ELISE action
Webinar Series

Geodata marketplaces supporting location intelligence

George O'NEILL, Deloitte
Lea YTREHUS, Deloitte
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Simon VREČAR, European Commission JRC (consultant)

22/10/20 14.00-15.00

European Location Interoperability Solutions for e-Government

Enabling Digital Government through Geospatial and Location Intelligence

ISA²

ISA² Programme & ELISE action

European Interoperability Programme

cross-border *and* ***cross-sector*** *Interoperability solutions*

for ***public administrations, businesses*** *and* ***citizens***

54 different actions tackling **interoperability** from different angles

ELISE action is the **only** action focusing on the **location dimension**

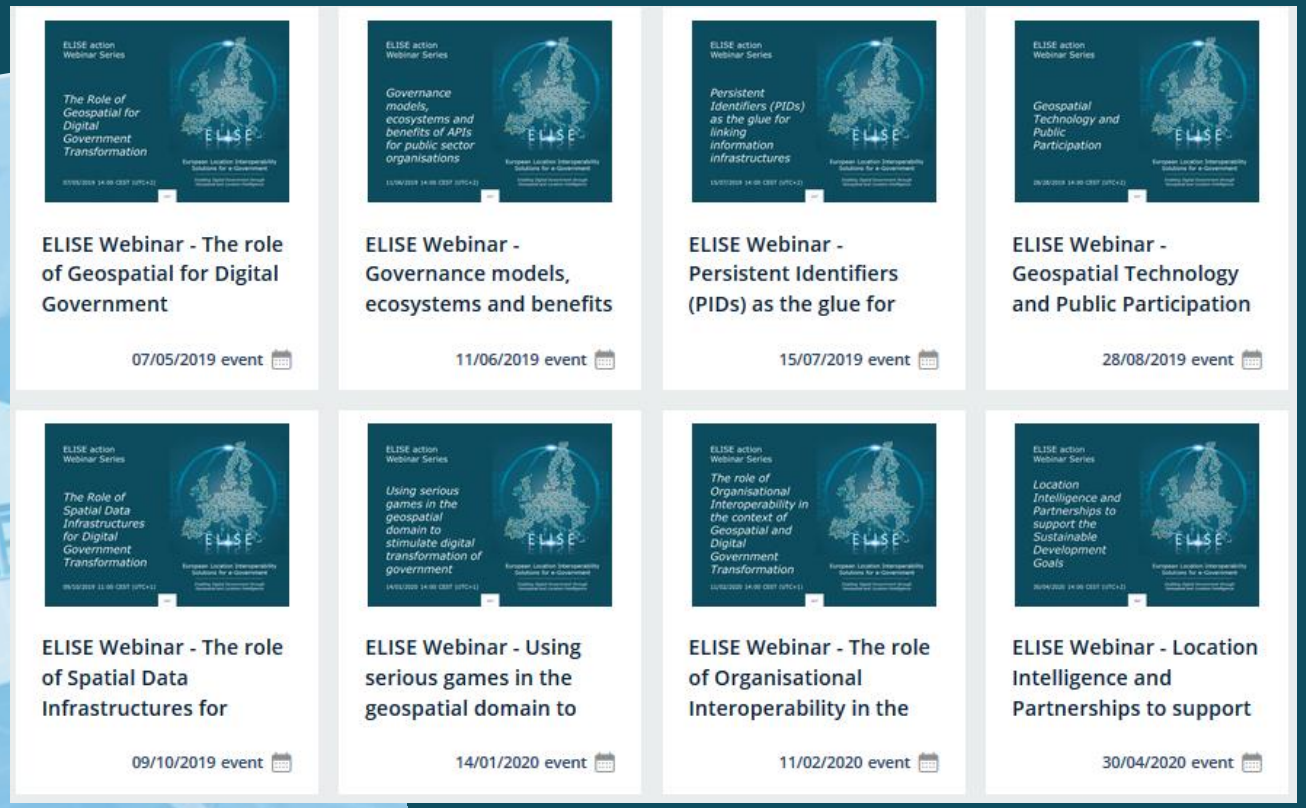
European Location Interoperability Solutions for e-Government

Enabling Digital Government through Geospatial and Location Intelligence

ISA²

ISA²

Welcome to the ELISE webinar series



ELISE **Knowledge Transfer** activities

Purpose:

- engage in **an agile way**
- with **topics** of relevance to the **Digital Transformation**
- **by harnessing the use of spatial data and technology**.
- Share **ELISE** results

https://europa.eu/!nP74ph

ISA²

Our speakers

George O'Neill

Public Sector Policy

Deloitte.

Lea Ytrehus

Public Sector Policy

Deloitte.

The views expressed are purely those of the authors and may not in any circumstances be regarded as stating an official position of the European Commission.

Our guest speakers

Javier Perez Trufero

Head of Data and Analytics

CARTO

Jill Saligoe-Simmel

SDI & INSPIRE product manager

esri

Valdis Karulis

GIS project manager

GEODATA HUB

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Geodata marketplaces: context and definitions

Key definitions for this webinar: Data marketplace

A data marketplace *is a* ***platform where users buy (obtain) or sell (provide)*** *different types of data sets and data streams from several sources. Data marketplaces are mostly cloud services where individuals or businesses upload data to the cloud. Those* ***platforms enable self-service data access while ensuring security, consistency and high quality of data*** *for both parties.*

AI Multiple Research, 2020

Photo by Joshua Hoehne on Unsplash

Key definitions for this webinar: Data ecosystems

A Data Ecosystem *"(or 'data-driven digital ecosystem') is where a* ***number of actors interact*** *with each other and their environment for a specific purpose,* ***generating value from the network*** *by producing, exchanging and consuming data in a* ***collectively governed and operated way****."*

EULF Blueprint (v4)

Geodata marketplaces: how is it different from other modes of data sharing?

New business models and public platforms are appearing building, richer ecosystems and further facilitating accessibility of geospatial data.

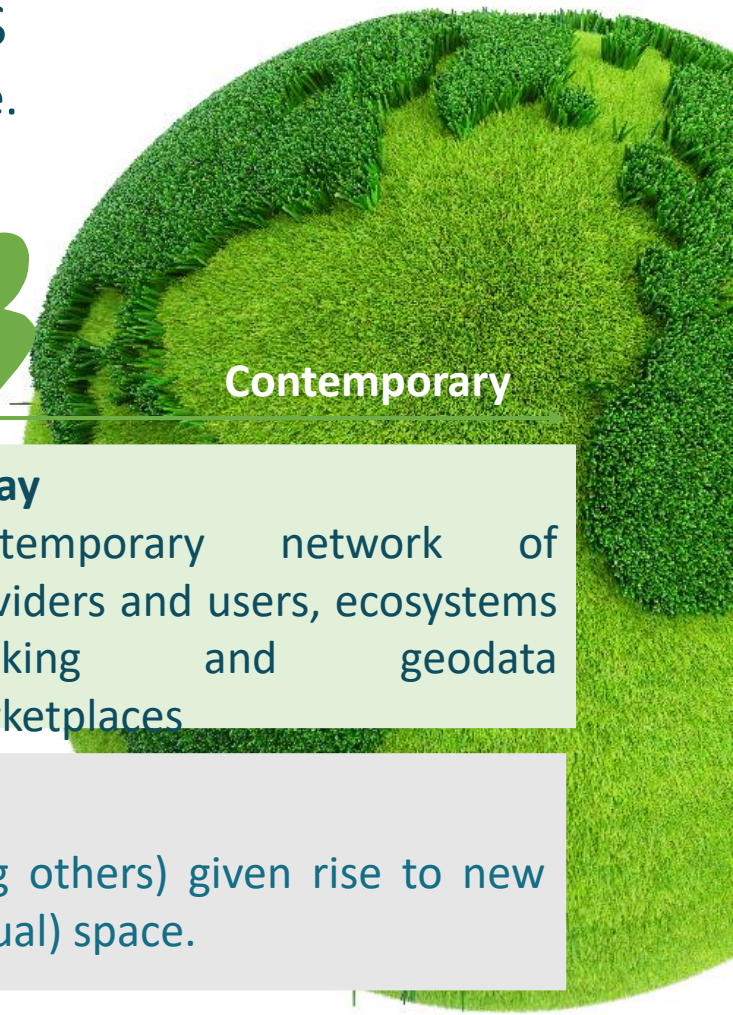
Moves beyond data as a service (DaaS) → use of data is no longer a unidirectional relationship (service = provision)

Related to data as a platform (DaaP) → data is the commodity, rather than the application.

