

# **SPATIAL STATISTICS ON WEB 2 & OSKARI**

EFGS 2016

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National Land Survey of Finland

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Oskari.org is  
an Open Source package  
for building multipurpose  
web and mobile  
mapping applications







Map Portals

Embedded  
Maps

Mobile  
Maps

# ABOUT OSKARI

- Oskari is open source software for creating web map applications
- You can
  - Set up a complete web map application / **geoportal**
  - Create **map applications** and embed them on other websites
  - Extend functionality of **embedded maps** with the [RPC integration API](#)
  - Consume **standardized web services** for spatial data, incl. INSPIRE
  - **Analyze** spatial data
  - Create and explore **thematic maps** made with statistical data

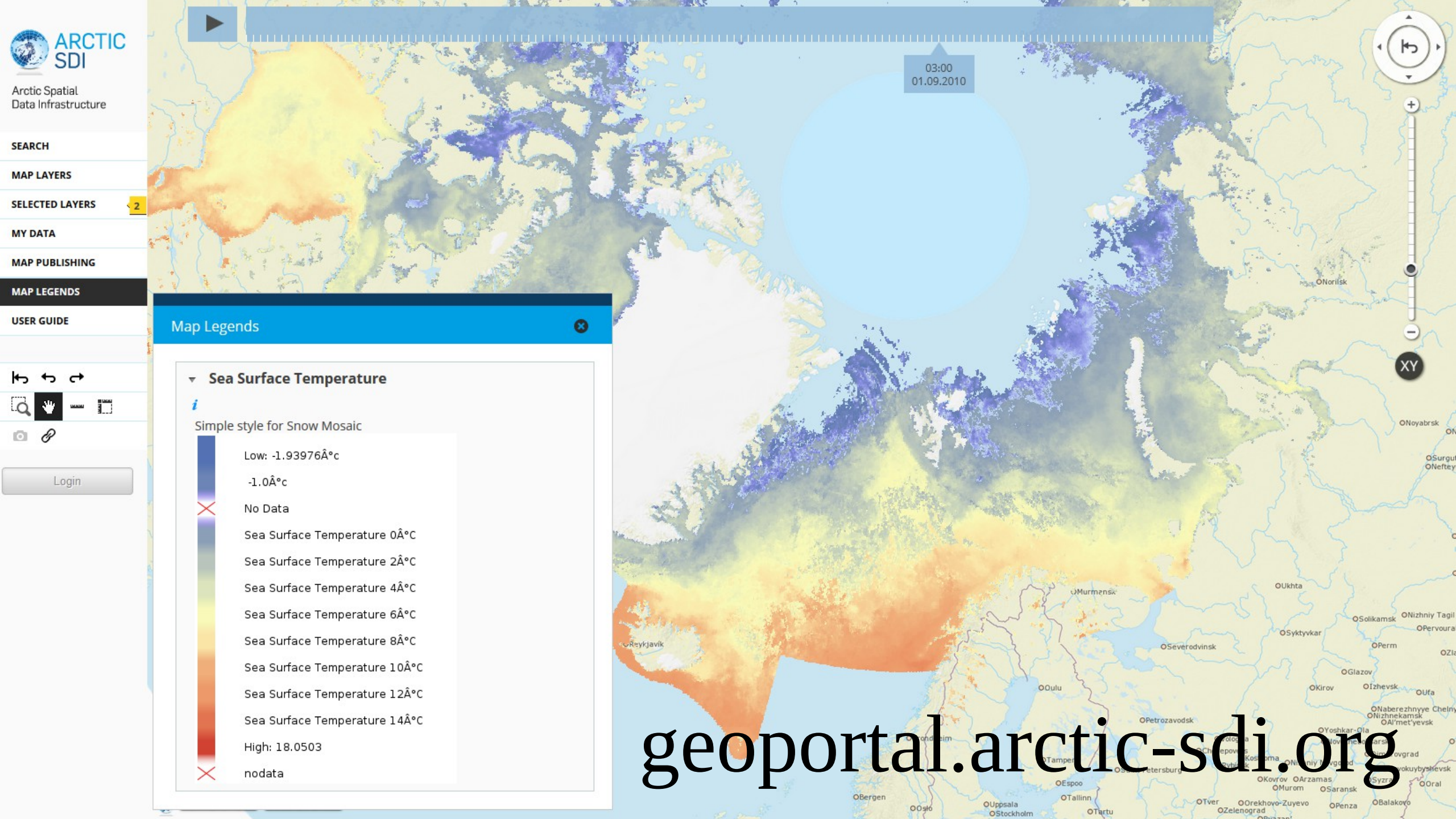
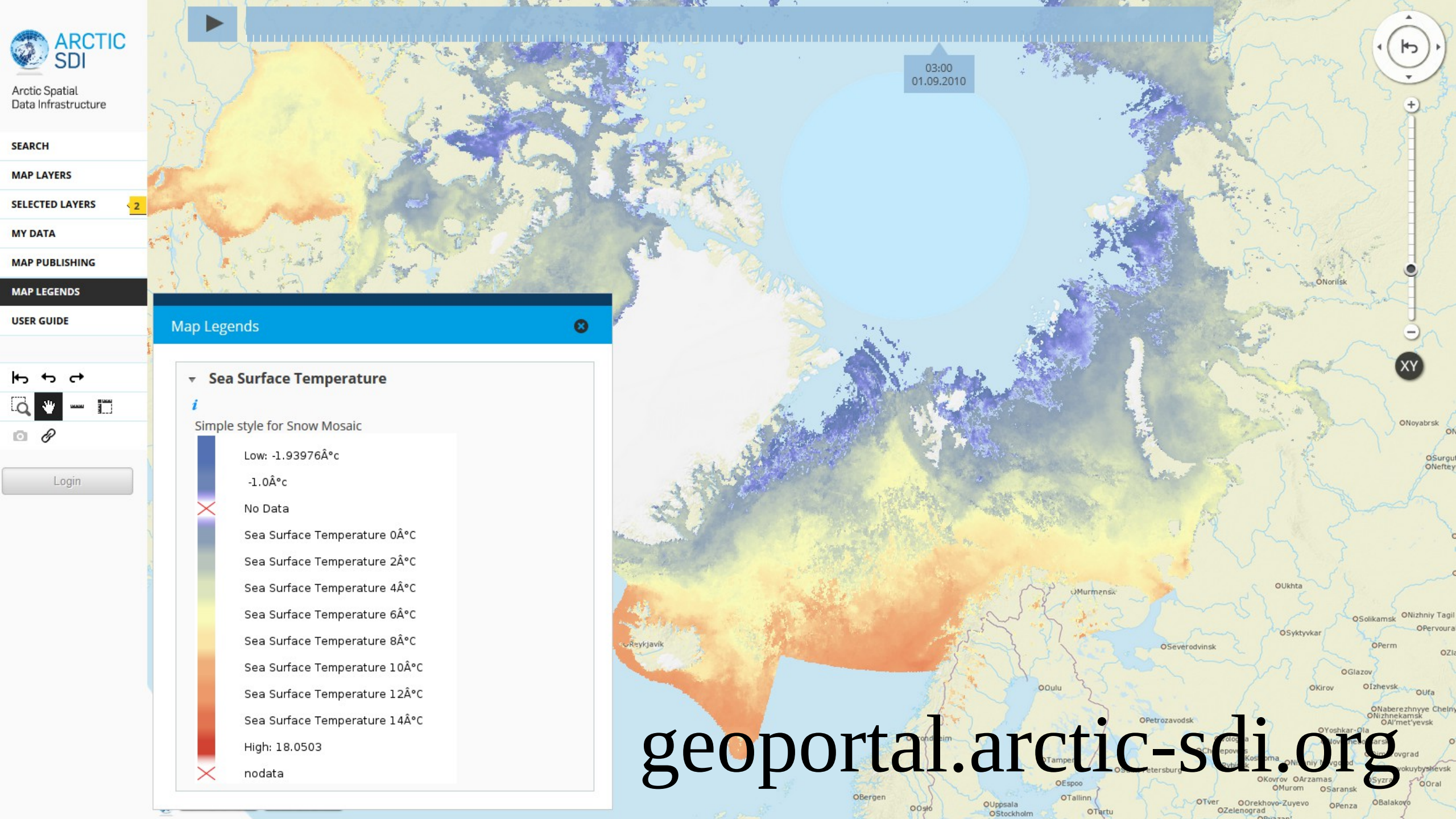


