

# THE LANDSENSE ENGAGEMENT PLATFORM

Connecting citizens with earth observation data to promote  
environmental monitoring

**Inian Moorthy**, Linda See, Matej Batič, Andreas Matheus, Grega Milčinski, Steffen Fritz

The ESA Earth Observation  $\Phi$ -week  
EO Open Science and FutureEO  
Nov 12 – 16 | ESA ESRIIN | Frascati, Italy



@LandSense  
LandSense.eu

# Motivation

- Uncovering the potential of citizen science and earth observation to improve the way we see, map and understand the world
- Improving the quality of Earth Observation-based Land Use & Land Cover (LULC) maps/products
- Demonstrate the value of satellite data to citizens while promoting environmental stewardship



# Participatory process

- EO-based mapping has a conventional top-down approach
- It is possible to involve citizens and interested experts to crowdsource the needed information using a more participatory approach
- At the intersection of EO and CS domains, we can engage people in various tasks (i.e. ground-based observations and on-line interactive mapping)





# LandSense

A Citizen Observatory and Innovation Marketplace for Land Use and Land Cover Monitoring

Connecting citizens with satellite imagery to transform environmental decision making

**September 2016 → August 2020**

**LandSense.eu**



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 689812



# LandSense Themes

LandSense technologies are deployed across various themes to illustrate the potential of Citizen Observatories to tackle environmental challenges