Geodata marketplaces enable data providers (sellers) and data users (buyers) to meet in one (virtual) space to exchange information and/or obtain new insights.

A marketplace for data? Timeline of developments

The recent history of geodata sharing can be viewed in a three-phased timeline. We characterise it as follows:



1 Early phase

1990s
Virtual marketplaces (i.e. eBay)
SDIs & geographic information infrastructures

2 Enlightened

2000s
Digital platforms, reflecting DaaS thinking.

3 Contemporary

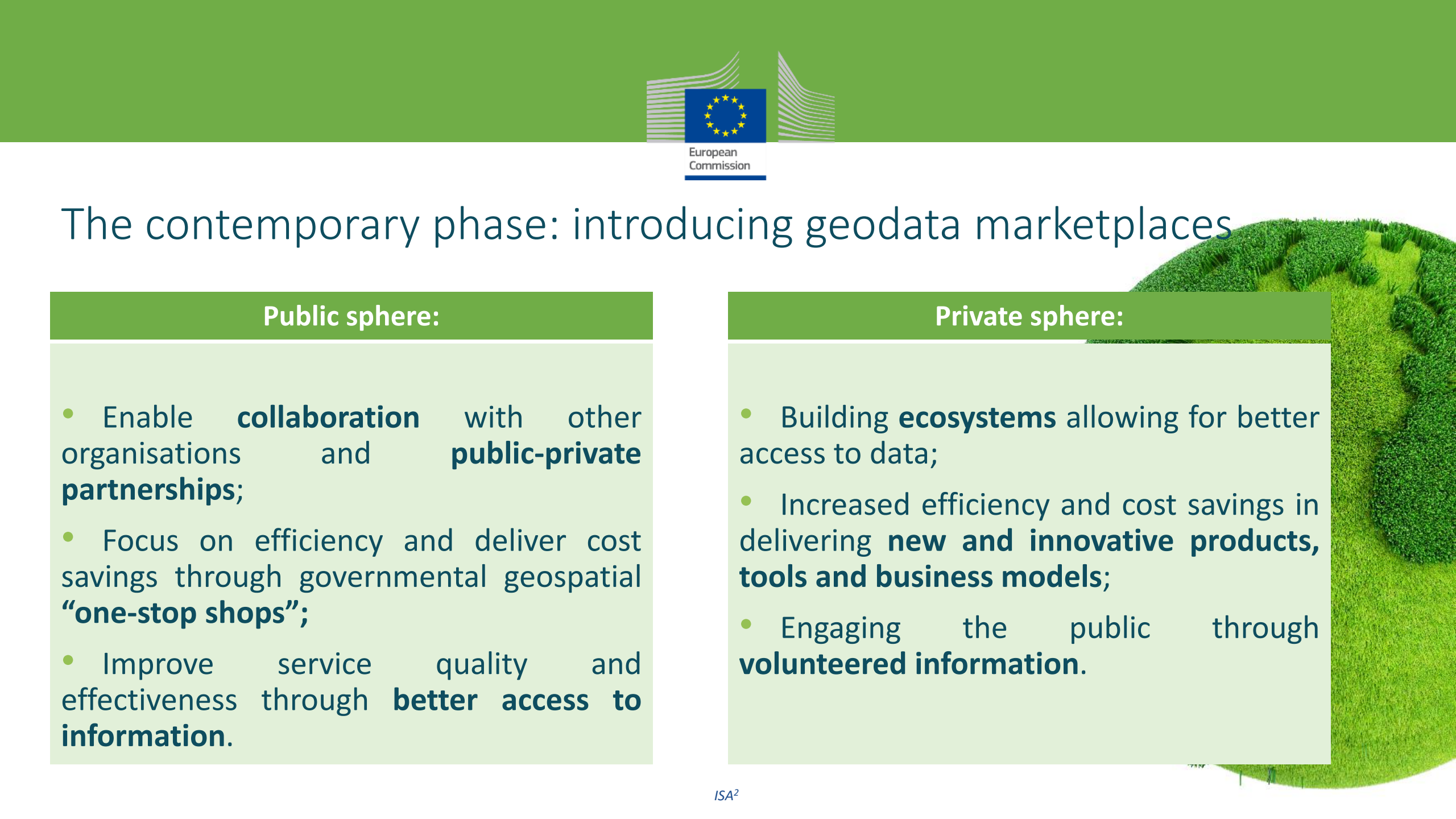
Today
Contemporary network of providers and users, ecosystems thinking and geodata marketplaces

New paradigm:
Unprecedented level of data availability and accessibility has (among others) given rise to new "marketplaces" where buyers and sellers of data meet in the same (virtual) space.

2

Opportunities in the move towards increased LI

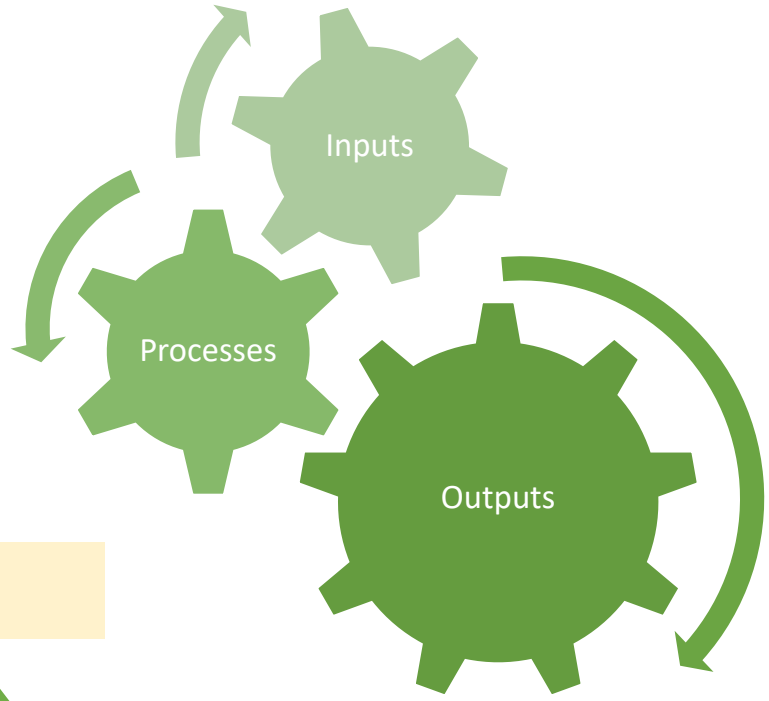
The contemporary phase: introducing geodata marketplaces



Public sphere:	Private sphere:
• Enable **collaboration** with other organisations and **public-private partnerships**; • Focus on efficiency and deliver cost savings through governmental geospatial **"one-stop shops";** • Improve service quality and effectiveness through **better access to information**.	• Building **ecosystems** allowing for better access to data; • Increased efficiency and cost savings in delivering **new and innovative products, tools and business models**; • Engaging the public through **volunteered information**.

