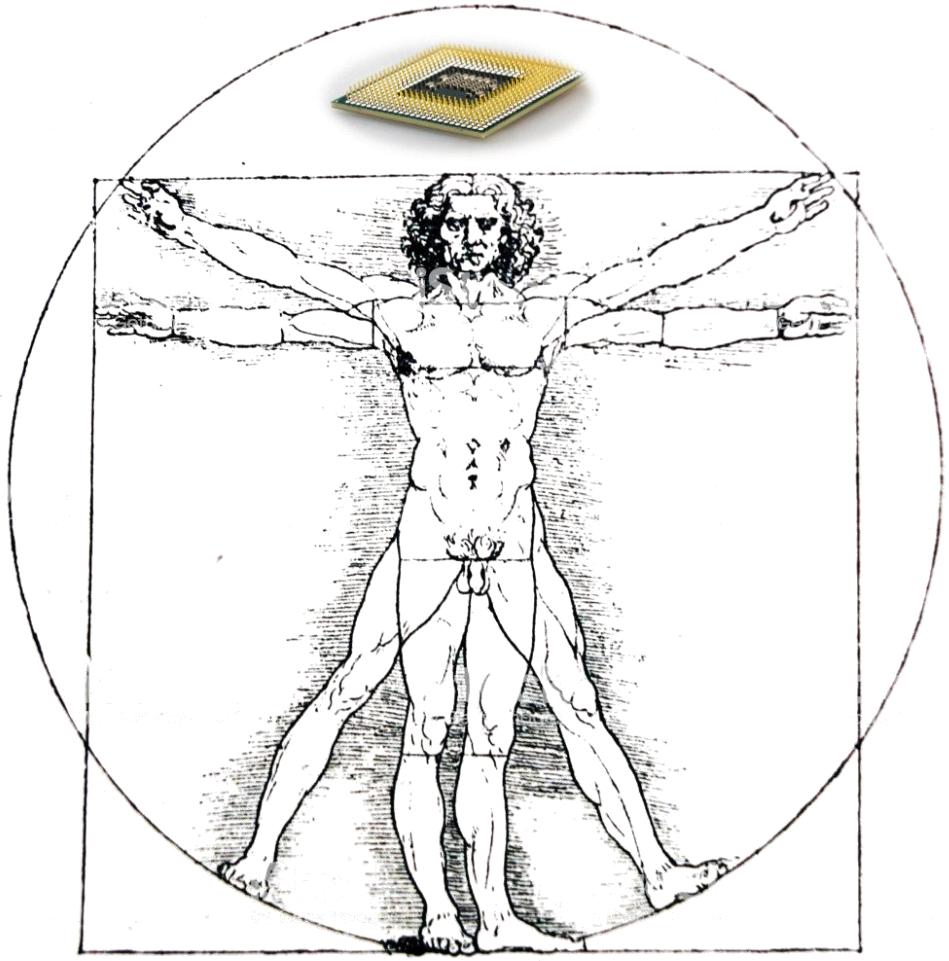
Human as a Sensor



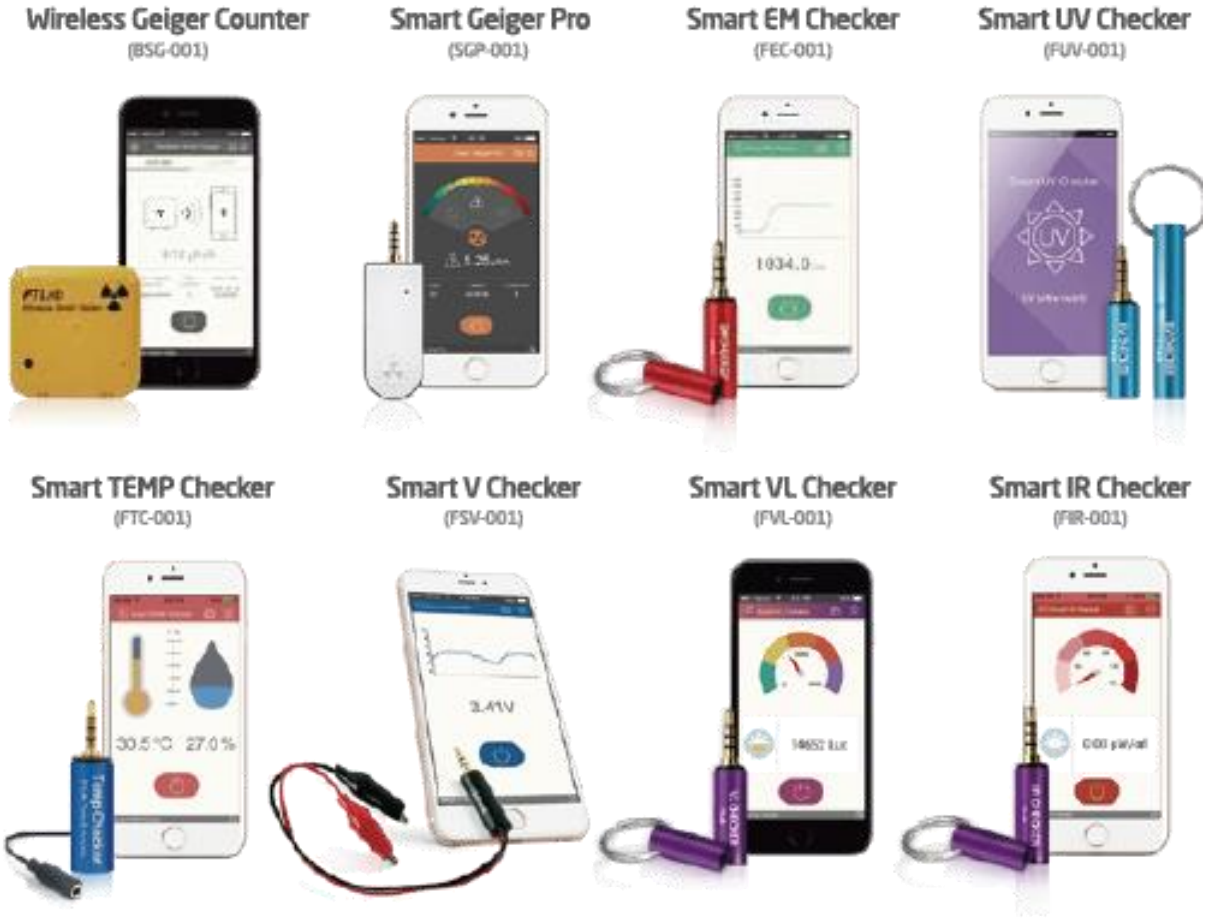
Human as an Actuator



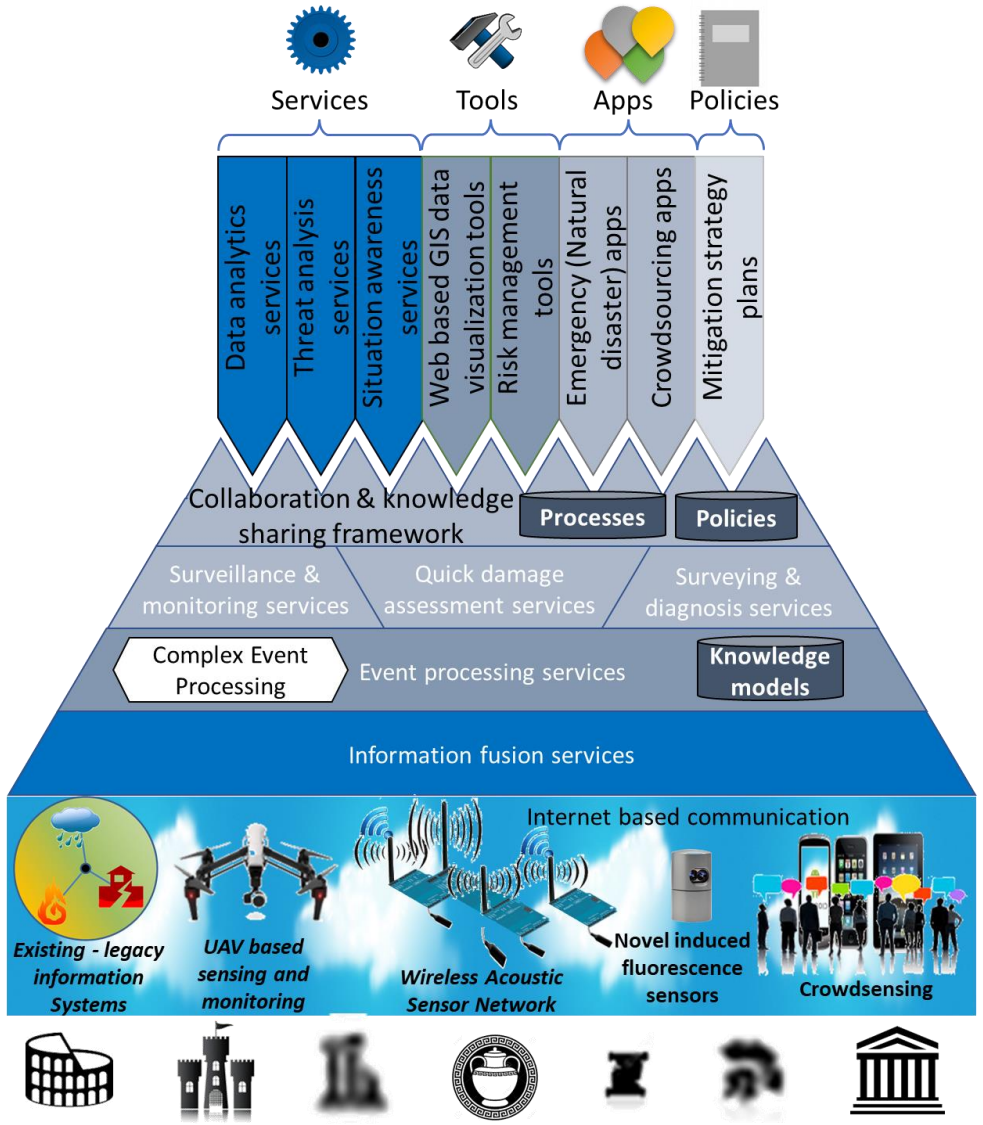
