

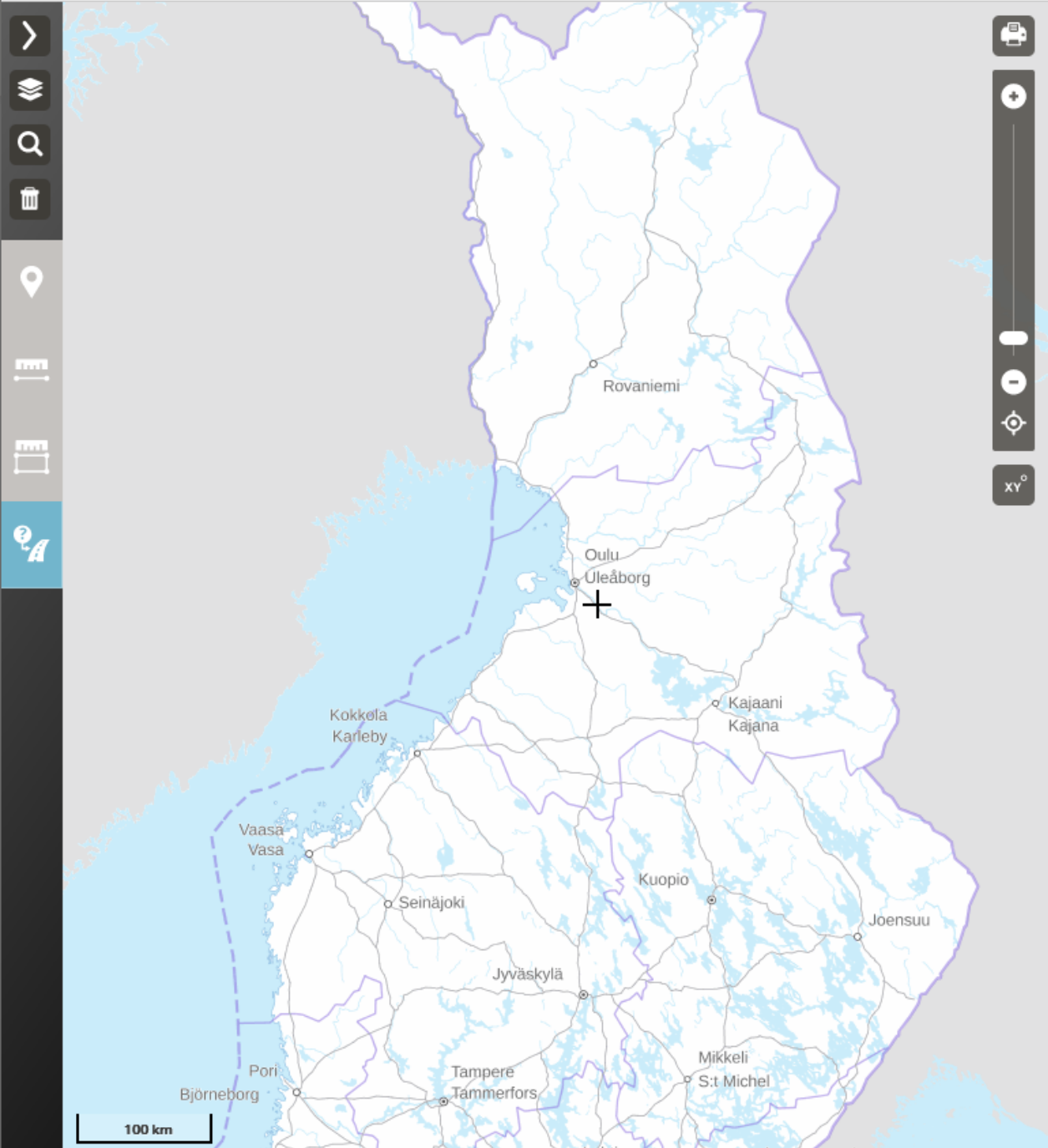


# OGC API Processes – A File Download Service in Finland

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National Land Survey of Finland



## Download open data **BETA**

In the BETA service, you can choose outlines and content for datasets in more diverse ways than in [the previous service](#).