# OSKARI COMMUNITY

- Oskari Network
  - Collaborative network that develops the software for various use cases
  - Develop once, use often
  - 32 members from private and public sector
  - Companies with competence in development
  - Several public sector organizations with sometimes overlapping needs
  - Used also abroad and in international projects, described in [EC ISA Joinup](#)
- OSGeo incubation process
  - Oskari will enter Open Source Geospatial Foundation incubation process to become an internationally acknowledged geospatial open source project

# OSKARI GEOPORTAL EXAMPLES

- Oskari set up as a cloud service / SAAS or in own infrastructure
- Customized look & feel and functionalities
- Supports any EPSG coordinate reference system
- Interoperable: OGC WMS, WFS, WMTS, WMS-T support
- Multilingual
  - Core features in 14 languages
  - All features in English, Finnish and Swedish







ELF

SEARCH

MAP LAYERS

SELECTED LAYERS 2

MY DATA

CREATE EMBEDDED  
MAP

MAP LEGENDS

USER GUIDE



Logout

administration

English

Change language

## Map Layers

By Theme

By Data Provider

build

Search map layers by map layer name, data producer name or keyword. [i](#)

### Buildings (11/11)

- ☐ Building (BE)
- ☐ Building (CZ)
- ☐ Building (FI)
- ☐ Building (FI)
- ☐ Building (FR)
- ☐ Building (IS)
- ☐ Building (NL)
- ☐ Building (NO)
- ☐ Building - INSPIRE 3.0
- ☐ Building - INSPIRE 4.0
- ☒ ELF Cadastral Index Map (Building)

## Metadata

### ELF Cadastral Index Map

Metadata

Data quality

Actions

License

Feedback

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- Evaluation Licence – You can access and use ELF products for the purpose of evaluating its suitability for your own internal use.
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[License](#)

50 m  
200 ft

Terms of Use Copyright

demo.locationframework.eu





## Map Layers

By Theme

By Data Provider

Newest

Vector layers

Publishable

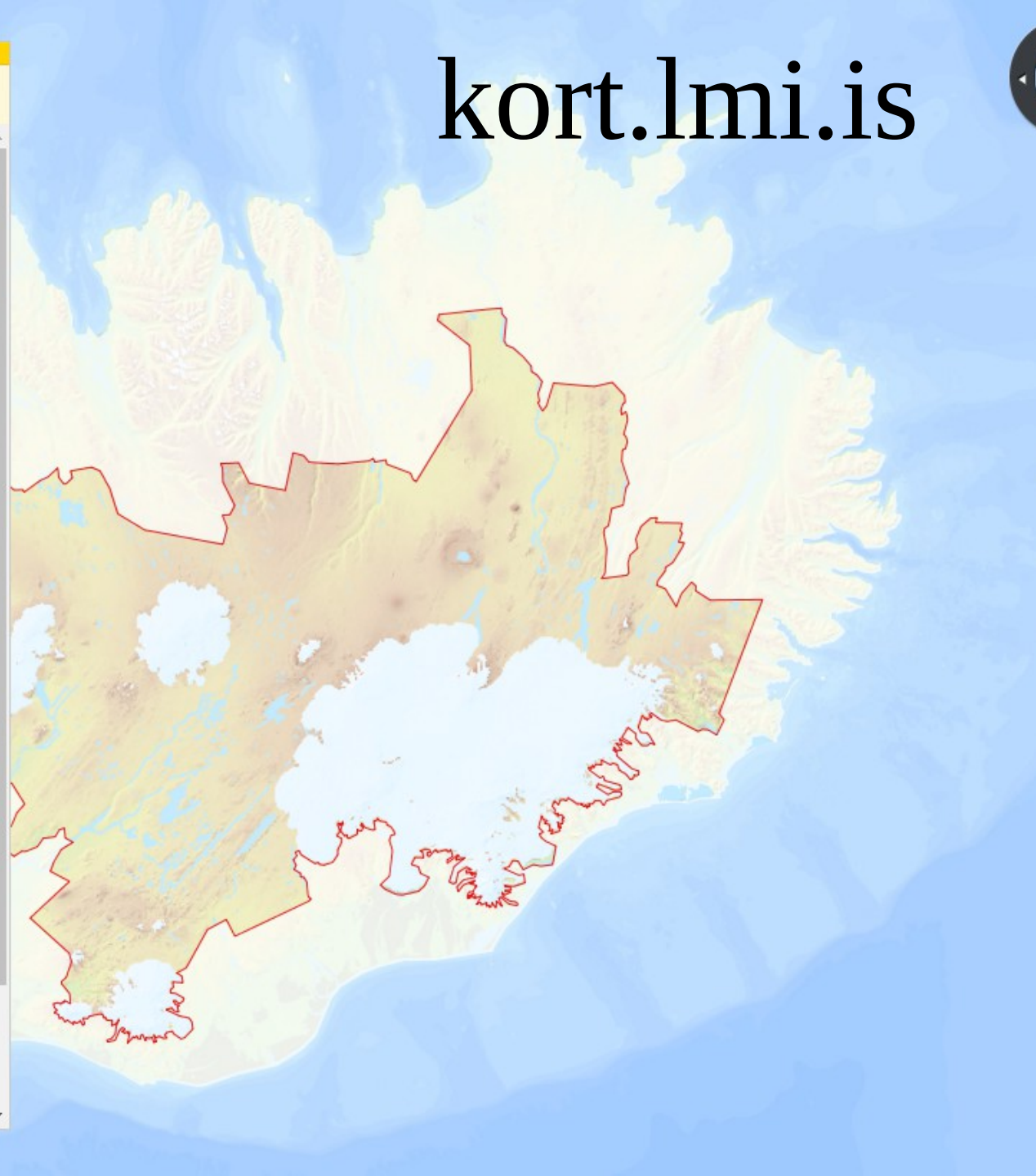
Search map layers.

