

ELISE action
Webinar Series

Geodata marketplaces supporting location intelligence

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22/10/20 14.00-15.00



European Location Interoperability
Solutions for e-Government

*Enabling Digital Government through
Geospatial and Location Intelligence*



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



Welcome to the ELISE webinar series



ELISE Knowledge Transfer activities



ELISE Webinar - The role of Geospatial for Digital Government

07/05/2019 event



ELISE Webinar - Governance models, ecosystems and benefits

11/06/2019 event



ELISE Webinar - Persistent Identifiers (PIDs) as the glue for

15/07/2019 event



ELISE Webinar - Geospatial Technology and Public Participation

28/08/2019 event



ELISE Webinar - The role of Spatial Data Infrastructures for

09/10/2019 event



ELISE Webinar - Using serious games in the geospatial domain to

14/01/2020 event



ELISE Webinar - The role of Organisational Interoperability in the

11/02/2020 event



ELISE Webinar - Location Intelligence and Partnerships to support

30/04/2020 event

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>



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



Valdis Karulis

GIS project manager

GEODATA HUB

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.



Table of Contents: Geodata marketplaces for location intelligence

1. Geodata marketplaces: context and definitions

2. Opportunities in the move towards increased location intelligence (LI)

3. Ecosystems thinking for LI: the cornerstone of new data marketplaces

4. Geodata marketplaces demonstrated

5. Key takeaway messages and conclusions

6. Q&A

1

*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

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:

- 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**.

Private sphere:

- 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](#))

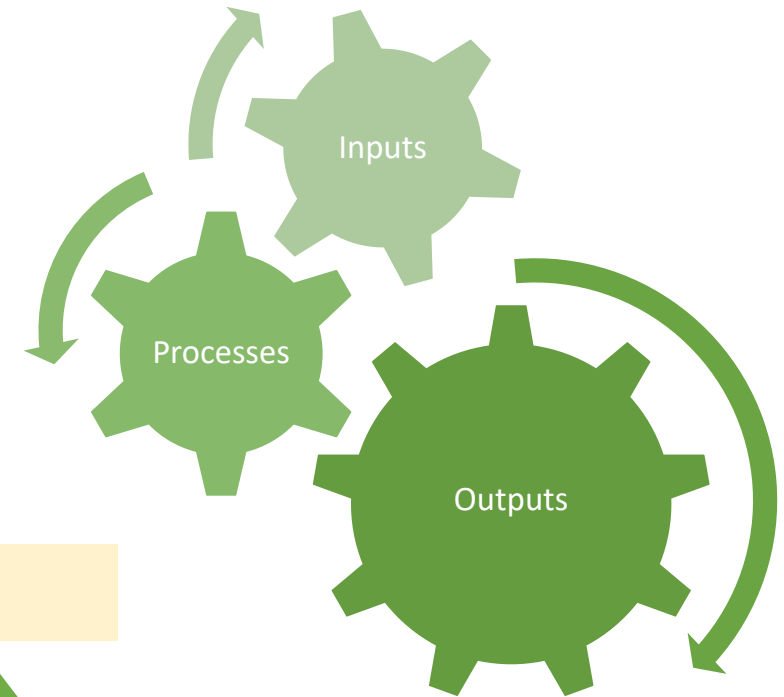
For this webinar is interpreted as a **broader concept** encompassing:

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

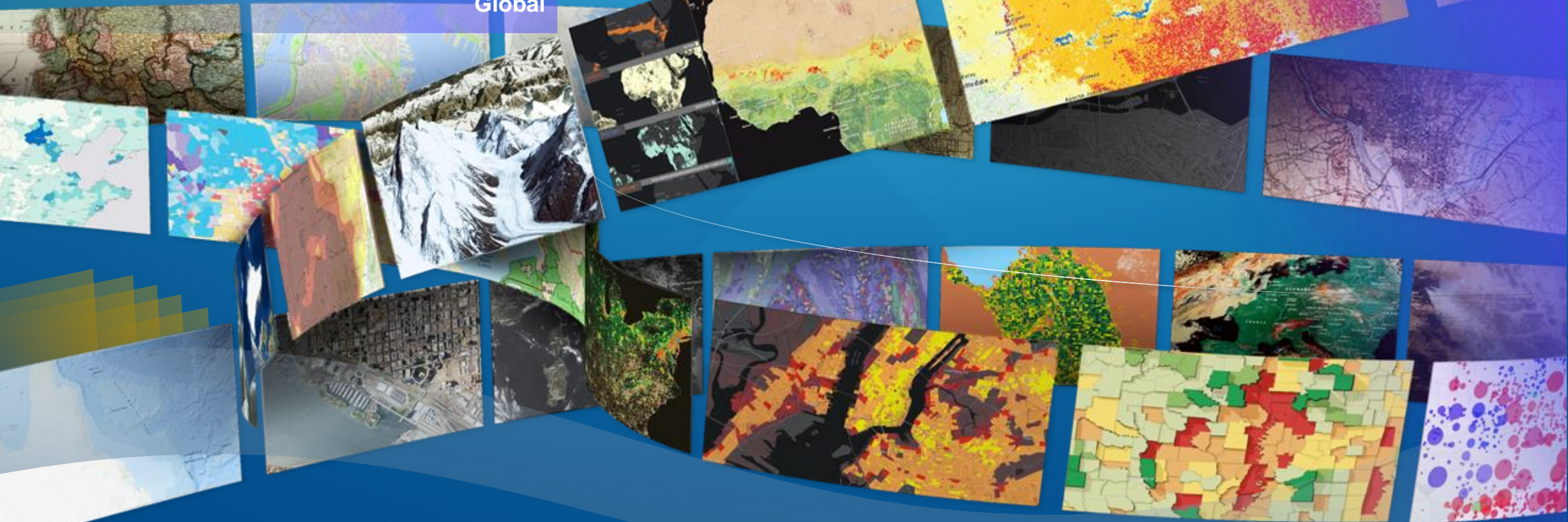
*Ecosystems for LI: the
cornerstone of new data
marketplaces*

