



UN-GGIM

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

„Use case from Slovenia- merging statistical and
geospatial data,,

Tomaž PETEK, Budapest 5. October 2016



UN-GGIM

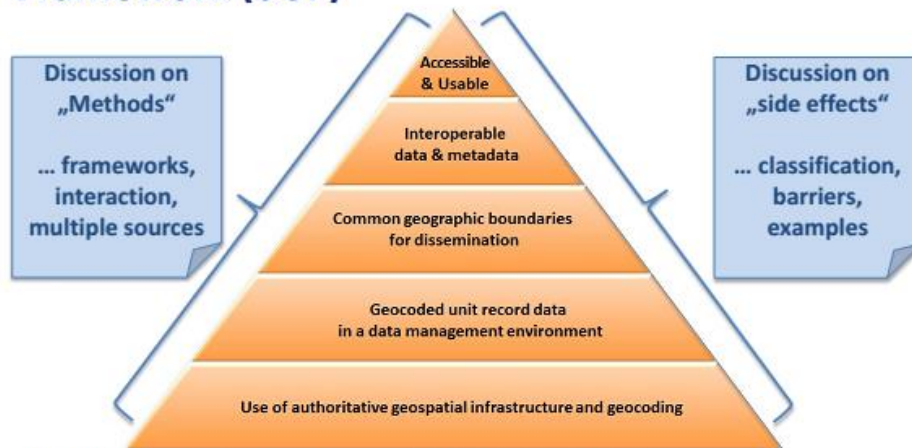
United Nations Initiative on
Global Geospatial Information Management

ggim.un.org

Content of the presentation:

- History of cooperation
- Use case description
- Conclusions

5 principles of the Statistical Geospatial Framework (SGF)



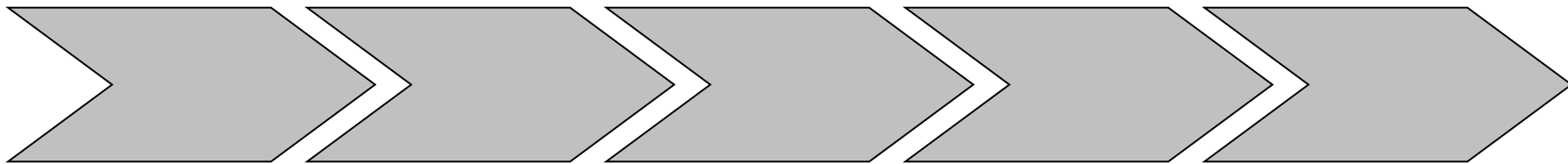
"Better Data, Better Lives"

- The challenges that society is facing are increasingly regional and global
- Trans-border problems require policies and solutions that extend across these borders
- Policy and decision makers require data that meet these demands to implement evidence-based policies and solutions
- Integrating statistical data with geospatial information



SURVEYING AND MAPPING AUTHORITY

- 1980 analogue address register and register of administrative units
- 1985 digital and centralised address register and register of administrative units
- 1990 Atribut data of Land Cadastre - digital
- 1996 – 2000 Digital Cadastre maps
- 2001 Data distribution system
- 2006 Buidlings Cadastre
- 2008 Real Estate Value notification
- 2014 Network services



...1985... ..1990 2000.. 20012006 ...2008. 2011... 2016



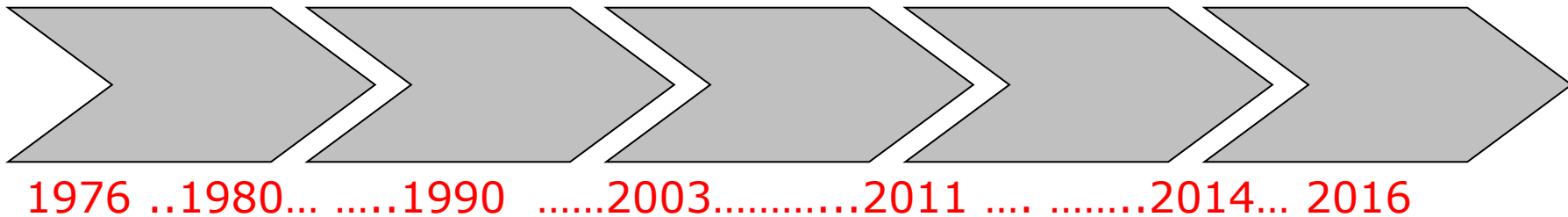
UN-GGIM

United Nations Initiative on
Global Geospatial Information Management

ggim.un.org

NATIONAL STATISTICAL OFFICE

- 1976 The Register of Organisations and Communities, the predecessor of the Business Reg.
- 1980 Unique personal identification number of citizens
- 1985 SMA takeover address register from NSO
- 2011 the first register-based census of population, households and housing is conducted completely without fieldwork. (saved 14 mio EUR)
- 2011 Geostatistics portal is set up.
- 2014 web mapping application STAGE for visualising statistical data in spatial units is set up.



UN-GGIM

United Nations Initiative on
Global Geospatial Information Management

ggim.un.org

Statistical and geographical data at portal



REPUBLIKA SLOVENIJA
STATISTIČNI URAD REPUBLIKE SLOVENIJE

STATISTIČNA PODROČJA | DRŽAVNA STATISTIKA | STATISTIČNI URAD | PUBLIKACIJE | PRVI DESK | KONTAKT

Demografsko-socijalno področje
je opisano s podatki o prebivalstvu, o njihovi življenjski ravni, socialni in zdravstveni varnosti, ter s podatki o aktivnosti in življenjskem slogu prebivalstva.

Ekonomsko področje
vključuje prostorske in storitvene dejavnosti, s podatki pa je predstavljena celotna ekonomska aktivnost.

Okolje in naravni viri
so predstavljeni s podatki o kmetijah in ribarstvu, gozdarstvu in lesu, zemlji in podnebju ter kmetijski in energijski.

Splošno
prikazuje geografske in upravno-prostorske delitve Slovenije, valilna statistika in informacije o dejavnosti Statističnega urada RS.

STATISTIČNE BAZE

SI-STAT podatkovni portal
na enem mestu vsebuje povezave do vseh statističnih podatkov.

Interaktivna orodja
Interaktivni statistični atlas, tematska kartografija, baza imen in priimkov, baza krajevskih imen, prebivalstvena piramida, baza rojstnih dni.

DRŽAVNA STATISTIKA

Evropske statistične podatke
tudi na enem mestu pri dostopu do brezplačnih

Kako do statističnih podatkov in informacij?

