REPUBLIC OF SLOVENIA
STATISTICAL OFFICE

SURS We count. Today for tomorrow.

Geo-referenced census data from productional and user‘s perspective

Case of Slovenia

Danilo Dolenc, MSc, Census Project Manager
Statistical Office of the Republic of Slovenia

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Overview

- Some nostalgia and milestones
- Development of spatial system in Slovenia
- Grid statistics
- Dissemination with spatial reference
  - Place names
  - Thematic cartography
  - GIS interactive tools
    - STAGE 1 and STAGE 2

Do you remember…

- Census spatial data till 1991

SLOVENIJA

OPŠTINA – NASELJE	STANOVNIŠTVO						DOMAĆINSTVA						STANOVI PREMA POPISU
	BROJ STANOVNIKA PREMA POPISU				INDEKS		BROJ DOMAĆINSTAVA PREMA POPISU				INDEKS		
	1948	1953	1961	1971	1971/1948	1971/1961	1948	1953	1961	1971	1971/1948	1971/1961	1971
ČEPLJE	61	69	66	55	90,2	83,3	15	16	16	16	106,7	100,0	16
ČETEŽ PRI STRUGAH	65	57	66	64	98,5	97,0	12	12	13	13	108,3	100,0	13
ČRNI POTOK PRI DRAGI	68	72	55	38	55,9	69,1	22	20	16	12	54,5	75,0	12
ČRNI POTOK PRI KOČEVJU	94	118	118	110	117,0	93,2	23	29	33	32	139,1	97,0	32
DELAČ	24	23	21	12	50,0	57,1	6	6	7	5	83,3	71,4	5
DOL	70	61	51	43	61,4	84,3	16	16	12	11	68,8	91,7	11
DOLENJA ŽAGA	11	12	2	1	9,1	50,0	3	4	2	1	33,3	50,0	1
DOLENJI POTOK	12	11	3	2	16,7	66,7	3	3	2	1	33,3	50,0	1
DOLGA VAS	319	349	423	498	156,1	117,7	85	93	120	144	169,4	120,0	135
DOLJNA BRIGA	94	86	85	42	44,7	49,4	24	40	24	13	54,2	54,2	13
DOLNJE LOŽINE	37	37	66	48	129,7	72,7	6	10	14	11	183,3	78,6	9
DRAGA	112	129	123	138	123,2	112,2	34	35	37	41	120,6	110,8	34
DREN	31	28	24	22	71,0	91,7	5	5	5	6	120,0	120,0	5
DREŽNIK	20	26	17	11	55,0	64,7	6	4	4	4	66,7	100,0	4
FARA	111	99	90	63	56,8	70,0	28	30	32	25	89,3	78,1	25
GLADLOKA	9	14	5	5	55,6	100,0	2	2	1	1	50,0	100,0	1
GLAŽUTA		3	9	3		33,3		3	3	2		66,7	2
GORENJA ŽAGA	27	29	18	14	51,9	77,8	6	7	7	5	83,3	71,4	5
GORENJE	94	131	123	118	125,5	95,9	30	40	31	30	100,0	96,8	30
GORENJI POTOK	16	11	2				3	2	1				
GORNJA BRIGA	49	44	30	15	30,6	50,0	13	10	8	4	30,8	50,0	4
GORNJE LOŽINE	56	81	79	104	185,7	131,6	13	18	23	28	215,4	121,7	28
GOTENC	32	28	16	16	50,0	100,0	7	6	5	5	71,4	100,0	5
GRGELJ	23	16	13	8	34,8	61,5	3	3	1	2	66,7	200,0	2
GRITOVEC PRI OSILNICI	31	25	25	23	74,2	92,0	7	8	5	5	71,4	100,0	5
GRIVAC	51	55	45	35	68,6	77,8	15	16	10	11	73,3	110,0	11
HRIB PRI FARI	14	12	10	3	21,4	30,0	4	5	4	3	75,0	75,0	3
JAKŠIČI	39	32	26	11	28,2	42,3	12	11	11	7	58,3	63,6	7
JELENJA VAS	59	50	53	42	71,2	79,2	15	15	18	12	80,0	66,7	12
JESENOV VRT	41	42	25	13	31,7	52,0	11	10	8	6	54,5	75,0	6
KAČJI POTOK		17	22					6	16				
KAPTOL	26	26	10	6	23,1	60,0	7	6	4	2	28,6	50,0	2
KLEČ				21						3			3
KLINJA VAS	88	93	126	133	151,1	105,6	29	6	33	33	113,8	100,0	33
KNEŽJA LIPA	18	50	55	45	250,0	81,8	4	5	23	11	275,0	47,8	11
KOBLARJI	180	204	229	206	114,4	90,0	47	5	68	59	125,5	86,8	59
KOČARJI		14	42	35		83,3		9	9	10		111,1	10
KOČE	31	30	80	26	83,9	32,5	8	11	16	9	112,5	56,3	8
KOČEVJE	2991	4447	5819	7382	246,8	126,9	1227	1659	2015	2347	191,3	116,5	2211
KOČEVSKA REKA	198	257	391	344	173,7	88,0	63	84	124	103	163,5	83,1	100
KOLENČA VAS	70	56	45	39	55,7	86,7	13	12	12	12	92,3	100,0	12
KOMOLEC		4	4					1	1				
KONCA VAS	79	81	91	83	105,1	91,2	18	24	25	20	111,1	80,0	20
KOPRIVNIK	240	297	228	190	79,2	83,3	75	2	62	46	61,3	74,2	45
KOSTEL	28	29	33	25	89,3	75,8	10	9	11	10	100,0	90,9	10

OPŠTINA – NASELJE

ČEPLJE
ČETEŽ PRI STRUGAH
ČRNI POTOK PRI DRAGI
ČRNI POTOK PRI KOČEVJU
DELAČ

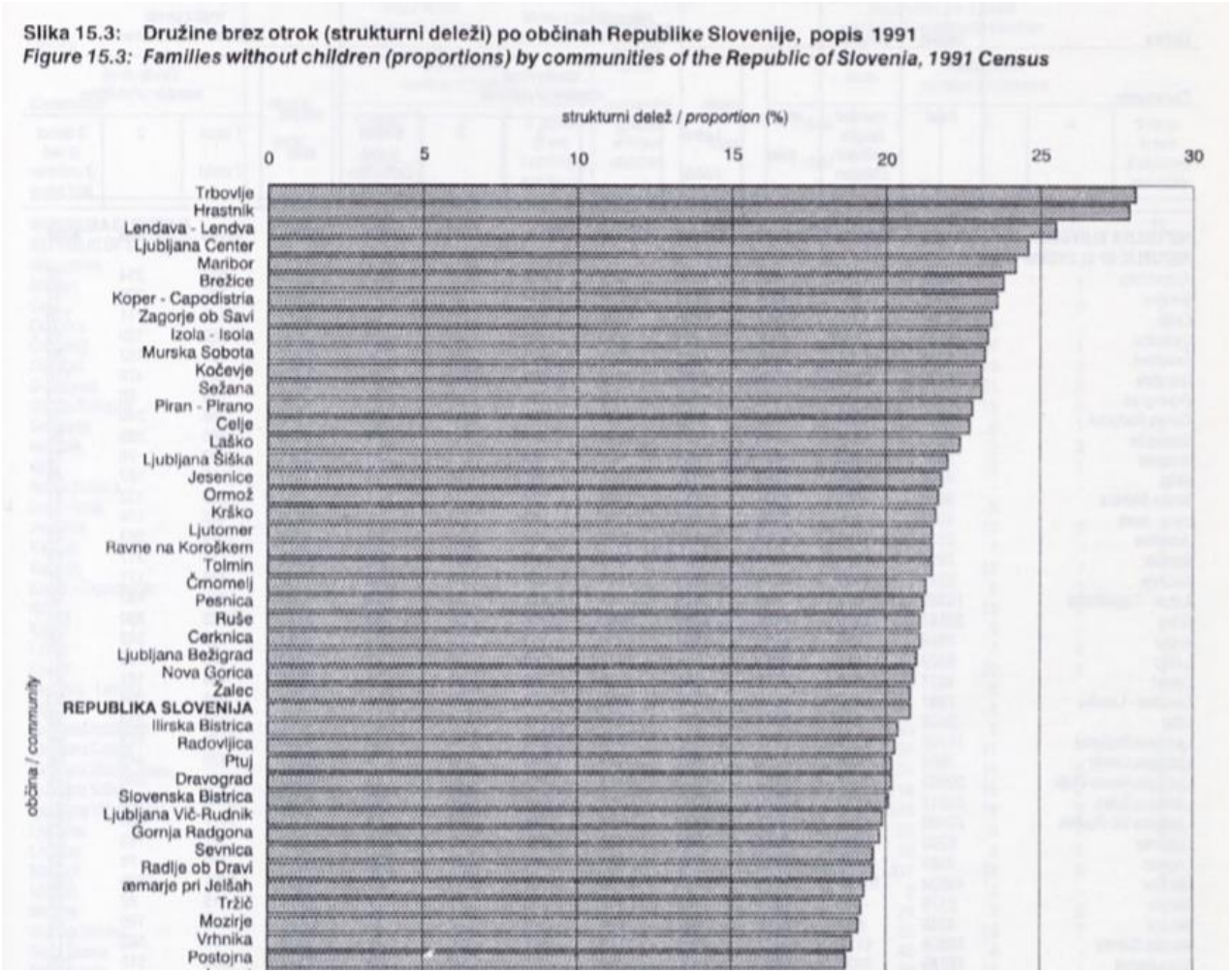
DOL
DOLENJA ŽAGA
DOLENJI POTOK
DOLGA VAS
DOLJNA BRIGA