Search map layers by map layer name, data producer name or keyword. [i](#)

- ▶ Icelandic Institute of Natural History (17)
- ▶ Icelandic Met Office (7)
- ▶ Icelandic Tourist Board (4)
- ▶ Landmótun (1)
- ▶ Landsnet (2)
- ▶ Ministry for the Environment and Natural Resources (8)
- ▶ Minjastofnun (1)
- ▶ My Places (2)
- ▶ National Energy authority (1)
- ▶ National Land Survey of Iceland (15)
- ▶ National Planning Agency (1)
- ▶ Prime Minister's Office (1)
- ▶ Registers Iceland (2)

20 km  
20 mi

# kort.lmi.is

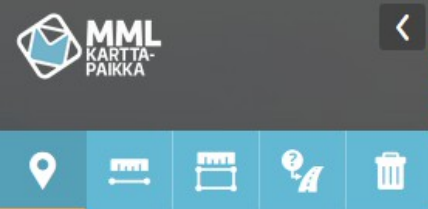






# EMBEDDED MAP EXAMPLES

- Tampere City example is an embedded map from Tampere's own Oskari installation
- Other examples are from National Land Survey's suomi.fi – map service
- All examples utilize the RPC integration API



Haku

Osoite tai paikannimi, kunta



Karttatasot

☒ Kiinteistötunnukset

☒ Kiinteistörajat

☒ Rinnevarjostus

☒ Ilmakuva

☒ Maastokartta

☒ Taustakartta



### Koordinaatit

Syötä koordinaatit tai osoita piste kartalta.

Koordinaatisto:

ETRS89 maantieteelliset (~WGS84)

N / lat: 65° 0' 9,578"

E / lon: 25° 29' 26,916"

☐ Näytä hiiren kursorin koordinaatit.

Keskitä kartta

Lisää merkintä

### Uusi talo

Tästä kiinteistöstä oli puhe

Sijainti: N=7209732.25, E=428865.25  
(ETRS-TM35FIN)

[Jaa karttalinkki](#)

[Poista](#)

Palvelut

[På svenska](#) [In English](#)



### Osta karttoja

Osta Maanmittauslaitoksen perus- ja maastokarttoja tai tilaa oma karttatuloste valitsemaltasi alueelta.



### Jaa karttalinkki

Tee kartalle merkintä ja jaa linkki siihen sähköpostilla, sosiaalisessa mediassa tai www-sivuillasi.



### Anna palautetta

Ilmoita virheestä tai puutteesta kartta-aineistoissa tai anna palautetta Karttapaikasta.

[Käyttöehdot](#)

asiointi.maanmittauslaitos.fi





# Tampere City tram route feedback map



Jep!

Tästä kohdasta haluan antaa palautetta!



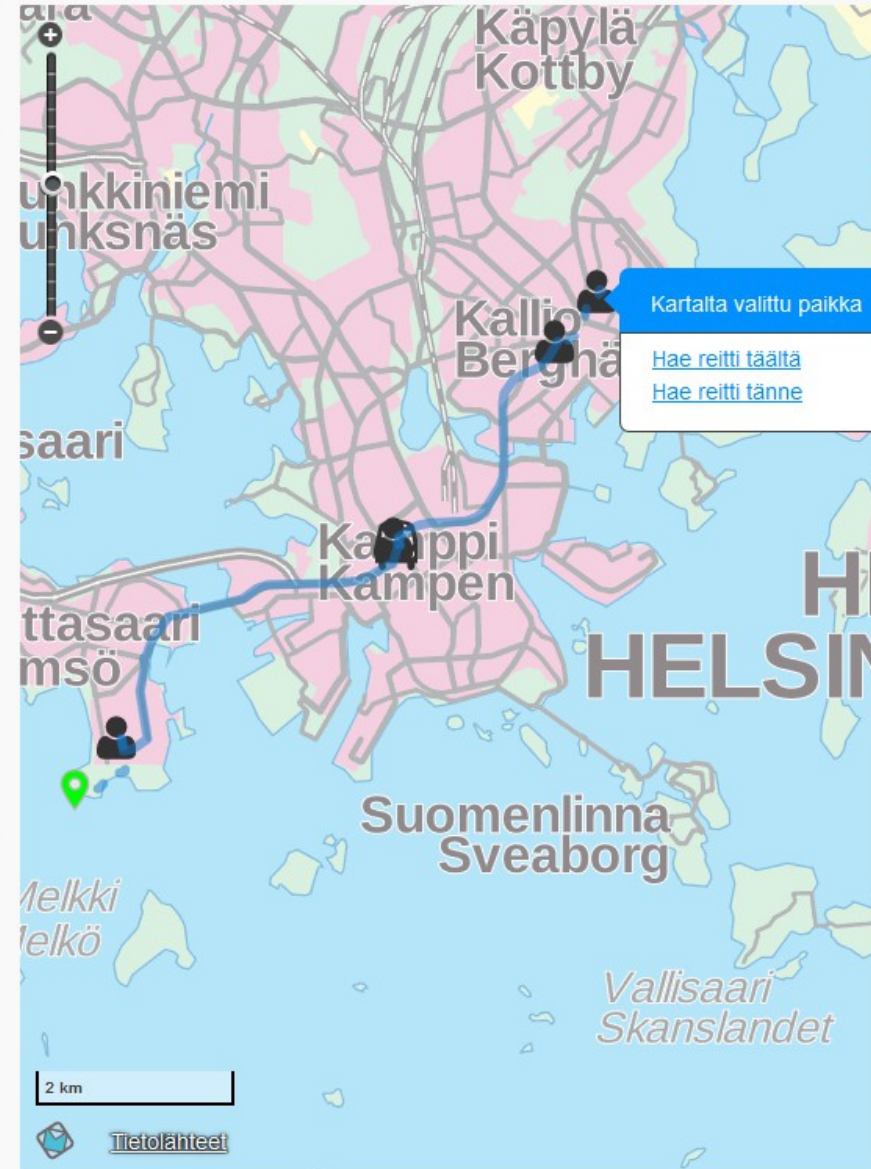


1 Reitin pituus: 0.83 km  
Reitin kesto: 50 minuuttia >

11:09 Lähtöpiste  
Kävelyä 830 m (12 min)  
11:23 Sörnäinen (0017)  
Metro (Ruoholahti)  
4 pysäkkiä (6 min)  
11:29 Kamppi (0013)  
Kävelyä 139 m (2 min)  
11:34 Kampintori (1217)  
Bussi 21V Lauttasaari(Vattun.)  
9 pysäkkiä (12 min)  
11:46 Melkonkuja (1051)  
Kävelyä 948 m (13 min)  
11:58 Määränpää