Slovenija v številkah

PRVI DESK PODATKOV IN DRUGE NOVICE

Željaški promet, Slovenija, 2. četrtletje 2013 - končni podatki
Transport
V drugem četrtletju 2013 je bilo z željaškimi prevozniki kar za 119 odstotkov več potnikov kot v drugem četrtletju 2012. (20.9.2013)

Anketa o menjarju potrošnikov, Slovenija, september 2012 - končni podatki
Življenjska raven
Vrednost kazalnika skupnega potrošnikov je bila v septembru 2012 za 2 odstotki nižja kot v prejšnjem mesecu. (23.9.2013)

Državna proračunska sredstva za raziskovalno-razvojno dejavnost, končni proračun 2012 in zabeleži proračun 2013, Slovenija
Raziskovanje in razvoj, znanost in tehnologija
Za raziskovalno-razvojno dejavnost, ama v Sloveniji v letu 2012 namenili 190 milijonov EUR državnih proračunskih sredstev. (23.9.2013)

Slovenske potrošniške agencije, Slovenija, 2012 - končni podatki
Turizem
V letu 2012 so slovenske potrošniške agencije organizirale potovanja za 833.000 domačih turistov in za 254.000 domačih izletnikov. (20.9.2013)

Aktivno prebivalstvo (po Anketi o delovni sili), Slovenija, 2. četrtletje 2013 - končni podatki
Trg dela
Podrobnejše podatke o aktivnem prebivalstvu (po Anketi o delovni sili) v Sloveniji za 2. četrtletje 2013 objavljamo v podatkovni bazi SI-STAT. (20.9.2013)

Obkup kmetijskih pridelkov, Slovenija, julij 2013 - začetni podatki

Mikroekonomska letna statistika

Uporabna statistika

OBDOBJANE PODATKI
- poročanje

Raziskovalno-razvojna dejavnost, 2012
Vse video objave

Preobdelana ura
Sveti: 7.113.341.354
Slovenija: 2.099.233

Geostatistični portal

- Kalkulator osebne inflacije
- Klasika
- Preobdelana piramida
- Revizija klasifikacije dejavnosti
- Izjava in rojstni dnevi
- Slovenija v OECD
- Spominski in prapročni dnevi



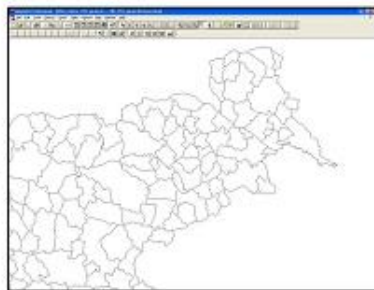
UN

INTEGRATION OF ATTRIBUTE AND GEOGRAPHICAL DATA

REGISTER OF SPATIAL UNITS



idm	nm	jumlah orang di rumah	jumlah orang di sekolah	jumlah orang di tempat lain	jumlah orang di tempat lain	jumlah orang di tempat lain
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9
10	10	10	10	10	10	10
11	11	11	11	11	11	11
12	12	12	12	12	12	12
13	13	13	13	13	13	13
14	14	14	14	14	14	14
15	15	15	15	15	15	15
16	16	16	16	16	16	16
17	17	17	17	17	17	17
18	18	18	18	18	18	18
19	19	19	19	19	19	19
20	20	20	20	20	20	20
21	21	21	21	21	21	21
22	22	22	22	22	22	22
23	23	23	23	23	23	23
24	24	24	24	24	24	24
25	25	25	25	25	25	25
26	26	26	26	26	26	26
27	27	27	27	27	27	27
28	28	28	28	28	28	28
29	29	29	29	29	29	29
30	30	30	30	30	30	30
31	31	31	31	31	31	31
32	32	32	32	32	32	32
33	33	33	33	33	33	33
34	34	34	34	34	34	34
35	35	35	35	35	35	35
36	36	36	36	36	36	36
37	37	37	37	37	37	37
38	38	38	38	38	38	38
39	39	39	39	39	39	39
40	40	40	40	40	40	40
41	41	41	41	41	41	41
42	42	42	42	42	42	42
43	43	43	43	43	43	43
44	44	44	44	44	44	44
45	45	45	45	45	45	45
46	46	46	46	46	46	46
47	47	47	47	47	47	47
48	48	48	48	48	48	48
49	49	49	49	49	49	49
50	50	50	50	50	50	50