DOLNJE LOŽINE
DRAGA
DREN
DREŽNIK
FARA

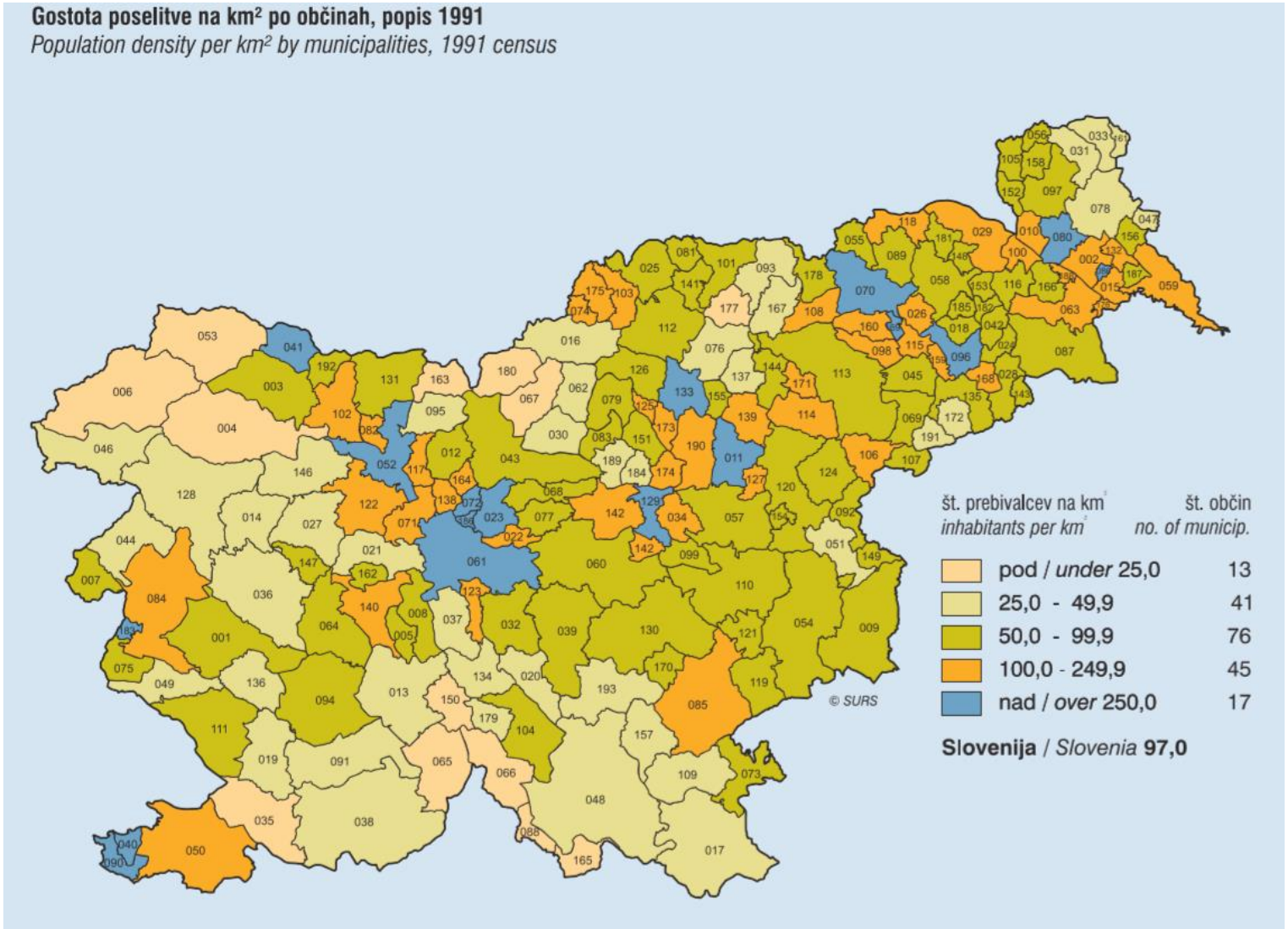
GLADLOKA
GLAŽUTA
GORENJA ŽAGA
GORENJE
GORENJI POTOK

GORNJA BRIGA
GORNJE LOŽINE
GOTENC
GRGELJ
GRITOVEC PRI OSILNICI

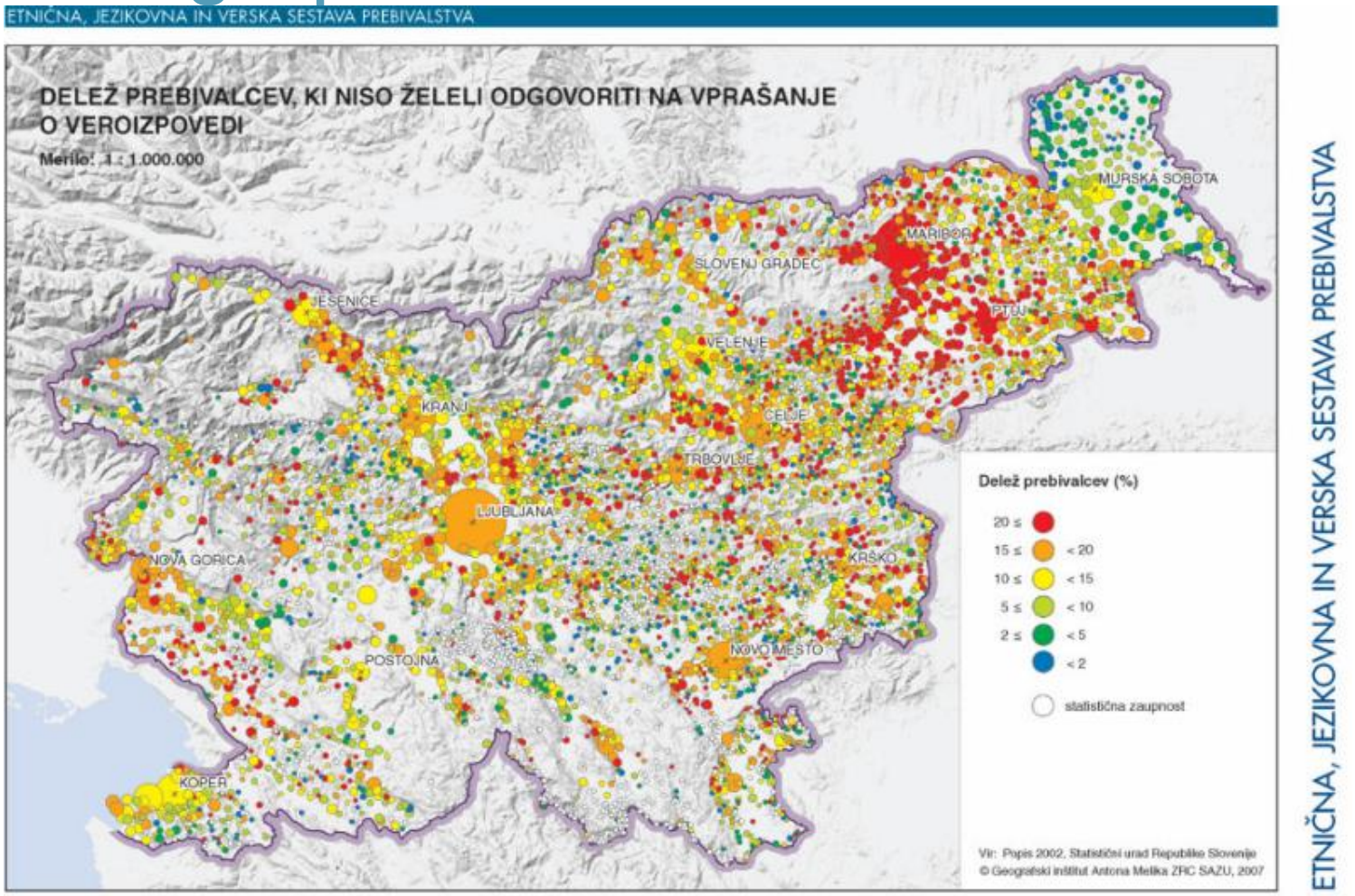
Census “cartography“ (1994)



MapInfo – late nineties



2002 Census Atlas – together with Geographical Institute



Web dissemination – PX iMap - 2005

Population by INDICATOR, MUNICIPALITIES, HALF-YEAR and SEX

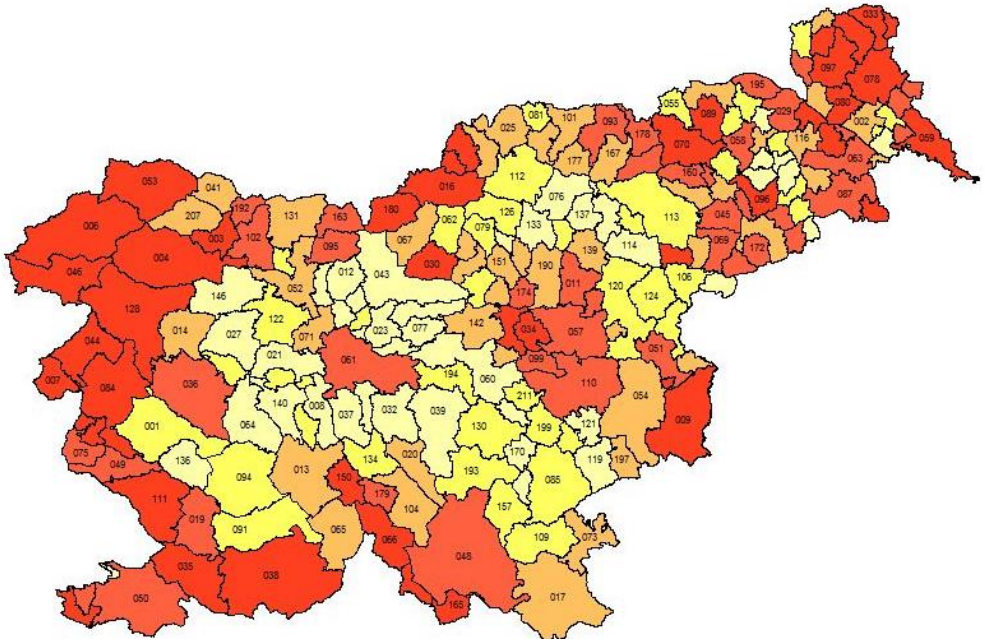
Variable: 2011H1
Classification method: Quantile
Map size: 100 %