Not all datasets and file formats are yet available in the BETA service. The datasets available for download in the service are subject to [the Attribution CC 4.0 licence of the National Land Survey of Finland's open datasets](#).

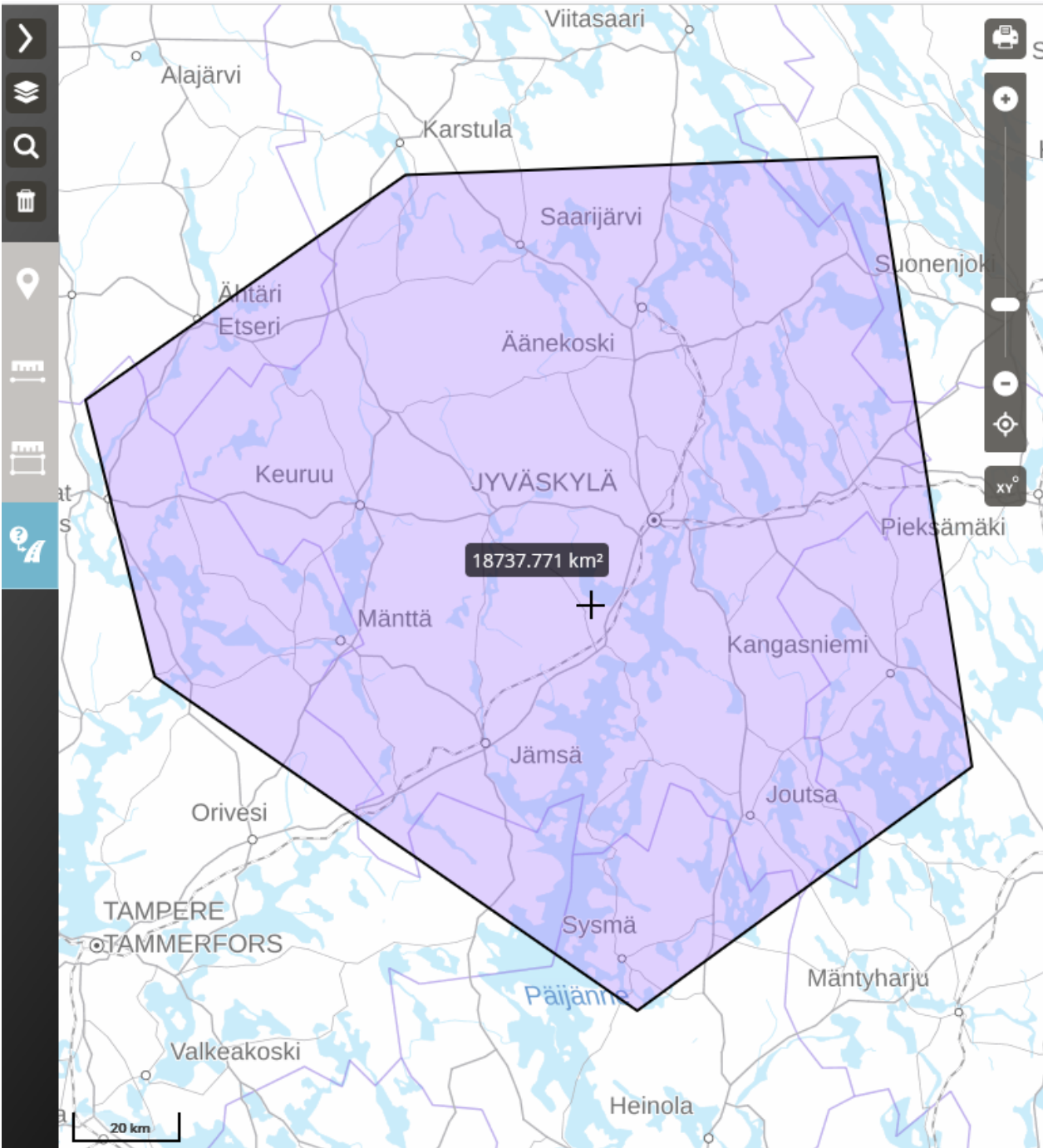
During the BETA phase, we will collect feedback on the service. You can help us develop the service by responding to the [questionnaire in Finnish](#).

