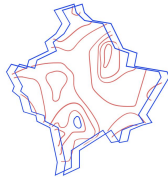




GISPO

Land of 60000 zoning plans - QGIS to the rescue!



FOSS4G

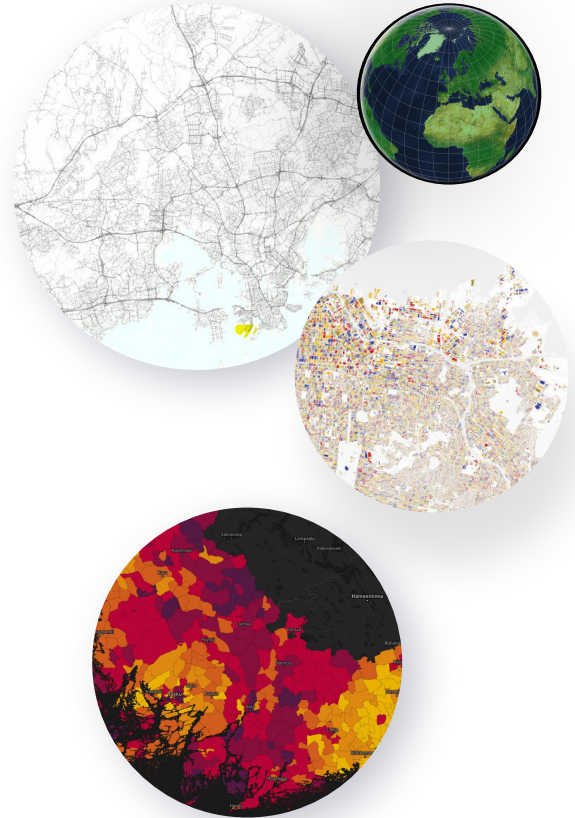
Prizren, 2023

GISPO



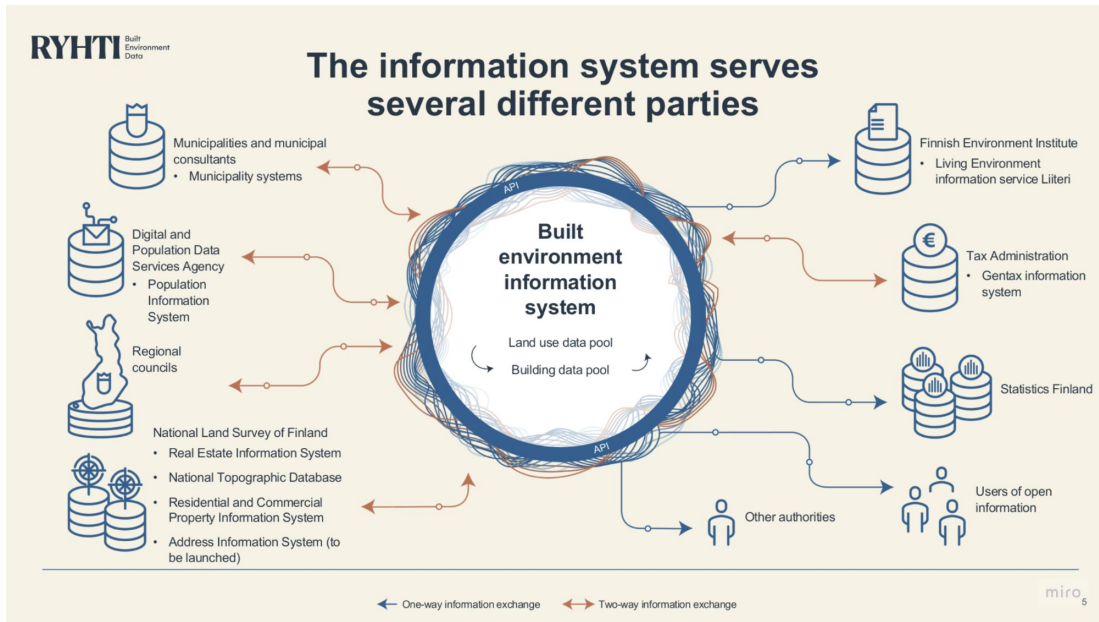
Gispo Ltd.