ArcGIS Living Atlas

Ready to Use

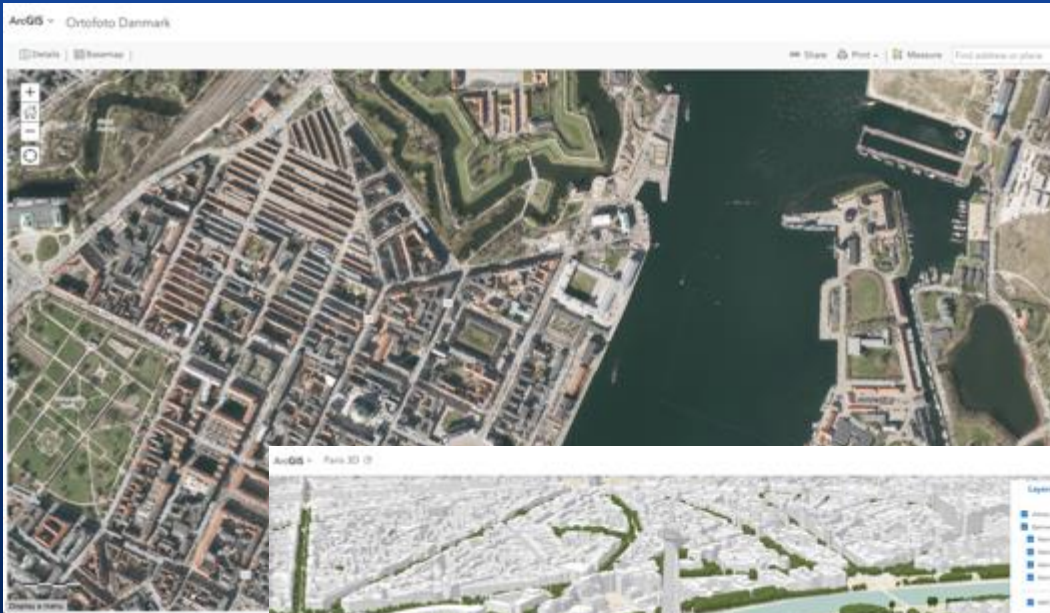
Best Available

Global



Curated, continuously updated authoritative content

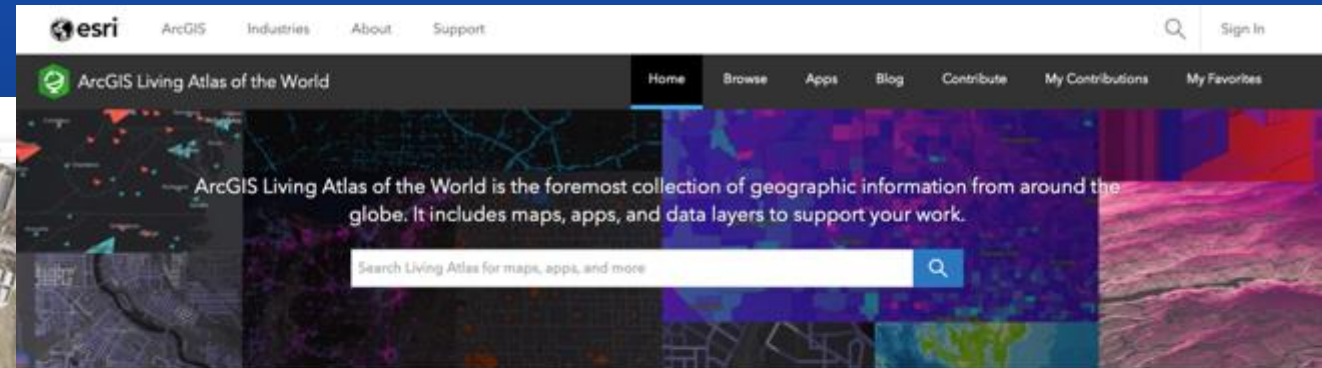
Enabled by geospatial infrastructure



Imagery

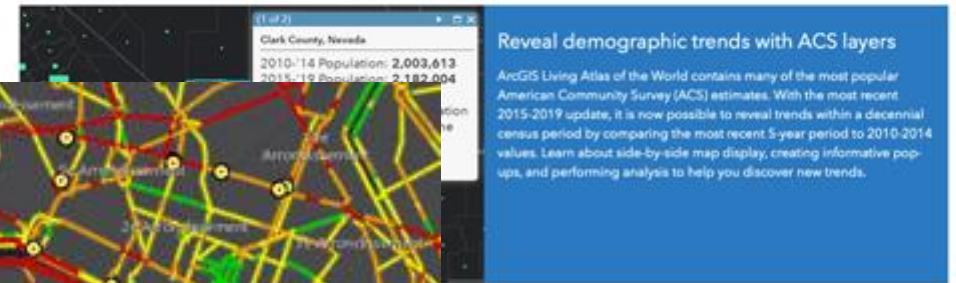


