PTA
Paikkatietoalusta

Findiagram - Visualizing Finnish topographic data for better decisions

Teemu Saloriutta

National Land Survey of Finland

EFGS Conference, Manchester 2019-10-11

Contents

- The Geospatial Platform
- From topographic data to statistics
- User interface
- Visualising statistics on maps and diagrams
- Examples

PTA
Paikkatietoalusta

ECOSYSTEMS

The built environment and transport.

Energy and the bioeconomy.

The financial sector.

Public sector services.

Research and development.

Education, training and learning.

Health and well-being.

Safety/security.

In this way spatial data will step up THE FUNCTION OF ECOSYSTEMS in society.

Companies will create applications and services that utilise the Geospatial Platform.

Citizens

Situational picture

The automation of processes

Data-driven management

Location / feature references

Baseline data for 2D and 3D design

Integrated spatial data, metadata and life-cycle management

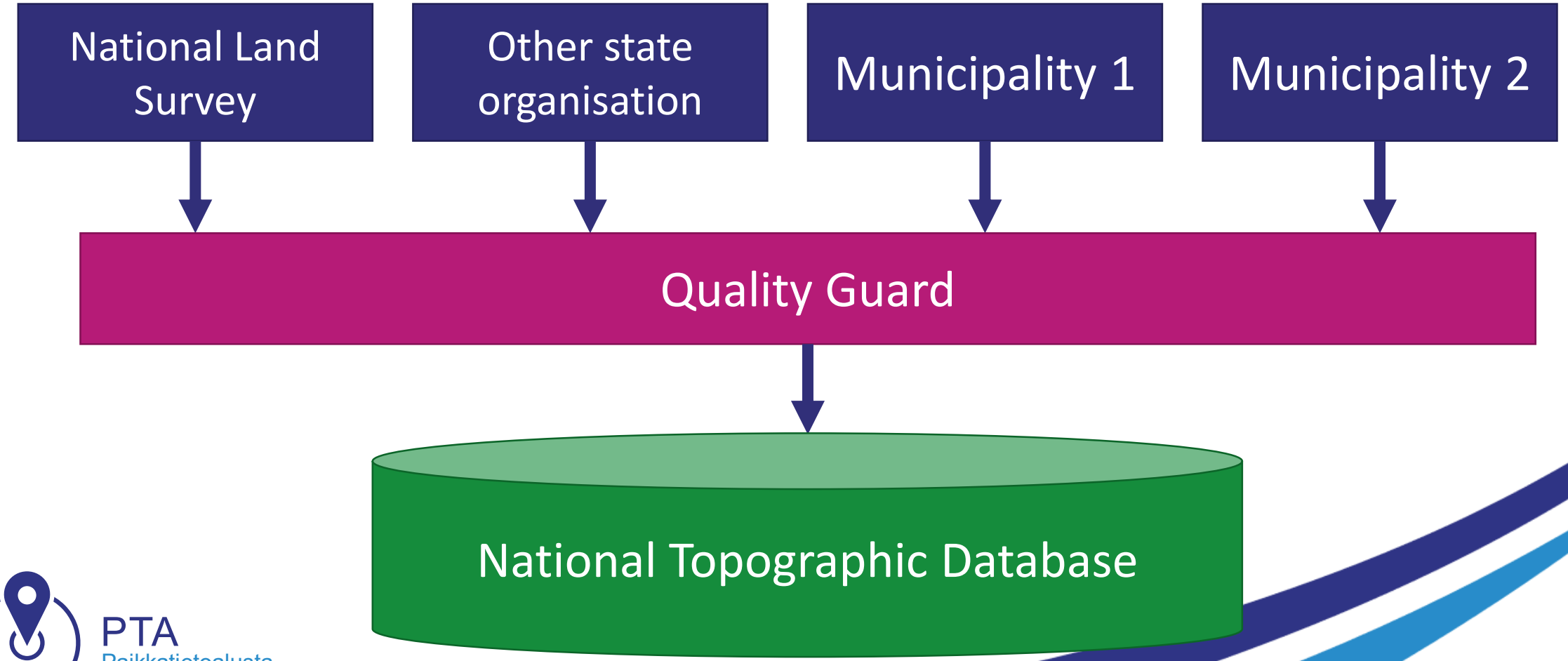
The Geospatial Platform

Satellite images | Land use | National topographic data | Addresses | INSPIRE

Regions | Municipalities | Government | Companies | Citizens

PRODUCERS OF NATIONAL HARMONISED SPATIAL DATA

Data collection

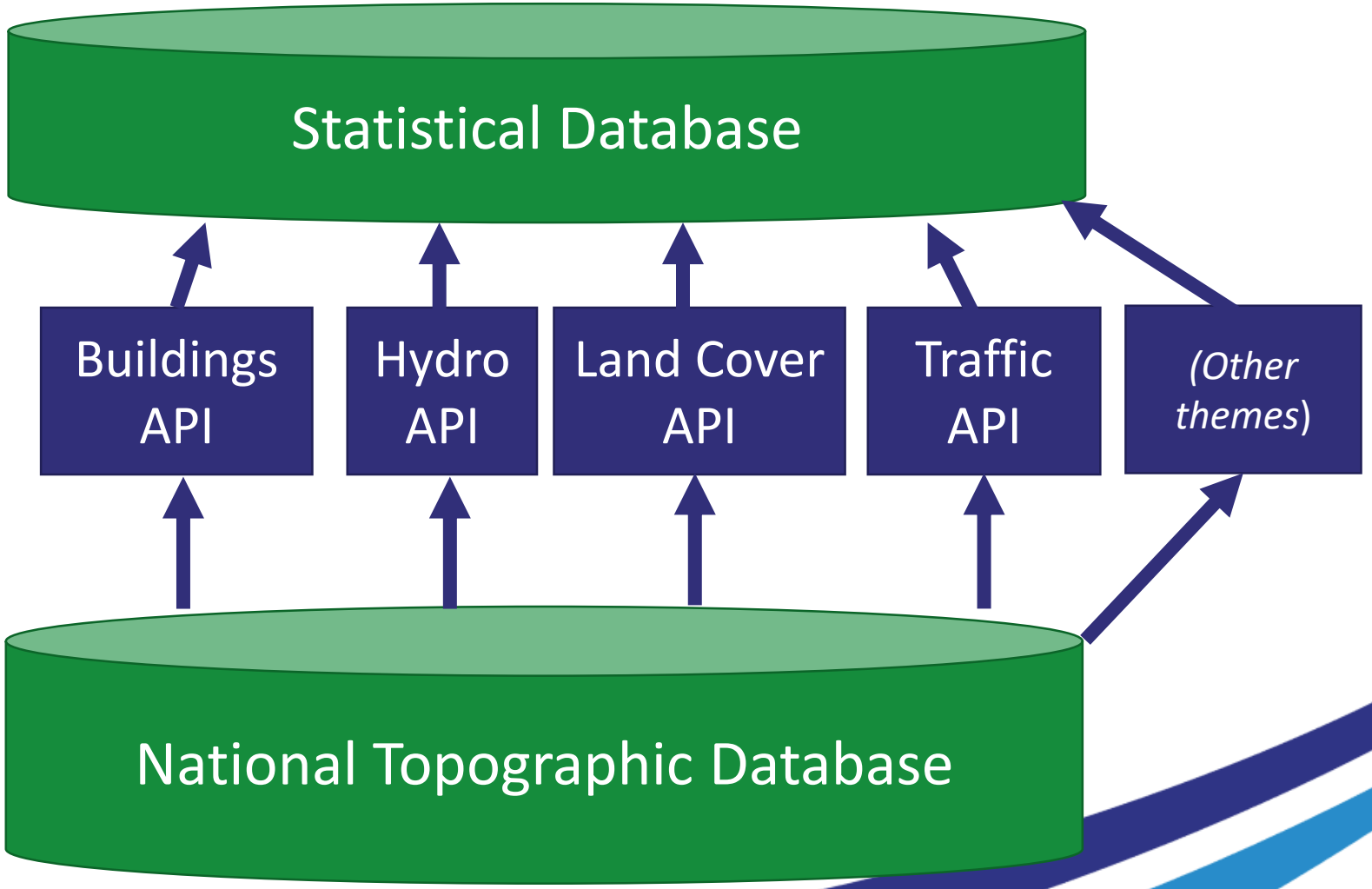


PTA
Paikkatietoalusta

Get selected spatial features from OGC APIs and save them to the Statistics Database (PostgreSQL + PostGIS)