- Founded in 2012
 - 20+ employees
- **We consult** our customers on how to utilize FOSS4G solutions and open data efficiently
- **We develop** software
 - QGIS plugins and QGIS core
- **We train** our customers in GIS - 100+ organizations and 1000+ people
- **We support** our customers who use FOSS4G
- Open source advocate and capacity building with open source

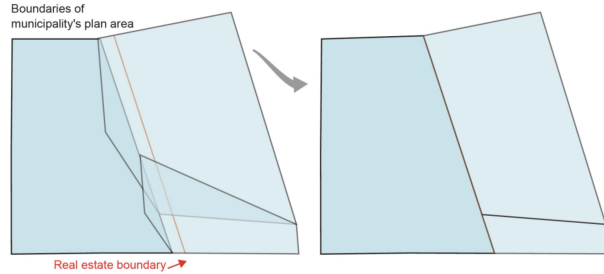


Built environment information system

- Data related to construction and zoning
- Ministry of the Environment & The Finnish Environment Institute
- The VOOKA pilot project 2022-23



The VOOKA pilot project



The external boundary data of current plans in South Savo municipalities + planning documents miro



Collecting the scattered data

```
# Aja vain kerran ennen ensimmäistä appendia!
master_df = setupKTJMasterDataFrame()

master_df = appendKTJToMaster(master_df=master_df, ktjdata=kunta_ktj_yhd, geometry='geometry')

# Tallennus
asema_kaavat = [31, 32, 33, 34, 35, 39]
yleiskaavat = [21, 22, 23, 24, 25, 26]

asema = master_df.loc[master_df['kaavalaji'].isin(asema_kaavat)]
yleis = master_df.loc[master_df['kaavalaji'].isin(yleiskaavat)]
```

miro

Automation of the data collection and analysis



Execution for the following years (2023-2030)

The challenge to tackle

Importing scattered data

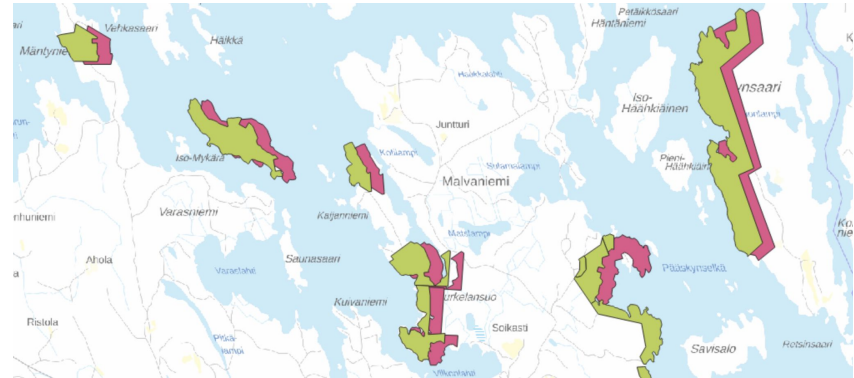
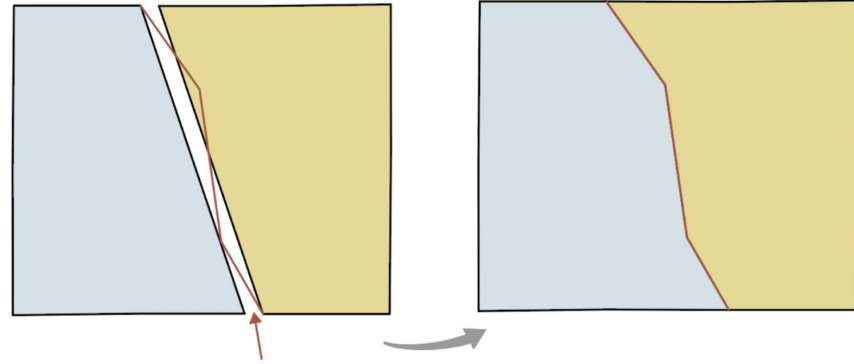
.GPKG, .shp, .png, .dwg, .dxf, .pdf,
tiff, tab, WFS...