3D



What's new

Explore items recently added to ArcGIS Living Atlas of the World, learn about GIS events, and discover ways to use content.



Live data

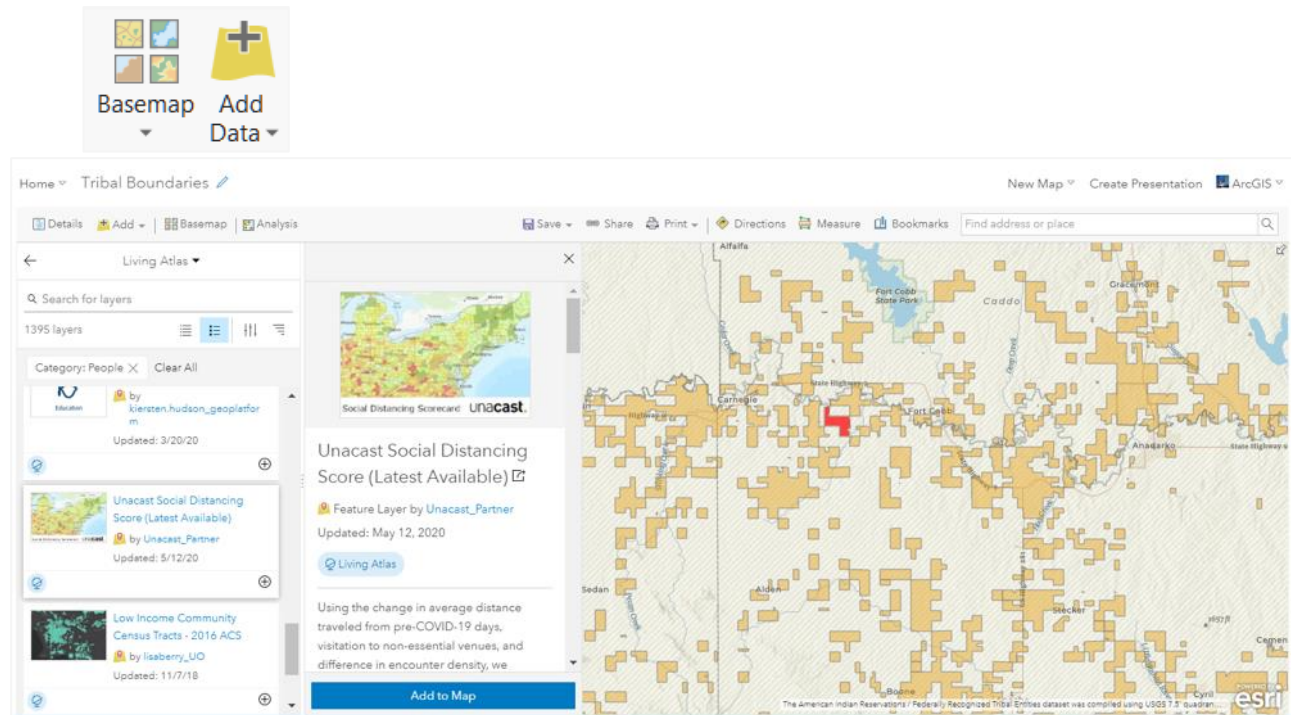
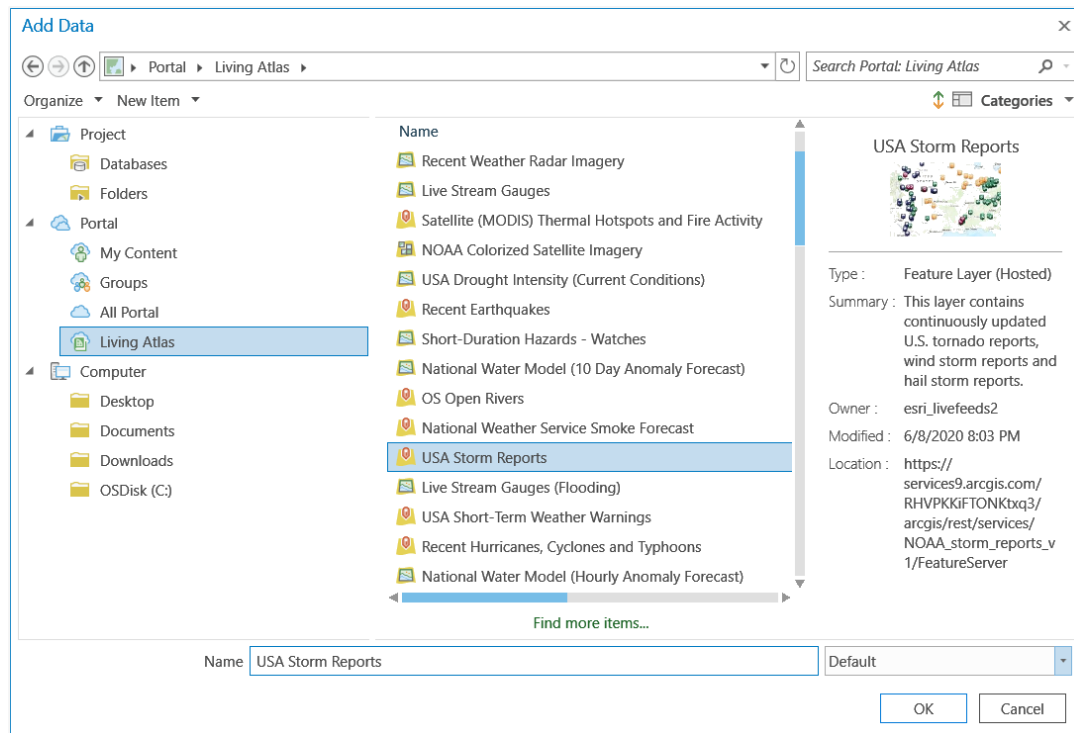
Community contributed content