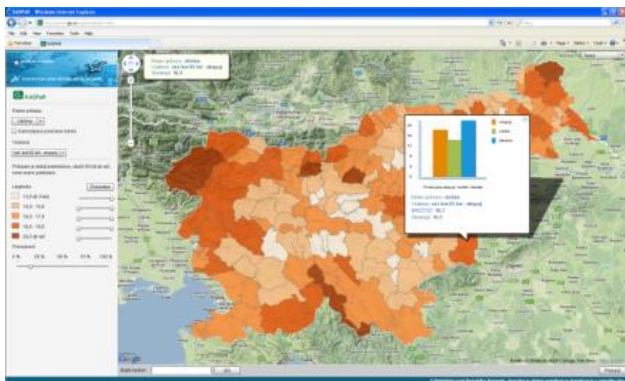


UN-GGIM

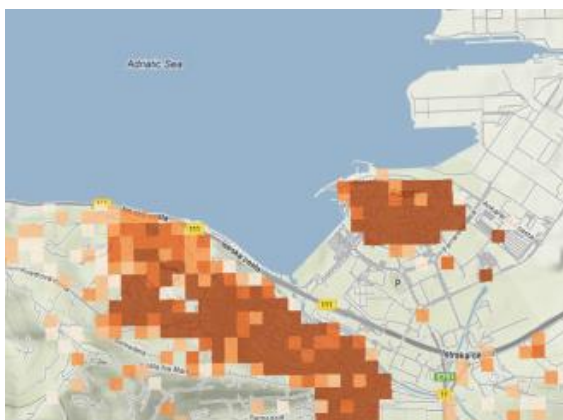
United Nations
Global Geospa

ggim.un.org

DISEMINATION CHANNELS



Kasper <http://www.gis.si/kasper/si/index.html>



GIS podatki: <http://www.stat.si/gis/>



From the special release
World Population Day 2014, 9 July 2014



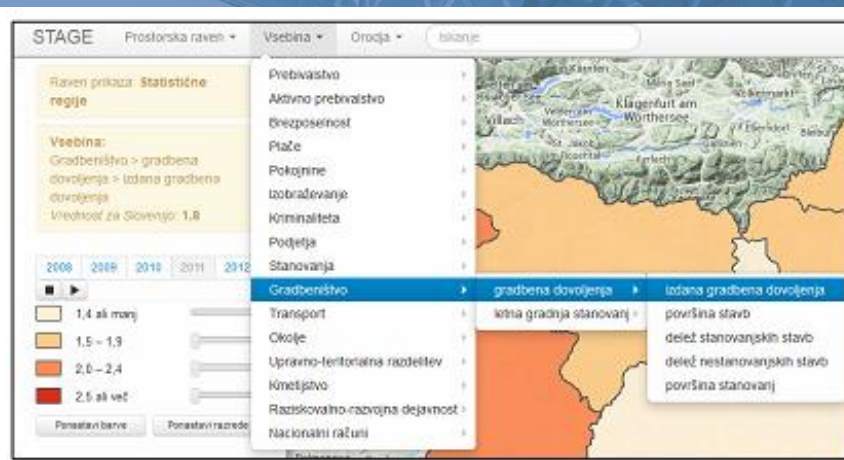
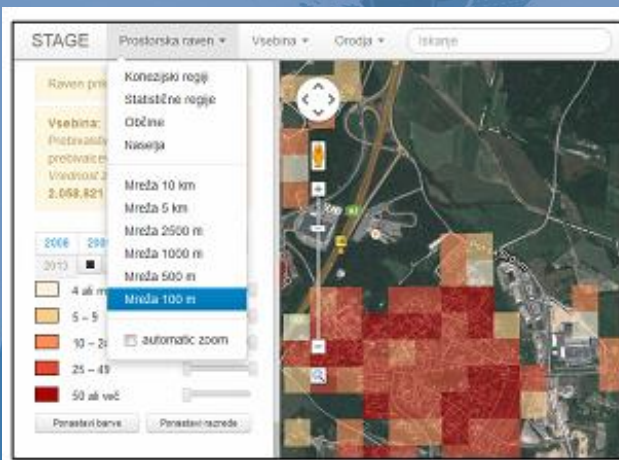
UN-GGIM