### Downloadable data sets

- [Elevation model](#)
- [Laser scanning data](#)
- [Topographic database](#)

### Information on service

- [Terms and conditions](#)
- [Terms for ordering and delivery](#)
- [Data protection descriptions](#)
- [Price list \(in Finnish\)](#)
- [Service messages](#)



## Topographic database

### Product description

[Topographic database](#)

### Preview image



### Select file format

GeoPackage

### Select area

Draw an area (at most 5 000 km<sup>2</sup>)



The area is too large. Draw a new smaller area.

Select municipality

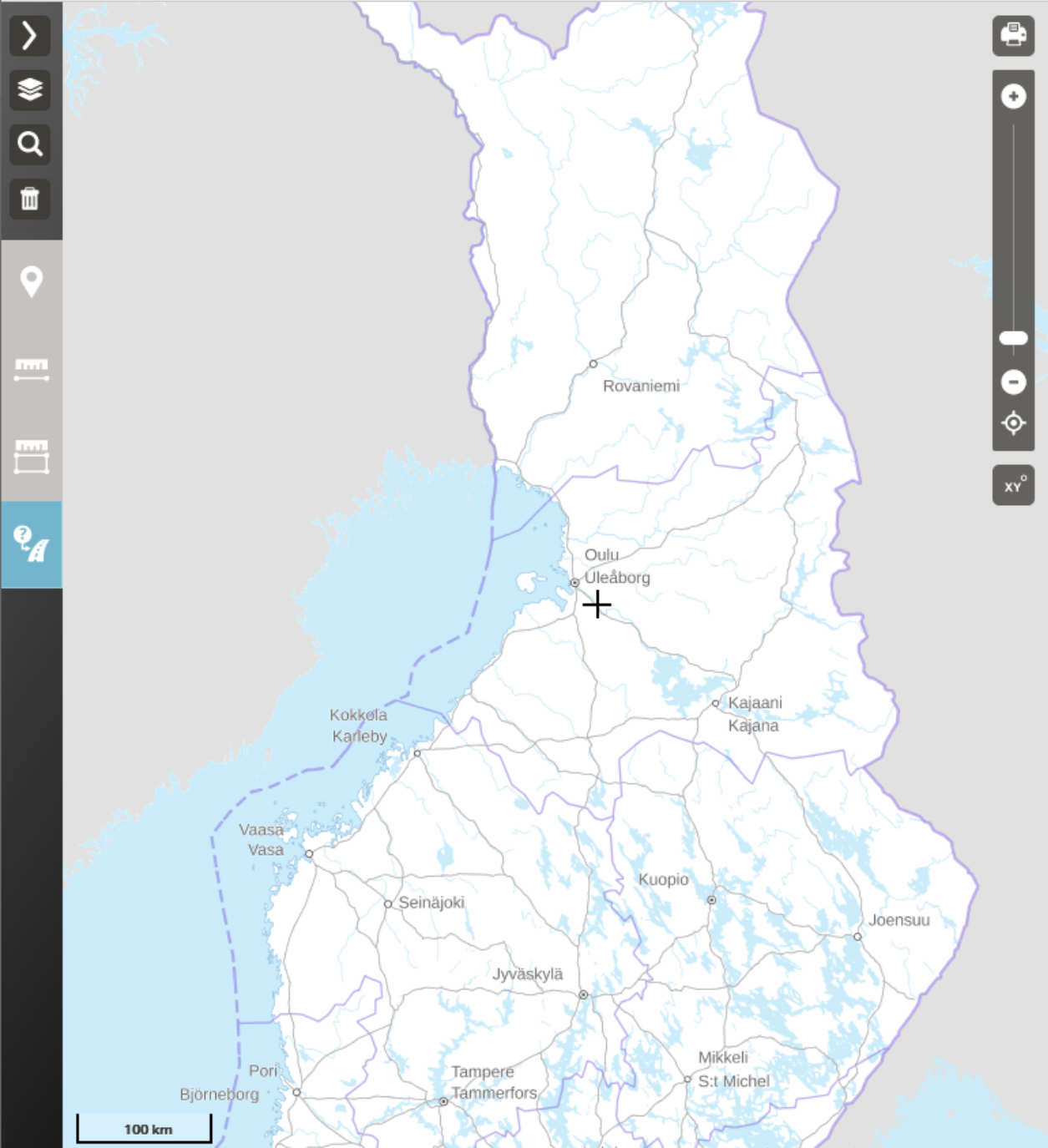
Select a municipality from the drop-down menu and add one at a time to the basket. A maximum of 10 municipalities can be included in one order.