2 Reitin pituus: 0.83 km  
Reitin kesto: 53 minuuttia >

3 Reitin pituus: 0.27 km  
Reitin kesto: 51 minuuttia >



beta.suomi.fi





## Tulokset

### ● Oulujoen vesistöalue

Näytä Kartalla

Nimi

Oulujoen vesistöalue

Tyyppi ja voimassaolo

● Vaelluskalavesistöt: 1.1 - 31.12

1 / 1

## Karttatasot

### Valitse taustakartta

● Taustakarttasarja

### Valitse muut karttatasot

☐ Ortokuvat

☒ Lipas liikuntapaikat

☒ Tampereen luontopolut

☒ Lipas liikuntareitit

# Mobile maps

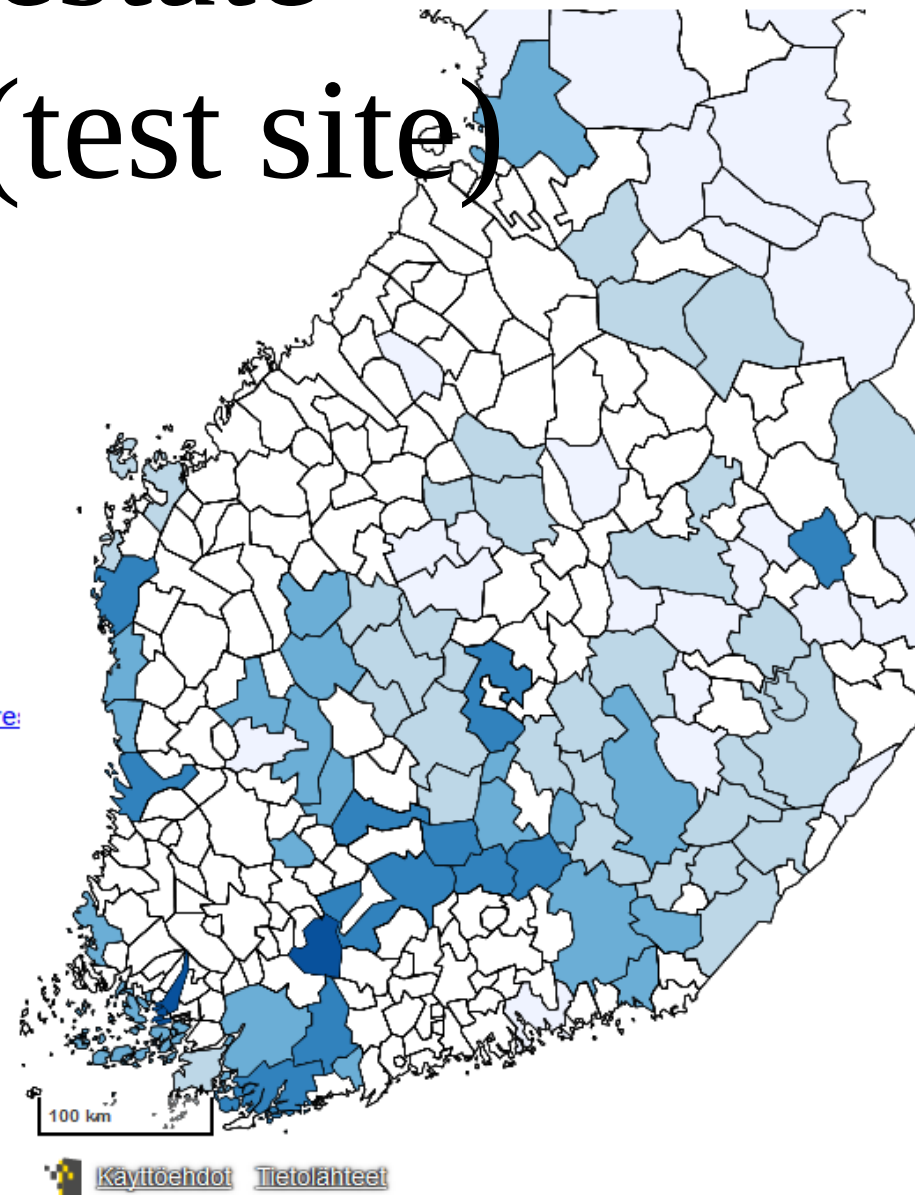


# NLS FI real estate price statistics (test site)

khrwfste.nls.fi - Testausympäristö

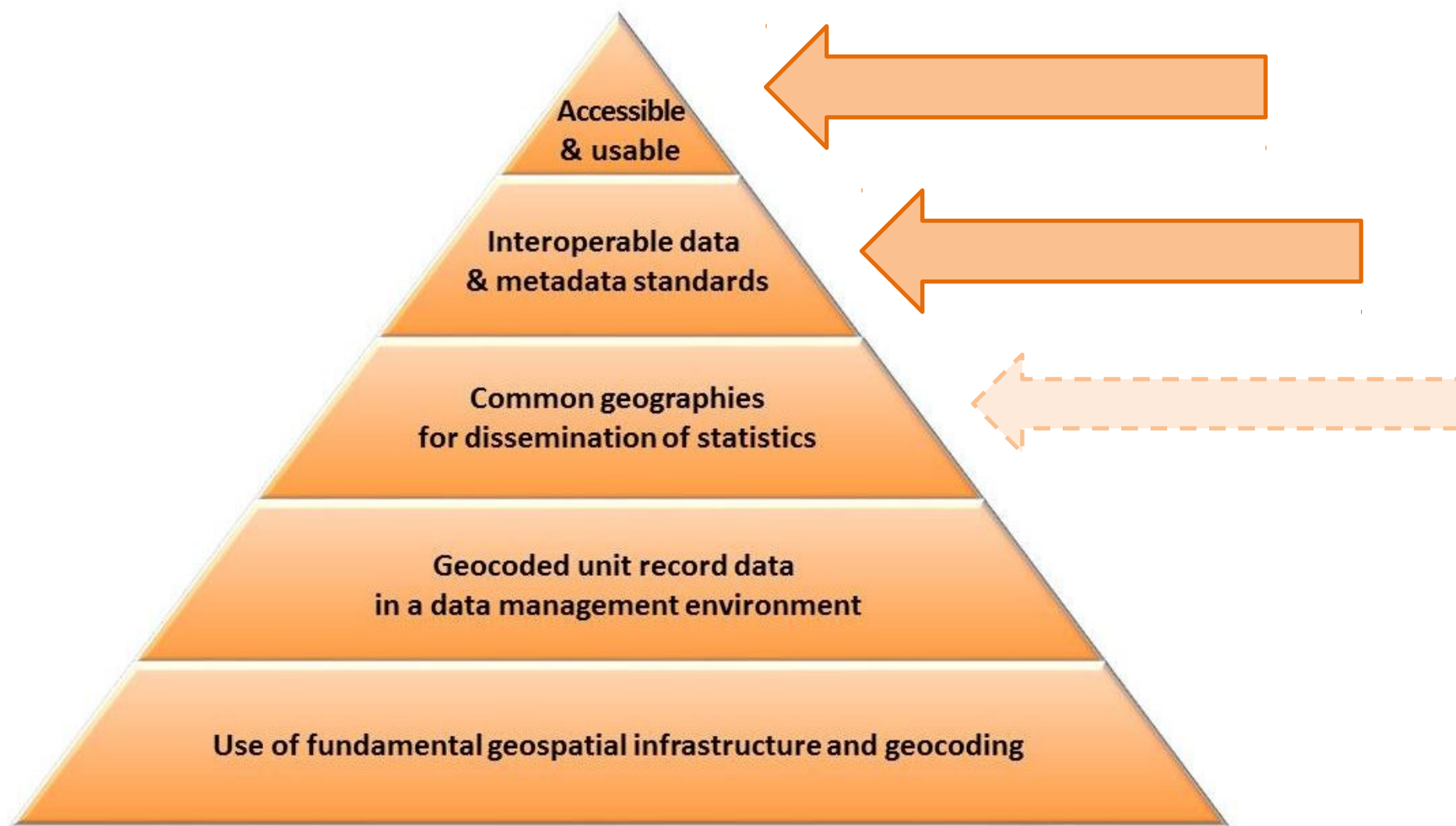
Tiedot perustuvat kehitystietokannan tietoihin - ei tuotantokäyttöön