Human as a . . . Human



Collect data



Integrating human input



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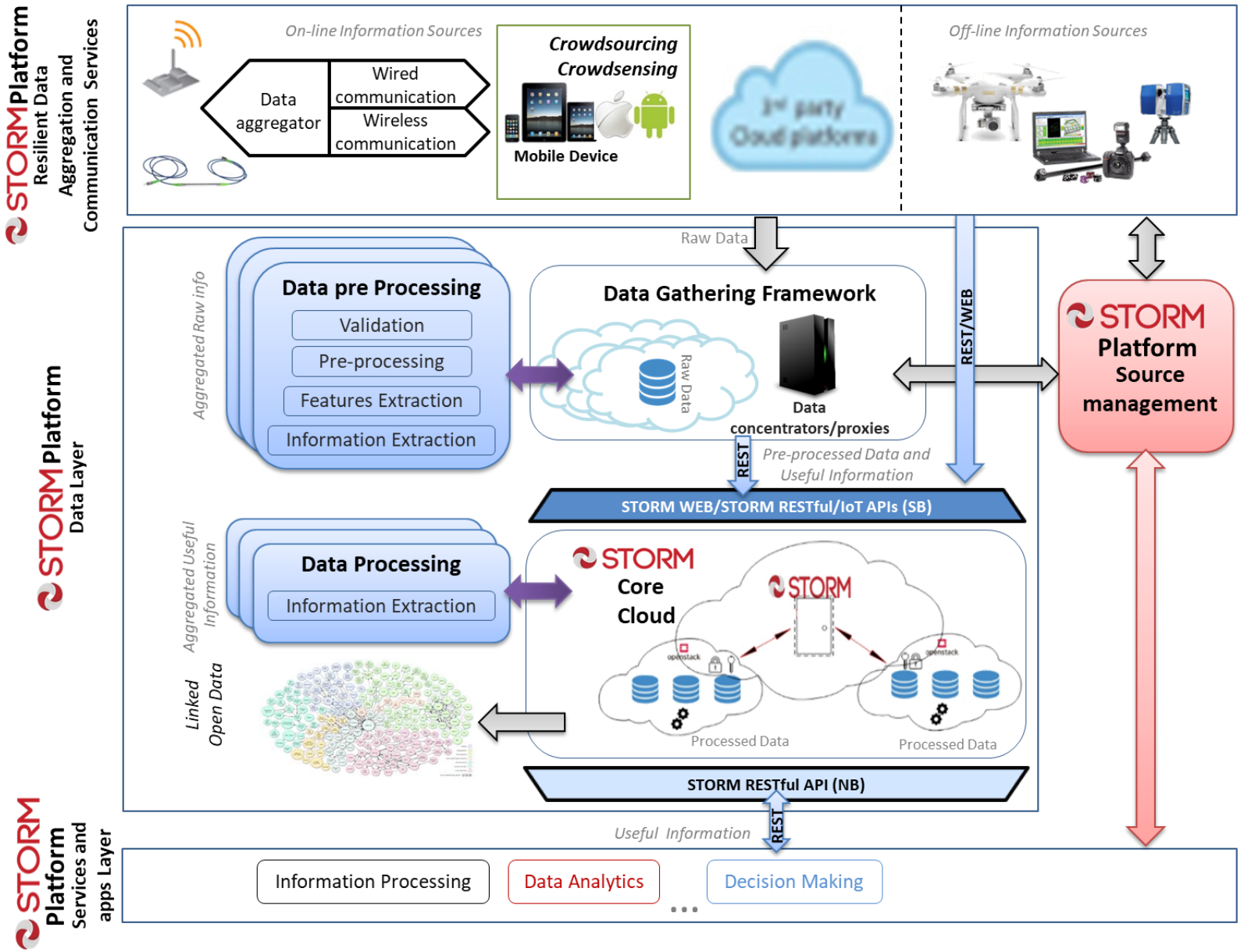
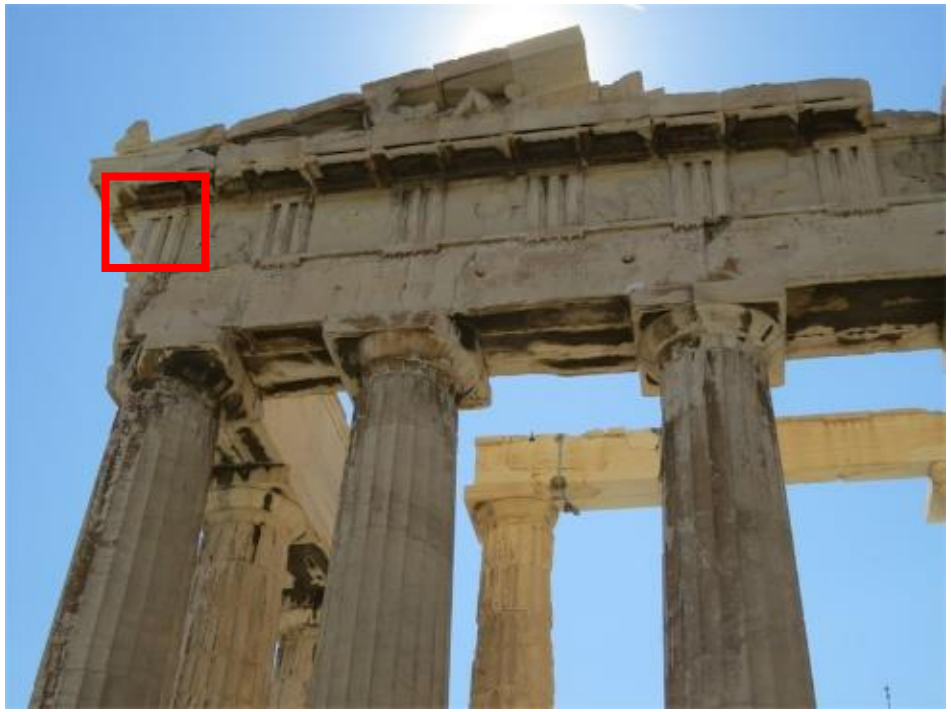
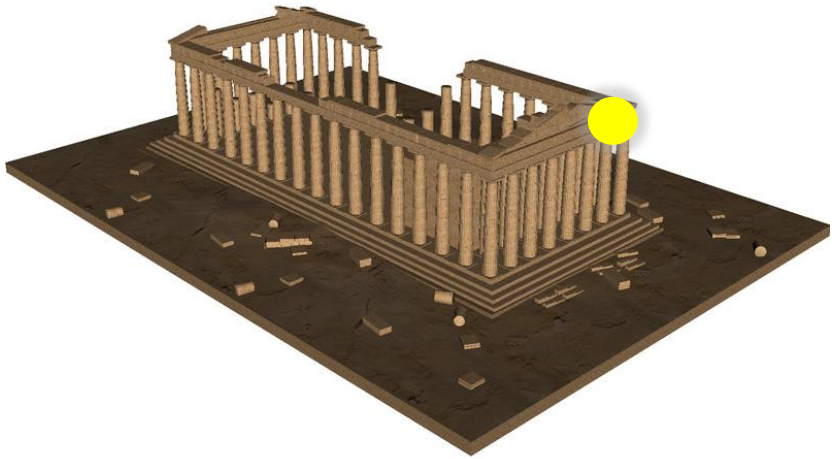
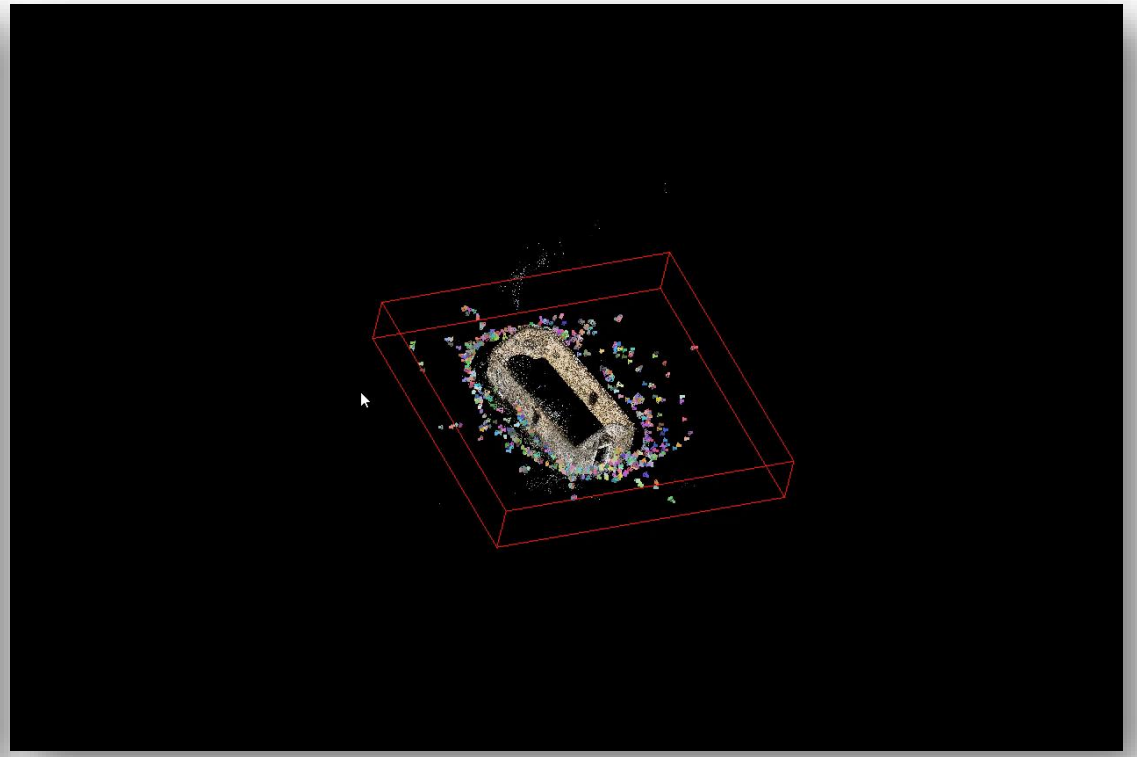