Broken geometry

Topology errors

Coordinate errors

Data and attribute errors



ETL (extract, transform, load) Process (...mostly transform)

GeoPandas as geospatial data extent in python

CheckGeometryValidity

CalculateGeometryValidityPercentage

Make_valid (=MultiPolygon or GeometryCollection)

Tolerance to match the border values

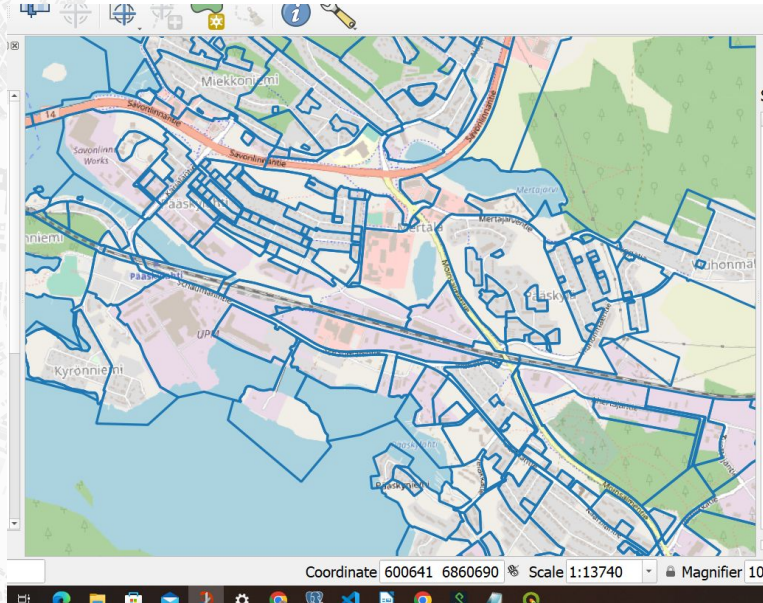
Remove enclaves outside the borders



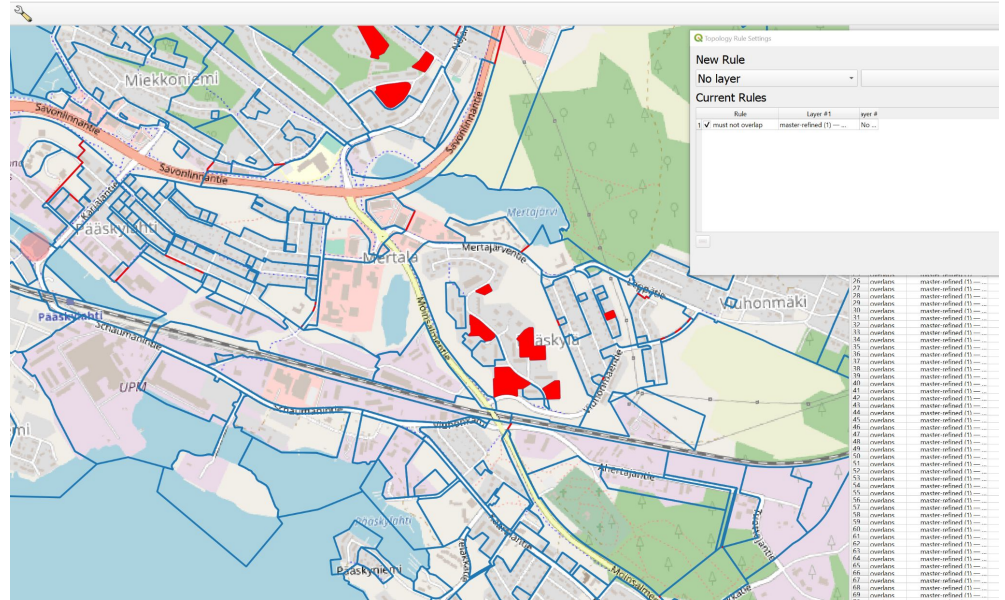
One municipality, 852 Polygons total, 352 geometry errors

QGIS as the quality assurance tool

What the eyes can't see...