<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

Oceans

Topographic

Scene

Imagery

Terrain

OpenStreetMap

Transportation Environment Business

Landscape Habitats Hydro

Infrastructure Movement

Basemaps Elevation

Boundaries Land Cover Traffic

Imagery Oceans POI

Demographics Weather

Hazards Authoritative

Community Content

Soils



Feedback



Edit Features



Contribute Data

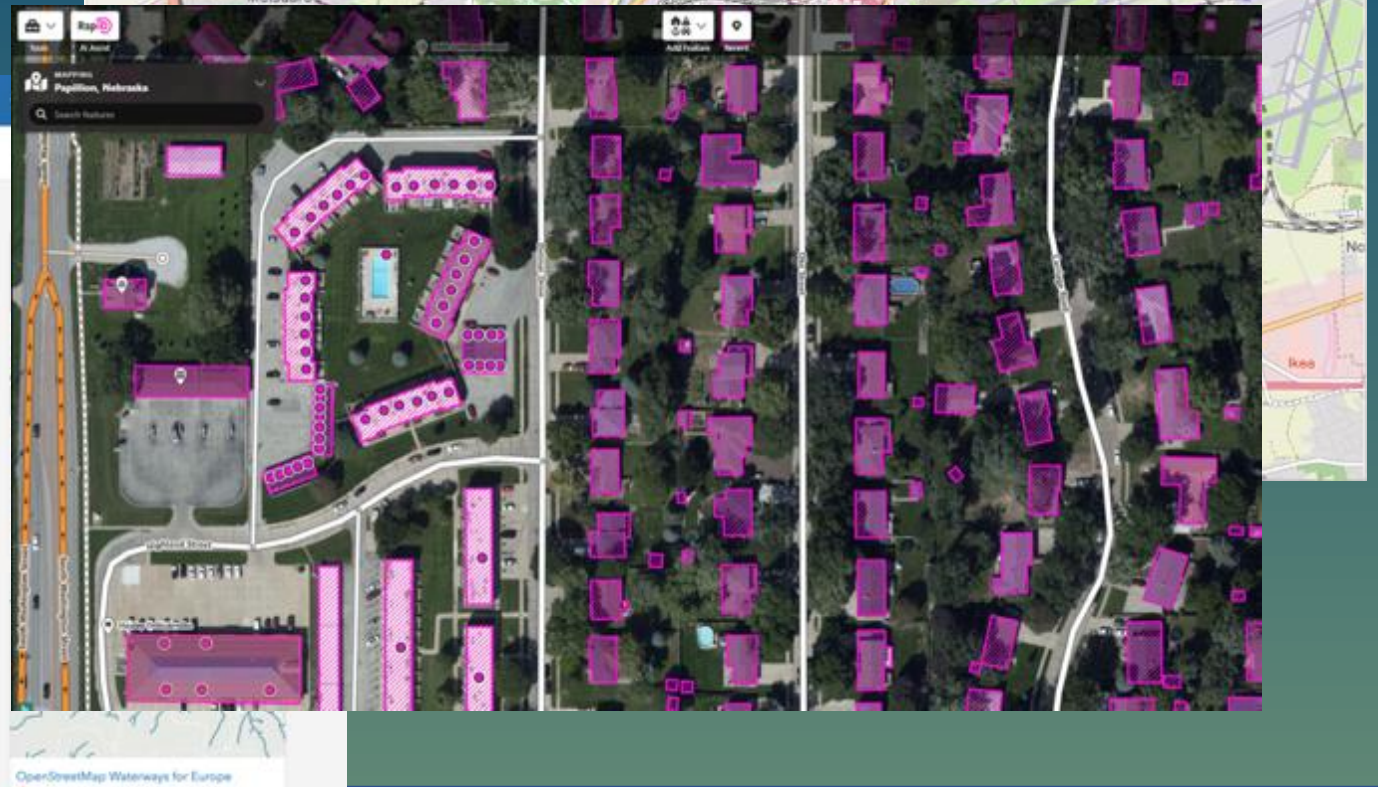
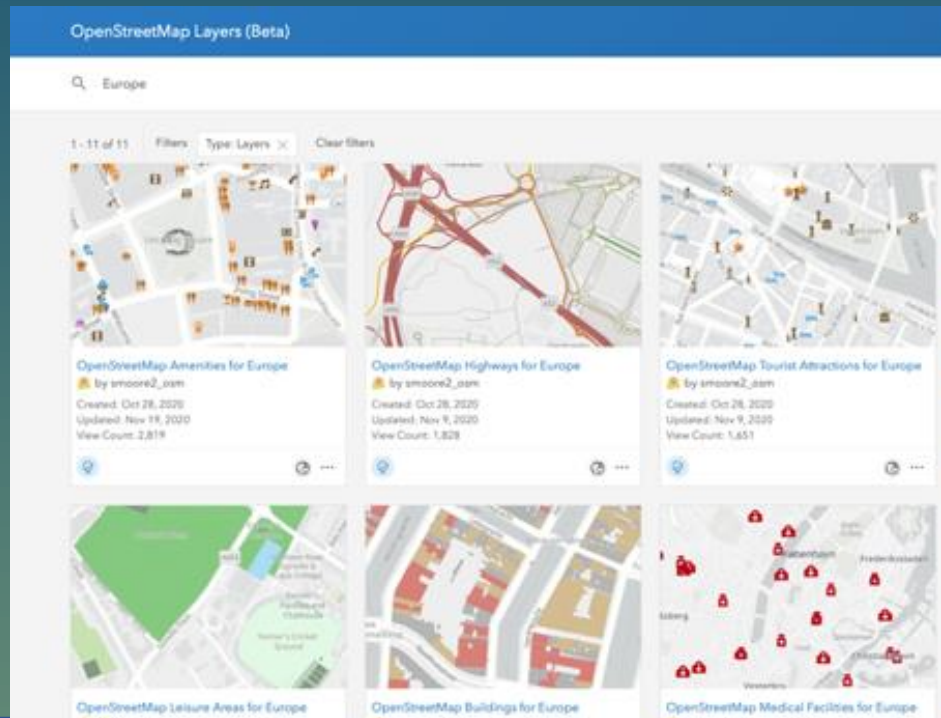
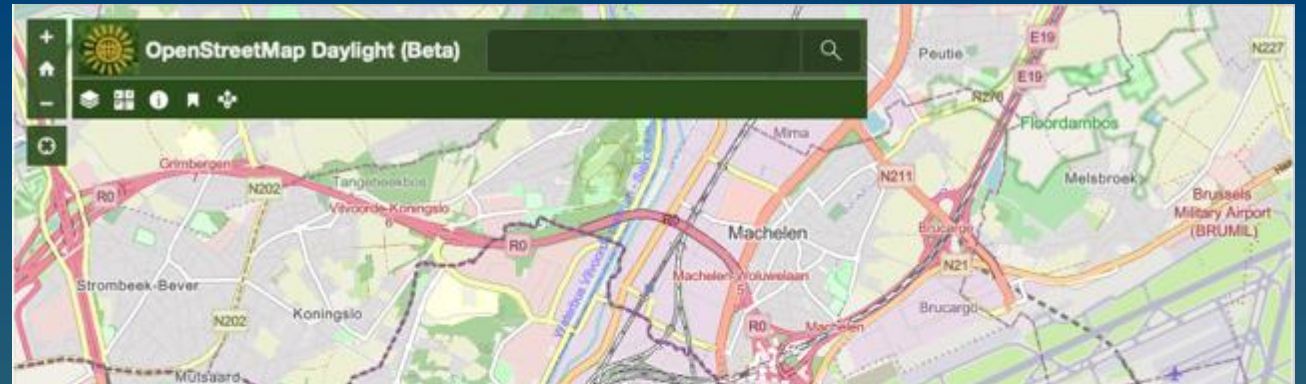
Community Maps & ArcGIS Basemaps