» Map image (jpg-file)
» Map legend (jpg-file)

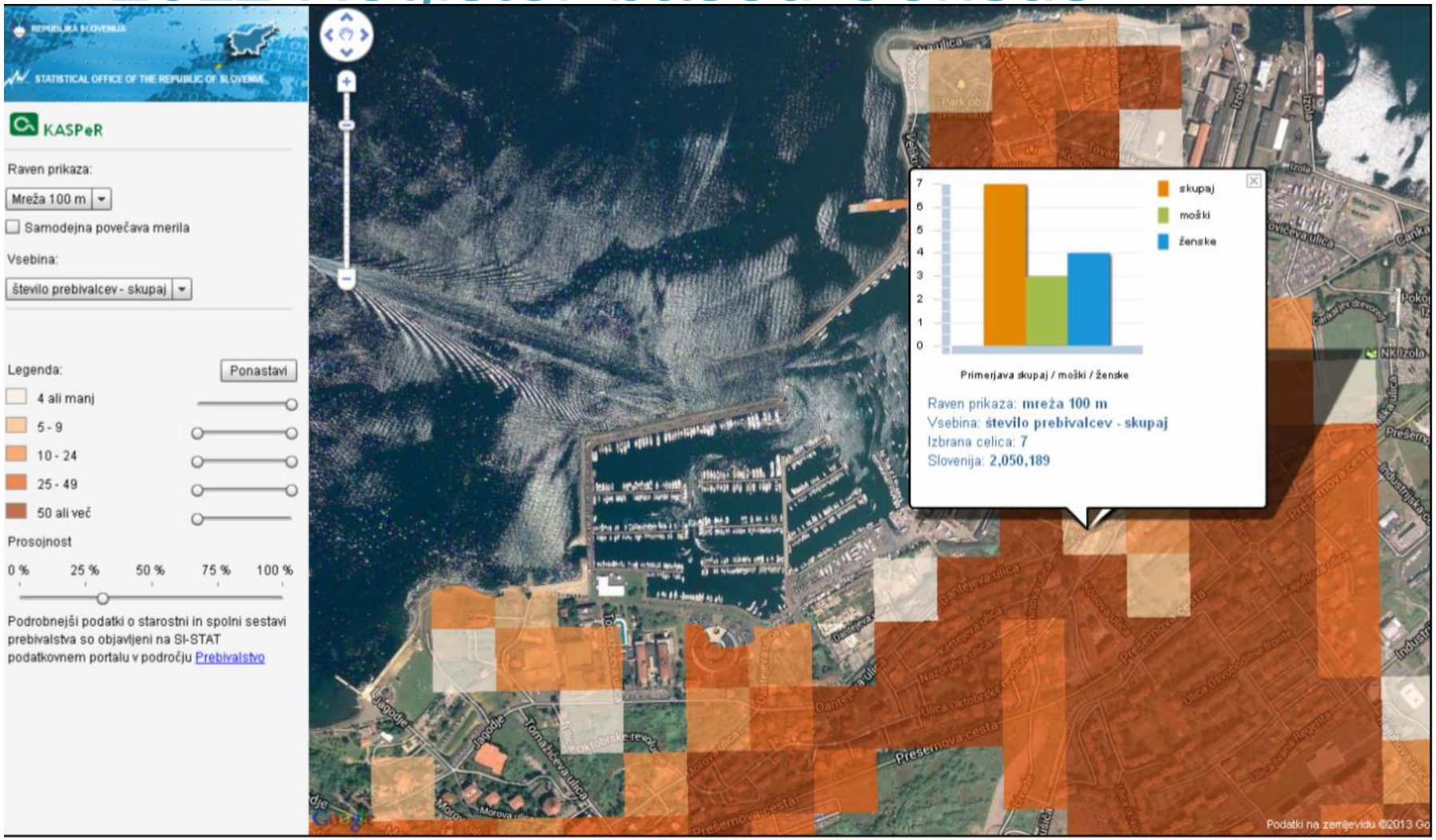
HALF-YEAR: 2011H1
SEX: Sex - TOTAL
INDICATOR: Ageing index

- 0 - 93,6 (42)
- 93,8 - 108,4 (43)
- 108,8 - 121 (43)
- 121,1 - 134,3 (42)
- 134,8 - 291,2 (42)

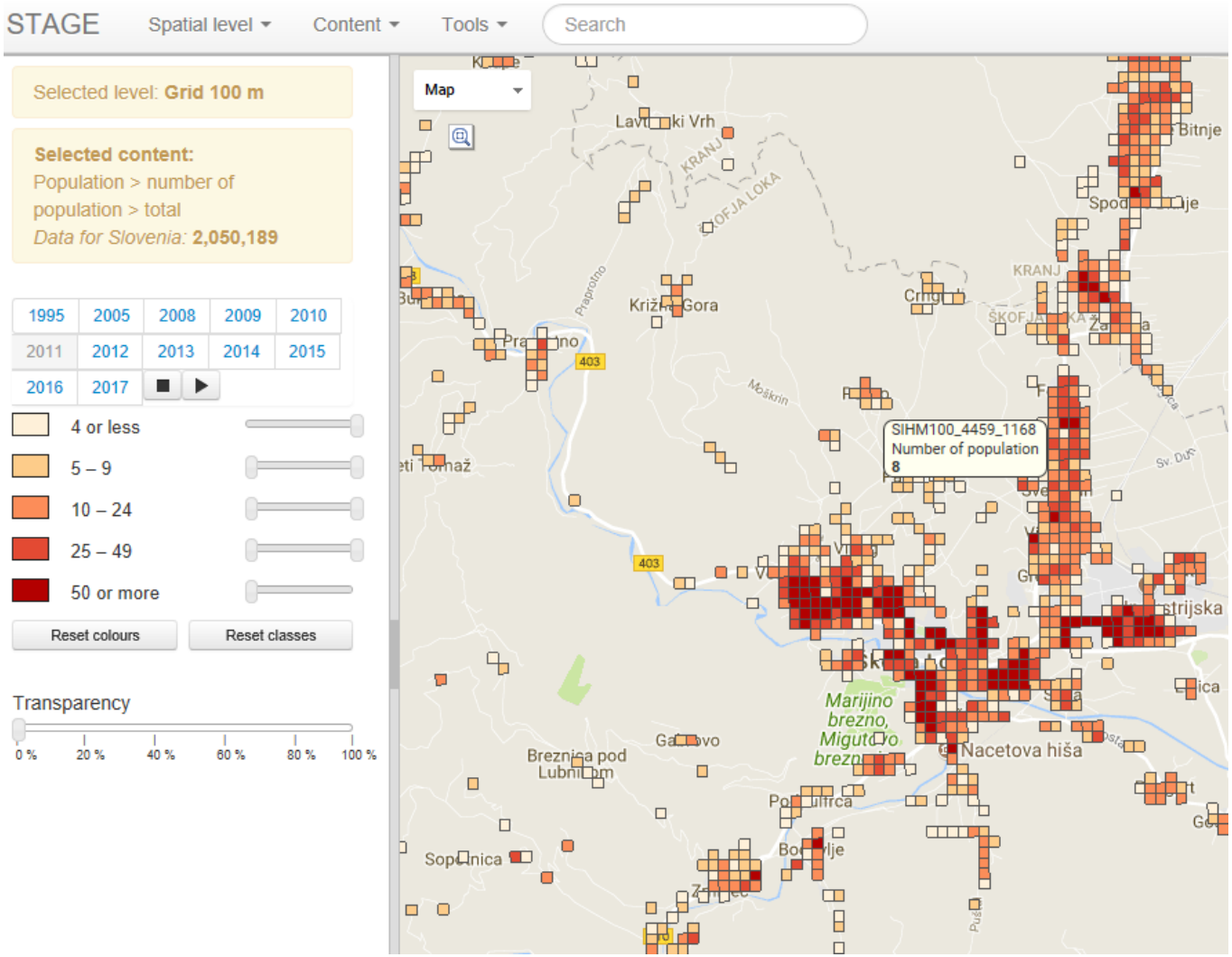
Source: Statistical Office of the Republic of Slovenia. Use and publicaton of data is allowed provided the source is acknowledged.
Mapdata: Surveying and Mapping Authority of Slovenia.



