



SINERGISE

The rise of crowd-sourcing - how valuable data can we get out of VGI

Grega Milčinski

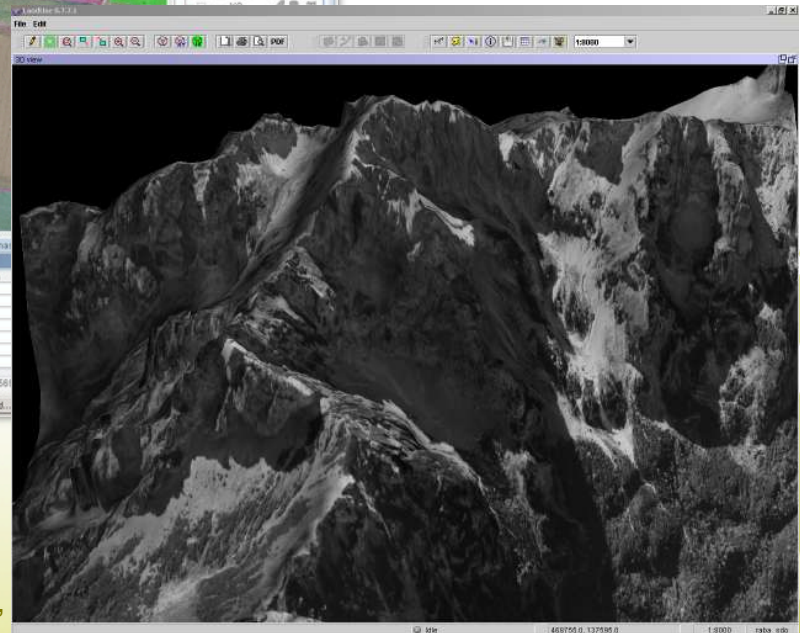
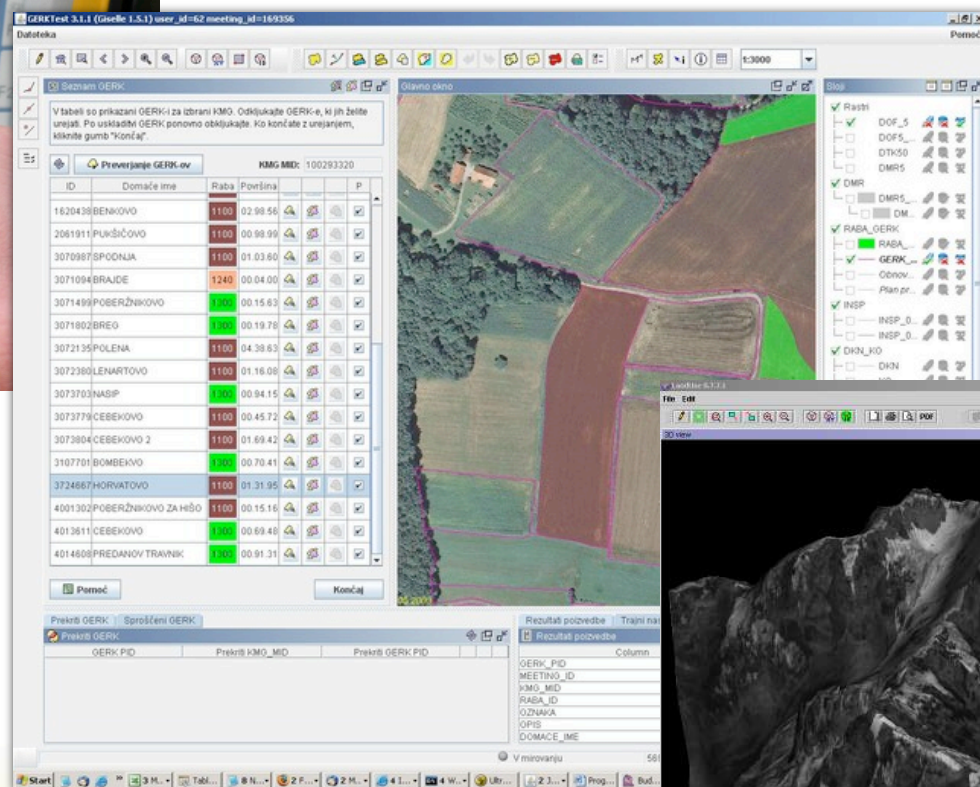
grega.milcinski@sinergise.com