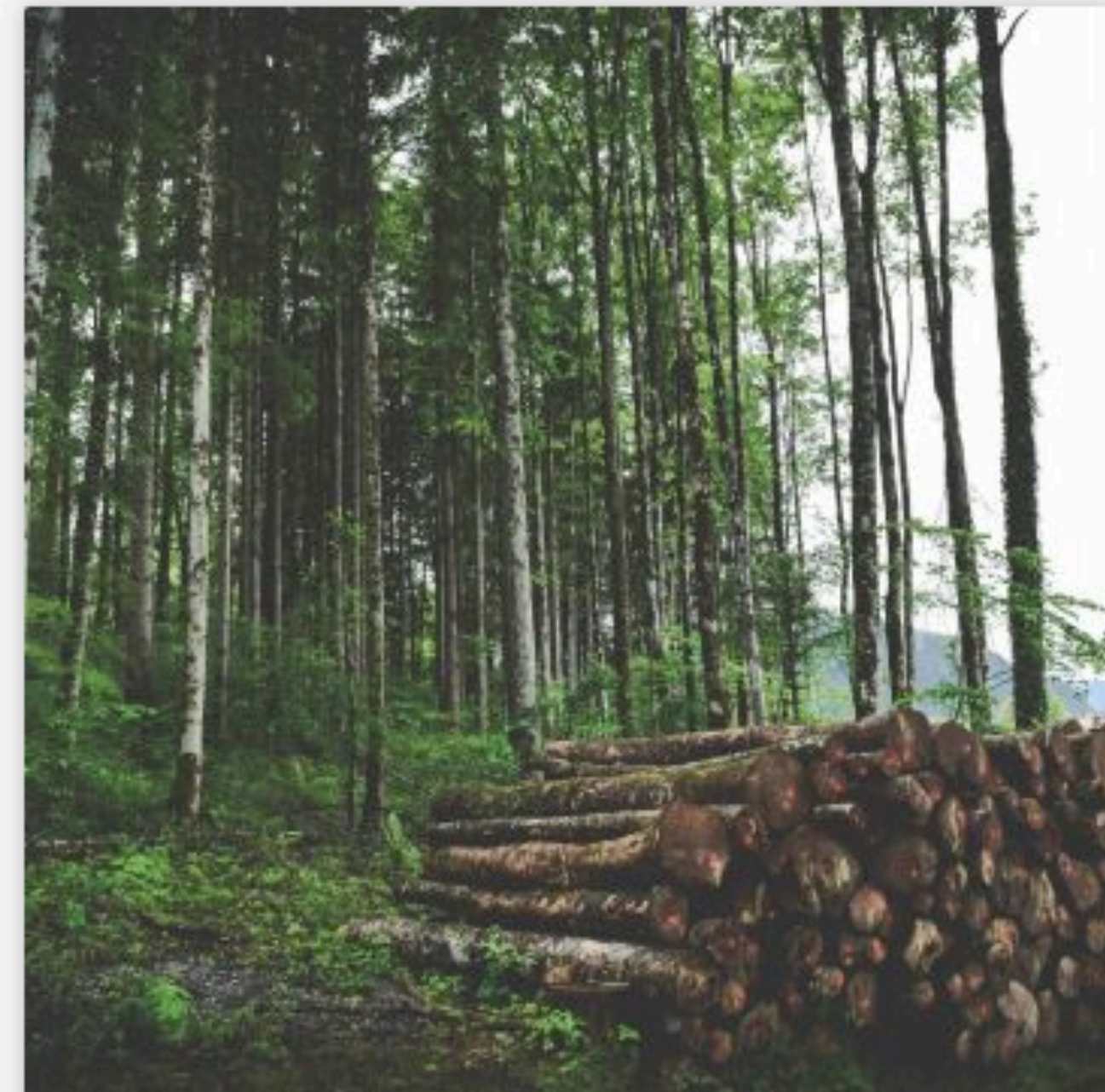
URBAN LANDSCAPE DYNAMICS

*Austria, France, Germany,  
Netherlands*



AGRICULTURAL LAND USE

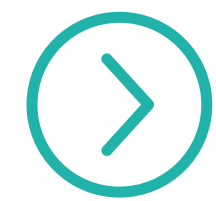
*Serbia*



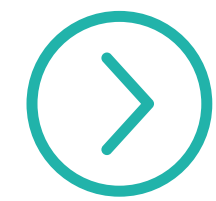
FOREST & HABITAT MONITORING