OpenStreetMap



OpenStreetMap
Foundation

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

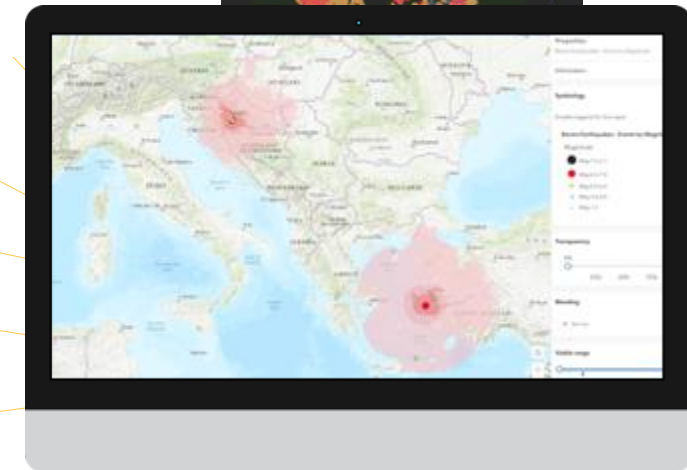
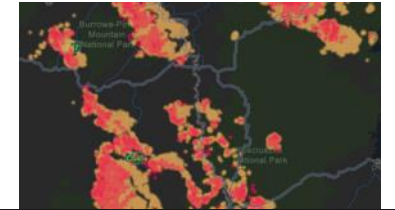


Living Atlas Live Data Layers

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

- Recent Earthquakes
- Storm Reports
- Active Hurricanes
- Weather Observations
- Weather Forecasts
- Weather Warnings
- Air Quality Conditions
- Active Wildfires & Hotspots



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

An aerial photograph of a complex highway interchange with multiple overpasses and ramps, surrounded by green trees. A large, dark green circular graphic is overlaid on the left side of the image. Inside this circle, there is a green location pin icon with a white checkmark inside it, and the text "GEO DATA HUB" in large, white, bold, sans-serif capital letters.