- Kiinteistökauppojen tilastopalvelu (REST) - BETA
  - [REST rajapinnan dokumentaatio Maanmittauslaitoksen sivuilla](#)
  - [REST rajapinnan esittelysovellus](#)
    - sovelluksessa esitellään REST rajapinnan API kutsuja
  - REST rajapinnan käyttöesimerkkejä (samalla asiakassovellusesimerkkejä)
    - *Nämä esimerkkisivut mukailevat kauppahintatilaston PDF julkaisun taulukoita*
    - *Sivut on tarkotettu vain esittelemään ja listaamaan REST rajapinnan API-kutsut, joilla esitettävät tiedot on haettu*
  - 1 Koko maata koskevat tilastot
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 1.1](#)
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 1.1 \(tässä JavaScript API hahmotelma / Work-in-Progre:](#)
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 1.1 kaavio](#)
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 1.2](#)
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 1.3](#)
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 1.4](#)
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 1.5](#)
  - 2 Asuinpientalokiinteistöt
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 2.1](#)
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 2.2](#)
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 2.3](#)
    - [REST rajapinnan käyttöesimerkki kauppahintatilasto 2.3 kaavio](#)





# GSGF AND SSW2



NLS FI,  
Statistics  
Finland  
**SSW2**  
2017-2018

# THEMATIC MAPS - STATUS

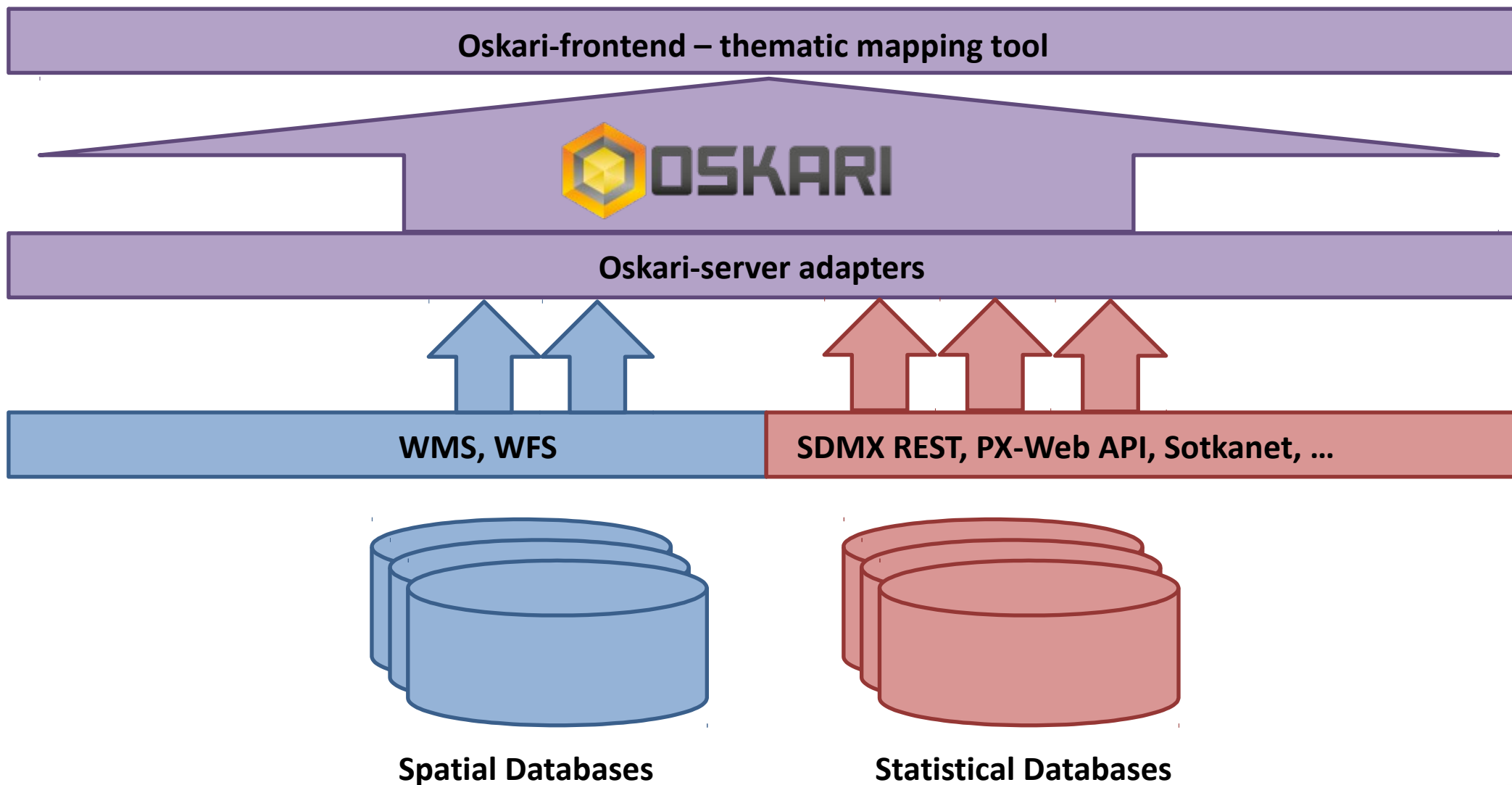
- Current thematic maps tool is feature rich
  - Classification method
  - Number of classes
  - Representation of class limits
  - Colors configurable
  - Can be printed, sorted, filtered, published etc.
  - Supports data import (CSV/Excel), calculating descriptive statistics
- Built to use a specific REST API for health statistics
  - Need for additional data sources has risen
  - Current tool not flexible enough to be extended
  - Also more functionality needed (charts, animations, ..)