Location Intelligence in theory

Location Intelligence refers to "*the process of deriving meaningful insight from geospatial data relationships — people, places or things — to solve particular challenges such as demographic or environmental analysis, asset tracking, and traffic planning [Gartner Research].*" (*ELISE Glossary*)



For this webinar is interpreted as a **broader concept** encompassing:

Processes allowing to turn **inputs** into **outputs**

Technologies like GIS but also Artificial Intelligence, digital twins, augmented reality

Different information sources including traditional geospatial sources and more innovative sources

Location intelligent insights

Location intelligence in practice: collecting and connecting for better insights

Location intelligence *"is more than analysis of geospatial information or geographic information systems alone, it is the capability to visualize spatial data* ***to identify and analyze relationships.****" (del Carmen, 2016)*

To exploit location intelligence (Deloitte 2013), stakeholders need to:

COLLECT
data available and integrate in decision-making

CONNECT
with external partners and data sources

PROTECT
citizens by understanding privacy issues

Ecosystems and location intelligence: how do they support one another and how does it relate to geodata marketplaces?

1. **Ecosystems** centered around the sharing, exchange, use and reuse of data are **key to provide an environment for creating, managing and sustaining** such initiatives.
2. **Location intelligence** is derived from processes that allow inputs to be turned into outputs.
3. By **collecting, connecting and protecting data through sustainable ecosystems**, we can derive new and deeper geospatial insight.
4. **Both private and public actors are picking up on this,** and new and innovative tools, platforms and business models are growing as a result.

Geodata marketplaces encapsulates ecosystems thinking and serves as an enabler for location intelligence.

3

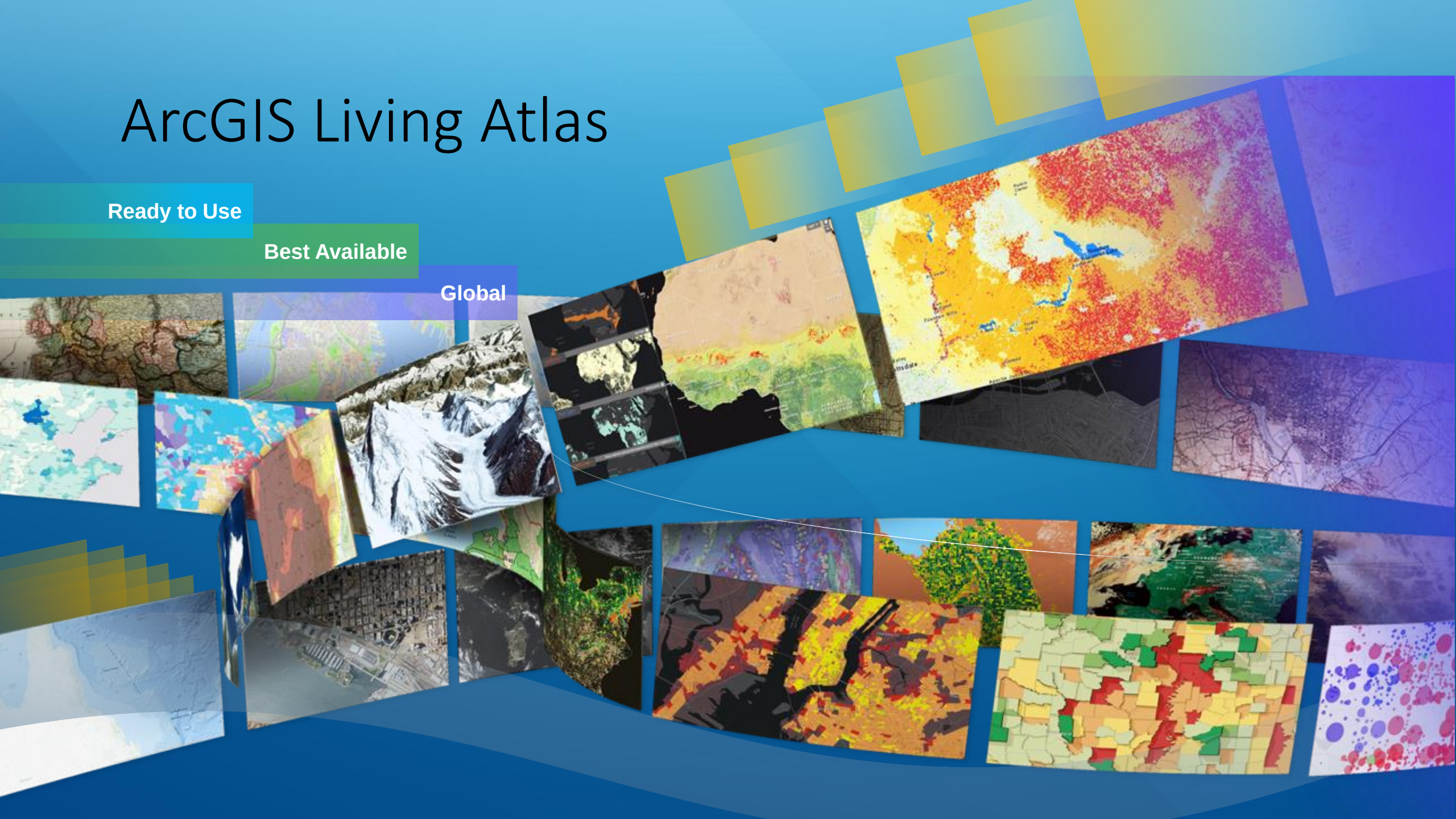
Ecosystems for LI: the cornerstone of new data marketplaces