Crowdsourcing - Crowdsensing





Crowdsourcing - Crowdsensing

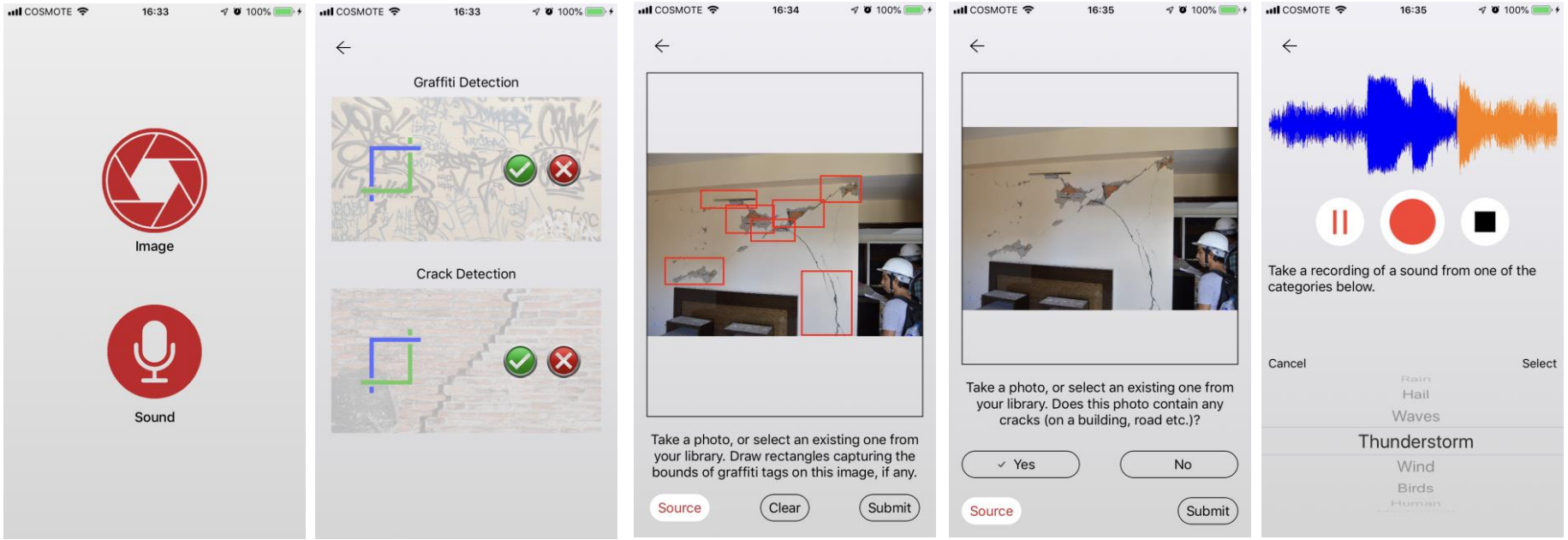


The model is created under the permission and collaboration of the Efareth of East Attica, and is to be used only for research purposes in the context of STORM project

Crowdsourcing/sensing (again)

Image and sound collection

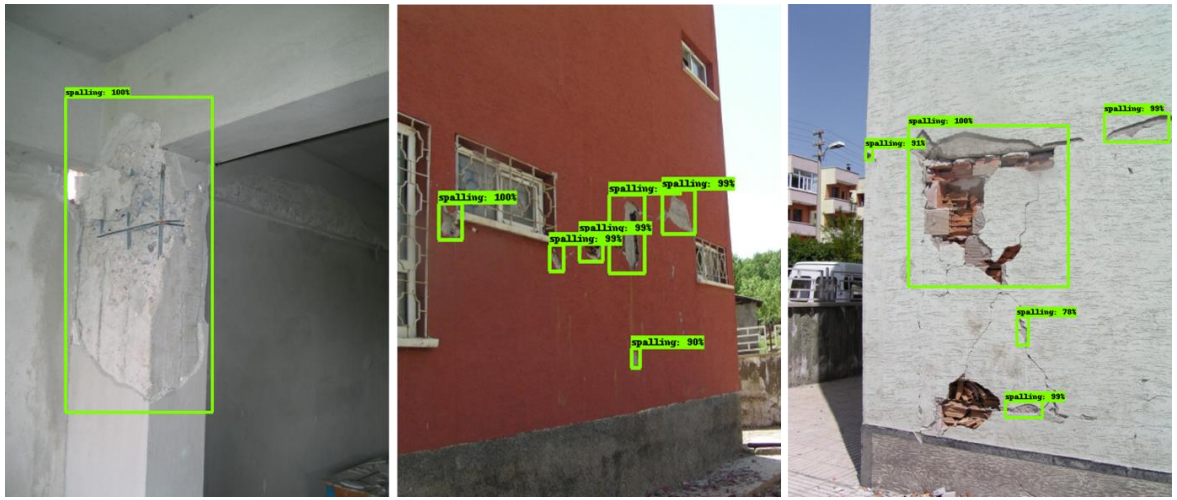
- Sound: Take recordings of one of the categories
- Image: Upload images, classify them (yes/no) or draw bounding boxes around areas of interest



- The included images display structures, such as walls, pavements, benches and statues that are located in the municipality of Athens and its suburbs.
- To the best of our knowledge, there is no existing annotated image database for graffiti/tagging detection.
- 1086 images with 3158 spalling annotations were used for this demonstration and are split into 75% (815 images) for training and validation and 25% (271 images) for testing.
- Tensorflow object detection API

Crowdsourcing/sensing (again)

- These images are collected from several different events such as earthquakes (e.g. Haiti in 2010, L'Aquila in 2009, Nepal in 2015, Taiwan in 2016), hurricanes (e.g. Florida in 2004, Texas in 2008), and tornadoes (Florida in 2007, Greensburg in 2007).
- Dataset provided by Purdue University
- 1022 annotated images with graffiti/tagging annotations, split into 80% (813 images) for training and validation and 20% (209 images) for testing.
- Tensorflow object detection API



What about AI?