Conclusion: refactor the tool completely



# THE NEW THEMATIC MAPS TOOL

- A complete rewrite of the backend and frontend
- Designed with UX specialists, responsive & more usable
- Proof of Concept ready for demonstration
- Now supports different web services as input
  - SDMX REST (demo)
  - PX-Web JSON API
  - JSON APIs, such as the Finnish Sotkanet
  - Additional support can be added by developing adapters
  - Geometries come from “any” OGC Web Map Service
- SSW2 will continue the development, add more features and provide a production-ready version of the application





# SPATIAL STATISTICS ON WEB 2

- Collaborative project between Statistics Finland and National Land Survey of Finland
- SF and NLSFI will design the features and concept together
- NLSFI will be responsible for software development
- New features to the thematic maps tool
  - Charts
  - Time series
  - Animations
  - Cross-highlighting (table-chart-map)
- All functionality also publishable on embedded maps

# SSW2 WORK PACKAGES

- WP1 Management of the action, StatFI
- WP2 Drafting of new tools and design of the application StatFI, NLS-FI
- WP3 Implementing the application, documenting and delivering the source code, NLS-FI
- WP4 Testing of new tools and design, StatFI
- WP5 Prototyping API services of statistical tables in order to integrate them to the Oskari application, StatFI, NLS-FI
- WP6 Review of the territorial statistical data production process to meet visualisation when needed, StatFI
- WP7 Exploitation, distribution and dissemination of the results, StatFI, NLS-FI



# OTHER DEVELOPMENT

- Use of vector geometries in the client
  - Smoother user-experience
- Enabling Web Feature Services as input data
  - Lots of data already available within SDIs
- Use of OGC Table Joining Service in the background
  - Promoting the use of standards
  - Revision of the standard starting
- Control the embedded map application via RPC integration API
  - Simple messaging between an embedded map and the embedding web page
  - Easy integration with existing and new services

**DEMO**



←

→

↺

demo.oskari.org

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★

🔴

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🛡️

🕒

🖱️

💬

⋮

SEARCH

MAP LAYERS

SELECTED LAYERS 1

MY DATA

MAP PUBLISHING

MAP LEGENDS

USER GUIDE

ANALYSIS (BETA)

THEMATIC MAPS

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Username

Password

Login

Greenland

Iceland

Norway

Sweden

Finland

Estonia

Latvia

Lithuania

Denmark

Ireland

Netherlands

Belgium

Germany

Poland

Byelarus

Slovakia

Hungary

Ukraine

Moldova

Romania

Slovenia

Croatia

Austria

France

Switzerland

Italy

Yugoslavia

Bulgaria

Macedonia

Greece

Turkey

Georgia

Azerbaijan

Spain

Portugal

France

Spain

Tunisia

Morocco

Algeria

Libya

Egypt

Syria

Jordan

Iraq

Saudi Arabia

United Arab Emirates

Western Sahara

500 km

200 mi

OSM Landsat

OSM Wordwide

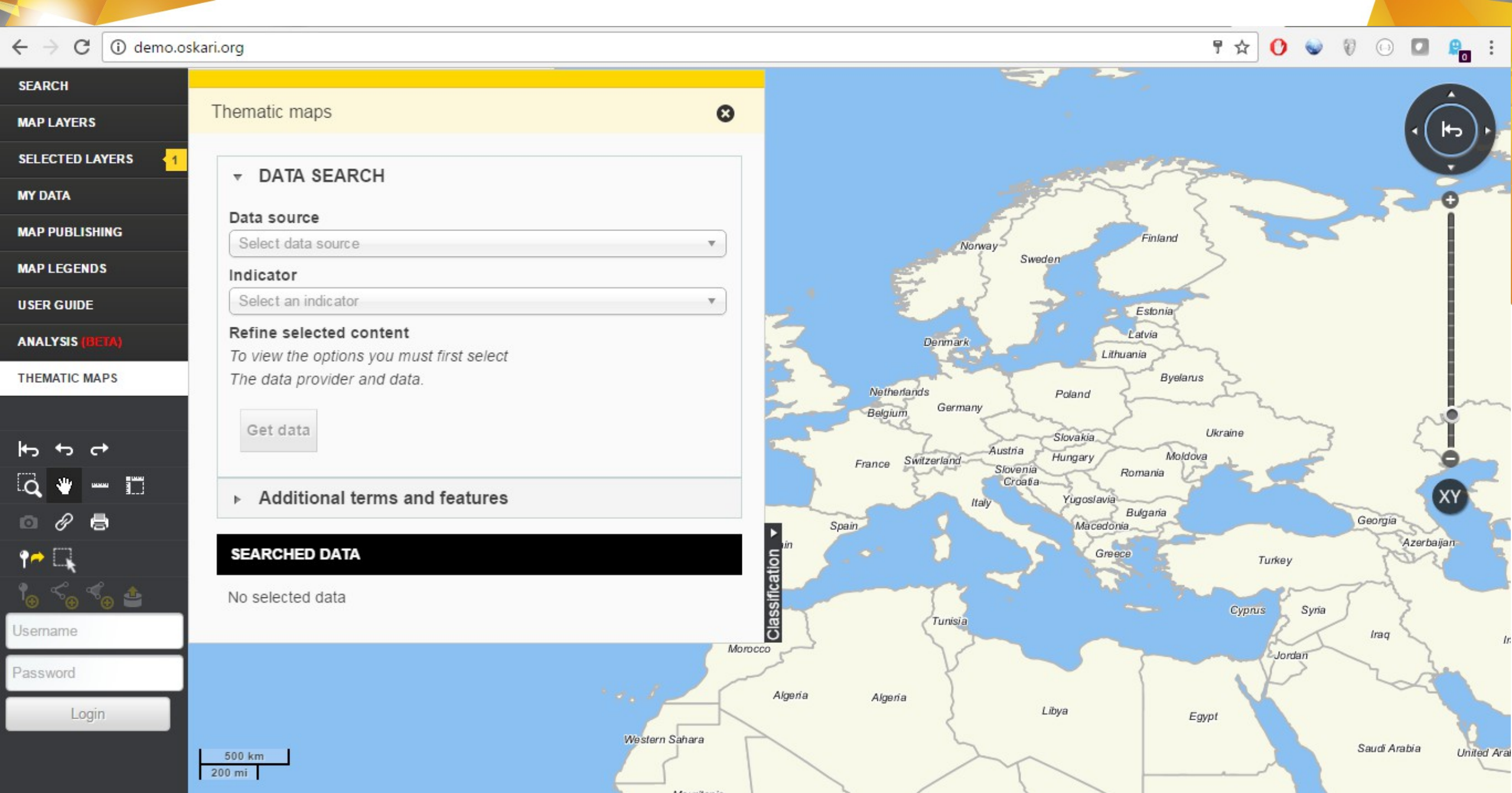
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XY





SEARCH

MAP LAYERS

SELECTED LAYERS 1

MY DATA

MAP PUBLISHING

MAP LEGENDS

USER GUIDE

ANALYSIS (BETA)

THEMATIC MAPS

Navigation icons: Home, Star, Print, Fullscreen, etc.