ArcGIS Living Atlas

Ready to Use

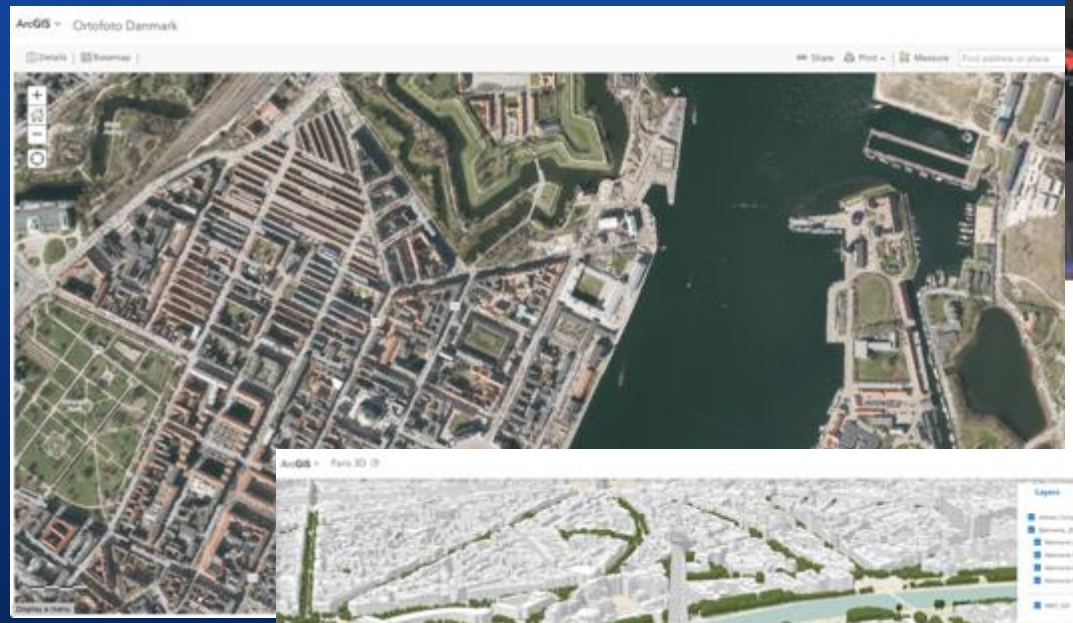
Best Available

Global



Curated, continuously updated authoritative content

Enabled by geospatial infrastructure



Imagery

3D

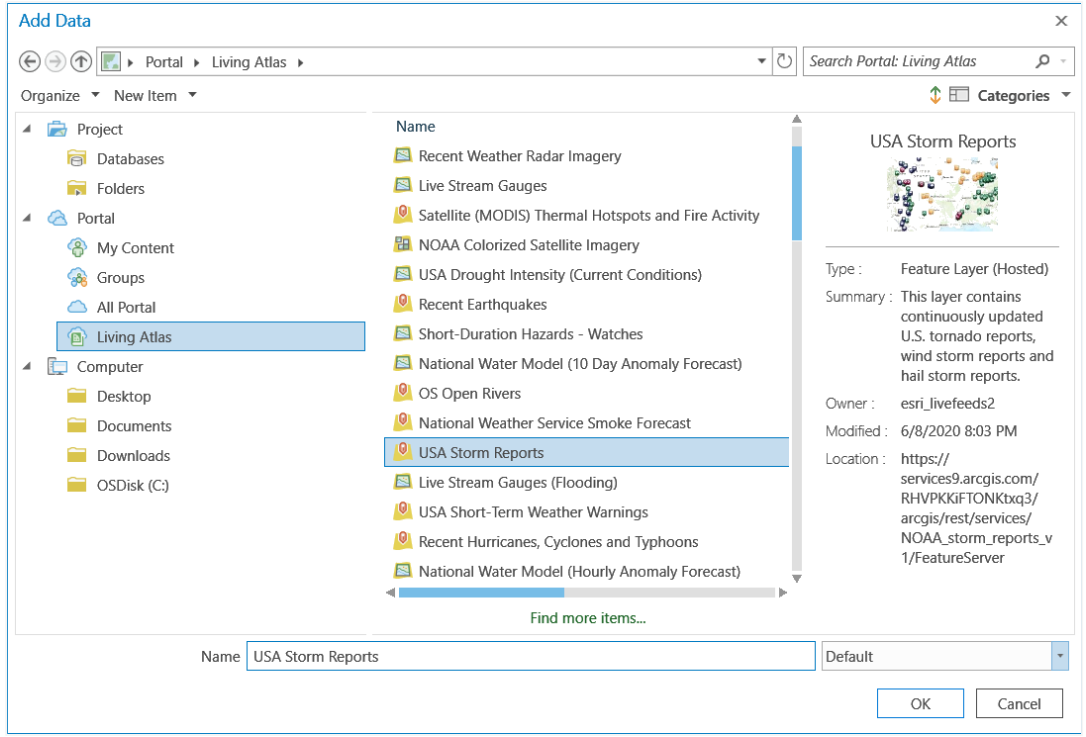
Live data

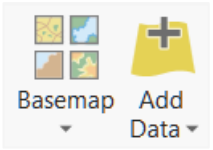
Community contributed content

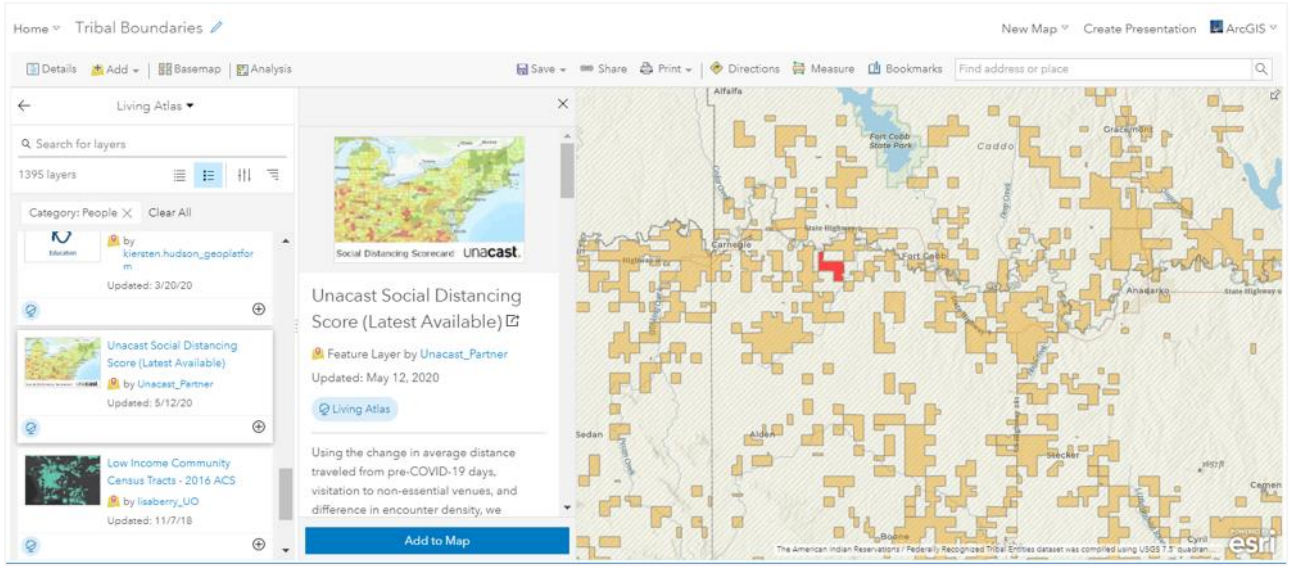
https://livingatlas.arcgis.com

ArcGIS Living Atlas is built-in to the ArcGIS user experience

Deeply integrated and integral to ArcGIS Pro, Enterprise, Online, and more…







…the foundation for maps, apps, analysis, and sharing the Science of Where

ISA²

Community Maps & ArcGIS Basemaps

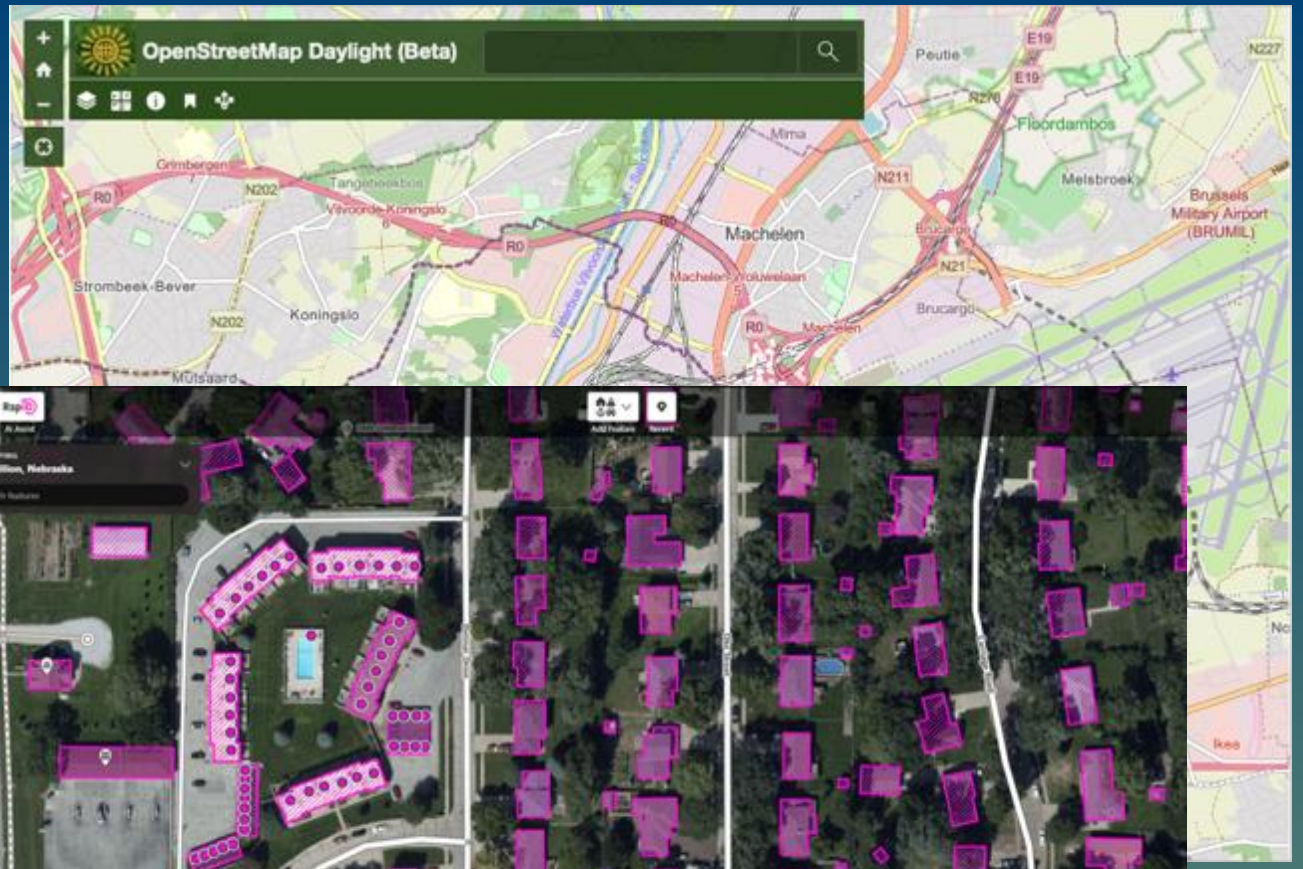
Authored and published by Esri, partners, and ArcGIS Community contributors