Contents

- About Sinergise
- VGI trends
- Practical experiences
 - OpenStreetMap
 - Geopedia

About Sinergise



The rise of crowd-sourcing - how valuable data can we get out of VGI,

About Sinergise

The screenshot displays the Sinergise web application, which is a platform for crowd-sourced geographic information. The interface is divided into several sections:

- Top Left:** A sidebar with navigation options like "Podaci", "Pretraživanja", and "Bizo pretraživanje". It also includes a search bar and a list of map layers (e.g., ORTO-FOTO KARTA, TOPOGRAFSKA KARTA).
- Top Center:** A header for "IZBIRKA VREDNOTENJA NEPREMIČNIN" (Selection of Real Estate Valuation) with a subtitle "Predlog modelov vrednotenja" (Proposal of valuation models). It shows a map with a red location marker and coordinates Y,X: 550973.45, 186725.66.
- Top Right:** A version number "v1.0.6 (2010-06-08)".
- Middle Left:** A section titled "IZBERITE MODEL" (Choose Model) with a dropdown menu set to "STANOVAJNA" and a checkbox for "CONE". Below it, there's a "MODEL" and "DOKUMENTI" tab.
- Middle Right:** A section titled "IZBERITE OBMOČJE POGLEDA" (Choose View Area) with instructions on how to use the mouse to select a view area on the map.
- Bottom Left:** A section titled "PODROBNEŠA NAVODILA dobite tukaj" (Get more detailed instructions here).
- Bottom Center:** A detailed view of a hiking trail named "Urejanje: Gorska pot-Uskovnica - Konjščica - Zajamniki". It includes fields for "Ime poti" (Trail name), "Vrsta poti" (Trail type), "Čas poti" (Trail time), "Izhodišče" (Starting point), "Vrsta podlage" (Trail surface), and "Težavnost" (Difficulty). It also features two photographs: "Slika 1" (A dirt path in a mountain valley) and "Slika 2" (A group of hikers on a trail).
- Bottom Right:** A large map view showing the trail route in orange on a satellite image. It includes a legend for "Ortofoto", "Višine", "Relief", and "Topo".

The rise of crowd-sourcing - how valuable data can we get out of VGI, CAPIGI 2011

About Sinergise

- 8 years in GIS
- 20 people, mostly programmers
- Governmental Solutions
 - Agriculture – IACS
 - Real-estate Management
- We run GIS in Slovenia and going outwards
 - 2008 - IACS in Croatia
 - 2009 – Real Estate in Africa
 - 2010 – IACS in Macedonia
- VGI project Geopedia.si running since 2007

Rise of Volunteered Geographic Information (VGI)

Michael Jones, Google:



The chief Internet evangelist at Google Inc., and one of the founding fathers of the Internet, says he'd like to see a geographic equivalent of Wikipedia — “Geopedia,” he dubs it — where anyone could add to the world’s geographic know-how.

Jack Dangerman, ESRI:



He worries that even the best-intentioned amateur could provide inaccurate data that could lead to a disaster. “Who wants to dig a hole and run into a pipe?” Dangerman asks.

(GeoWeb, summer 2007)

Short history of Wikipedia

- January 2001 – start
- October 2005 – criticism
 - “Broadly speaking, it's inaccurate and unclear.”
 - “I wouldn't have thought of using Wikipedia as a serious reference source”
- December 2005 – “Wikipedia is about as good a source of accurate information as Britannica” (Nature)
- June 2008 – “Encyclopaedia Britannica To Follow Modified Wikipedia Model”
- June 2009 – “Wikipedia, with a 97% share of the online encyclopedia market, has forced Microsoft to shut down Encarta.”



Creating your own VGI system

- idea
- infrastructure
- technology
- basic content
- rules
- community
- users

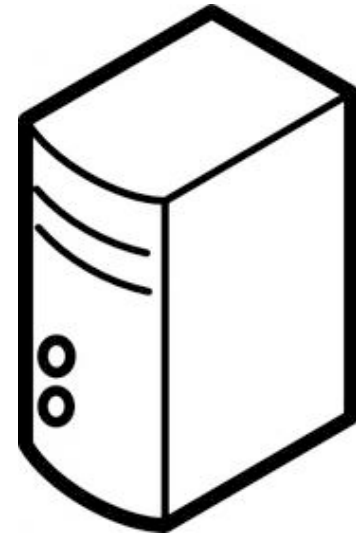
Idea

- What would we like to achieve?
- Which data are we collecting?
- More focused the idea is, better possibilities for a success.