- For example buildings, lakes, bogs, fields

OGC API - Features (WFS 3.0) services for each theme



PTA
Paikkatietoalusta

Joining features to areal divisions

- In PostgreSQL database, we have geometries for municipalities and regions
- With PostGIS extension and its spatial functions, we can combine the spatial features to municipalities and regions
- For example
  - **Function ST_Contains**: find geometries (e.g. buildings) inside polygons (municipality / region)

PTA
Paikkatietoalusta

```
CREATE TABLE building_statistics  AS

SELECT
buildings.id AS id, buildings.use AS use,
buildings.floornumber AS floornumber,
municipalities.municipalcode AS municipalcode
FROM buildings
JOIN municipalities
ON ST_Contains(buildings.geom, municipalities.geom)
```

PTA
Paikkatietoalusta

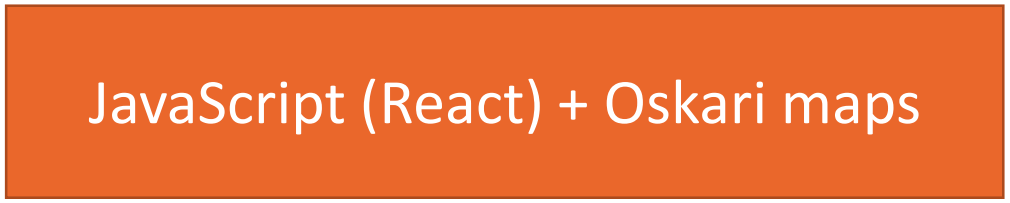
```
SELECT
Count(use), Count(floornumber),
municipalcode
FROM building_statistics
GROUP BY municipalcode
```

… And now we have different types of buildings calculated in each municipality

PTA
Paikkatietoalusta

Technology stack: mostly Open Source

Frontend / UI



Backend: parsing WFS queries to JSON for frontend

Reading data from the database and publishing a WFS service

PTA
Paikkatietoalusta

Oskari: Open Source map application

- Map publishing: we get an embedded map window with the official background map by National Land Survey

- Styling for JSON features via RPC protocol
  - We can put GeoJSON features on and style them based on attribute

  →Choropleth map

- For more information, visit **oskari.org**
  - **Twitter @oskari_org**

PTA
Paikkatietoalusta

Suomigrammi

Tilastoja maastotiedosta

Suomigrammi info, Suomigrammi info, Suomigrammi info, Suomigrammi info, Suomigrammi info, infonen
Suomigrammi info, Suomigrammi info, Suomigrammi info, Suomigrammi info, Suomigrammi info,