Choose

Select the whole of Finland

# File Download Service - conclusions

- Intuitive user interface
- Easy to use
- A customer can easily navigate through a map and select an area or municipality or pre-defined map sheets
- Not suitable for a frequent download (daily, monthly)
- Requires manual work
- Download can not be automatic



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# OGC API Processes

Geospatial data processing functionality

OpenAPI

Asynchronous

RESTful protocol using JSON encodings

Modular (core + extensions)



## Processes

Approved Standard 

OGC API - Processes allows for processing tools to be called and combined from many sources and applied to data in other OGC API resources through a simple API.

# OGC API Processes

- Landing page
- API definitions
  - JSON
  - YAML
- Conformance
- Execution
  - Inputs - outputs

## Extrude building

Extrude 2D building to a LOD1 3D building

extrude 3D building

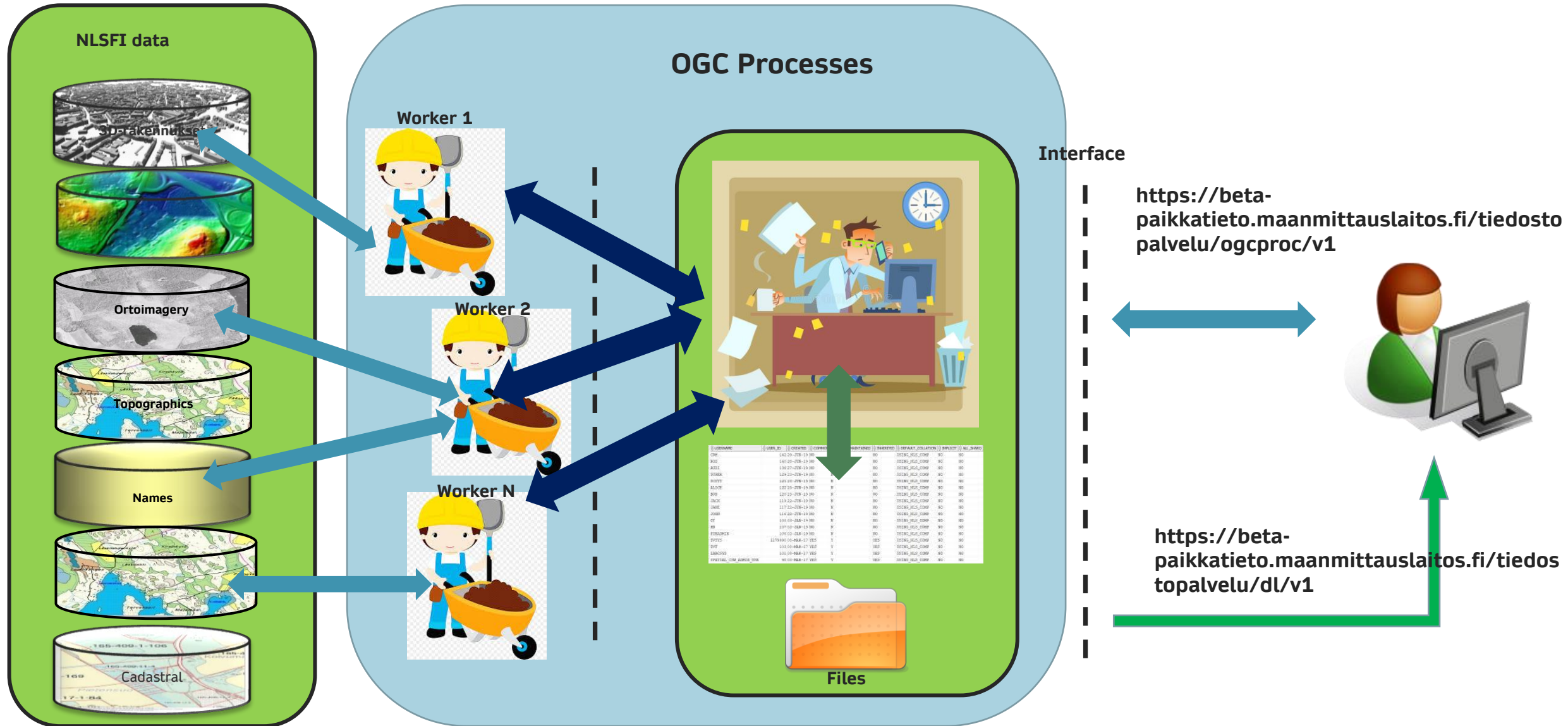
### Inputs

Id	Title	Data Type	Description
country	Country	string	Country from which the building is queried (two-letter country code)
id	ID	string	The Feature ID of the building to be processed

### Outputs

Id	Title	Description
cityjson	CityJSON	CityJSON -encoded 3D model of the building

# OGC API Processes – NLSFI download service





# OGC API Processes (landing page)

<https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/ogcproc/v1/>

Links to API definition as JSON and YAML, conformance classes and metadata about processes

```
title: "Paikkatiedon tiedostopalvelu (OGC API Processes)"
▼ description: "Paikkatiedon tiedostopalvelu (OGC API Processes) tarjoaa prosessipohjaisen rajapinnan Maanmittauslaitoksen paikkatietoaineistojen irrotukseen."