Infrastructure

- Requirements

- Data storage (raster and vector data)
- Application servers
- Network



- Possibilities

- Set of own servers
- Cloud (Google Maps, SimpleGeo,...) + own servers
- Cloud (Google MyMaps, Amazon, Geopedia.si,...)

Technology

- Open source
 - Geoserver, OpenLayers, Drupal
 - PostGis, MySQL
- Minimum development
 - ESRI
 - Oracle, MS SQL
- Custom software



Basic content

- Orientation

- Topographic maps, satellite/aerial imagery
 - ▶ Google Maps (restrictions!) and similar, open data (NASA), government



- Geo-location

- Municipalities, street numbers
 - ▶ Google Maps (restrictions!), open data (Natural earth), government

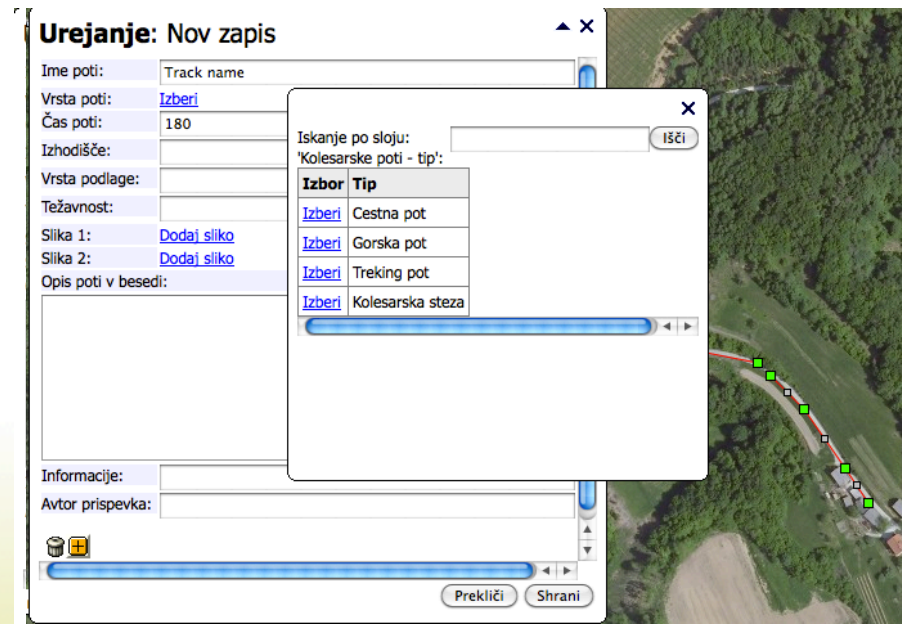
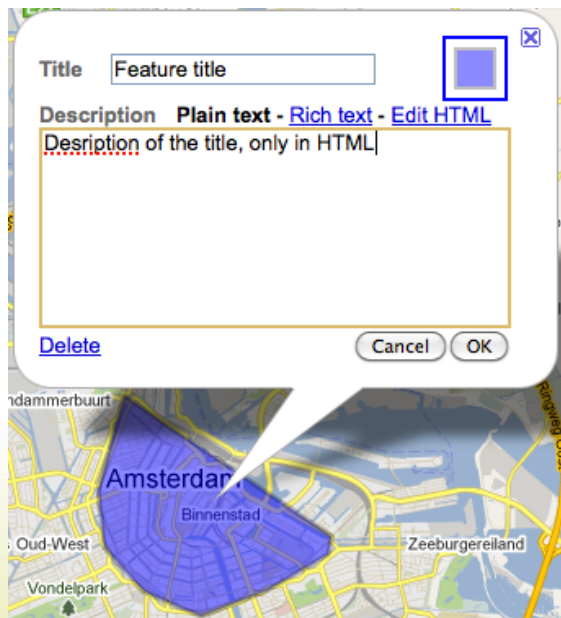
- Topic data

- Depends on the idea



Rules

- Lesson from Wikipedia
 - “Nature said its reviewers found that Wikipedia entries were often poorly structured” (June 2005)
- Maps vs GIS



The rise of crowd-sourcing - how valuable data can we get out of VGI, CAPIGI 2011

Community

- Wikipedia
 - 365 MIO visitors (2010)
 - 500.000 contributors
 - 2000 power users (mothly activity)
- Geopedia.si
 - 620.000 visitors (2010)
 - 15.000 contributors
 - 55 power users



Users

- Who will make use of the data collected
- How?
 - on-line viewer
 - web-services
 - data export
- Where the data will be maintained?