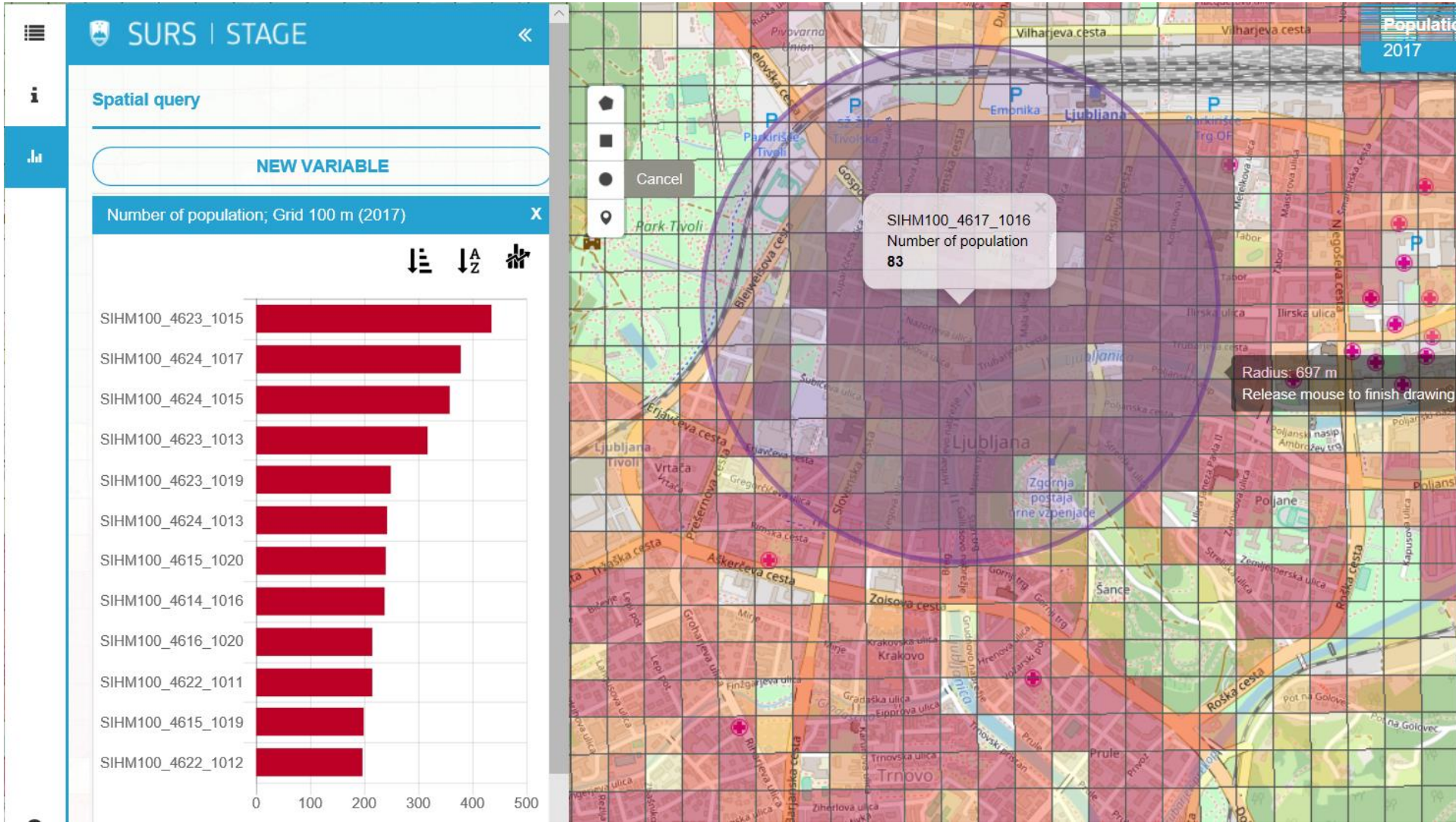
KASPeR – introduction of grid statistics – 2011 Register-based Census



STAGE 1 – grid statistics - 2014



STAGE 2 – grid statistics - 2018



Address Register

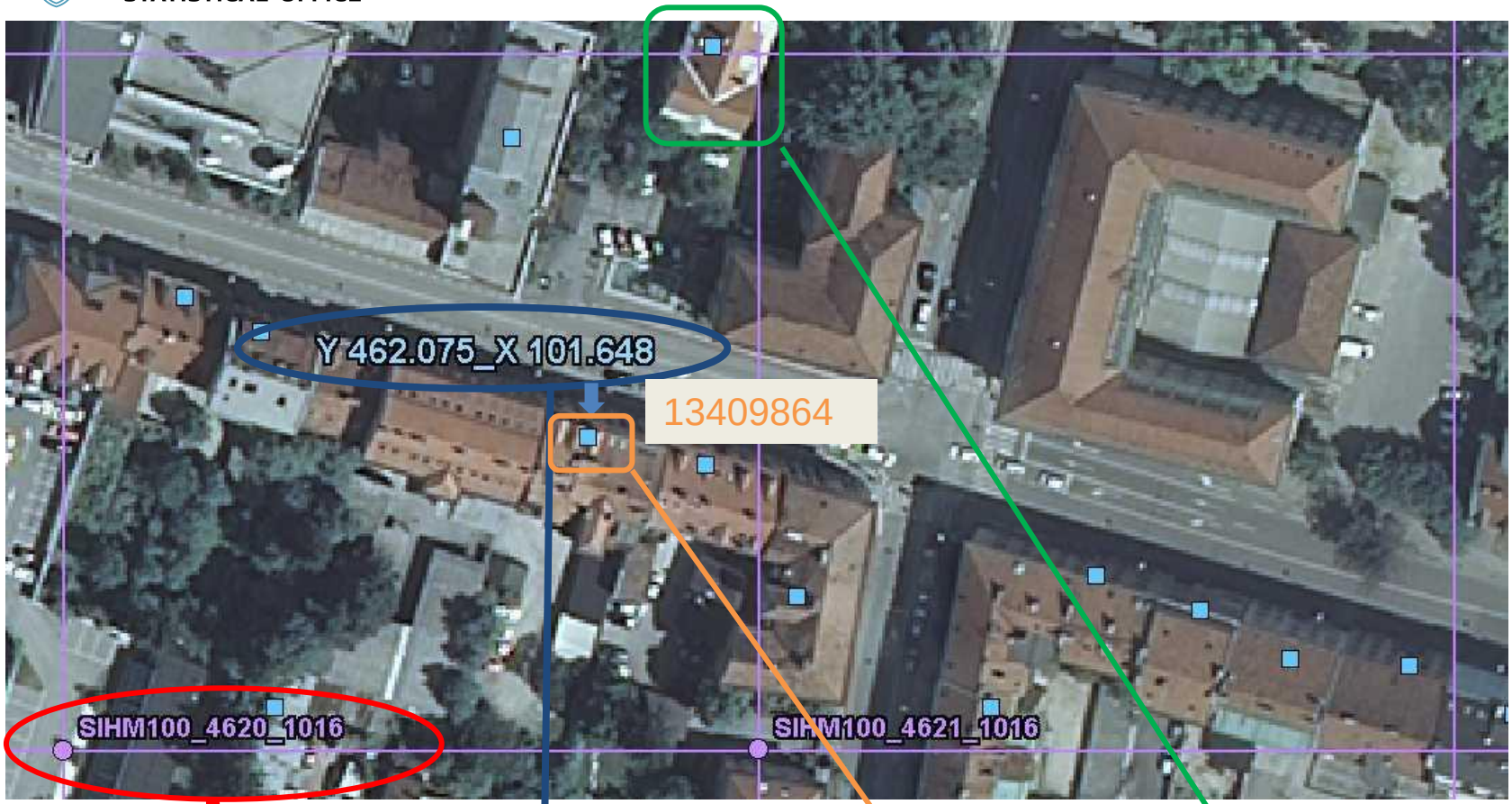
- Established by SURS in 1960‘
  - Implemented by the 1971 census including the complete address
- In 1995 transferred to the GURS
  - Graphic part set up at the same time
- Point-based with hierarhical structure
  - Administrative part
  - Grid part (coordinates)

Address atributes (meta data)

- HS_MID = 12596032
- Slovenija
- SR Osrednjeslovenska
- UE Ljubljana
- MO Ljubljana
- NA Ljubljana
- PO 10305136
- UL Vožarski pot
- HŠ 12
- X_H = 462283
- Y_H = 100165

Grid

- Grid definition
  - A grid for representing thematic information is a system of regular and geo-referenced cells, with a specified shape and size, and an associated property
- In Slovenia national grid system established in 2008
- Part of 2021 EU Census dissemination