Source: https://www.youtube.com/watch?v=DJ2hcC1orc4

Motivation through gamification

- Scavenger-Hunt like game: Complete a series of tasks

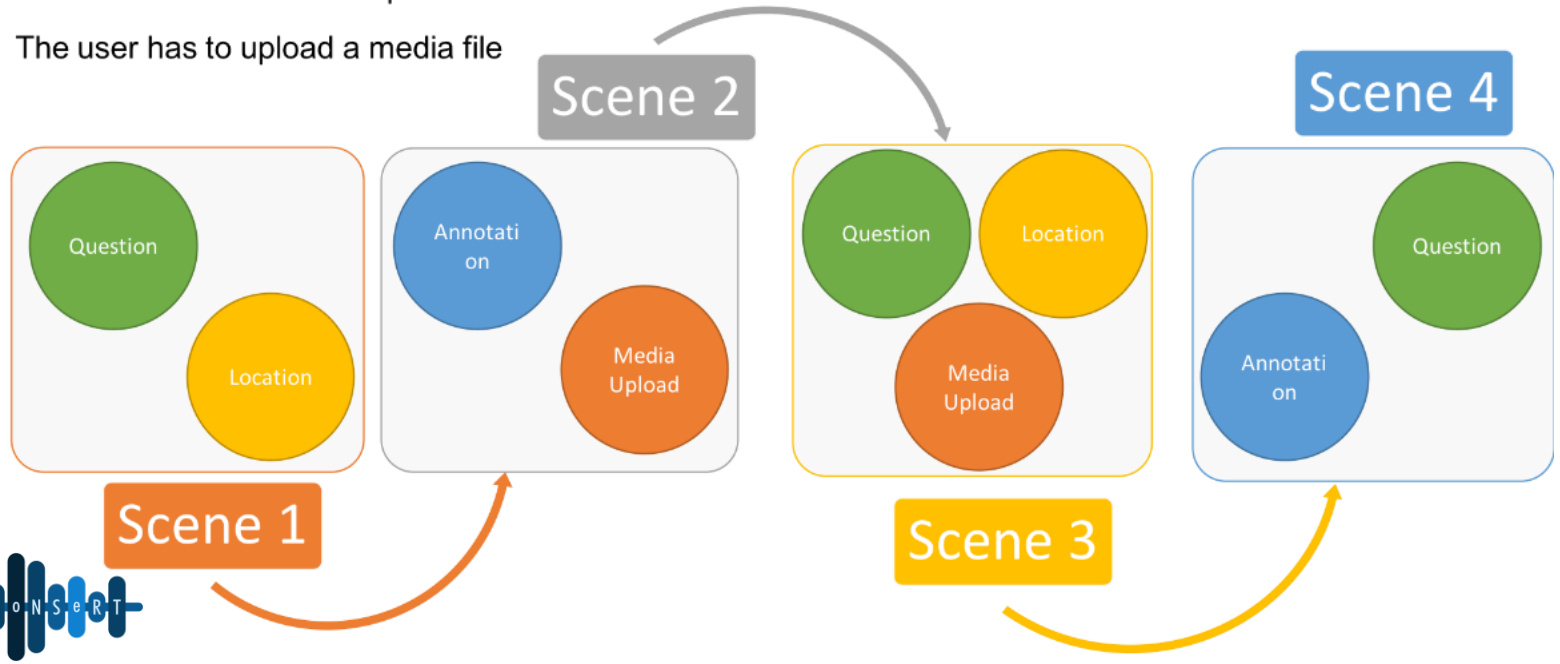
- Upload sensory data (Audio, Image, Video, Environmental)
- Annotate media (Image, Audio)