Username

Password

Login

Thematic maps

DATA SEARCH

Data source: Eurostat

Indicator: Fertility rates by age and NUTS 2 region

Refine selected content

FREQ: Daily

UNIT: Number

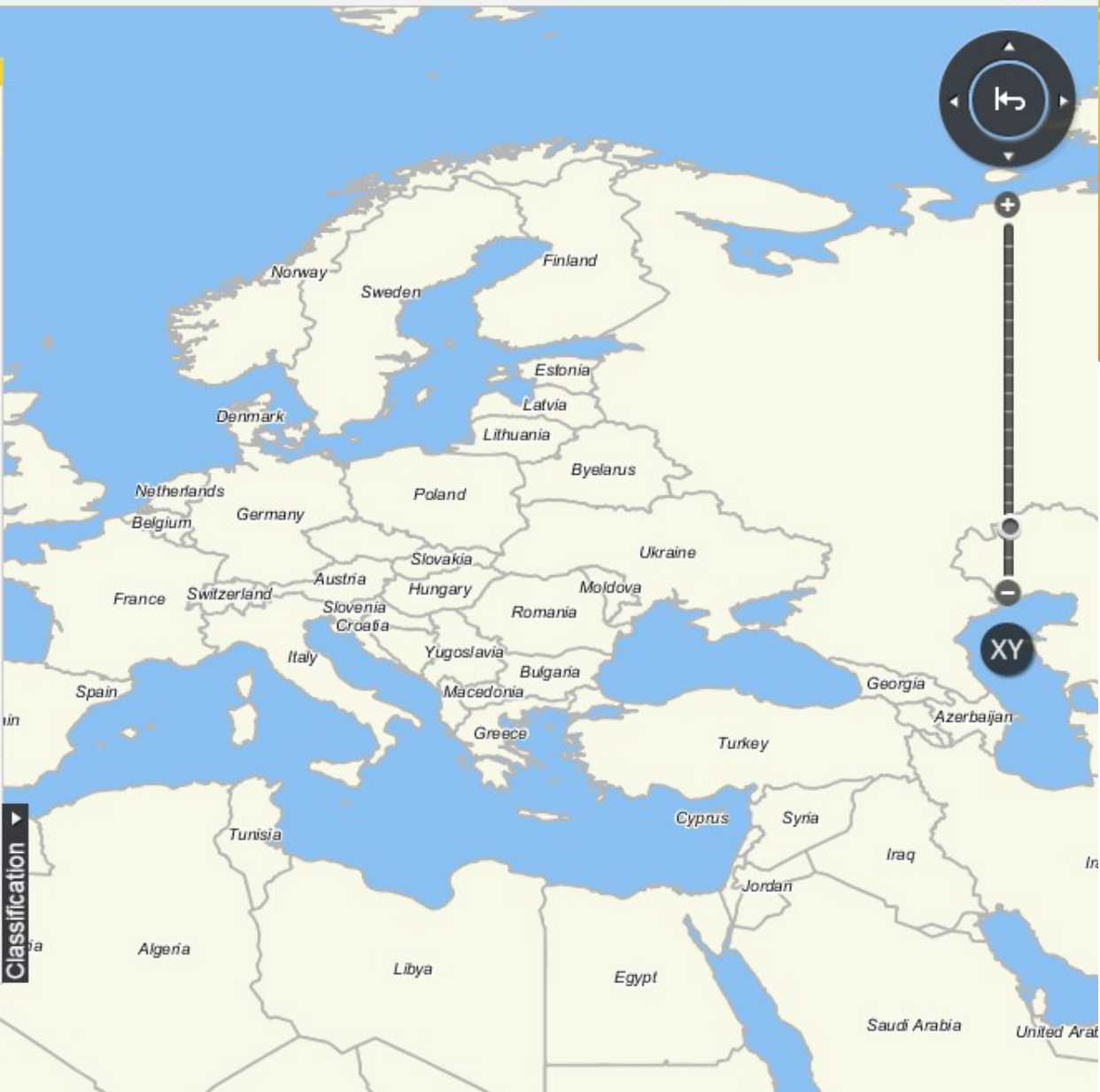
AGE: Total

time: 2014

Region: NUTS 2

Get data

Additional terms and features



## Thematic maps

### DATA SEARCH

### Additional terms and features

#### REGION

NUTS 2

Redefine the areas in which you want to view the data, click the drop-down menu

Order by ▲

Région Lémanique	1.55
Nordjylland	1.73
Oberösterreich	1.61
Flevoland	1.89
Oberfranken	1.38
Principado de Asturias	0.99
Aquitaine	1.79
Nord - Pas-de-Calais	2.09
Berkshire, Buckinghamshire and Oxfordshire	1.88
Jihovýchod	1.57
Vestlandet	1.81