*Spain, Indonesia*

# LandSense Engagement Platform



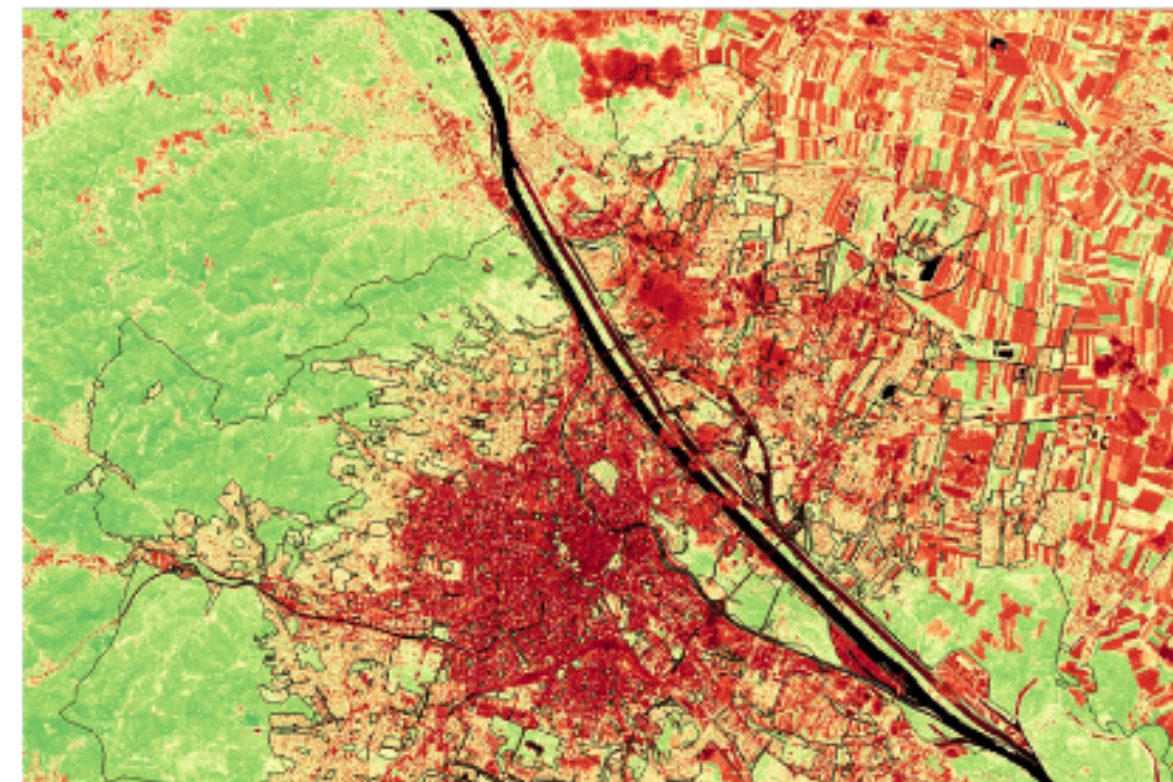
A service platform that contributes to the transfer, assessment, valuation, uptake and exploitation of LULC data and related results.