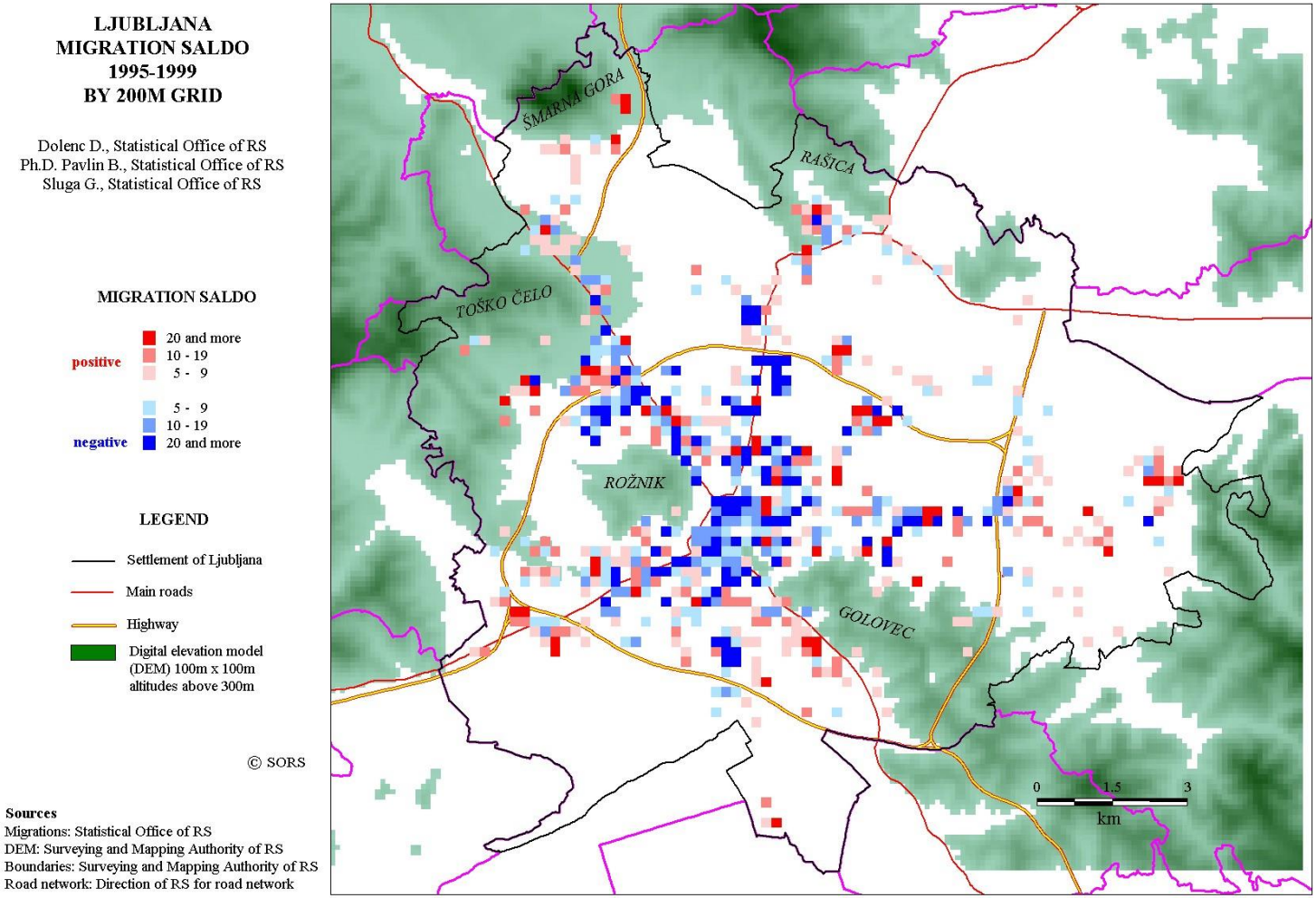
Grid code

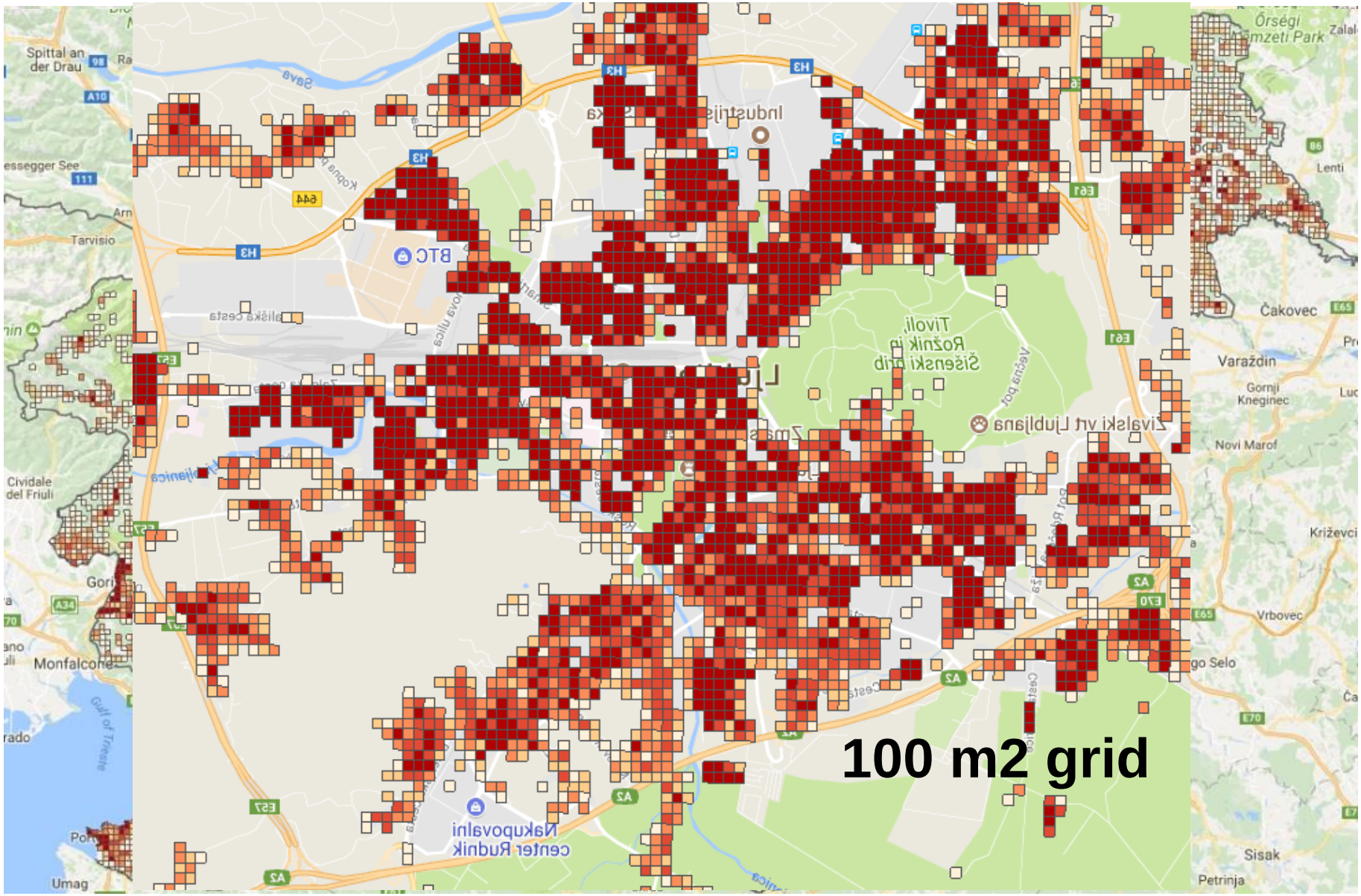
X, Y coordinate of the building

Address identifier

Building in intersection

First statistical grid map - 2000




100 m2 grid

Grid - advantages

- Hierarchy and equality of areas
- Independent from administrative changes
- Stable in time allowing comparability over time (evenly distributed)
- Easy to generate from point-based data
- Additional small area analyses possible

2015 Census grid data (1)

- Empty grid km2 cells
  - 31% without building with address
  - 36% without population
  - 5% with one occupied building only
    - Confidentiality issue

2015 Census grid data (2)

- No SDC methods currently applied for basic demographic characteristics
- For other topics 30 persons per grid cell is primary threshold
  - The same as for the settlements
    - 40% of cells with 96,7% population disseminated with educational data