#### SEARCHED DATA (1)

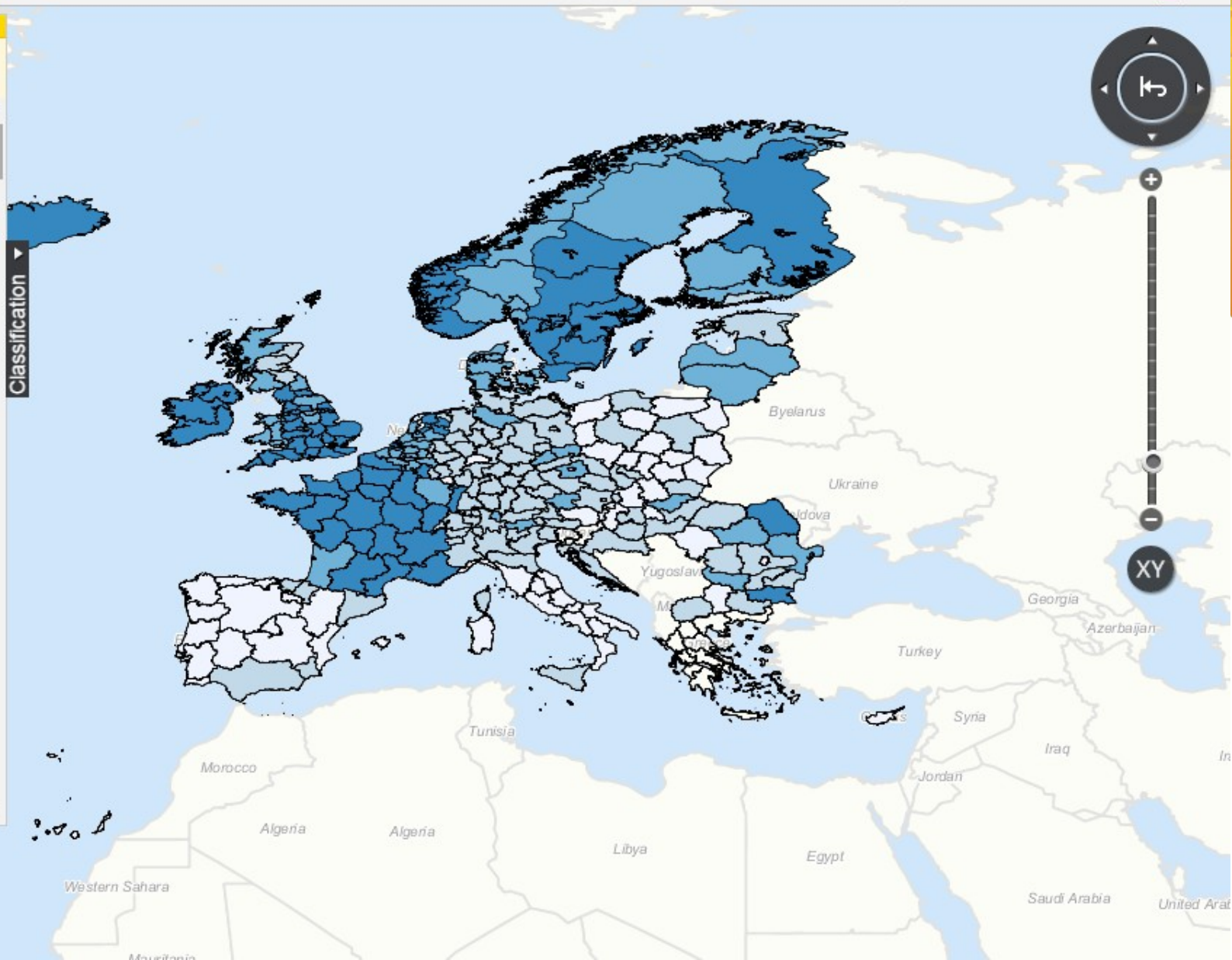
Source 1: Fertility rates by age and NUTS 2 region ( Daily / Number / Total / 2014 )

Order by ▼

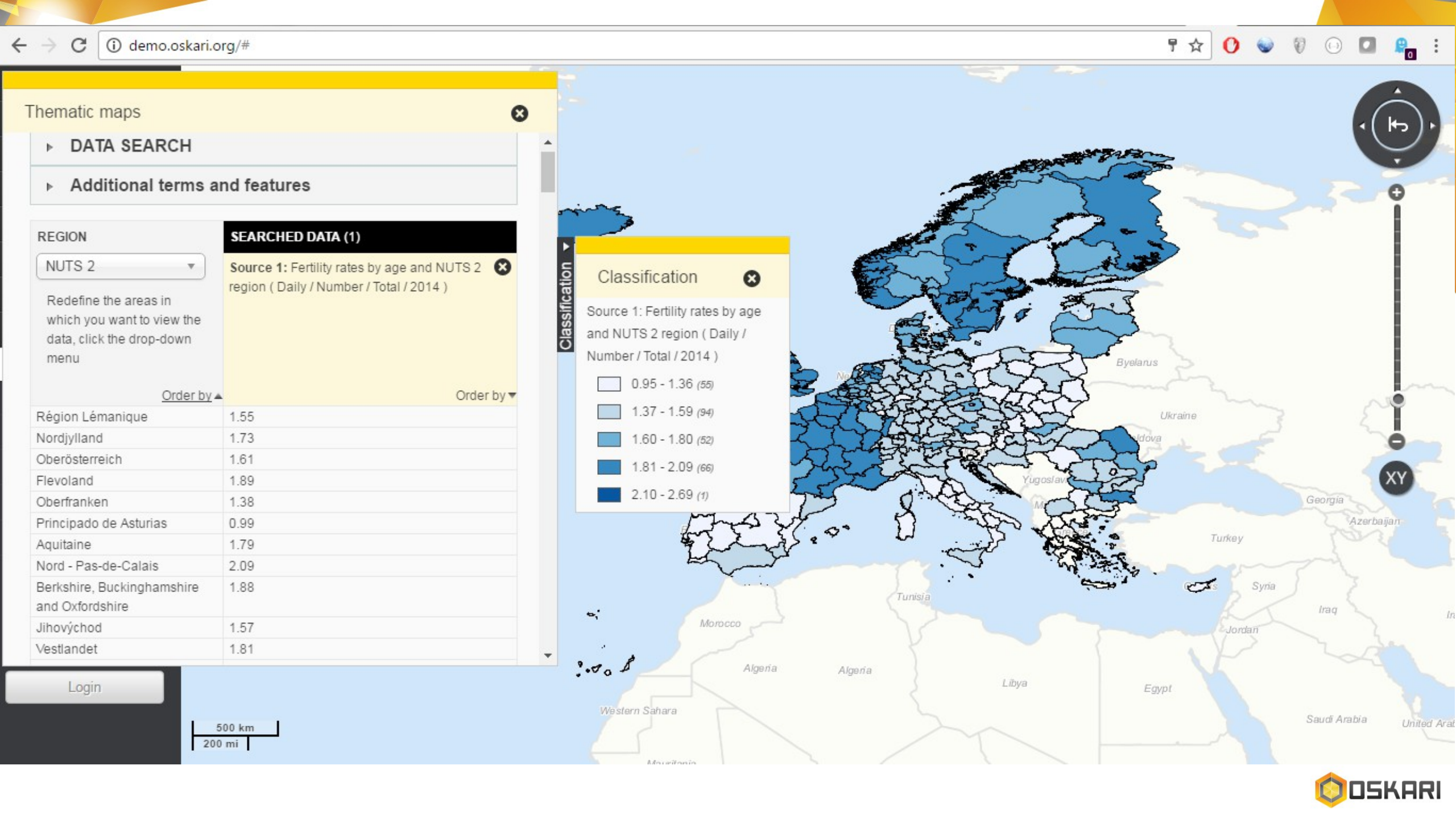
Login

500 km  
200 mi

Classification ▼







# THANK YOU!



[oskari.org](http://oskari.org)

joinup

[tinyurl.com/oskari-joinup](http://tinyurl.com/oskari-joinup)



oskari\_org



nls-oskari