The platform employs a federated approach will promote the awareness, outreach, uptake and ultimately the science of citizen science.



Connecting citizens with satellite imagery to transform environmental decision making



## LANDSENSE AIMS

Uncovering the potential of citizen science and earth observation data to improve the way we see, map, and understand the world.

Kickstarting an earth observation enabled crowdsourcing economy

[LEARN MORE](#)

## LANDSENSE OBJECTIVES

**Assess** current practices, user requirements and barriers of present Land Use and Land Cover (LULC) technologies and illustrate the potential of citizen observatories.

**Engage** key stakeholders in the LandSense platform, facilitating the collection, integration, management, and presentation of LULC data

**Deliver** innovative and scalable services and implement a strategy detailing the sustainable exploitation of these technologies post-project.

**Demonstrate** the quality, confidence and added value of citizen-driven observations and citizen engagement for improved LULC monitoring

**Promote** the uptake of LandSense technologies, solutions, and products for large-scale LULC monitoring across the EU using the LandSense Services Incubator



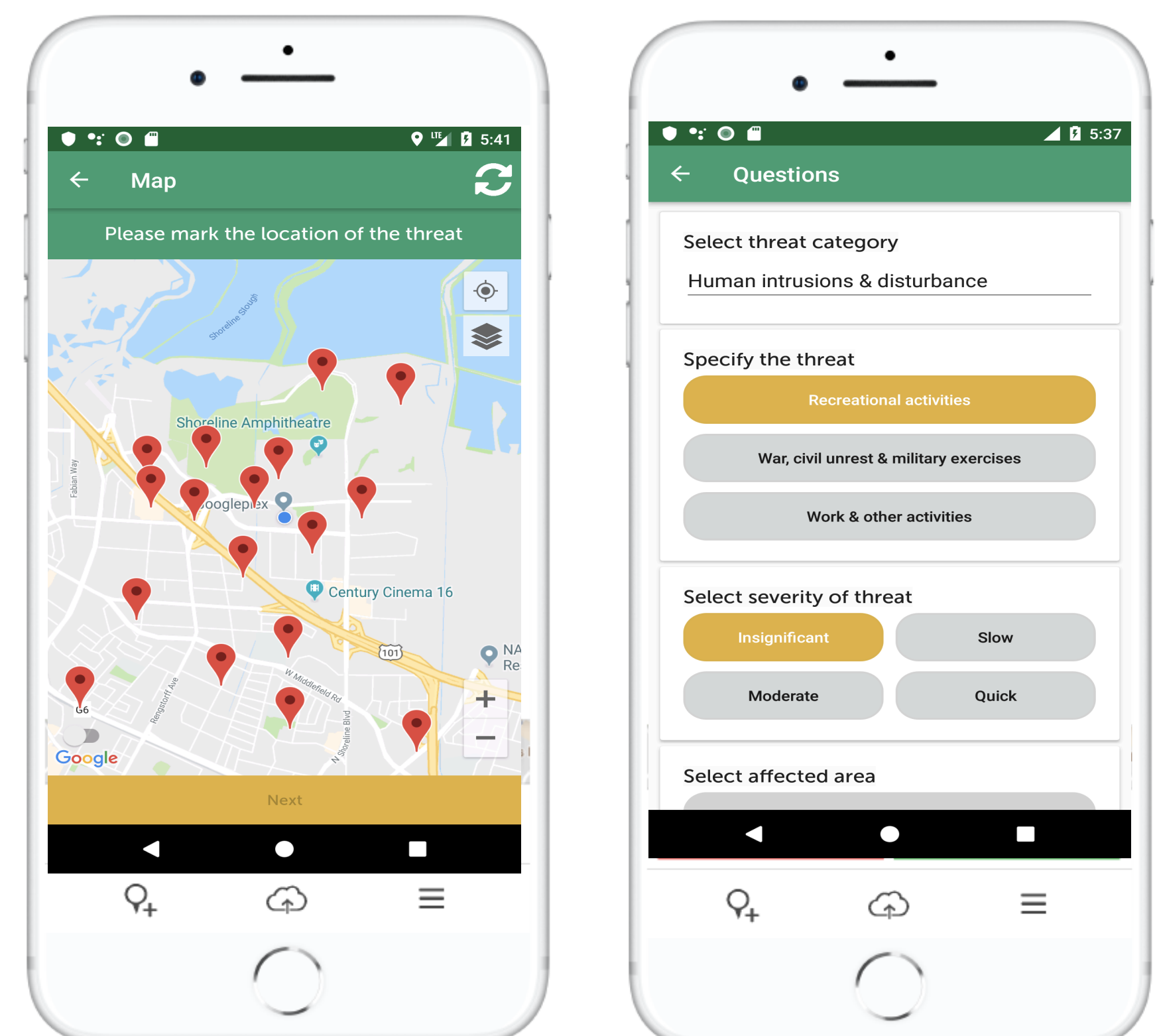