United Nations Initiative on
Global Geospatial Information Management

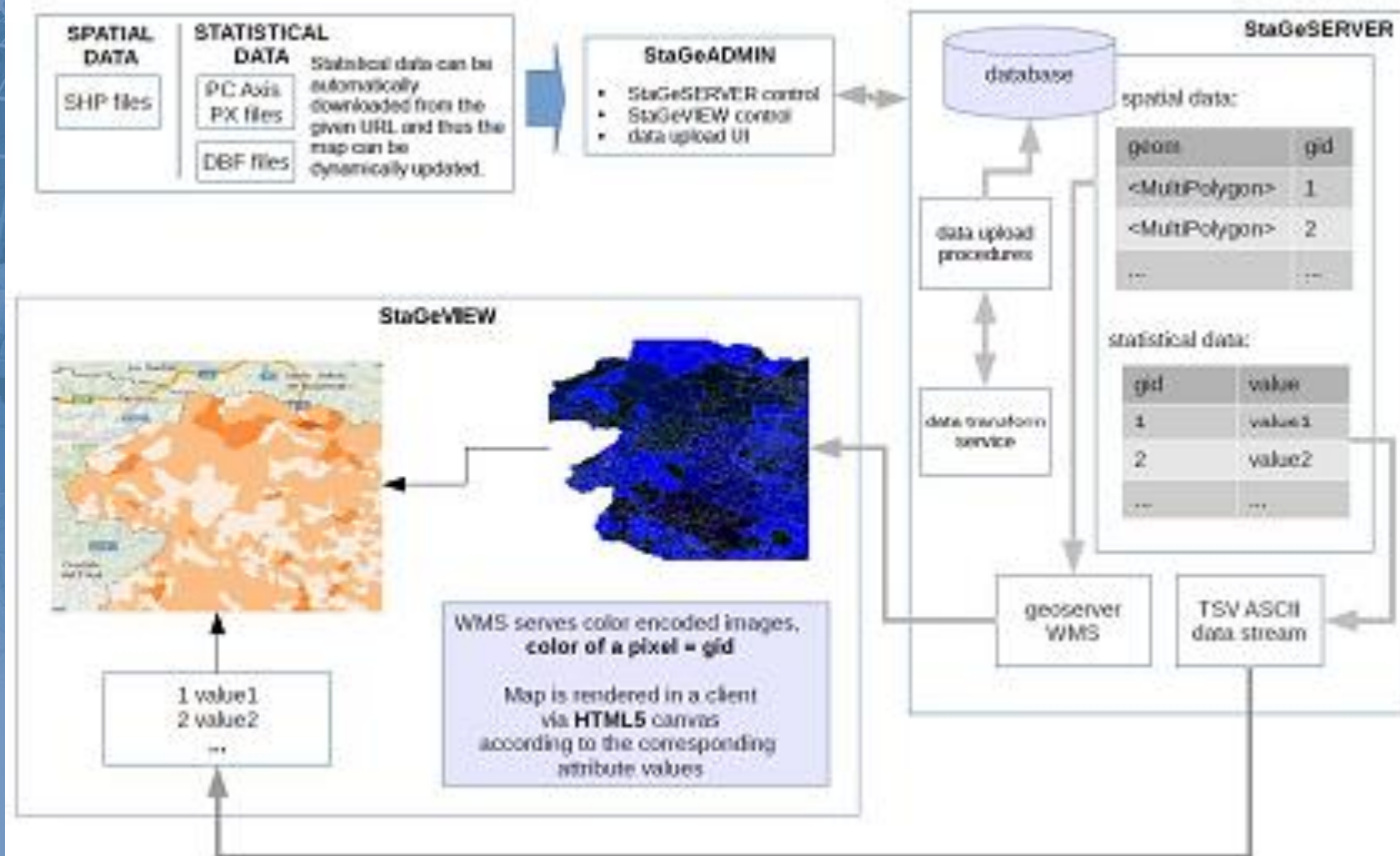
ggim.un.org

„STAGE“ www.gis.stat.si

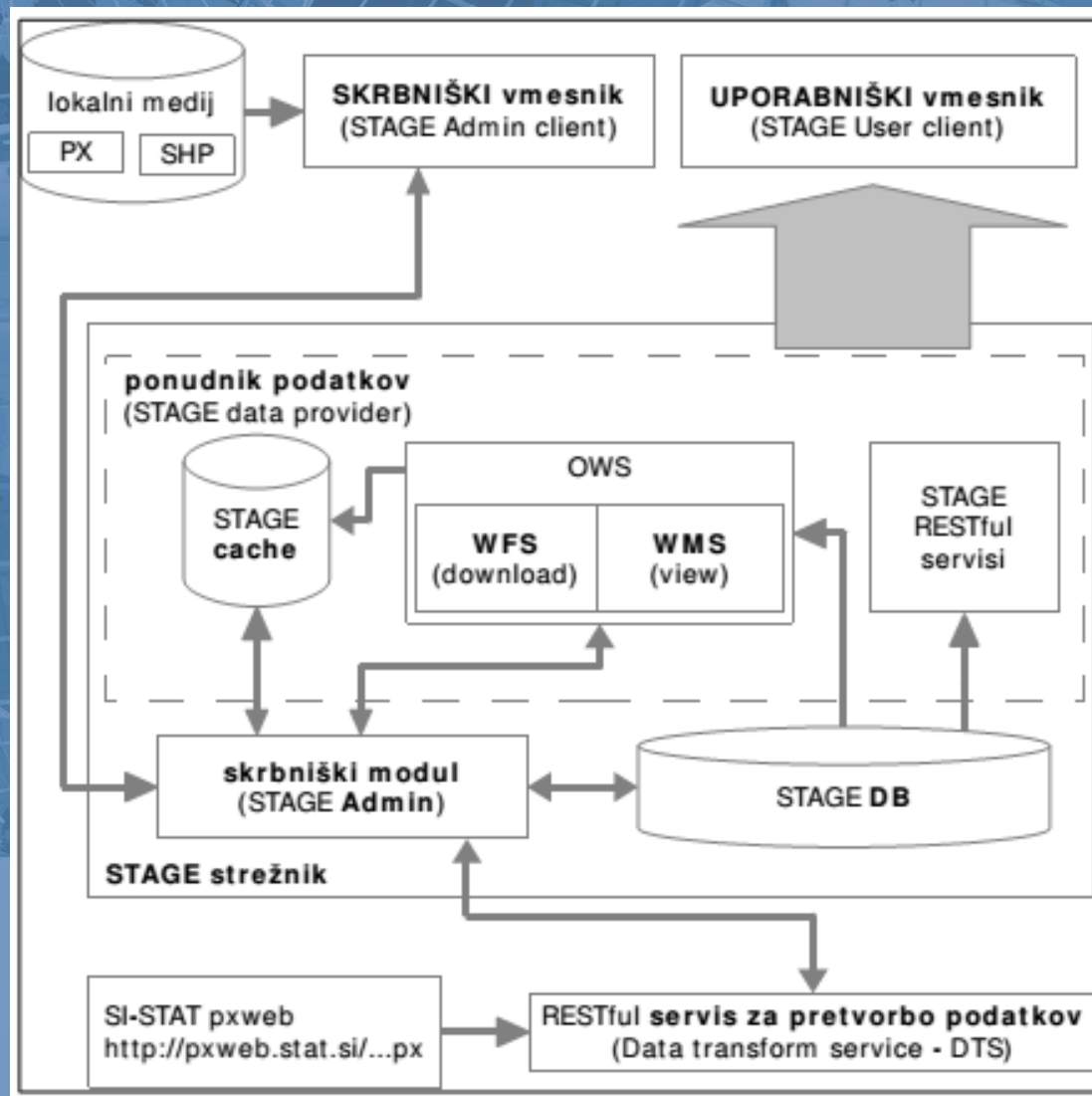
- Grid of cells and administrative units
- Time stability (2009 – 2016)
- Regional and national availability
- Statistical confidentiality
- Spatial and statistical analyses
- EUROSTAT donation 2014 (122.000 EUR)
- INSPIRE directive as driving force
- Geodetic Institute of Slovenia - contractor



StaGe – principle of operation



STAGE ARCHITECTURE



ADMINISTRATIVE INTERFACE

- upload, updated content in *.shp and *.px files
- Metadata,
- Popdown menuues...
- Info windows (html)

StageADMIN general layer translations users Language (en) Test >> Logout (logout)

upload manage variables jobs

geospatial data

+ Select a file... Cancel upload

select an existing level

statistical data

put data from the selected geospatial source

+ Select a file... Cancel upload

insert PX file URL Upload

<http://gis.stat.si/admin/>

StageADMIN General Layer Translations users Language (en) Test >> Logout (logout)

Translations

Layer-variables-translations

Displaying 1-16 of 957 results

ID	Category	Message	sl translation	en translation
2154	Menu	Met_533e65143b5b6	Prebitatstvo	Population
2155	Menu	Met_533e65143b5b6	Število prebivalcev	number of population
2156	Menu	Met_533e65143b5b6	Skupaj	Total
2157	Menu	Met_533e6514419ee	Moški	Men
2158	Menu	Met_533e651442559	Zenske	Women
2159	Menu	Met_533e65144319e	Število prebivalcev po velikosti starostnih skupin	number of population by large age groups
2160	Menu	Met_533e651443202	od 0 do 14 let	from 0 to 14 years
2161	Menu	Met_533e651443115	od 15 do 64 let	from 15 to 64 years
2162	Menu	Met_533e6514434c4	65 let in več let	65 or more years
2163	Menu	Met_533e6514436c1	Število prebivalcev po petletnih starostnih skupinah	number of population by 5-year age groups

StageADMIN General Layer Translations users Language (en) Test >> Logout (logout)

Variables

select a variable

Menu questions

Assign to the selected menu item Download from the menu items Unassign all

Menu tree

- Population
 - Active population
 - Unemployment
 - registered unemployed persons
 - total → BO_3
 - men → BO_31
 - women → BO_32
 - percentage of women in registered unemployment → BO_31_2
 - registered unemployment rate by sex
 - registered unemployment rate by age groups
 - registered unemployment rate by education
 - registered unemployment rate by duration



UN-GGIM

United Nations Initiative on
Global Geospatial Information Management

ggim.un.org

NETWORK SERVICES

➤ CSW

- each variable can have a metadata file with the resource locator pointing to the WMS/WFS service for the variable
- metadata file gets published on CSW server

➤ WFS

- downloadable GML files (geometry with variable values) of the selected regions/layers
- ExtendedCapabilities block in the WFS capabilities document where metadata URL is pointing to the metadata published on the CSW server

➤ Network services

- StaGe platform integrates pycsw (OGC CSW server implementation) ← discovery service
- Thematic maps of variables are available via WMS
← view service
- Data is downloadable via WFS ← download service

➤ WMS

- styled map according to the predefined variable classification and colors
- ExtendedCapabilities block in the WMS capabilities document where metadata URL is pointing to the metadata published on the CSW server

DATA PROTECTION POLICY AT STAGE

- Smallest pixel size is 100 m x 100 m
- Minimum number of citizens within one grid cells is ≥ 30 – then all data are shown without reduction of attributes
- In case where minimum number of citizens within one grid cells is < 30 – then only basic attributes are shown (gender and ages)