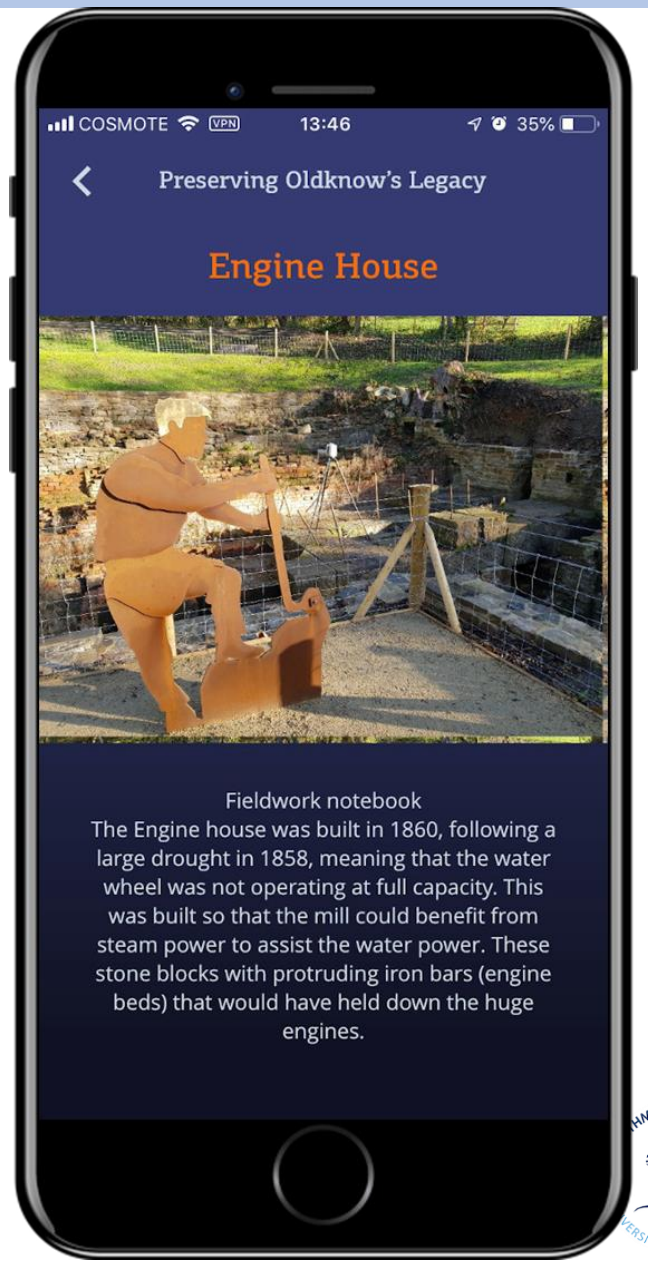
The user has to send his/her location

The user has to classify a series of media files

The user has to answer a question

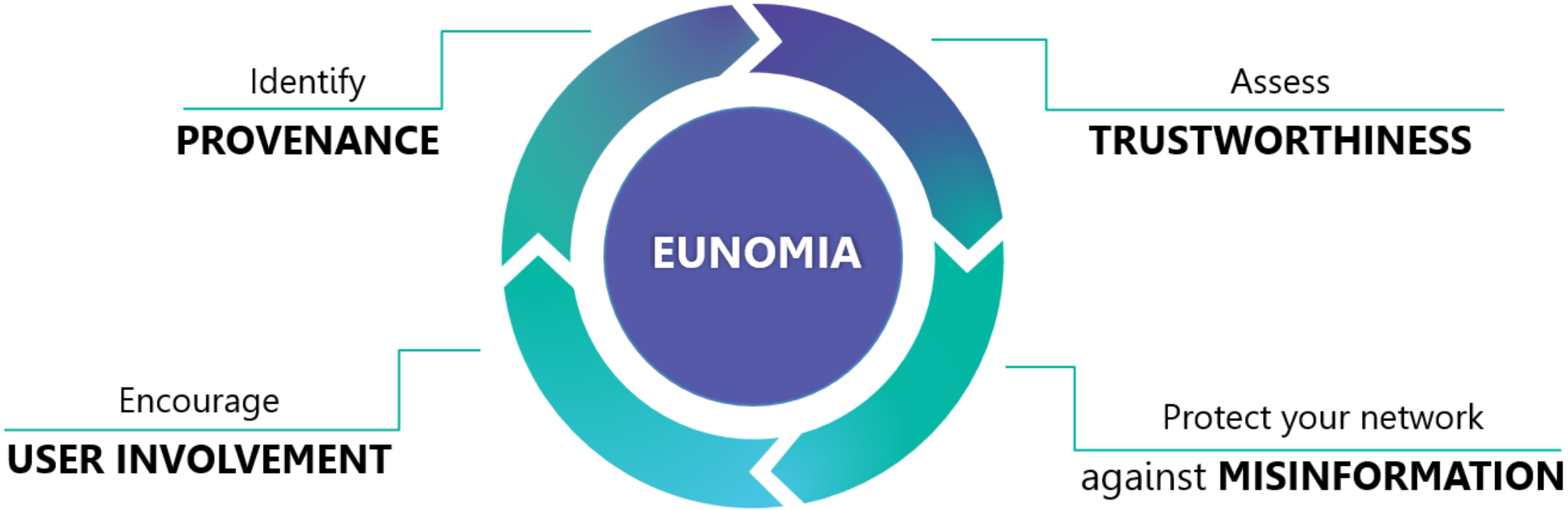
The user has to upload a media file



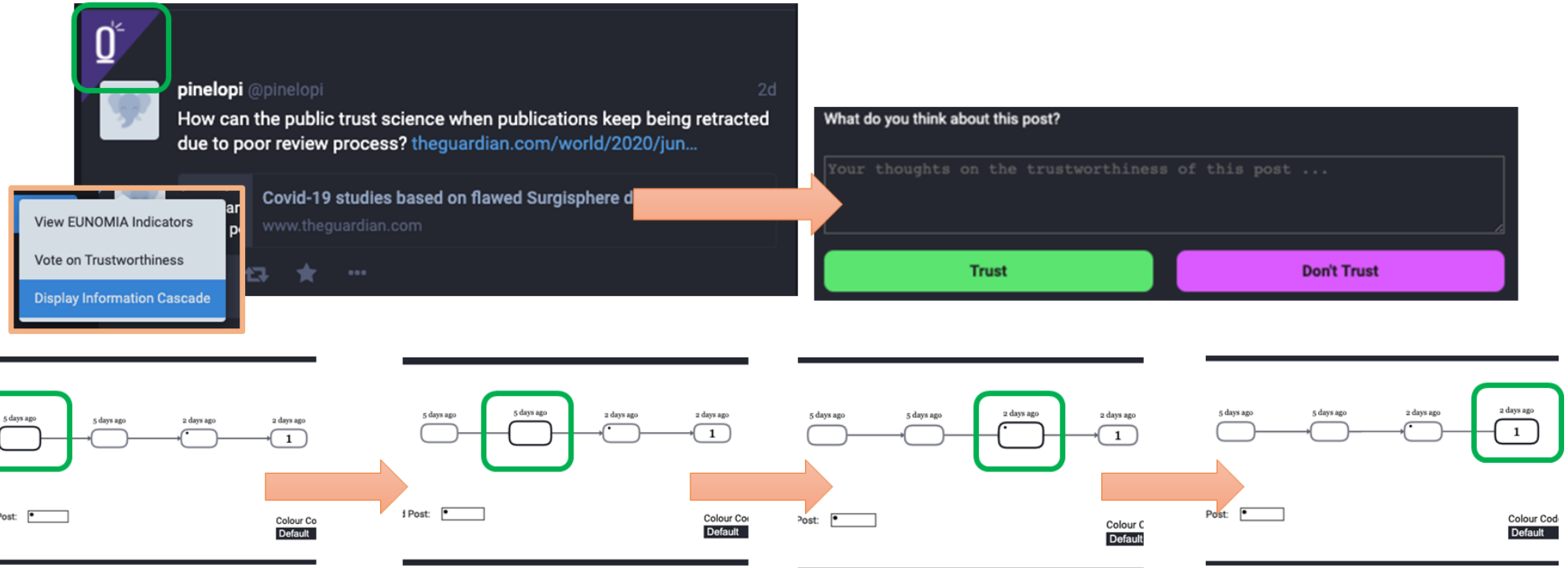


Repurposing the visiting experience

Fighting misinformation



Human-as-Trust-Sensor



Earliest Similar Source :
"How can public trust science when publications keep being retracted due to poor review process?"