# 1 Participate as a citizen scientist

## Ground-based observations

Urban green space monitoring in Vienna & Amsterdam



Biodiversity threat monitoring in Spain

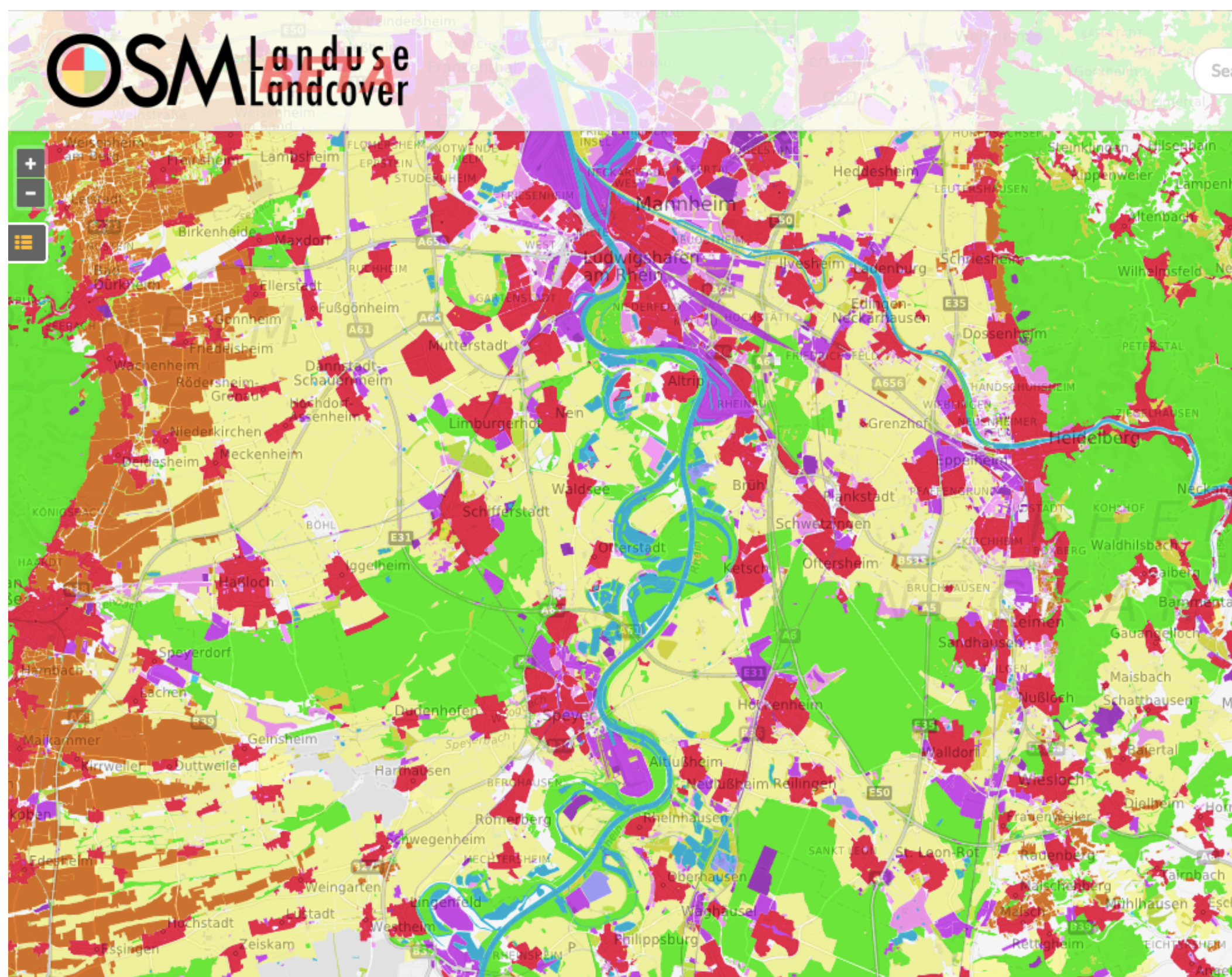


# 1

# Participate as a citizen scientist

## Online interactive mapping

Validation of OSM LandUse Map via a series of mapathons across Europe



**Classify the object:**

- Urban fabric (11)
- Skip (99)
- other land use (100)

Comment

Submit

**Sample Information**

Sample Item ID 136944  
Validated by  
Timestamp -  
Bing imagery date 07 Aug 2010 GMT

[Download sample \(kmz\)](#)



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# Register your app & exploit LandSense Services



# LandSense Federation

Single-Sign-On with LandSense partners, Google, Facebook, Academic Federations via eduGAIN



2500+ Organizations Worldwide



# LandSense Authorization Server

GDPR compliant broker for authentication statements



Authenticated Login  
(No personal data)



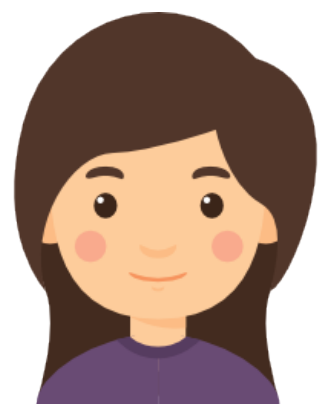
Promotes anonymous contribution



Cryptonym Login  
(No personal data)