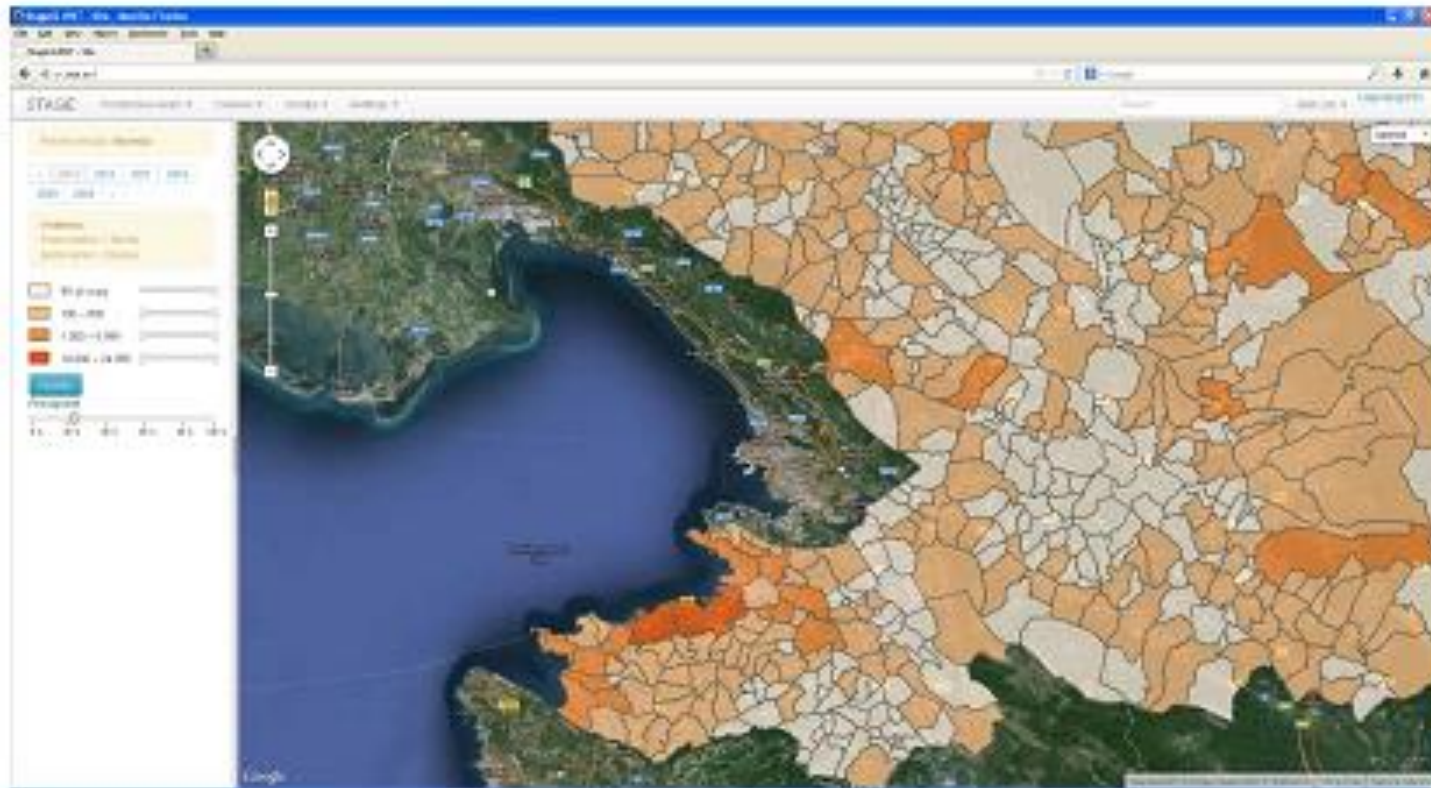
Represented Data

- **Citizens**
 - number, sexual stricture (grupppe in 5 years group and 85+), activities, education (3 categories)
- **Housholdes**
 - number of housholdes and number of participants in each housholdes
- **Appartements**
 - numbers, area (clasified group)
- **Buildings**
 - number, ages (cgrouppes)
- **Crime, Helth, education.....**



VIEWER

STAGE - client



- time series
- manage (legend, transparency, delineation)
- embed (authorised producers)
- downloads (picture, geodata)