Aineiston rajaus

Aineisto
Rakennukset

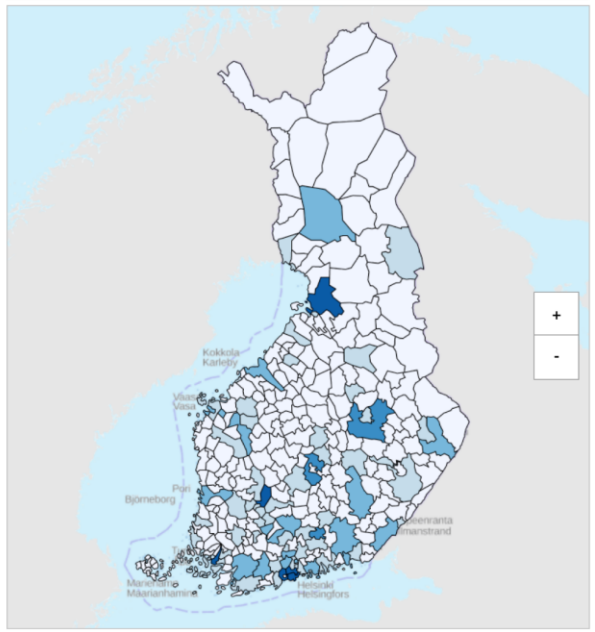
Aineiston ominaisuus
Käyttötarkoitus

Ominaisuuden jokin
Vapaa-ajan asunnot

Aluejako
(•) Kunnat ( ) Maakunnat

TYHJENNÄ NÄYTÄ

Kartta Diagrammi



Rakennukset (lukumäärä)
Käyttötarkoitus: Vapaa-ajan asunnot

- 50 000 - 100 000
- 10 001-50 000
- 5001-10 000
- 1001-5000
- 0-1000

Lähde: Maanmittauslaitoksen Maastotietokanta 12.9.2019

PAIKKATIETOALUSTA
ETUSIVU PALVELUT HAKEMISTO INFO KIRJAUDU FI

Suomigrammi

Paikkatietoa Suomesta

Suomigrammi info, Suomigrammi info, Suomigrammi info, Suomigrammi info, Suomigrammi info, infonen
Suomigrammi info, Suomigrammi info, Suomigrammi info, Suomigrammi info, Suomigrammi info,

Arvo, laskeva
Arvo, nouseva
Nimi, nouseva
Nimi, laskeva

Otsikko

Aineisto
Rakennukset

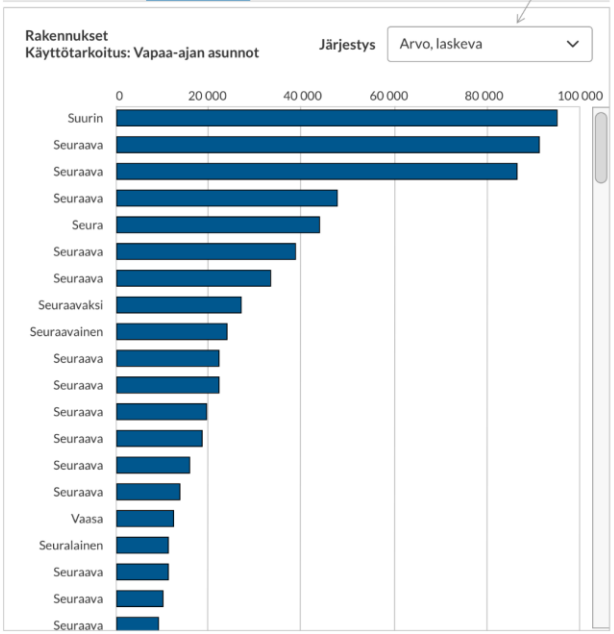
Aineiston ominaisuus
Käyttötarkoitus

Ominaisuuden jokin
Vapaa-ajan asunnot

Aluejako
(•) Kunnat ( ) Maakunnat

TYHJENNÄ NÄYTÄ

Kartta Diagrammi



Lähde: Maanmittauslaitoksen Maastotietokanta 12.9.2019

ANNA PALAUTETTA

Ota yhteyttä
info@paikkatietoalusta.fi
Lähetä tukipyyntö

Seuraa meitä
Tilaa uutiskirje
Ajankohtaista

PAIKKATIETOALUSTA
Maa- ja metsätalousministeriö
Jord- och skogsbruksministeriet
HALLITUKSEN KÄRKIHANKE

User interface

- User can select:
  - Areal division municipalities / regions
  - Feature type (buildings, lakes, fields, roads etc)
  - Additional attributes, such as *number of floors* or *heating* for buildings
  - Absolute value vs. normalised by area

- Visualisation includes
  - Thematic map
  - Horizontal bar diagram sorted by value

PTA
Paikkatietoalusta

Examples

- Number of different types of buildings
  - By use, heating, number of floors
- Area of lakes, fields, bogs and other land cover types
  - Absolute and relative
- Length of road network
  - By road category
- Change: number of new buildings during last 6 months

PTA
Paikkatietoalusta

For more information

- go to the Geospatial Platform website.
- You can follow the project (in Finnish) on Twitter and Facebook.
- Videos are stored on the project's YouTube channel.
- You can also subscribe to the project newsletter (in Finnish).
- You can send questions and comments about the project to info(a)paikkatietoalusta.fi.

PTA
Paikkatietoalusta