▼ links:
  ▼ 0:
    ► href: "https://beta-paikkatieto...dostopalvelu/ogcproc/v1/"
    rel: "self"
    type: "application/json"
    title: "This document as JSON"
  ▼ 1:
    ▼ href: "https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/ogcproc/v1/openapi.json"
    rel: "service-desc"
    type: "application/json"
    title: "API definition for this endpoint as JSON"
  ▼ 2:
    ▼ href: "https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/ogcproc/v1/openapi.yaml"
    rel: "service-desc"
    type: "application/x-yaml"
    title: "API definition for this endpoint as YAML"
  ▼ 3:
    ▼ href: "https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/ogcproc/v1/conformance"
    rel: "conformance"
    type: "application/json"
    ▼ title: "OGC API - Processes conformance classes implemented by this server"
  ▼ 4:
    ► href: "https://beta-paikkatieto...elu/ogcproc/v1/processes"
    rel: "processes"
    type: "application/json"
    title: "Metadata about the processes"
```

# Individual process metadata

[...v1/processes/](#)

Title (Topographic Map Database)

Description

Link to the process

```
▼ 5:
  id: "maastotietokanta_bbox"
  title: "Maastotietokannan sisältö bbox-rajauksella"
  ▼ description: "Hakurajoitus: Suurin sallittu pinta-ala = 17 334 km²; Arvioitu tiedoston koko 0,3 Mt/km²"
  version: "1.0.0-beta"
  ▼ jobControlOptions:
    0: "async-execute"
  ▼ outputTransmission:
    0: "value"
  ▼ link:
    ▼ href: "https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/ogcproc/v1/processes/maastotietokanta_bbox"
    rel: "process-desc"
    type: "application/json"
    title: "Maastotietokannan sisältö bbox-rajauksella"
```

# Individual process (Topographic map database)

[...v1/processes/maastotietokanta\\_bbox](#)