- INSPIRE
- HTML 5 (responsive design)
- Web service for cartography



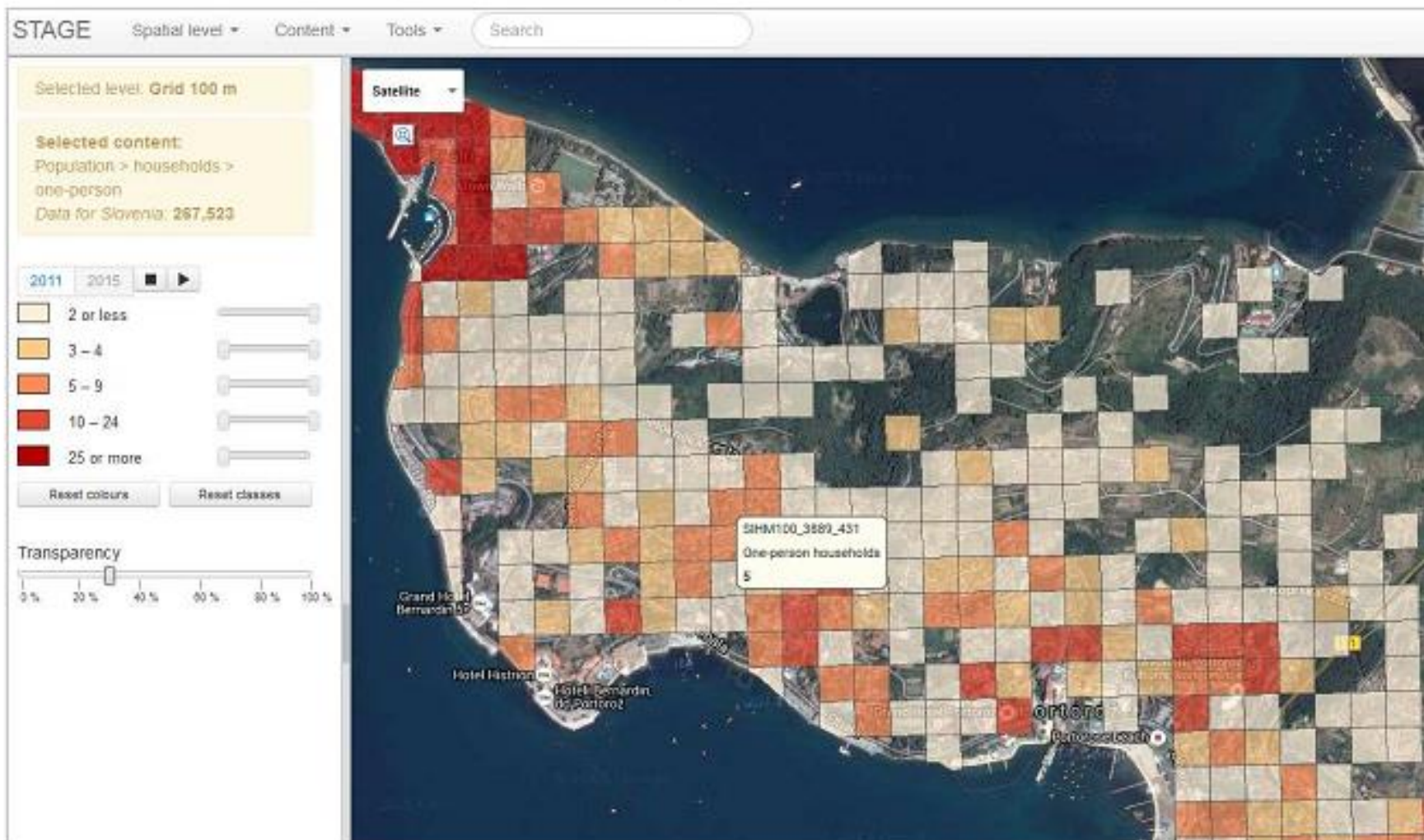
UN-GGIM

United Nations Initiative on
Global Geospatial Information Management

ggim.un.org

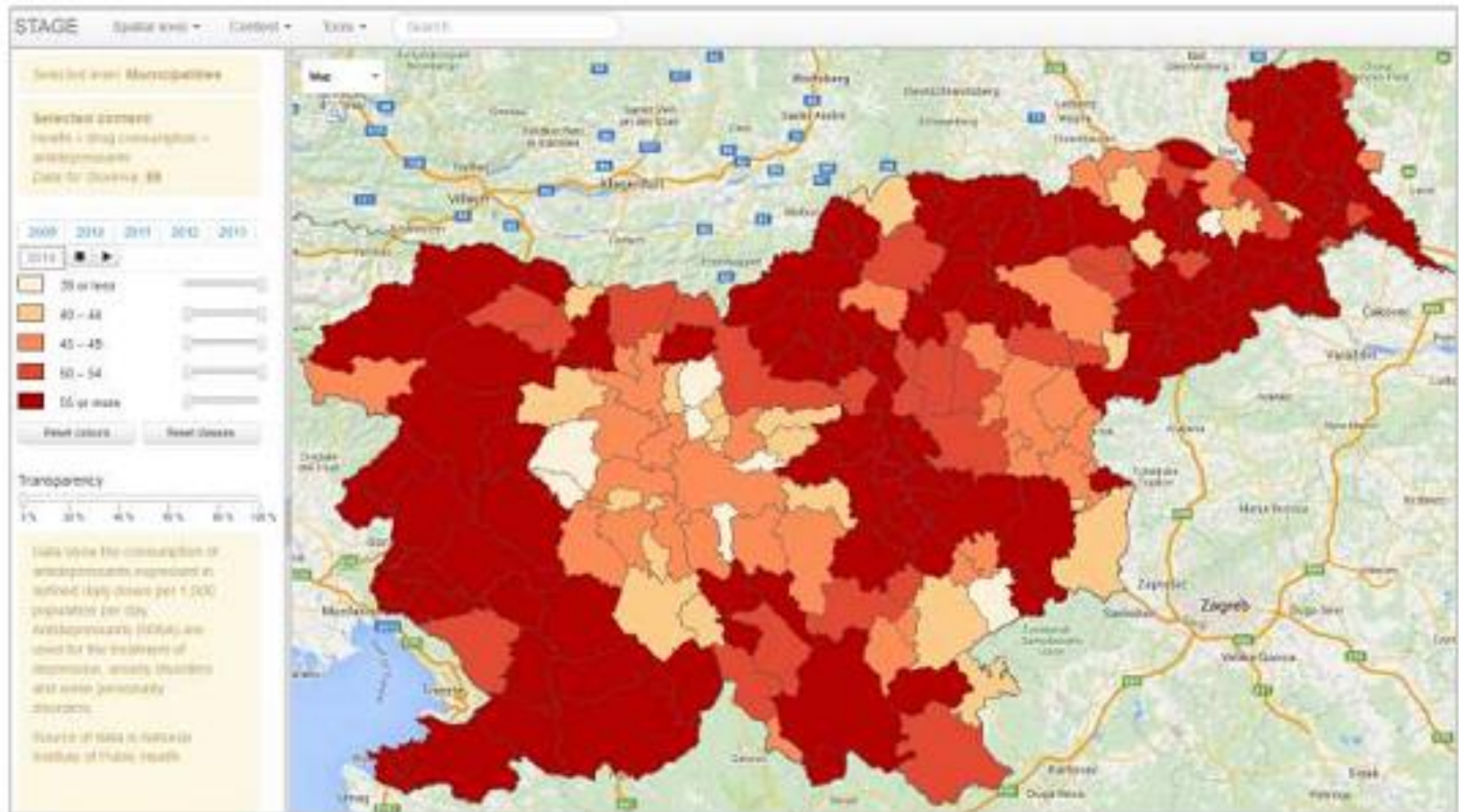
DENSITY OF POPULATION