STAGE | Spatial level | Content | Tools | Search

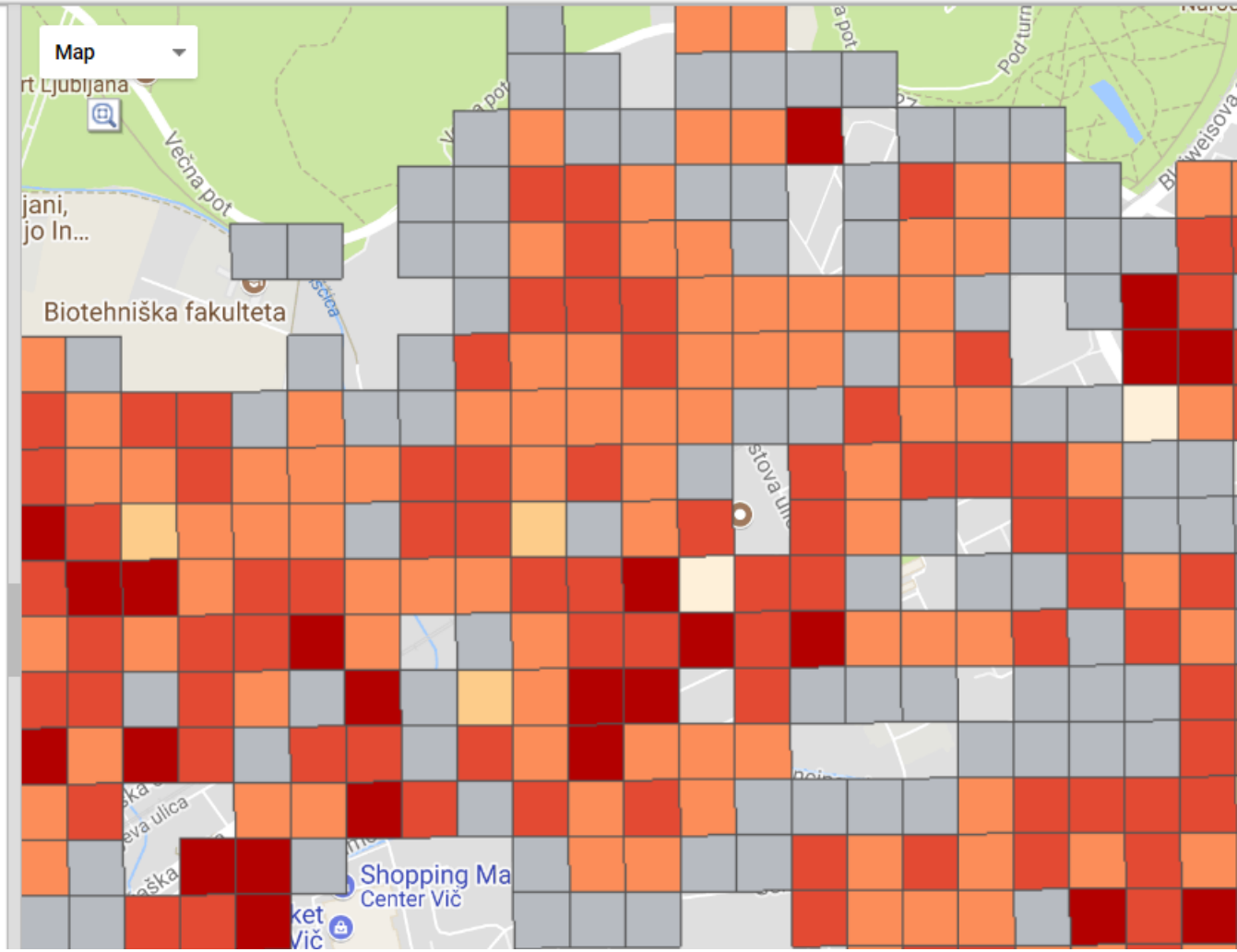
Selected level: **Grid 100 m**

Selected content:
Population > population aged 15 or more by educational attainment > number of population with tertiary education
Data for Slovenia: **374,941**

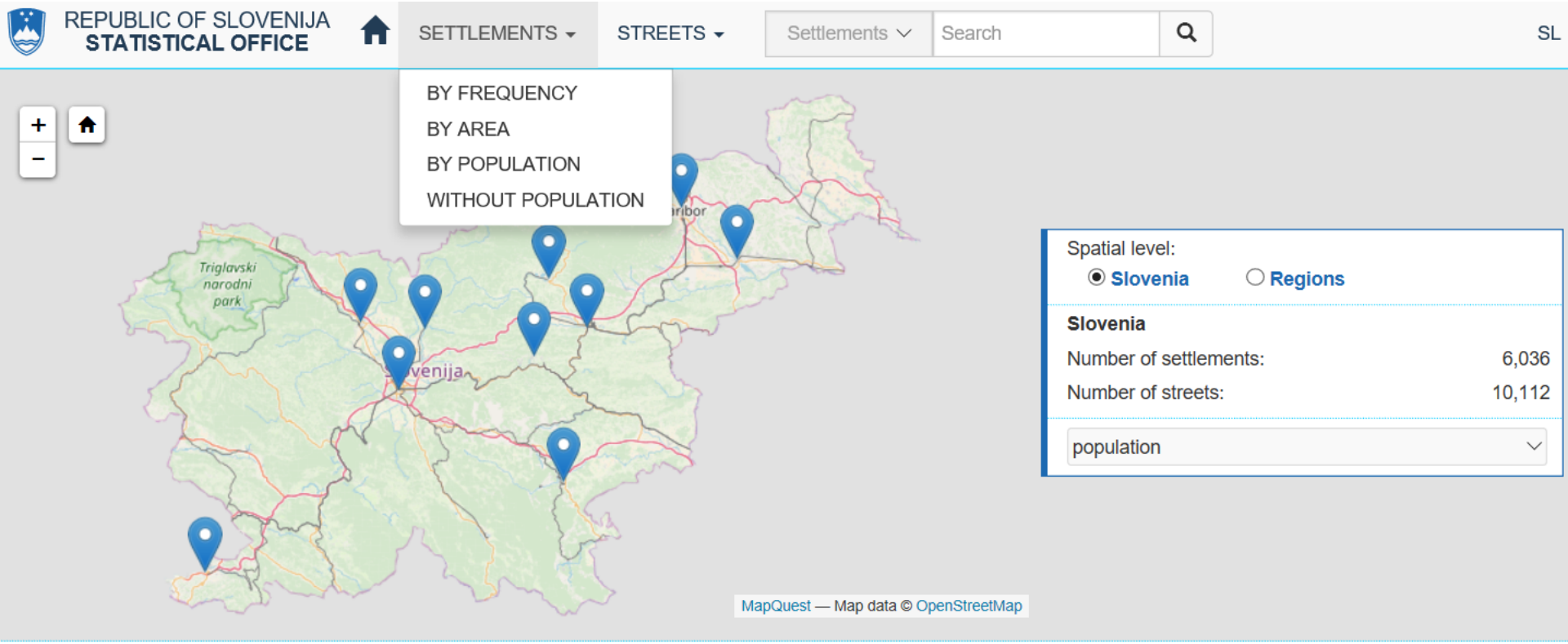
2011 | 2012 | 2013 | 2014 | 2015

- 4 or less
- 5 – 9
- 10 – 24
- 25 – 49
- 50 or more
- not shown

Reset colours | Reset classes



Popular spatial statistics



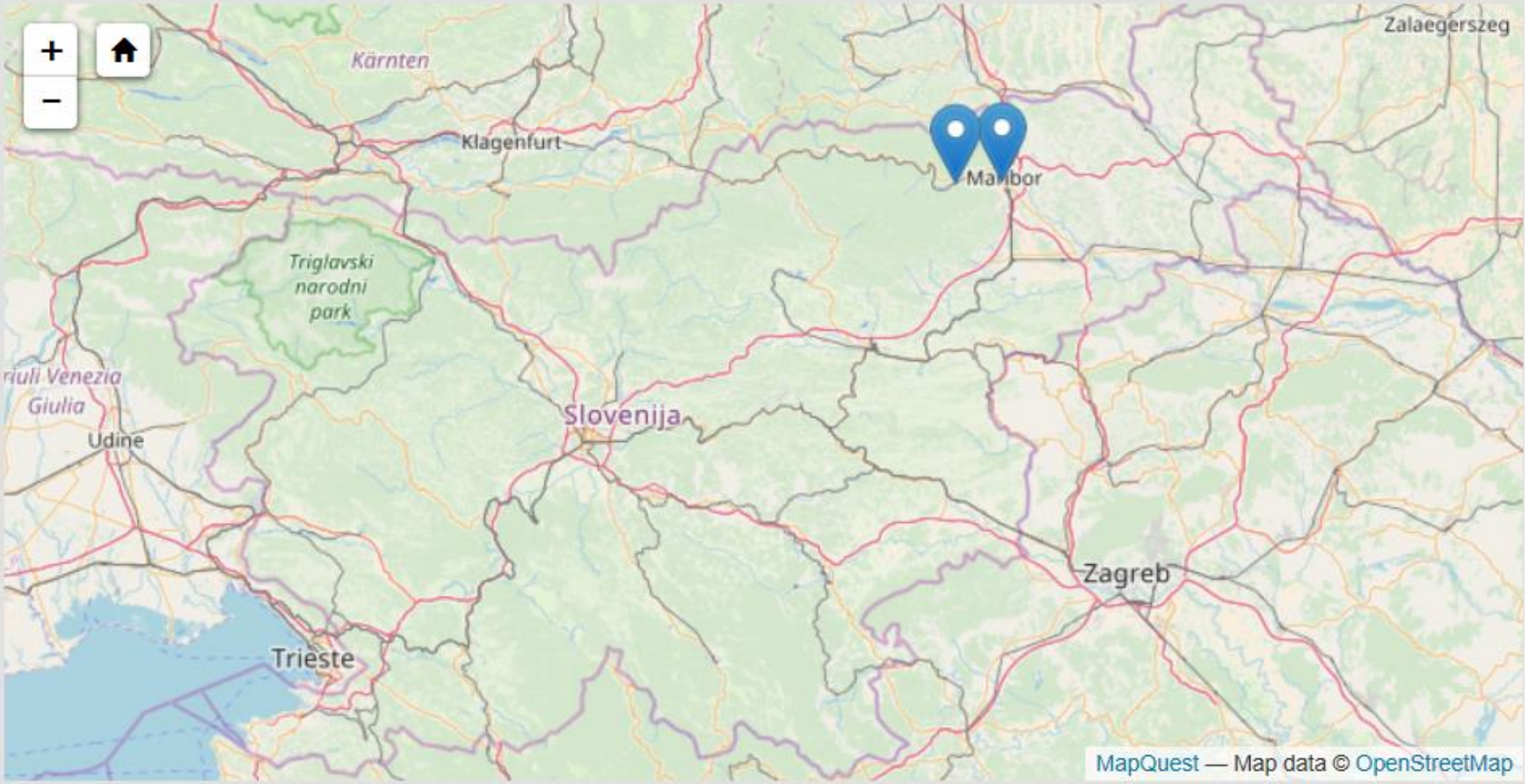
PLACE NAMES

The *Place Names* web application displays selected statistical data on settlements and streets in Slovenia. By clicking the menus, users can get the following information in a simple way:

- How many settlements and streets in Slovenia have the same name and how often is an individual name repeated
- Where the settlements or streets you are inquiring about are located
- Municipality where the settlement is located, and municipality and settlement where the street is located