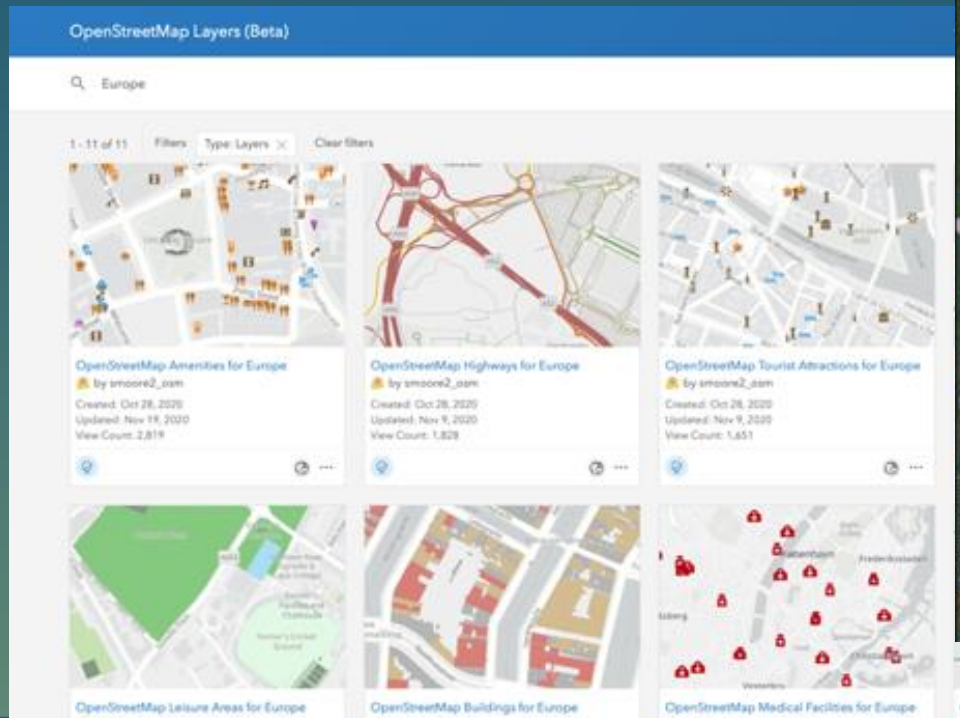
Community Maps & ArcGIS Basemaps

OpenStreetMap

OpenStreetMap Foundation

OSM Daylight (Beta) map
OSM Feature Layers (Beta)
OSM RapiD ArcGIS Dataset Editor

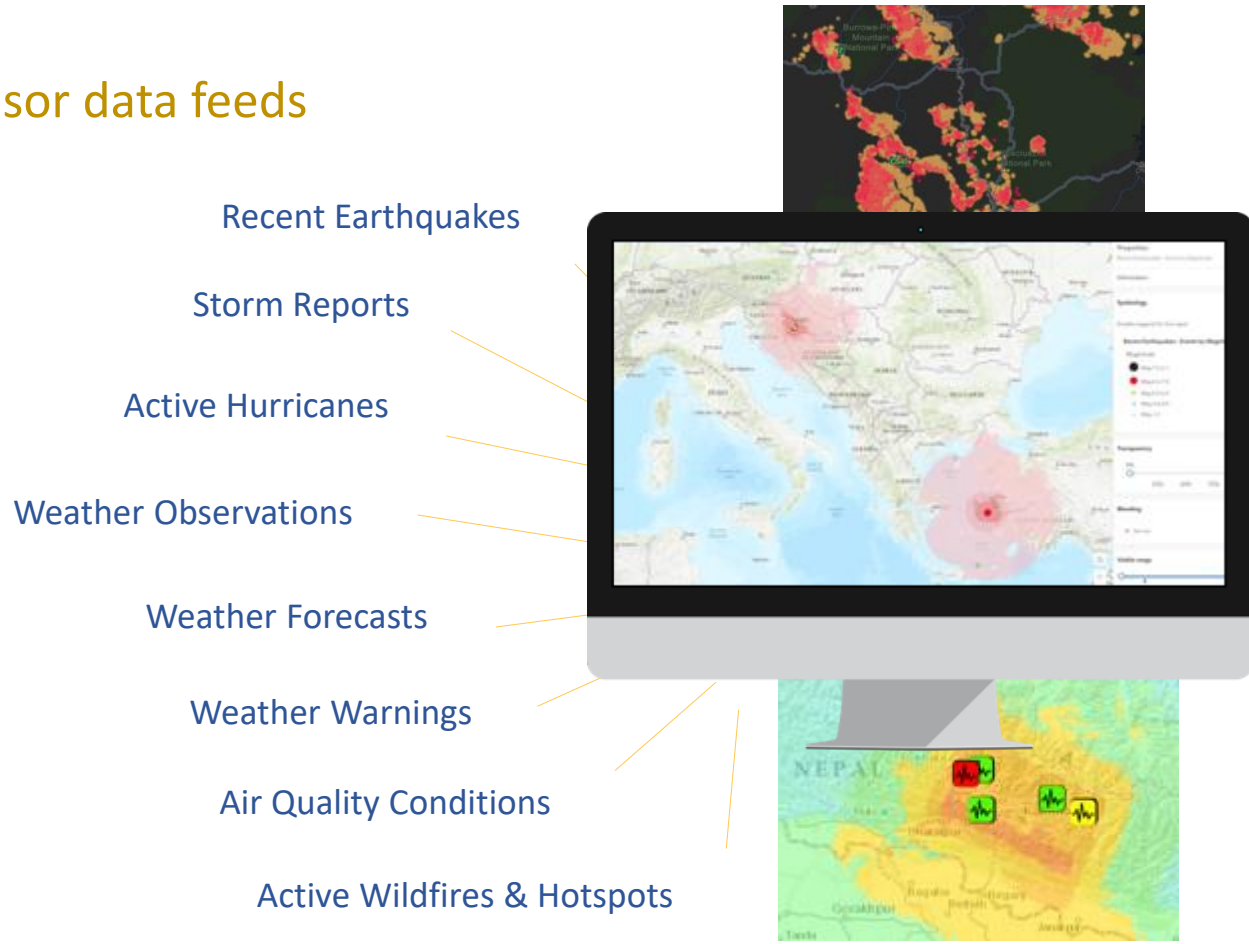




Living Atlas Live Data Layers

Feature layers of live weather, hazard, and other sensor data feeds

- Live Feed Feature Layers
  - Featuring Data from NOAA, USGS, NASA, …
  - Designed to be Highly Scalable during Events
- Use in Your Maps and Apps
- Freely Accessible in ArcGIS Online