STAGE, number of one-person households, grid 100m x 100m, 2015

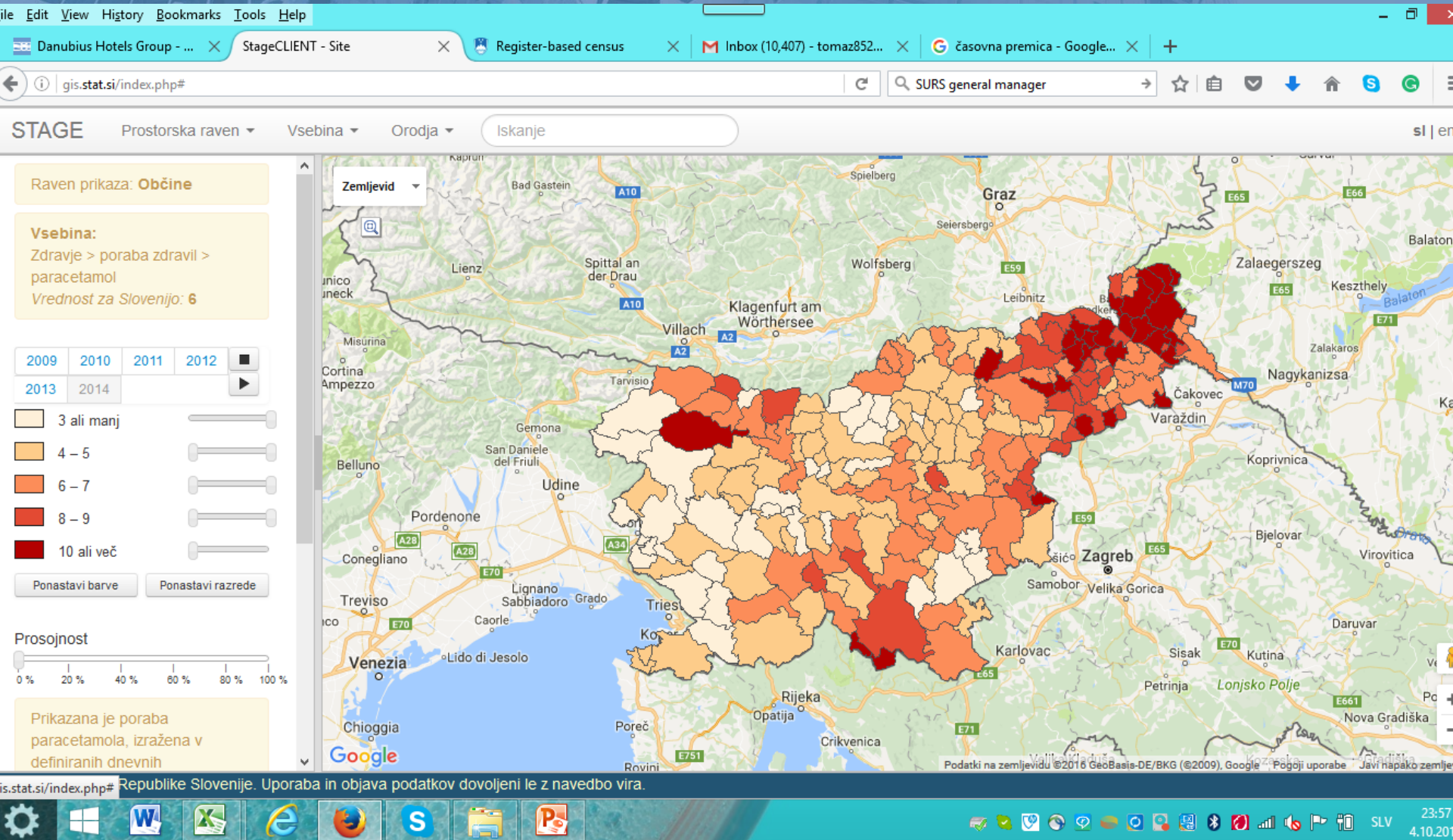


Drug consumption (antidepressants) in municipalities 2009 - 2014

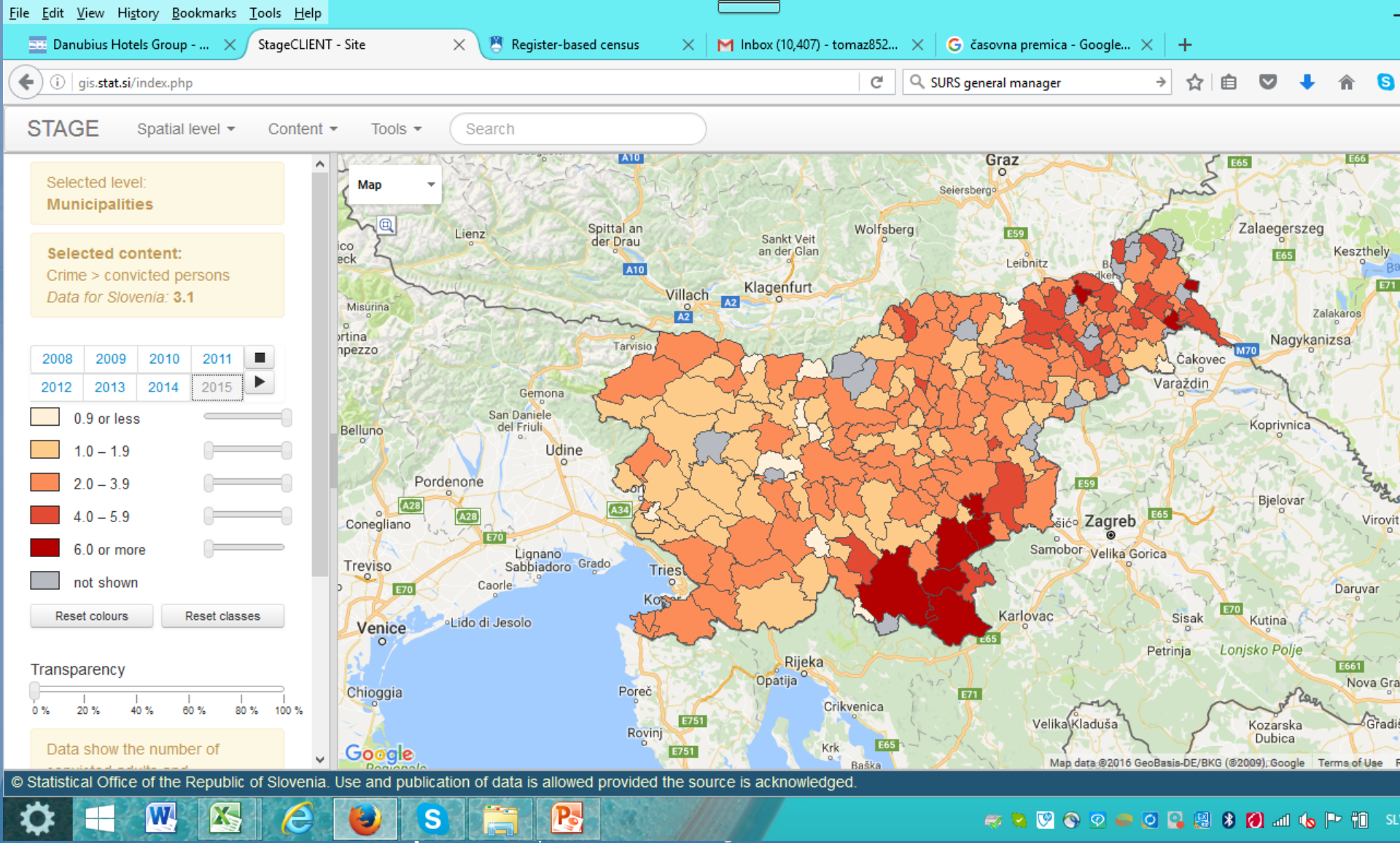
STAGE, drug consumption, antidepressants, municipalities, 2014