REPUBLIC OF SLOVENIJA
STATISTICAL OFFICE

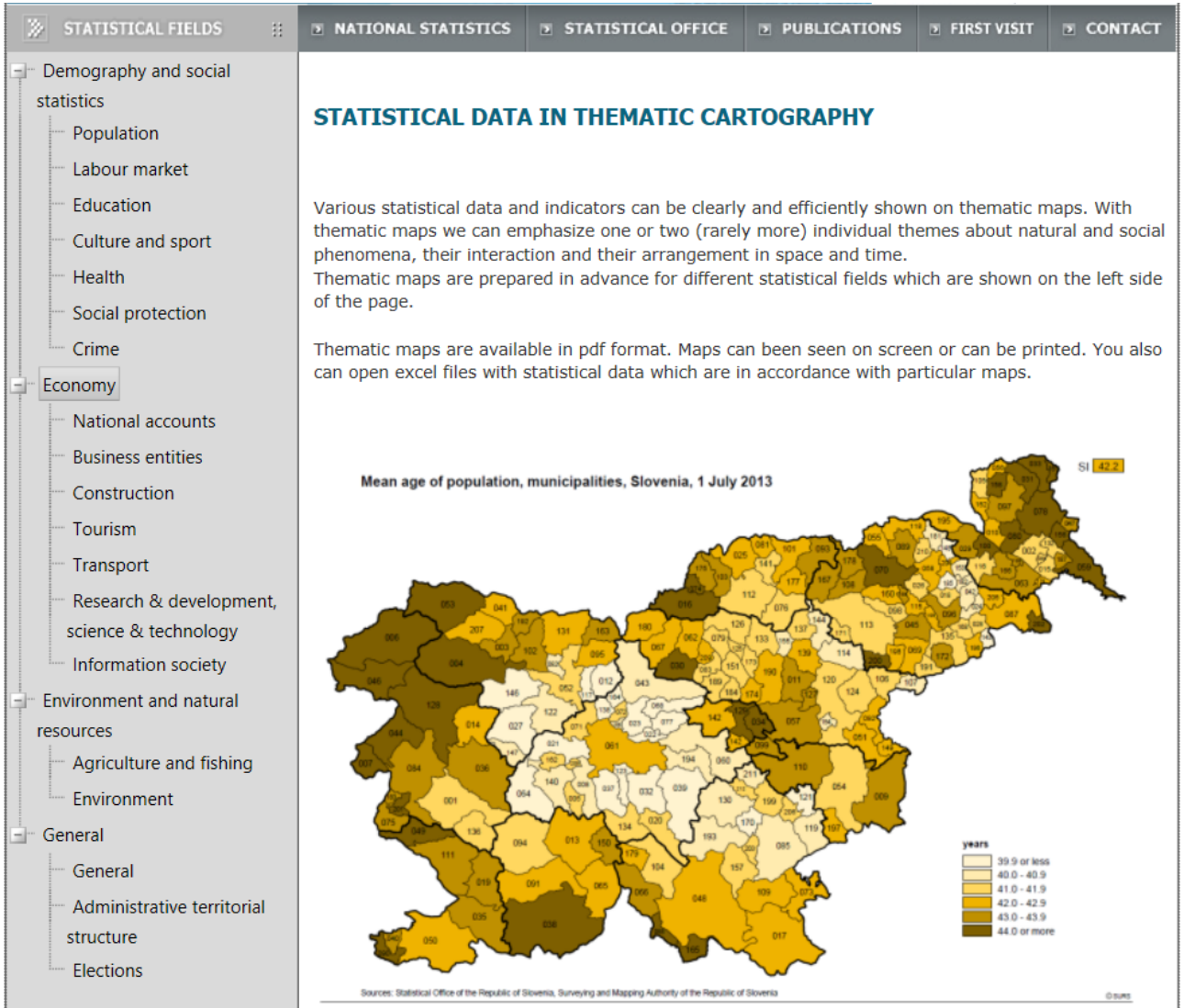
SETTLEMENTS STREETS Streets beogra



Referential year: 2017

10 **Streets**	**Number of house numbers**
BEOGRAJSKA ULICA *Settlement: MARIBOR, Municipality: Maribor*	40
MALI BEOGRAD *Settlement: RUŠE, Municipality: Ruše*	8

Thematic cartography

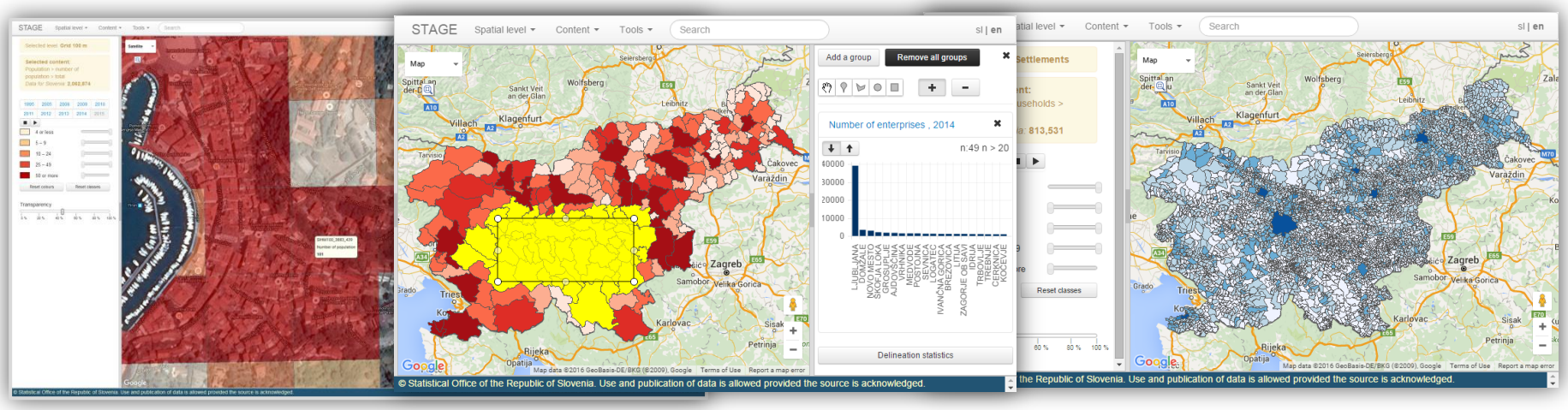


Pre-prepared thematic maps

- Pdf format
- Excel with data

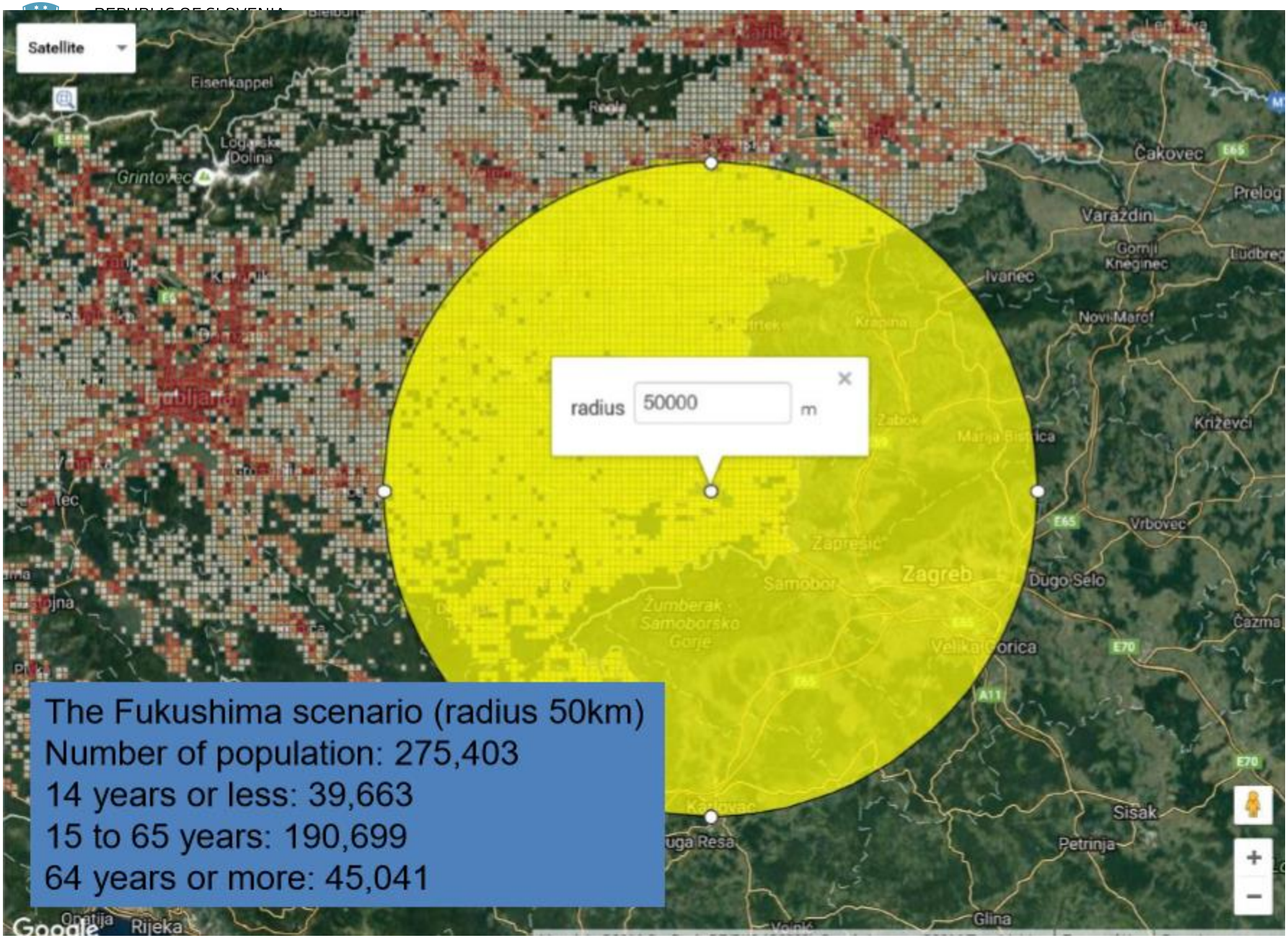
STAGE 1 - interactive web-GIS application