**GEO
DATA
HUB**

geodatahub.eu



European
Commission

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

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2   "name": "riia 24, tartu",
3   "features": [
4     {
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26          58.371547
27        ]
28      }
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30  ]
31 }
```

GEO
DATA
HUB



GEO
DATA
HUB

Geospatial data API with Baltic in heart



LOCATION



MAPS



DIRECTIONS

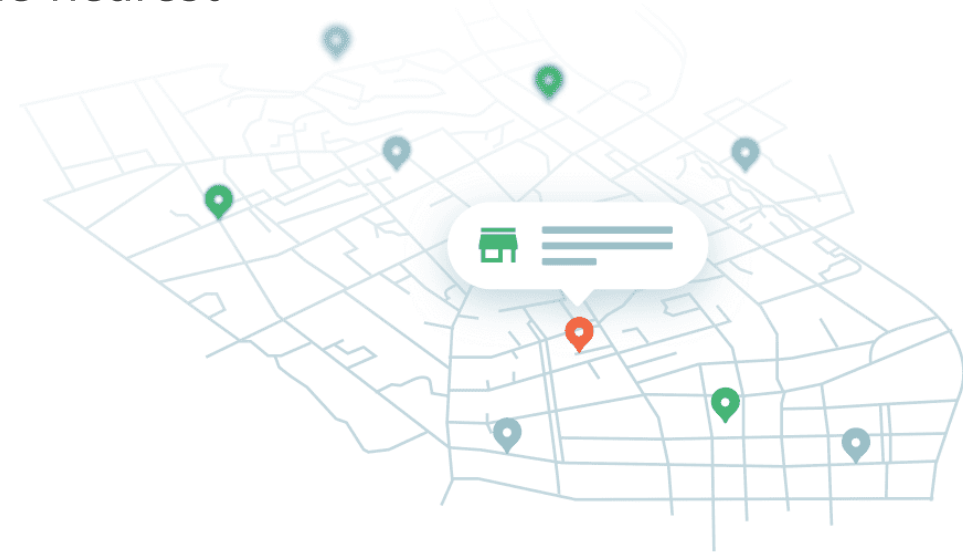
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LOCATION

“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**



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**



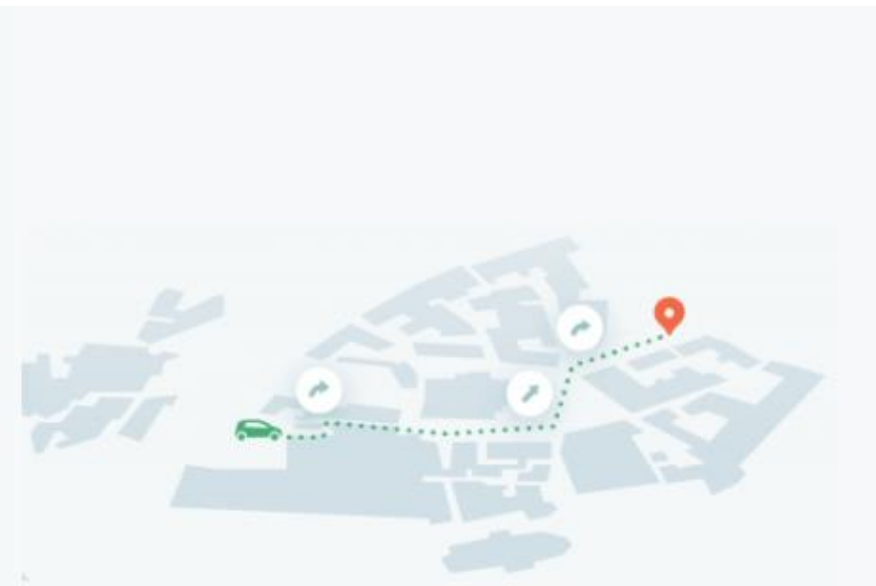
GEODATA HUB



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.

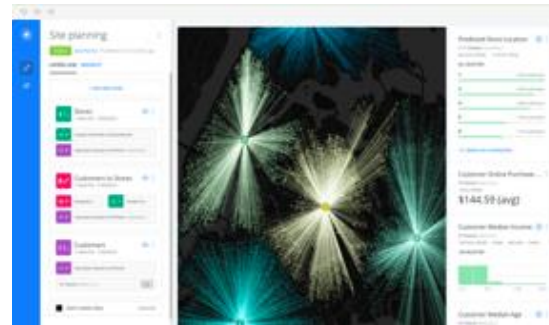


CARTO: A platform for visualization, analysis and development of location data projects

CARTOframes Data Scientist



CARTO Builder Data Analyst



CARTO Engine Developers



Data Observatory



Road Traffic