Drug consumption (paracetamol) in municipalities 2009 - 2014

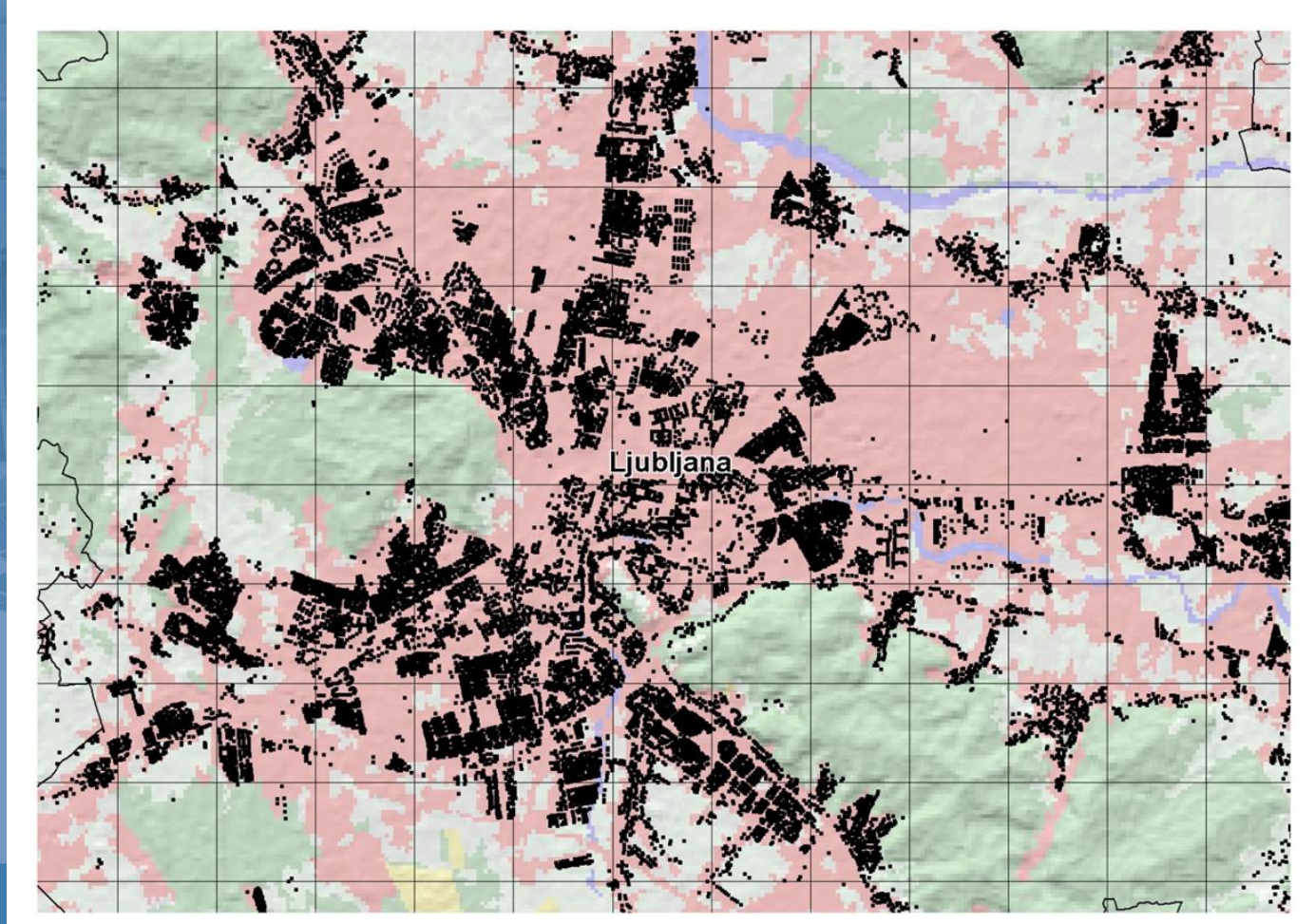


Crime (convicted persons) by municipalities 2009 - 2015



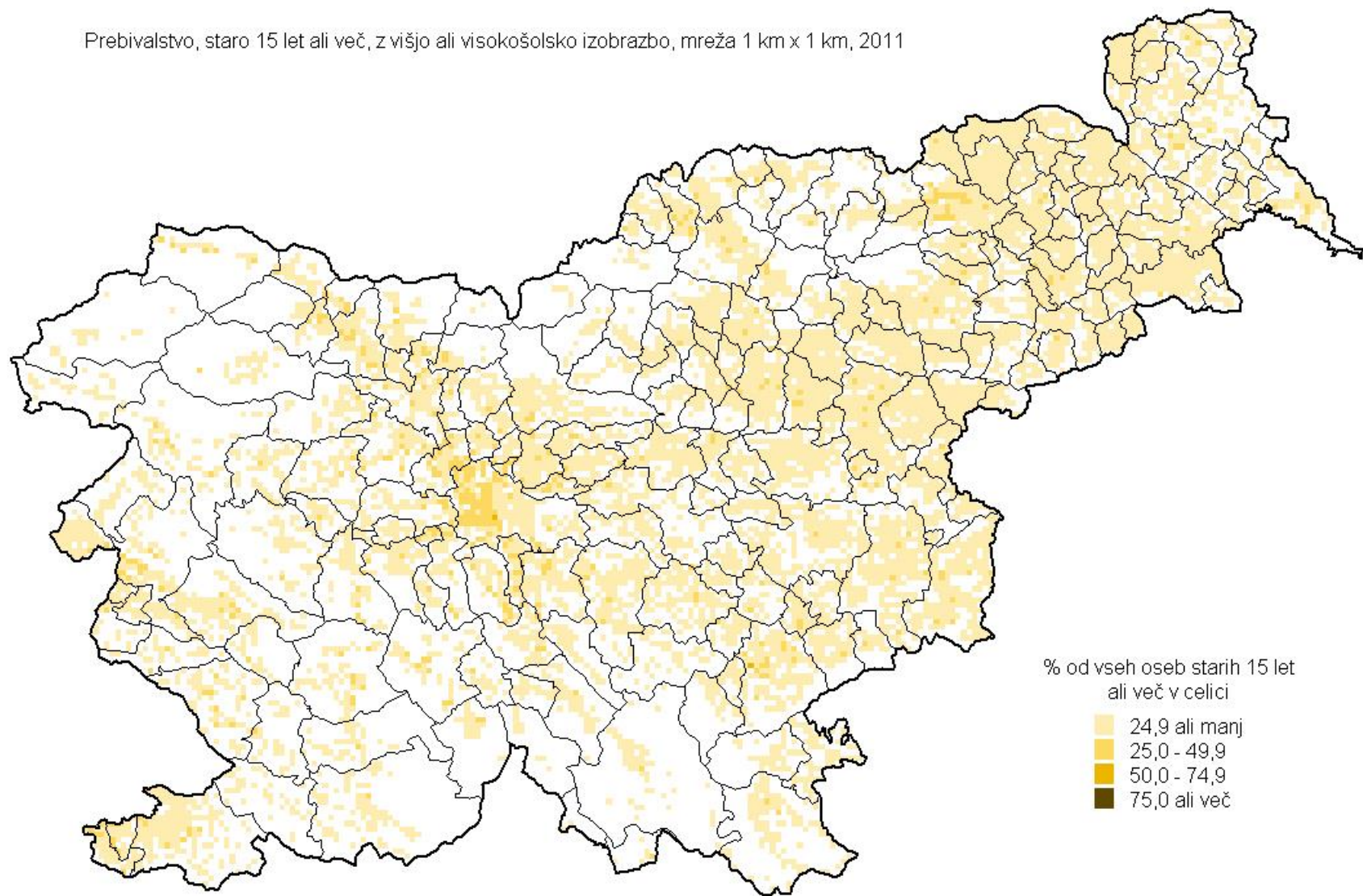
DATA DESIMINATION

- Hierarchical grid & administrative units
- Data from registry based census 2011



EDUCATION OF CITISENS

Prebivalstvo, staro 15 let ali več, z višjo ali visokošolsko izobrazbo, mreža 1 km x 1 km, 2011



CONCLUSIONS

- Merging statistical and geospatial data
- Open data (4 stars)
- Integration with other dissemination databasess
- Multilingual and inter sectorial solution
- EU standards and INSPIRE compliant



UN-GGIM

United Nations Initiative on
Global Geospatial Information Management

ggim.un.org

QUESTIONS?



UN-GGIM

United Nations Initiative on
Global Geospatial Information Management

ggim.un.org

THANK YOU !

[Name: Tomaž Petek]

[E-mail: tomaz.petek@gov.si]

[Address: Zemljemerska ulica 12, si-1000 Ljubljana, Slovenija]

[Phone: +386 31 367 110]



UN-GGIM

United Nations Initiative on
Global Geospatial Information Management

ggim.un.org