- Select spatial level, content, time
- Change legend intervals & colours, transparency
- Downloads
  - Map (*.png), geospatial data (*.shp), data (*.csv)
- User defined areas/statistics (delineation)
  - Based on aggregated grid data

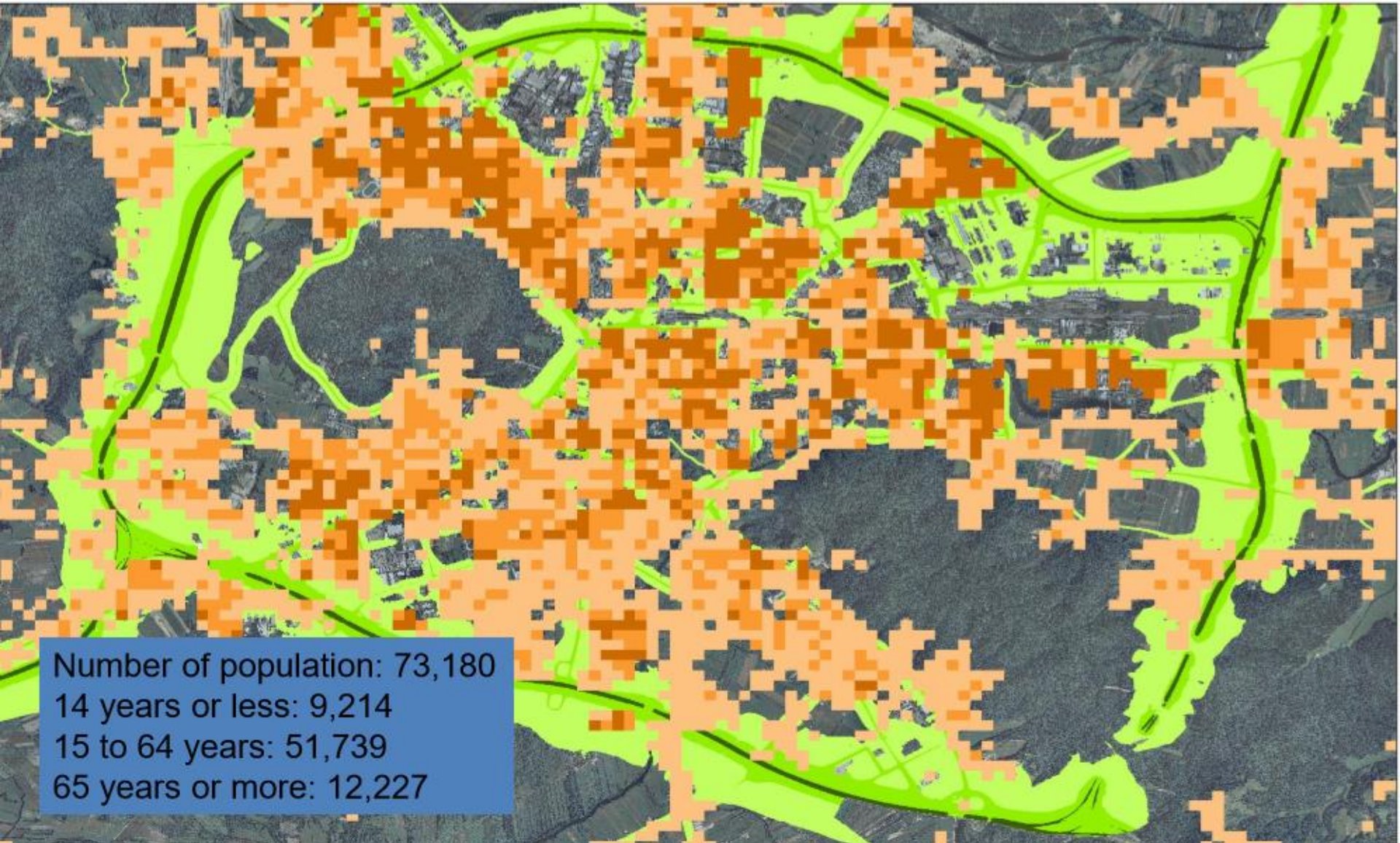


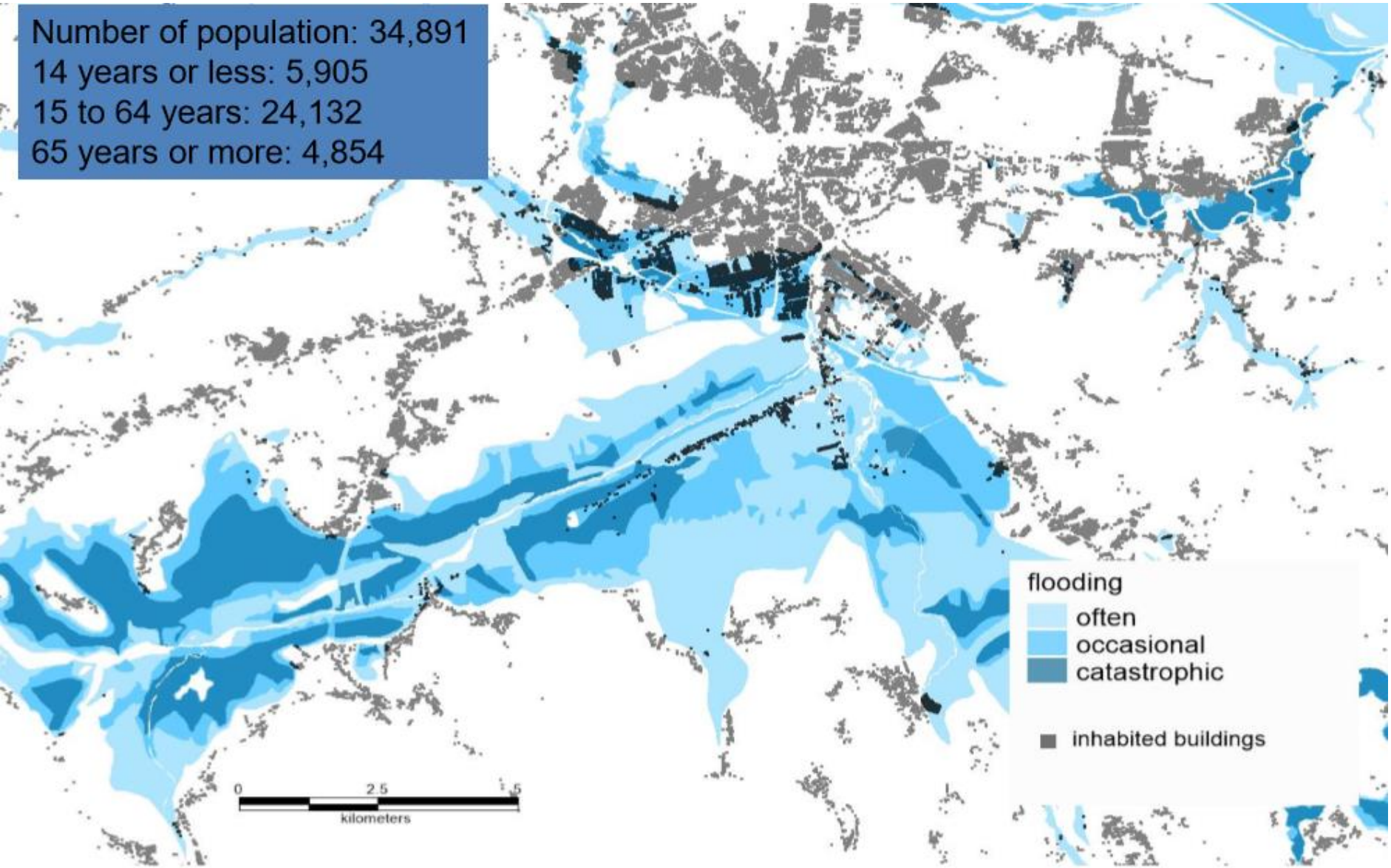
STAGE 2 - novelties

- Mostly technical improvements
  - Responsive design
  - Mobile first
  - Improved functionalities
  - OpenStreetMap instead of GoogleMap
  - STAGE Help


Satellite
radius
50000
m
The Fukushima scenario (radius 50km)
Number of population: 275,403
14 years or less: 39,663
15 to 65 years: 190,699
64 years or more: 45,041
Google

Exposure to the noise pollution




Number of population: 34,891
14 years or less: 5,905
15 to 64 years: 24,132
65 years or more: 4,854
flooding
often
occasional
catastrophic
inhabited buildings
0
2.5
5
kilometers

Data availability

- Thematic cartography
  - http://www.stat.si/TematskaKartografija/Default.aspx?lang=eng
- Place names (popular statistics)
  - http://www.stat.si/KrajevnaImena/en/Settlements/ByRegion
- STAGE 1
  - http://gis.stat.si
- STAGE 2 (testing application available)
  - Access from STAGE 1 - see STAGE2 (beta)

Conclusion

- Relevancy of grid data vs administrative small areas
- Visualisation
- Confidentiality issues
- User‘s needs
  - General public – improving geospatial literacy
  - Specialized users – space plannig