Promotes anonymous contribution  
but allows aggregation



Login (includes personal data)  
i.e username, email address



Promotes GDPR-compliant identified  
contribution

# LandSense Citizen Observatory

## Call to Action!



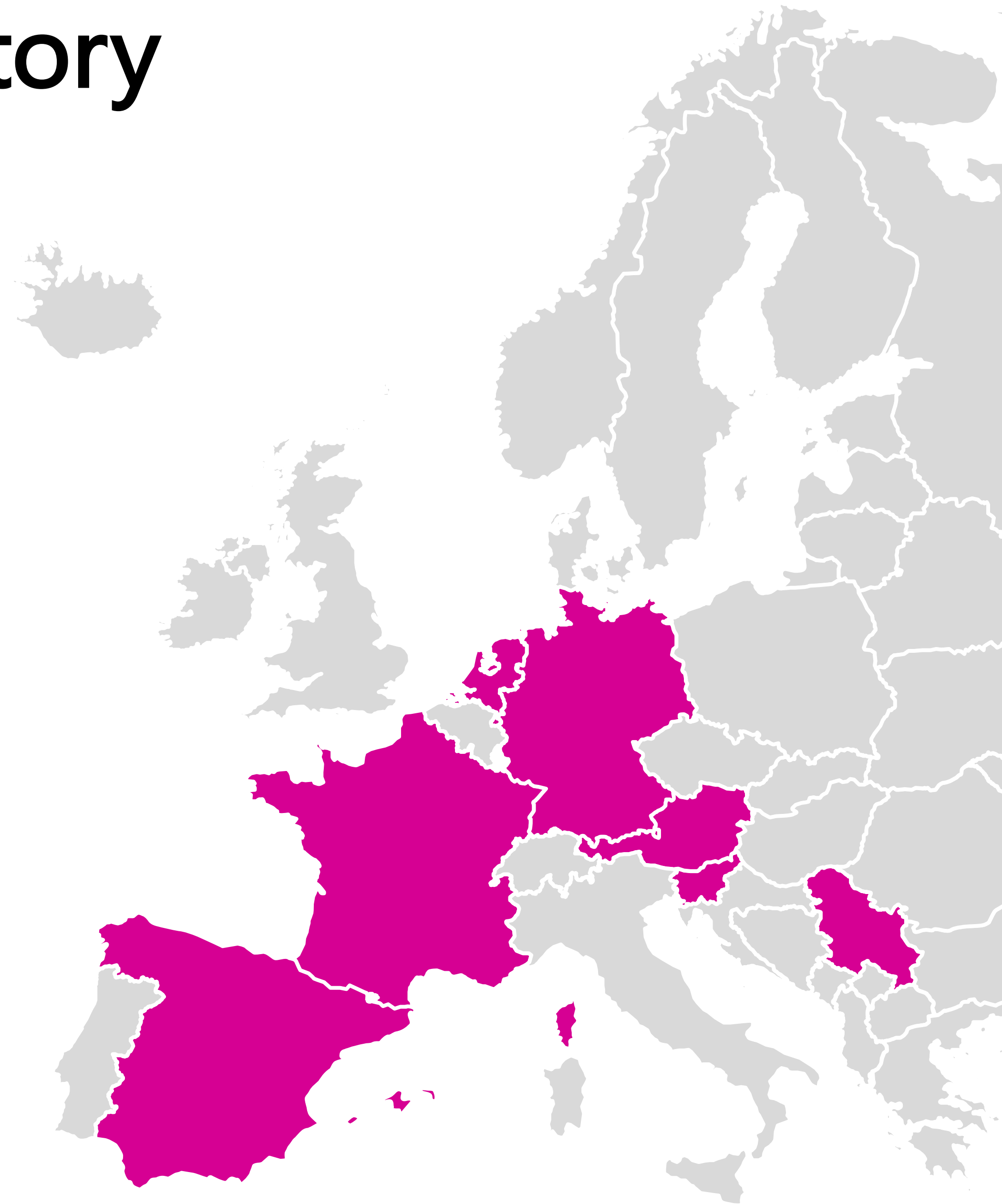
Join our series of public campaigns to be launched in 2019



Connect with us and integrate your application or service



[LandSense.eu](http://LandSense.eu) | [@LandSense](https://twitter.com/LandSense) | [info@landsense.eu](mailto:info@landsense.eu)



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