Real-life experiences

- OpenStreetMap



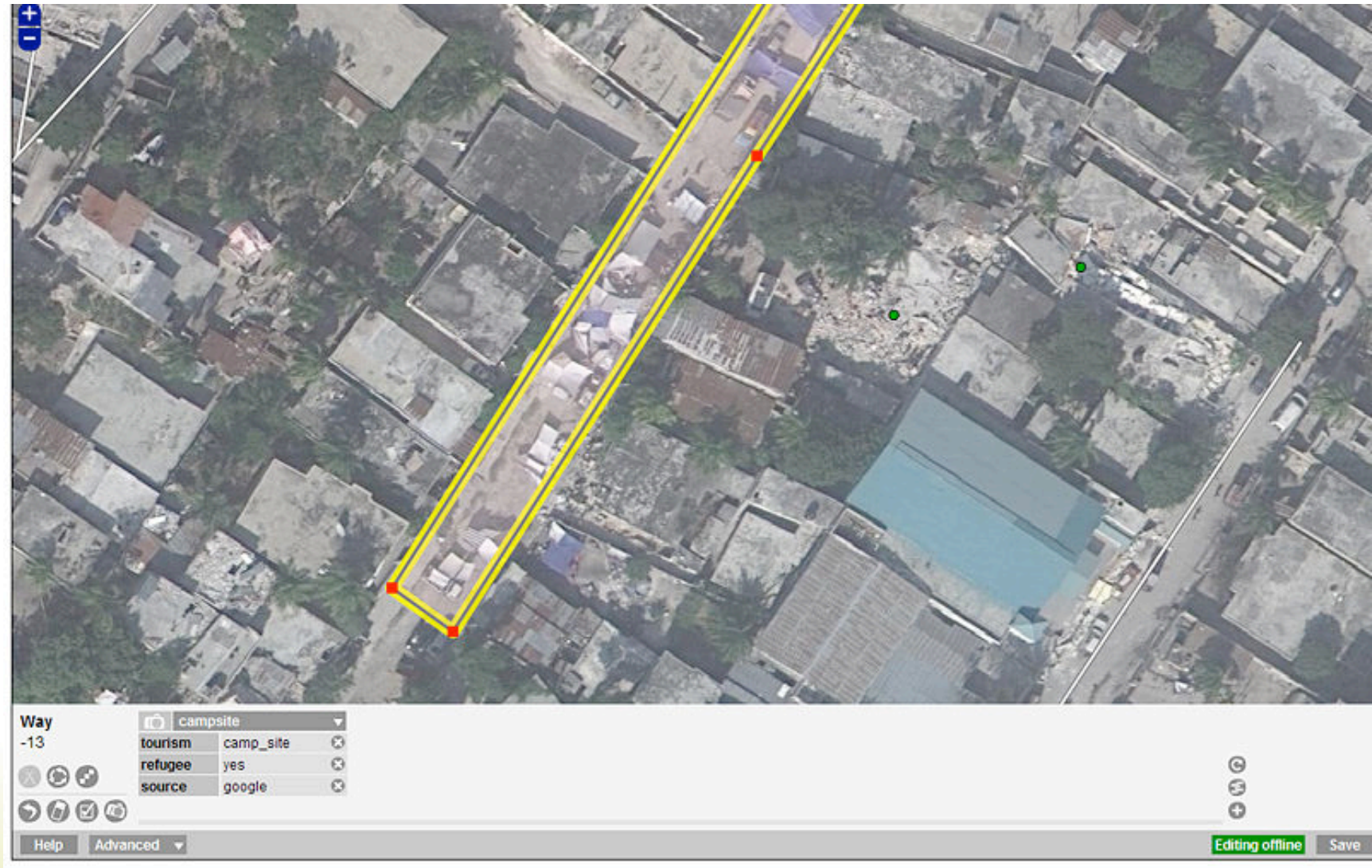
- Geopedia.si



Open-street map

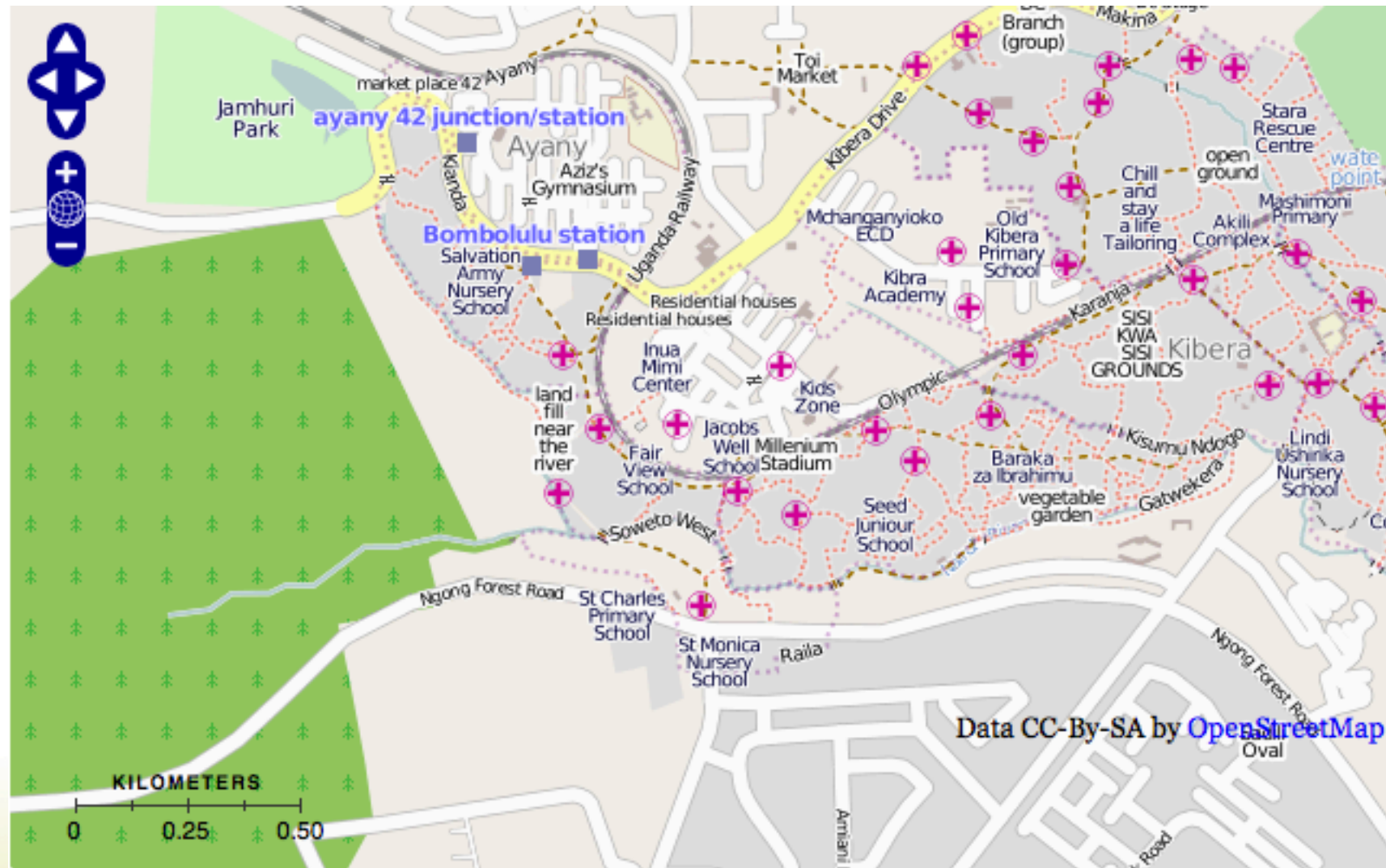
Idea	Creation of a free, editable map of the whole world (roads, buildings, etc.)
Infrastructure	Own servers
Technology	OpenLayers PostgreSQL Other software (Potlatch, Maplink...)
Basic content	Yahoo! Aerial Imagery Some government's data (US Gov, AND Holland, Ordnance Survey, ...)
Rules	Well-defined feature list
Community	>200.000 (end of 2009) 10 % contributing the majority of the data
Users	Haiti Earthquake, large number of web-sites (web-services, tiles)