## Inputs

- Bounding box
- Theme
  - All
  - Road network
  - Etc.
- Link to run the process

```
id: "maastotietokanta_bbox"
title: "Maastotietokannan sisältö bbox-rajauksella"
▶ description: "Hakurajoitus: Suurin sal...edoston koko 0,3 Mt/km²"
version: "1.0.0-beta"
▶ jobControlOptions: [...]
▶ outputTransmission: [...]
▼ inputs:
  ▼ boundingBoxInput:
    title: "BBOX"
    ▼ description: "Rajataan Maastotietokannan sisältö BBOX-rajauksella"
    ▼ schema:
      maxItems: 4
      minItems: 4
      type: "array"
      ▼ items:
        type: "number"
  ▼ themeInput:
    title: "Teema"
    description: "Rajataan Maastotietokannan sisältö teemalla."
    ▼ schema:
      type: "string"
      ▼ enum:
        0: "maastotietokanta_kaikki"
        1: "maasto"
        2: "tieliikenne"
        3: "vesiliikenne"
        4: "raideliikenne"
```

# Execution

[...v1/processes/maastotietokanta\\_bbox/execution](https://...v1/processes/maastotietokanta_bbox/execution)

HTTP POST as  
application/json

Result gives a link to the  
status of process

## Inputs

```
{
  "id": "maastotietokanta_bbox",
  "inputs": {
    "boundingBoxInput": [317000.124, 6822000.091, 327300.003, 6822300.598],
    "themeInput": "maastotietokanta_kaikki",
    "fileFormatInput": "GPKG"
  }
}
```

## Result

```
{
  "jobID": "1cddc225-93e3-40c6-a544-82cbb4317291",
  "status": "accepted",
  "message": "Job accepted",
  "progress": 0,
  "create": "2022-03-29T15:15:56.829+0300",
  "link": {
    "href": "https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/ogcp:",
    "rel": "self",
    "type": "application/json",
    "title": "this document"
  }
}
```

# Job status and results

The process is asynchronous and a user can ask the status

When the job is completed user can download the data

## Job status

```
jobID:      "1cddc225-93e3-40c6-a544-82cbb4317291"
status:     "successful"
message:    "successfully executed job"
progress:   100
create:     "2022-03-29T15:15:56.829+0300"
▼ link:
  ▼ href:   "https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/ogcproc/v1/jobs/1cddc225-93e3-40c6-a544-82cbb4317291/results/"
  rel:      "self"
  type:     "application/json"
  title:    "this document"
```