Financial



Human Mobility



Demographics



Housing

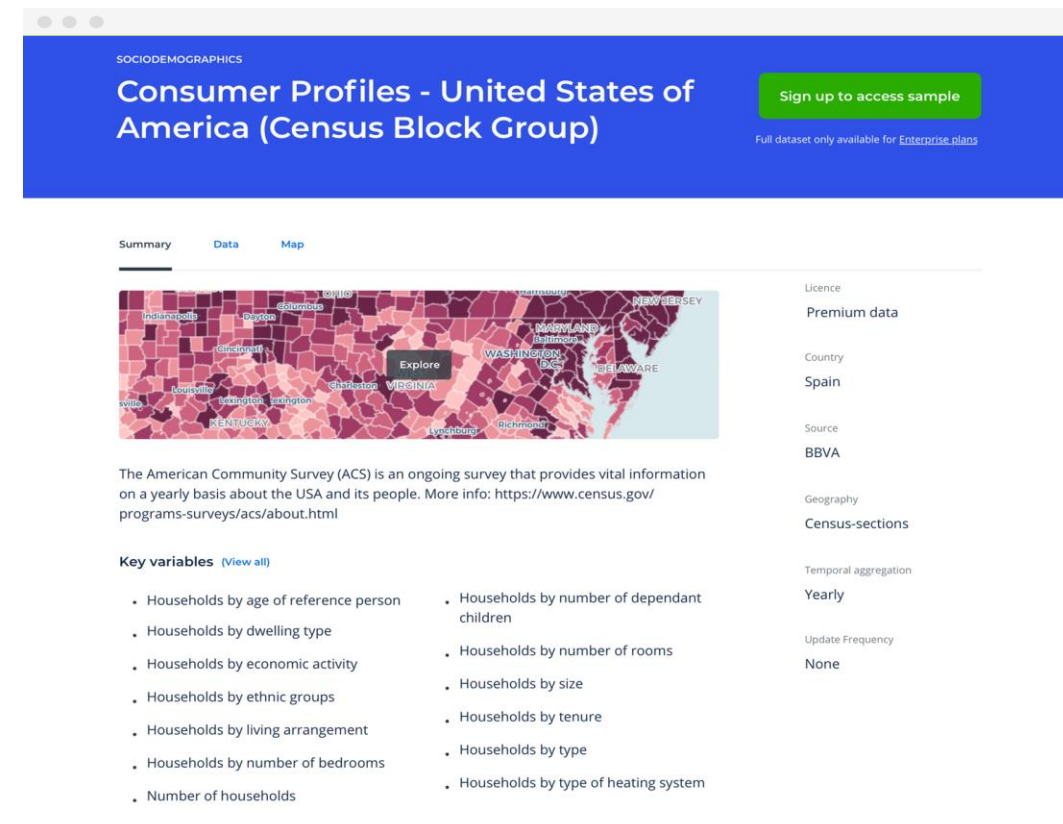


Environmental

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



The screenshot shows the CARTO Data Observatory interface for the dataset 'Consumer Profiles - United States of America (Census Block Group)'. The page has a blue header with the title and a 'Sign up to access sample' button. Below the header, there are tabs for 'Summary', 'Data', and 'Map'. The 'Map' tab is active, showing a choropleth map of the United States with state names labeled. To the right of the map is a sidebar with metadata including 'Licence: Premium data', 'Country: Spain', 'Source: BBVA', 'Geography: Census-sections', and 'Temporal aggregation: Yearly'. Below the map, there is a description of the American Community Survey (ACS) and a list of 'Key variables' such as 'Households by age of reference person', 'Households by dwelling type', 'Households by economic activity', 'Households by ethnic groups', 'Households by living arrangement', 'Households by number of bedrooms', 'Number of households', 