ArcGIS Living Atlas - Indicators of the Planet BETA

Global GIS for Global Issues

Air Quality
Today
3,735
locations with poor air quality
Decreased 46.5%
in 24 hours
OpenAQ

Drought
This week
18.8%
of agricultural areas
Increased 24,143 sq km
in a week
NOAA

Wildfire
Today
85,380
thermal detections
Decreased -9,415 fires
in 24 hours
NOAA/NASA

Conservation
This month
54,734,053
sq km
land & ocean area protected
Increased 327,537 sq km
in a month
UNEP-WCMC & IUCN

Deforestation
Last week
1,778
sq km
forested area lost
2,917 sq km lost
this year
Global Forest Watch

COVID-19 Cases
Last 24 hrs
90,695,701
confirmed cases
14 day trend is increasing
JHU/Esri

Earthquakes
This week
55
major earthquakes
6.3 magnitude
largest event this week
USGS

Cyclones
Today
0
active storms
2 storms this year
NOAA/JTWC

Arctic Sea Ice
Last month
-8.9%
of normal extent
#3 lowest December
since 1979
NSIDC

Coral Bleaching
This week
26
locations
at risk of bleaching
Increased 6 locations
in a week
NOAA

Global Temperatures
Last week
0.97
Deg C
above 20th Century average
#2 warmest November
since 1880
NOAA

Women in Parliament
Last month
25.1%
of national representatives
Increased 209 members
in a year
IPU

Sea Level Rise

El Niño

Carbon Dioxide

Ocean Health

Piracy

Armed Conflict

4

Geodata marketplaces demonstrated

Geodatahub: an EU funded cross-border geodata marketplace

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Best and most reliable geospatial data APIs for the Baltic states!

Geospatial data API with Baltic in heart

LOCATION

MAPS

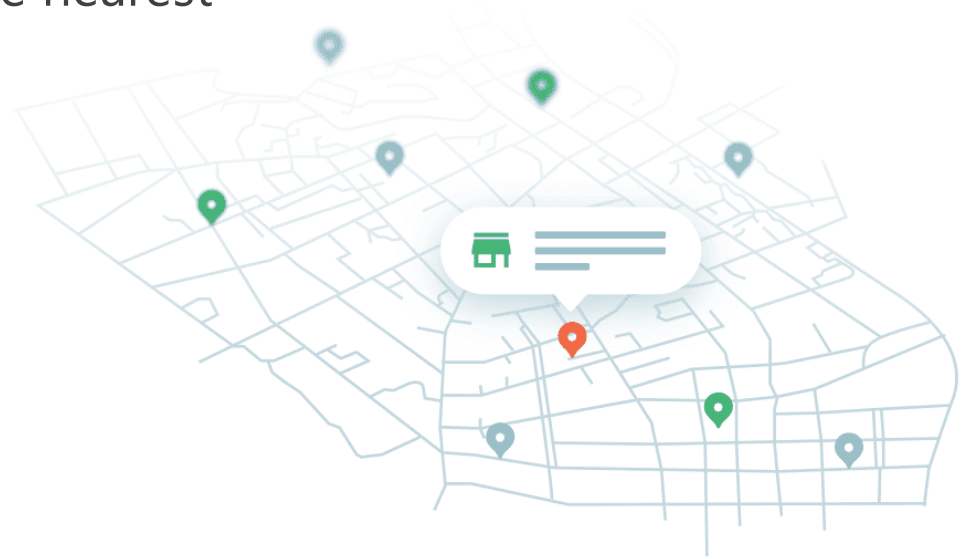
DIRECTIONS

GEODATA HUB

LOCATION

"Location, location, location". Need the most accurate address data? Looking for easy-to-use services? Want to give your customers more value by helping them find the nearest restaurant? Check out Locations!

- **Geocoder**
- **Reverse geocoder**
- **Address components**
- **POIs**



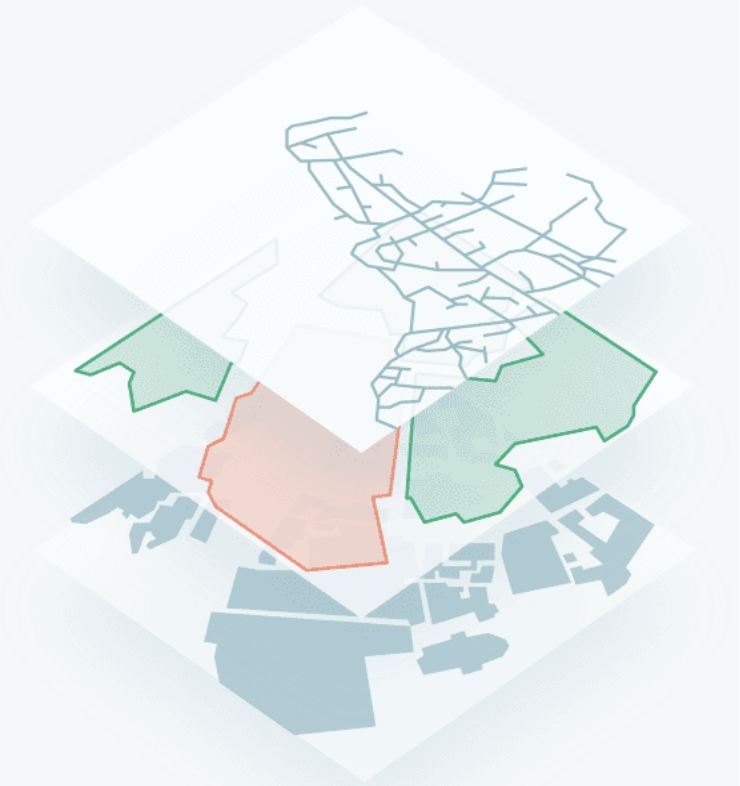
European Commission

GEODATA HUB

MAPS

Integrate good-looking and accurate basemaps to your applications with ease. Want to use quarterly updated map data from the strongest vendors in the region? Try the Maps!

- **Coloured basemap**
- **Grayscale basemap**



European Commission

GEODATA HUB

DIRECTIONS

Want to find the best way to get from A to B? What's the optimal route to visit all your customers? Directions is here to help.

- **Routing**
- **Travelling Salesman Problem (TSP)**

Service-level agreement for the GEODATA HUB

Most up-to-date regional data

Easy integration

Built-in reporting tool

24/7 technical support

API documentation - developer.geodatahub.eu

hello@geodatahub.eu

CARTO Data Observatory

An Integrated Data Platform for Location Intelligence

Solve spatial problems using our data and analysis to understand where and why things happen, optimize business processes, and predict future outcomes through Spatial Data Science.

NextGen DO

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 960401.