## A link to download data

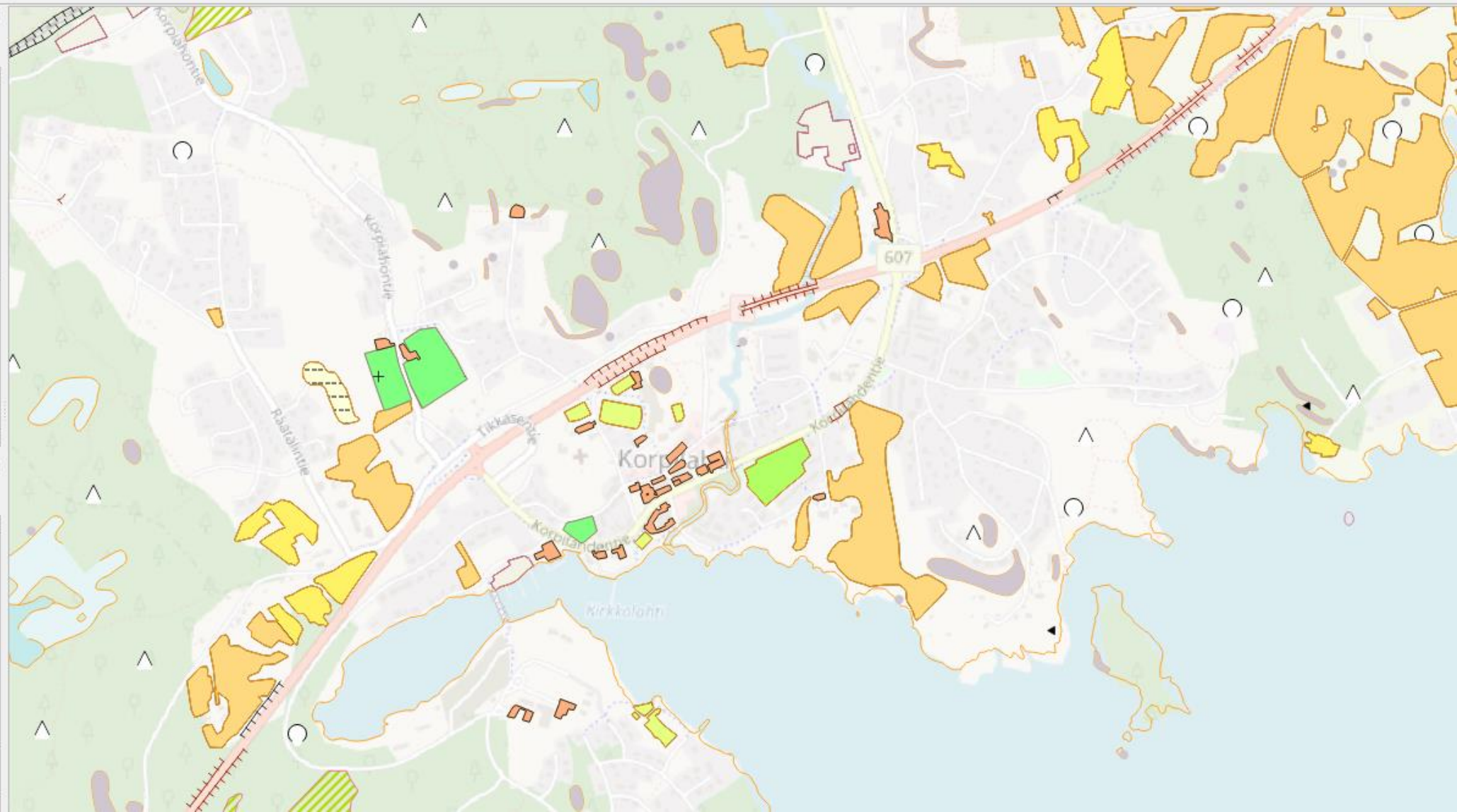
```
uuid:      "1cddc225-93e3-40c6-a544-82cbb4317291"
▶ jobDescription:  {...}
processId:  "maastotietokanta_bbox"
status:     "successful"
progress:   100
jobCreateTime: "2022-03-29T15:15:56.829+0300"
statusMessage: "successfully executed job"
owner:      "default"
▼ results:
  ▼ 0:
    ▼ path:  "https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/dl/v1/1cddc225-93e3-40c6-a544-82cbb4317291/maastotietokanta_kaikki.gpkg"
    format:  "GPKG"
    crs:     "etrs-tm35fin"
    mimeType: "application/geopackage+vnd.sqlite3"
    length:  "7766016"
  ▼ 1:
    ▼ zipPath: "https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/dl/v1/uncompressed/1cddc225-93e3-40c6-a544-82cbb4317291"
```

Browser

- Home
- C:\
- J:\
- L:\
- S:\
- T:\
- Z:\
- GeoPackage
- Spatialite
- PostGIS
- MSSQL
- Oracle
- DB2
- WMS/WMTS
- Vector Tiles

Layers

- varkeakukainen metsäinen
- suojanne**
  - taajaanrakennettualue
  - taytemaa**
- tunnelinaukko**
  - uittolaite
  - uittoranni
- urheilujavirkistysalue**
  - pieni
  - suuri
- varastoalue**
  - pieni
  - suuri
- OSM Standard