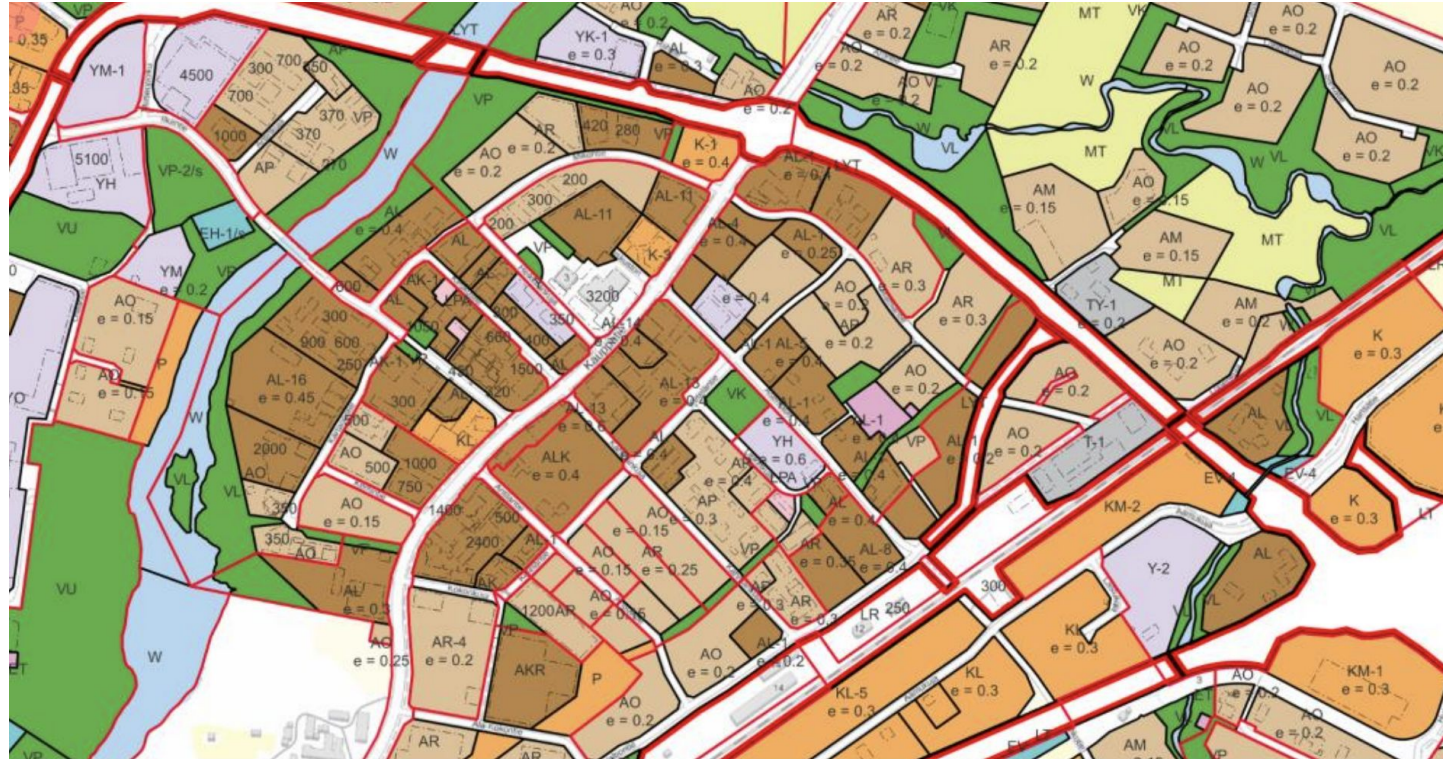


...some QGIS tool will!



QGIS as the quality assurance tool

- Check validity
- Geometry checker
- Topology checker
- Fix Geometries
- Remove duplicate Vertices
- Simplify
- v.build.check



Eventually check the result manually. Digitize, edit, validate.

Future plans for the following years

Time consumption: multiple auto-fix processes, doesn't apply to all data.

When it's fasted to manually edit the data?

Accuracy: auto-fix process is always a "compromised" process

What is reasonable accuracy?
Simplified polygons, but with what cost?

Workflow loop for executing selection of tools. Predetermined processes are matched to property line data with eligible accuracy



Thank you.

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- info@gispo.fi