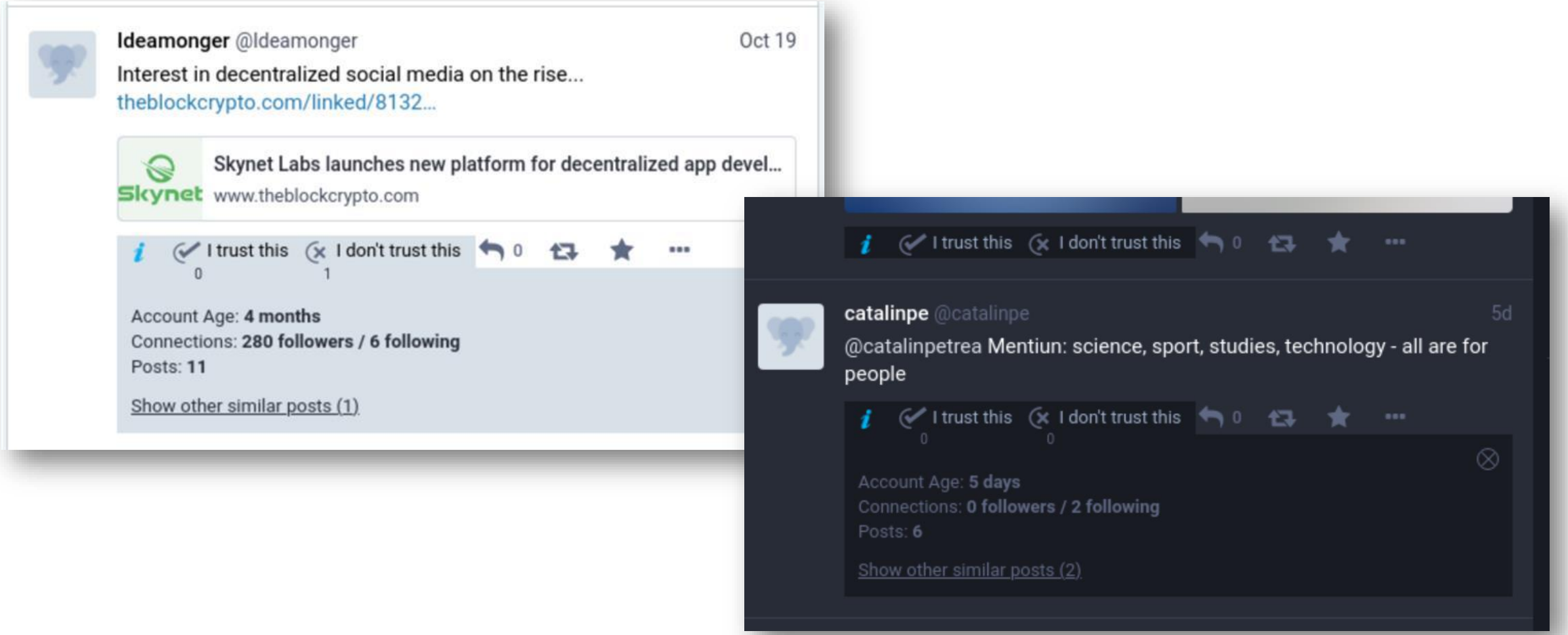
Earlier Similar Source :
"How can public trust science when publications keep being retracted due to poor review process?"

Selected Post:
"RT @pinelopi How can the public trust science when publications keep being retracted due to poor review process"

Newest Post:
"RT @pinelopi How can the public trust science when publications keep being retracted due to poor review process"

https://decentralized.eunomia.social/auth/sign_in

Let’s enter the toolkit



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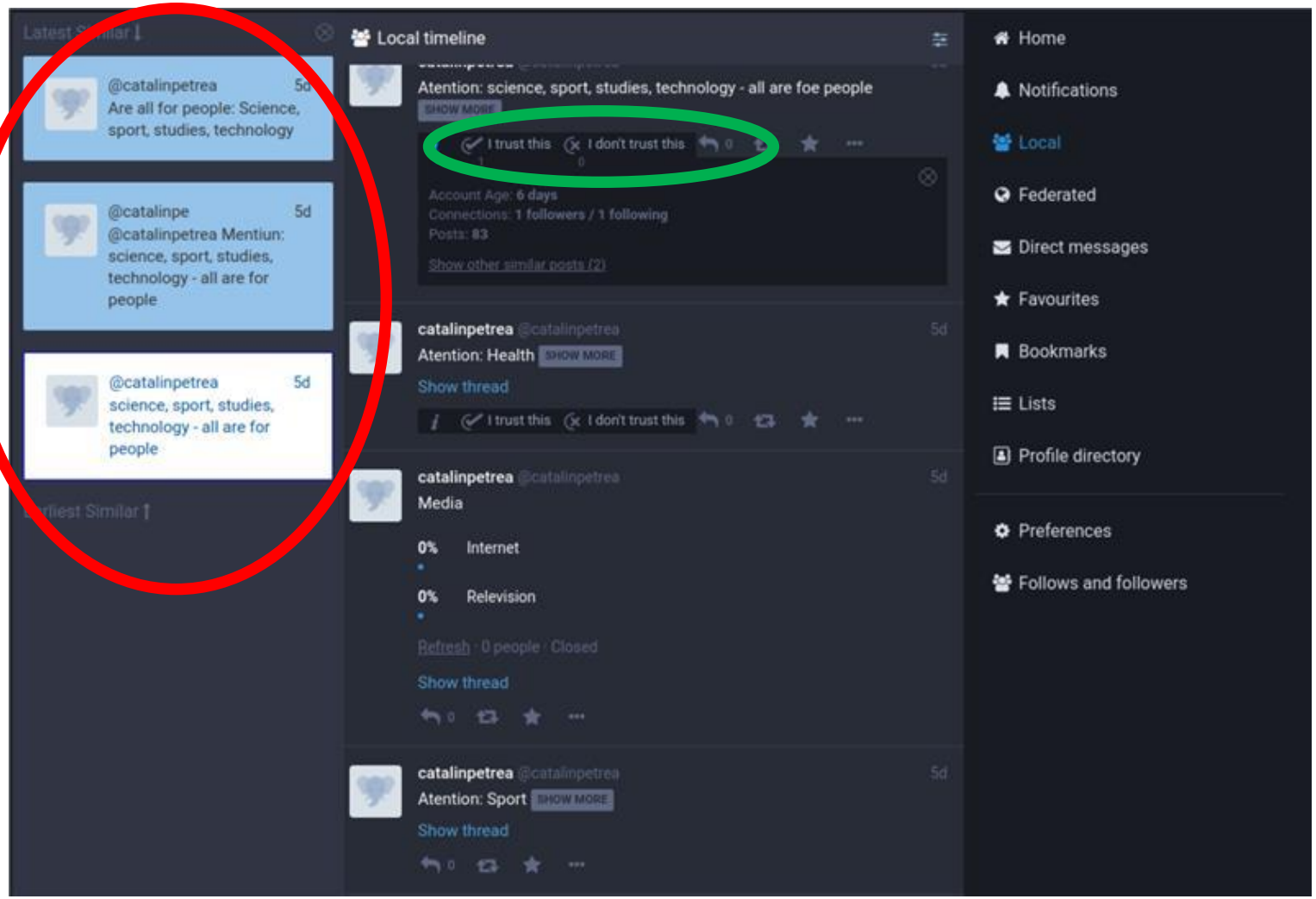


The EUNOMIA toolkit consists of four interrelated functional components all within an integrated digital companion– each of which the user directly interacts with.