Database Navigator

Enter a part of table name here

- gpkg\_geometry\_columns
- gpkg\_metadata
- gpkg\_metadata\_reference
- gpkg\_ogr\_contents
- gpkg\_spatial\_ref\_sys
- gpkg\_tile\_matrix
- gpkg\_tile\_matrix\_set
- harvalouhikko
- hautausmaa
- hietikko
- jyrkanne
- kaatopaikka
- kallioalue
- kalliohalkeama
- kalliosymboli
- kivi
- kivikko
- layer\_styles
- lentokenttaalue
- louhos
- luiska
- maaaineksenottoalue
- maasto2kuvionreuna
- maastokuvionreuna

Project - General

Name DataSource

- Bookmarks
- ER Diagrams
- Scripts

OS\_Open\_Zoomstack.gpkg layer\_styles

Properties Data ER Diagram

layer\_styles Enter a SQL expression to filter results (use Ctrl+Space)

Grid	ABC f_table_schema	ABC f_table_name	ABC f_geometry_column	ABC sty
16		vesikivi	geom	vesikiv
17		vesikivi	geom	vesikiv
18		vesiasteikko	geom	vesiast
19		vesiasteikko	geom	vesiast
20		varastoalue	geom	varast
21		valtakunnanrajapyykki	geom	valtak
22		valtakunnanrajapyykki	geom	valtak
23		urheilujavirkistysalue	geom	urheil
24		uittoranni	geom	uittora
25		uittoranni	geom	uittora
26		uittolaite	geom	uittola
27		uittolaite	geom	uittola
28		tuulivoimala	geom	tuulivo
29		turvalaite	geom	turvala
30		turvalaite	geom	turvala
31		tunnelinaukko	geom	tunnel
32		tulvaalue	geom	tulvaa
33		tulentekopaikka	geom	tulent
34		tulentekopaikka	geom	tulent
35		tieviiva	geom	tieviiv
36		tiesymboli	geom	tiesym
37		tiesymboli	geom	tiesym
38		tienroteksti	geom	tienrot
39		tienroteksti	geom	tienrot
40		tervahauta	geom	tervah
41		tervahauta	geom	tervah
42		tervahauta	geom	tervah

Value

```

<?xml version="1.0" encoding="UTF-8"?>
<StyledLayerDescriptor xmlns="http://www.opengis.net/SLD" version="1.0">
  <NamedLayer>
    <se:Name>tieviiva</se:Name>
    <UserStyle>
      <se:Name>tieviiva</se:Name>
      <se:FeatureTypeStyle>
        <se:Rule>
          <se:Name>Single symbol</se:Name>
          <se:LineSymbolizer>
            <se:Stroke>
              <se:SvgParameter name="stroke">#e31a1c</se:SvgParameter>
              <se:SvgParameter name="stroke-width">4</se:SvgParameter>
              <se:SvgParameter name="stroke-linejoin">round</se:SvgParameter>
              <se:SvgParameter name="stroke-linecap">square</se:SvgParameter>
            </se:Stroke>
          </se:LineSymbolizer>
        </se:Rule>
      </se:FeatureTypeStyle>
    </UserStyle>
  </NamedLayer>
</StyledLayerDescriptor>

```

Save Cancel Script

200 200+ 200 row(s) fetched - 39ms (+28ms)



Rows: 1

# How to start testing?

- Create an account to get API-key
  - In English: <https://www.maanmittauslaitos.fi/en/rajapinnat/api-avaimen-ohje>
  - Registration: <https://omatili.maanmittauslaitos.fi/user/new/avoimet-rajapintapalvelut?lang=en>

## Creation and management of API keys

You can create a personal API key in the My Account service of the National Land Survey of Finland as follows:

1. Register in the [My Account service](#) .
2. [Log in to the service](#)  with the user ID you have registered.

After logging in, you can

- create a new API key
- delete an existing API key
- edit your information or delete your user ID



# How to start testing? (2)

- Access the service
  - <https://beta-paikkatieto.maanmittauslaitos.fi/tiedostopalvelu/ogcproc/v1/>
- [Video](#)

# Thank you!

 @JariReini

 <https://www.linkedin.com/in/reini/>



# Advancing together