ISA²

CARTO: A platform for visualization, analysis and development of location data projects

CARTOframes

Data Scientist

CARTO Builder

Data Analyst

CARTO Engine

Developers

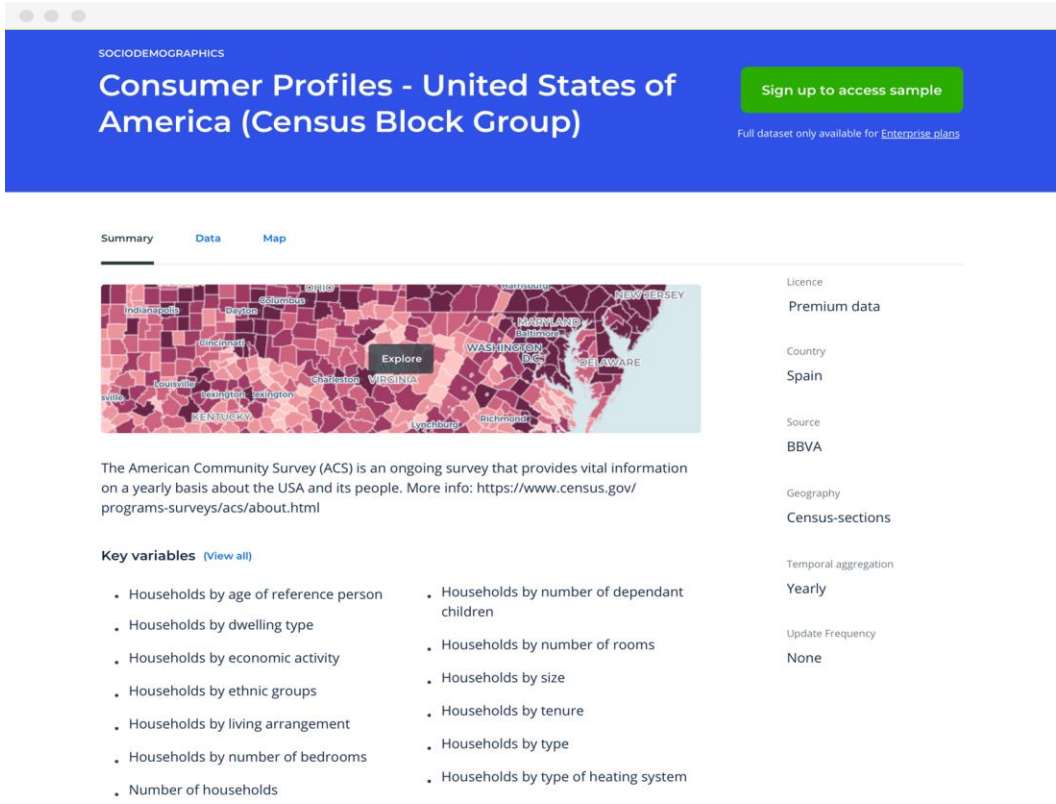
Data Observatory

Road Traffic | Financial | Human Mobility | Demographics | Housing | Environmental

CARTO Data Observatory

The Data Observatory enables Data Scientists, Analysts & Developers to save time on gathering & cleaning data for spatial analysis .

- Simple access to thousands of public and premium data from vetted sources
- Spatial data for more than 150 countries
- Fast licensing process thanks to existing agreements with leading data providers
- Easy enrichment with data already presented in standardized formats
- Seamless integration with Cloud Datawarehouses (eg. BigQuery) and via CARTO APIs



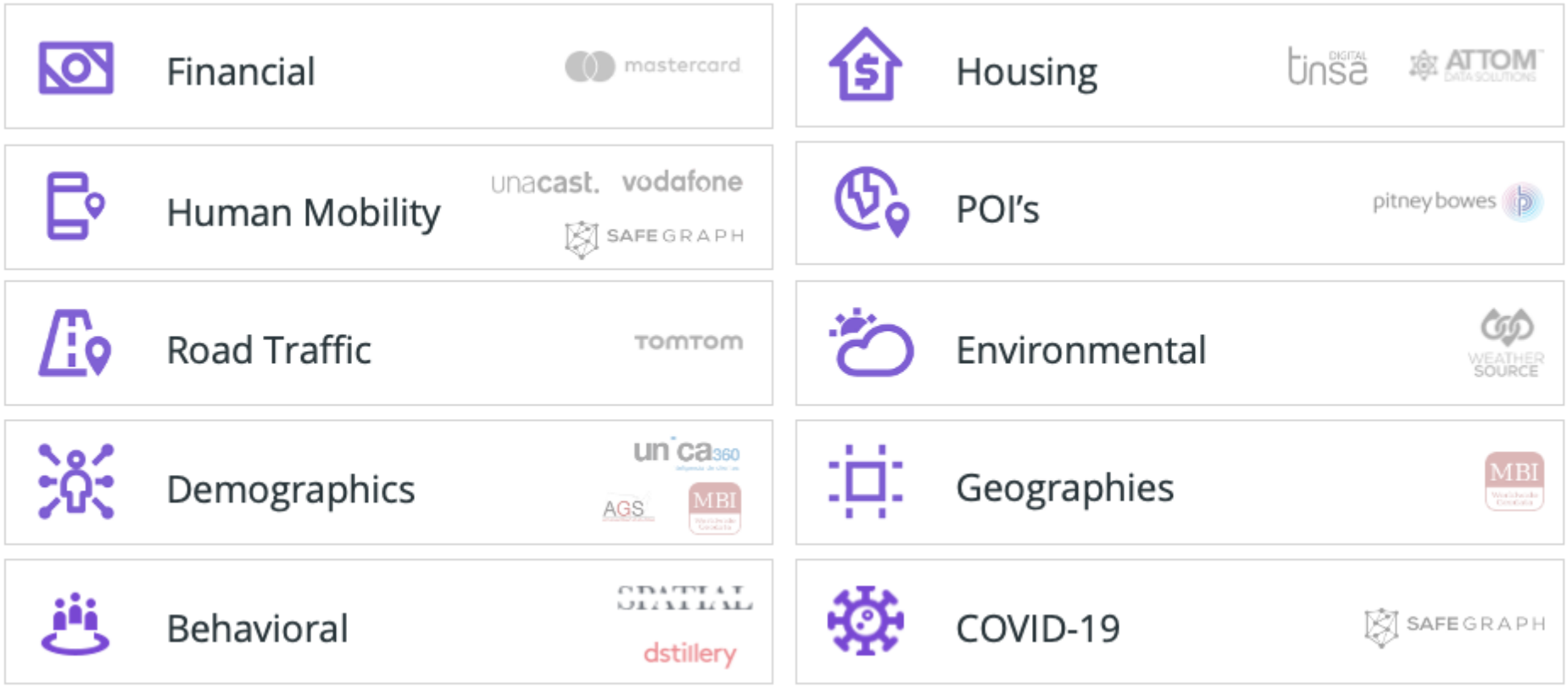
Working with spatial data

- Finding the location data I need can take weeks as there are too many providers offering similar data and it's difficult to assess quality.
- Licensing can also be a long and tedious process: I'll have to negotiate terms with every single data provider.
- Enriching my data will be hard as I'll need to deal with different formats and support geographies.

How CARTO can help

- **Simple access** to public and premium data from vetted sources.
- **Faster licensing process** thanks to existing agreements with leading data providers.
- **Easy enrichment** with data already presented in standardized formats.