'Households by number of dependant children', 'Households by number of rooms', 'Households by size', 'Households by tenure', 'Households by type', and 'Households by type of heating system'.

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

 Financial 	 Housing  
 Human Mobility   	 POI's 
 Road Traffic 	 Environmental 
 Demographics   	 Geographies 
 Behavioral  	 COVID-19 

So far in the Data Observatory



1

Categories

1

35

Sources

8k

Spatial datasets
and growing!

5

*Key take-away messages and
conclusions*

Key takeaway messages and conclusions

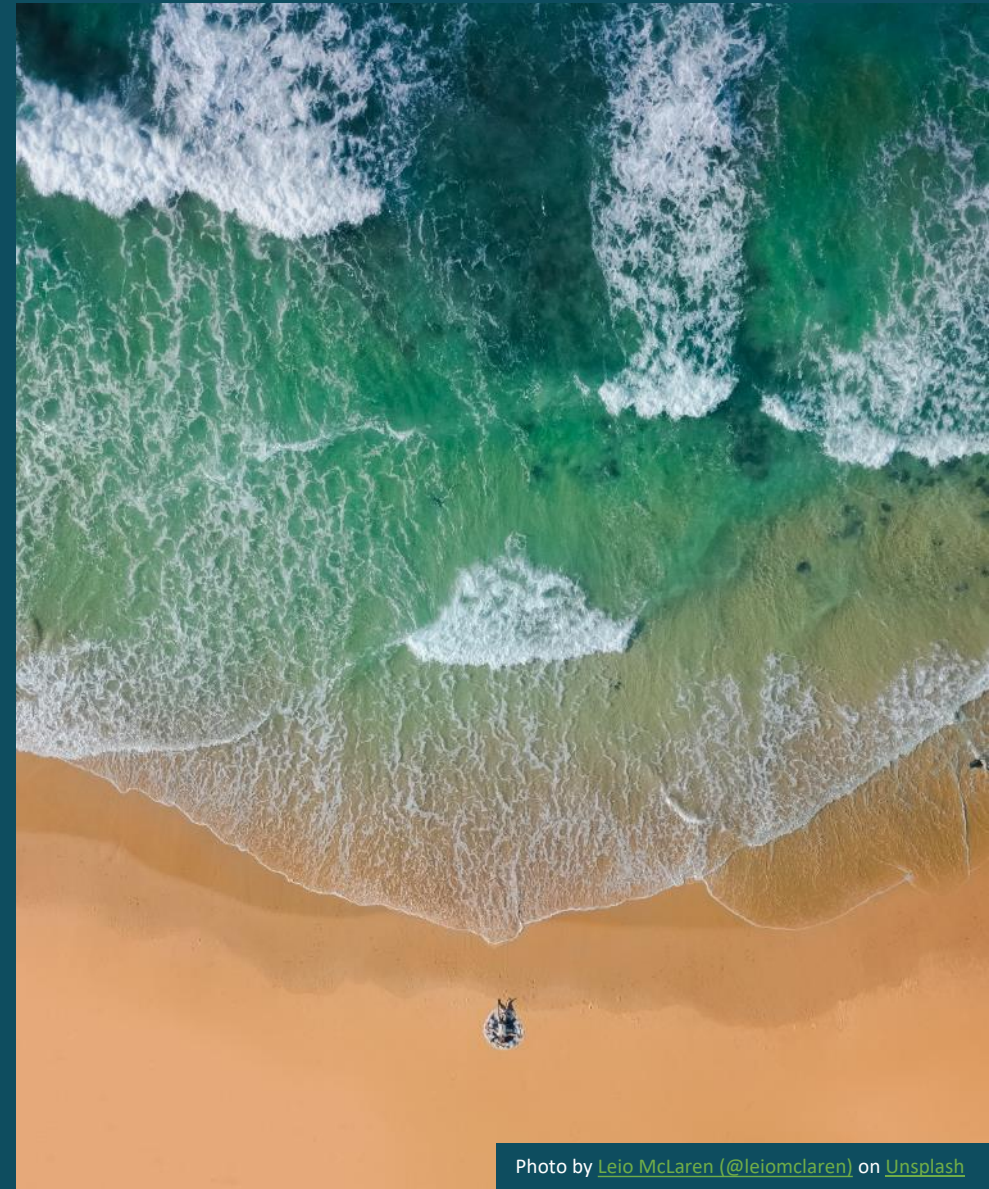
- 1** Geodata marketplaces is a **concept building on developments over the past decades**; virtual marketplaces, digital platforms and more have paved the way for new and improved ways of exchanging, providing and using data.
- 2** **Geodata marketplaces are powered by ecosystems thinking.** New and 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)





Thank you



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eulocation@ec.europa.eu



[ELISE playlist](#)