- **The information cascade**
- **Human-as-Trust-Sensor interface**

- **Sentiment and subjectivity analysis**
- **Trustworthiness scoring**

More on user active involvement

European Union
European Regional Development Fund

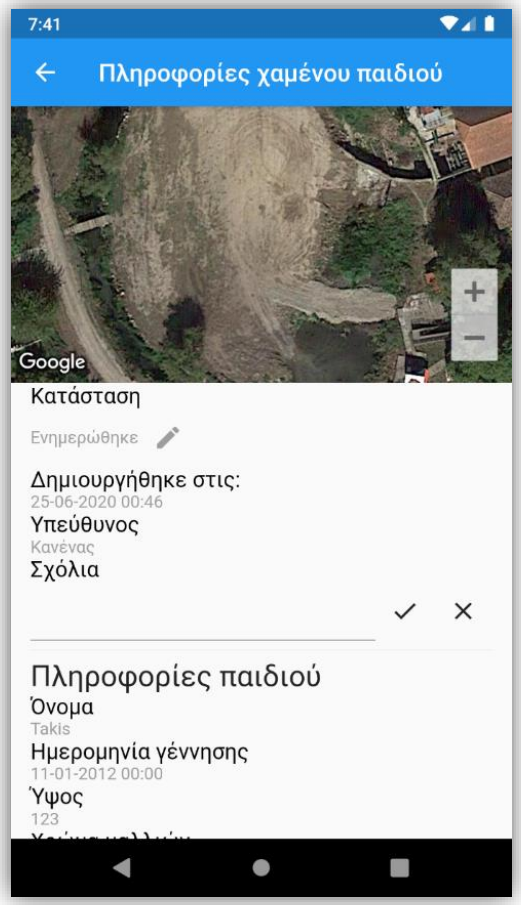
EPAnEK 2014-2020
OPERATIONAL PROGRAMME
COMPETITIVENESS • ENTREPRENEURSHIP • INNOVATION

Co-funded by Greece and European Union

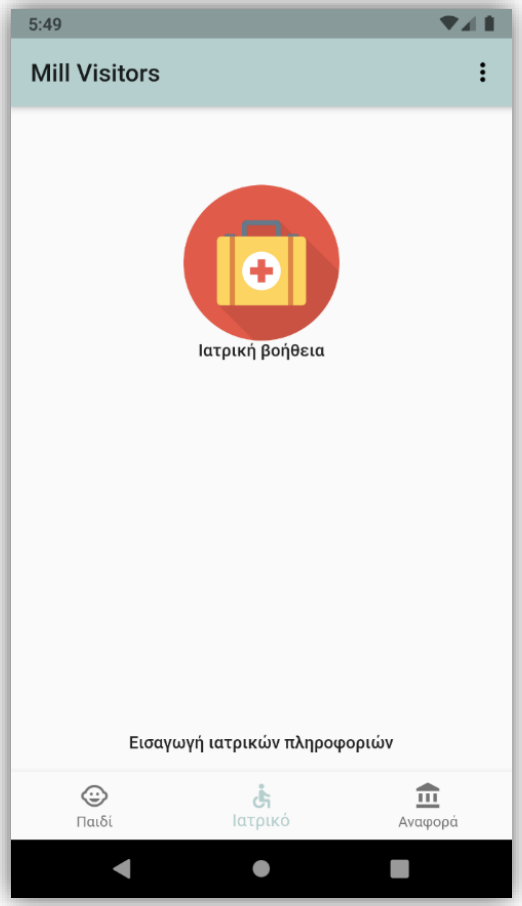
ΕΣΠΑ 2014-2020
ανάπτυξη - εργασία - αλληλεγγύη
Partnership Agreement
2014 - 2020

Funded by the Horizon 2020 Framework Programme of the European Union

Collaboration over Internet of Everything

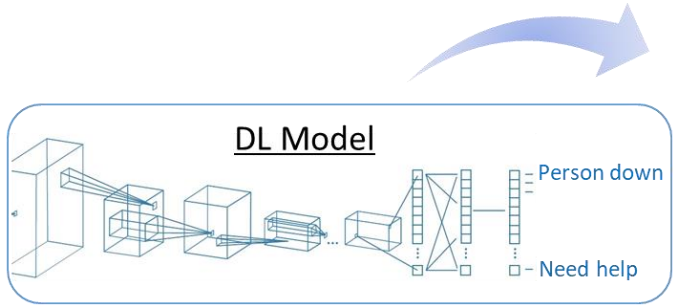


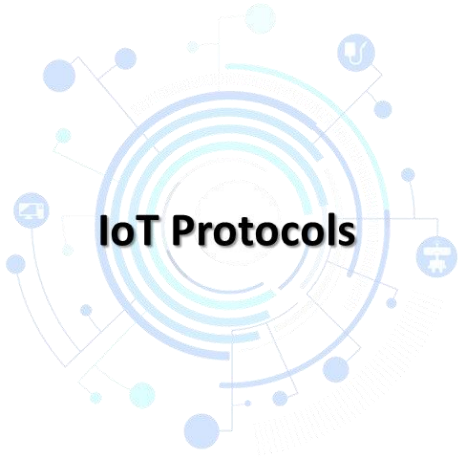
Missing child

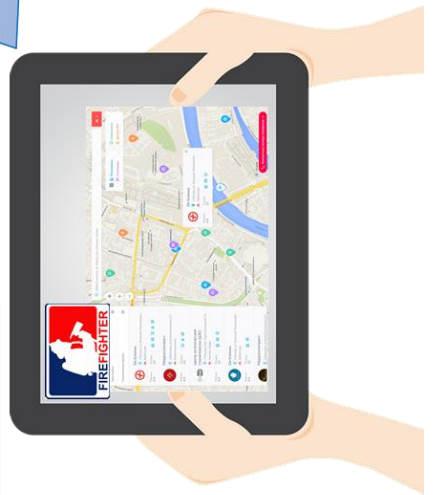


Medical assistance

Wearable computing (for K9s)







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Feel free to contact me at

bpatr@uniwa.gr

or visit CONSERT web site

https://consert.eee.uniwa.gr