Access to best-in-class location data

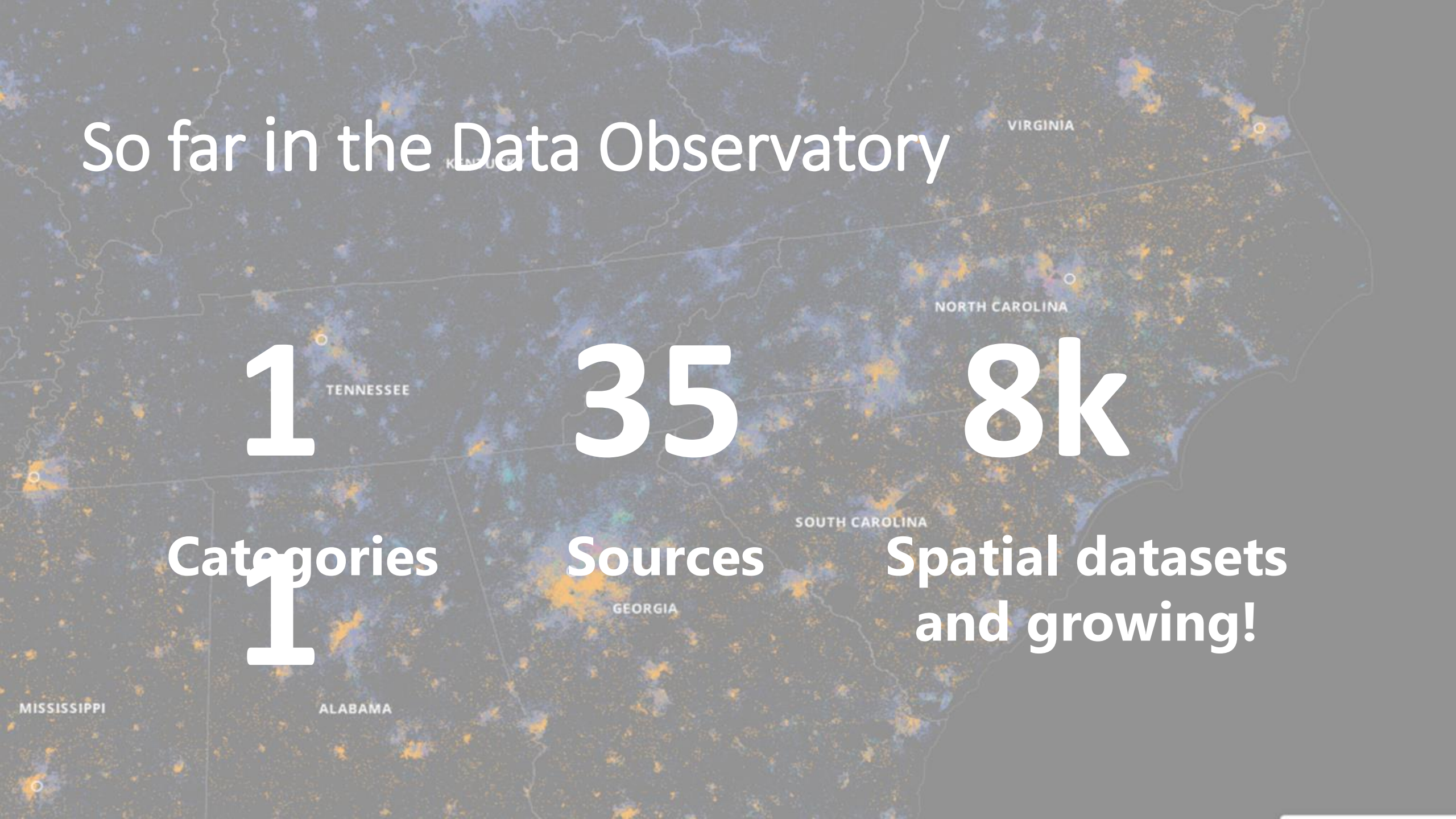


So far in the Data Observatory

1
Categories

35
Sources

8k
Spatial datasets and growing!



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Key take-away messages and conclusions

Key takeaway messages and conclusions

1. Geodata marketplaces is a **concept building on developments over the past decades**; virtual marketplaces, digital platforms and more have paved the way for new and improved ways of exchanging, providing and using data.
2. **Geodata marketplaces are powered by ecosystems thinking**. New and innovative models, creating interactive and living marketplaces are made possible by sustainable ecosystems of actors working together.
3. **Geodata marketplaces encapsulates ecosystems thinking and serves as an enabler for location intelligence.** By exchanging data through geodata marketplaces, we can derive **new and deeper geospatial insight**.

Q&A

Next webinars…

- Geospatially enabled modelling, simulation and prediction (21/01)
- Evolution of the access to spatial data for environmental purposes – Study presentation (04/02)

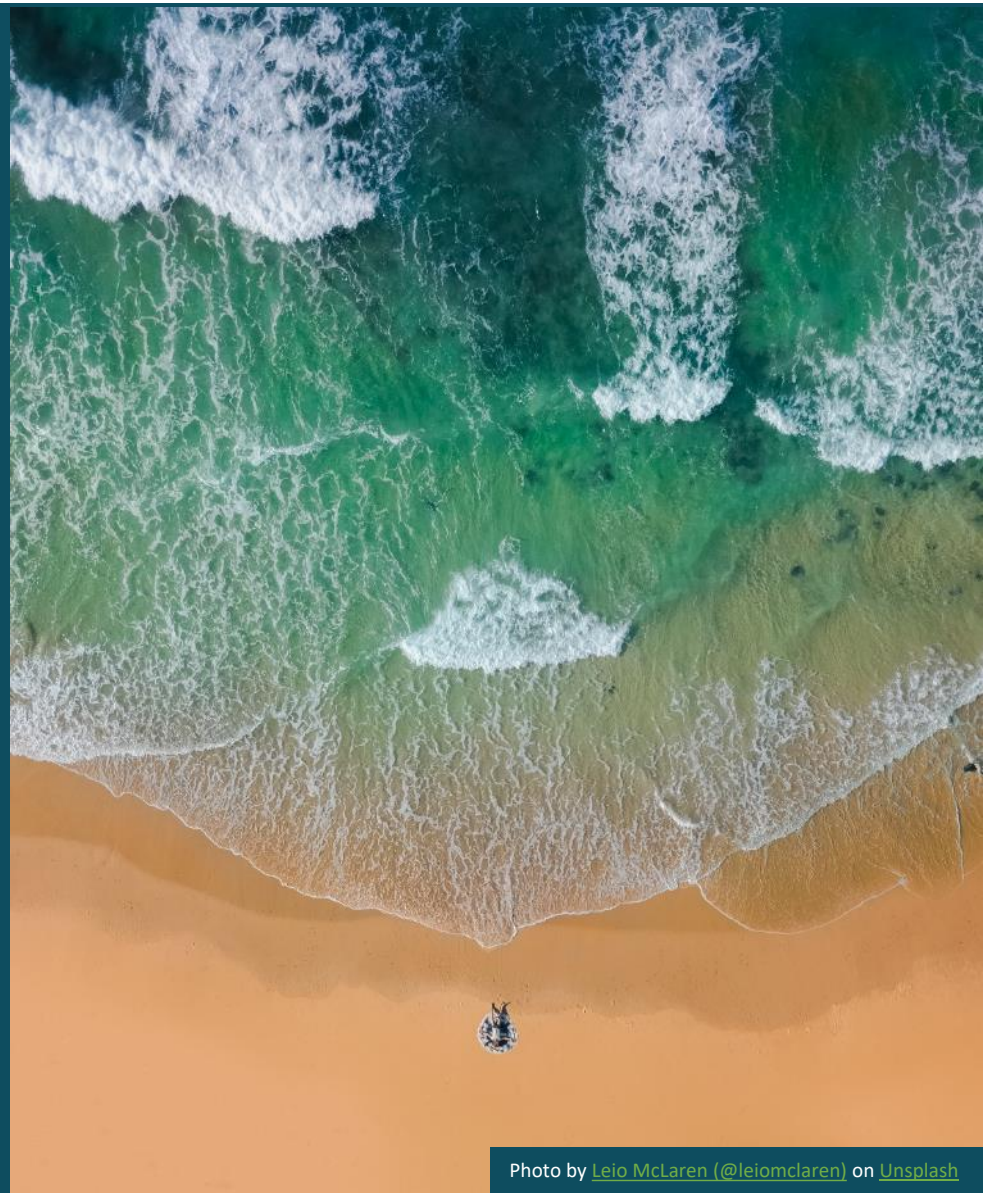

Photo by Leio McLaren (@leiomclaren) on Unsplash

Thank you

Stay tuned

Join the *ELISE* community in JoinUp

@eu_location

eulocation@ec.europa.eu

ELISE playlist