Open-street map – Haiti earthquake



The rise of crowd-sourcing - how valuable data can we get out of VGI, CAPIGI 2011

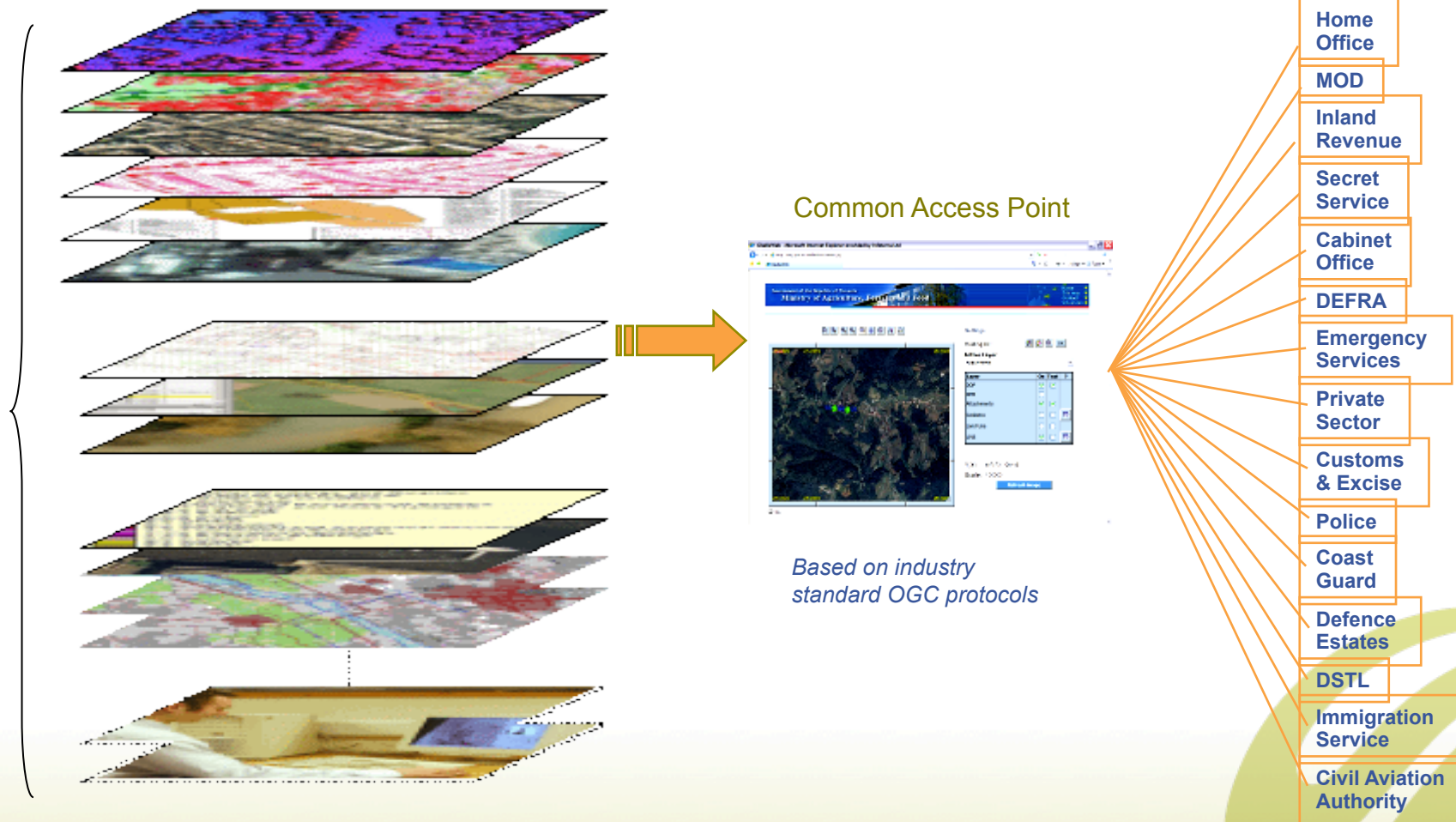
Open-street map – Kibera slum



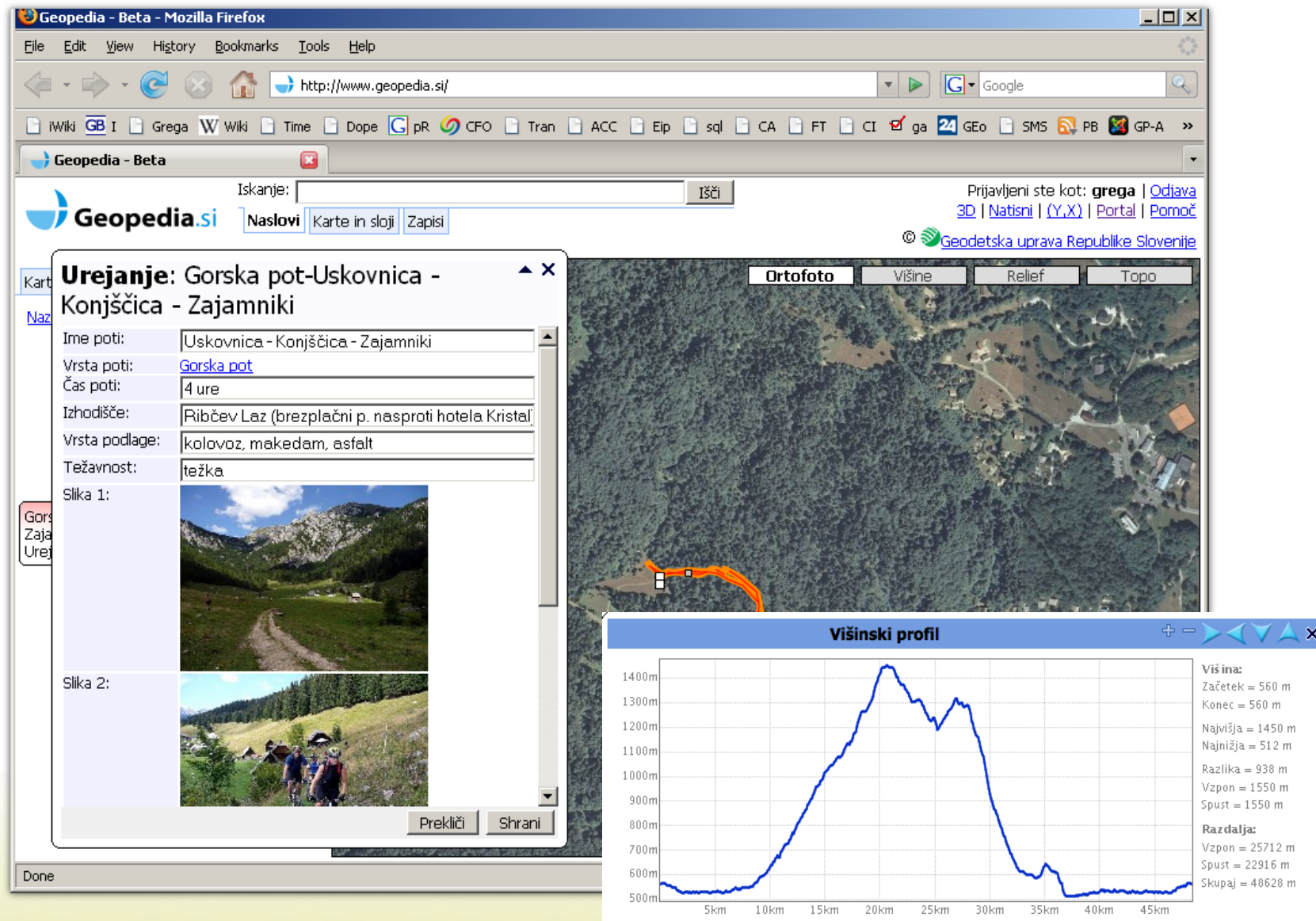
Geopedia.si

Idea	Infrastructure for VGI systems, collection of all spatial data in Slovenia
Infrastructure	Own servers
Technology	Own software (Giselle) MySQL / PostgreSQL
Basic content	Topographic maps, aerial imagery, DMR (Slovenia) Street numbers, other government data
Rules	<ul style="list-style-type: none">• single-theme applications with strict business rules• editable spatial layers with pre-defined structure• creation of own layers
Community	20.000 5% contributing the majority of the data
Users	Illegal dump-sites, Cyclists, Mountaineering organization, Encyclopedia of natural and cultural heritage, Energy agency, ...

Geopedia.si - SDI



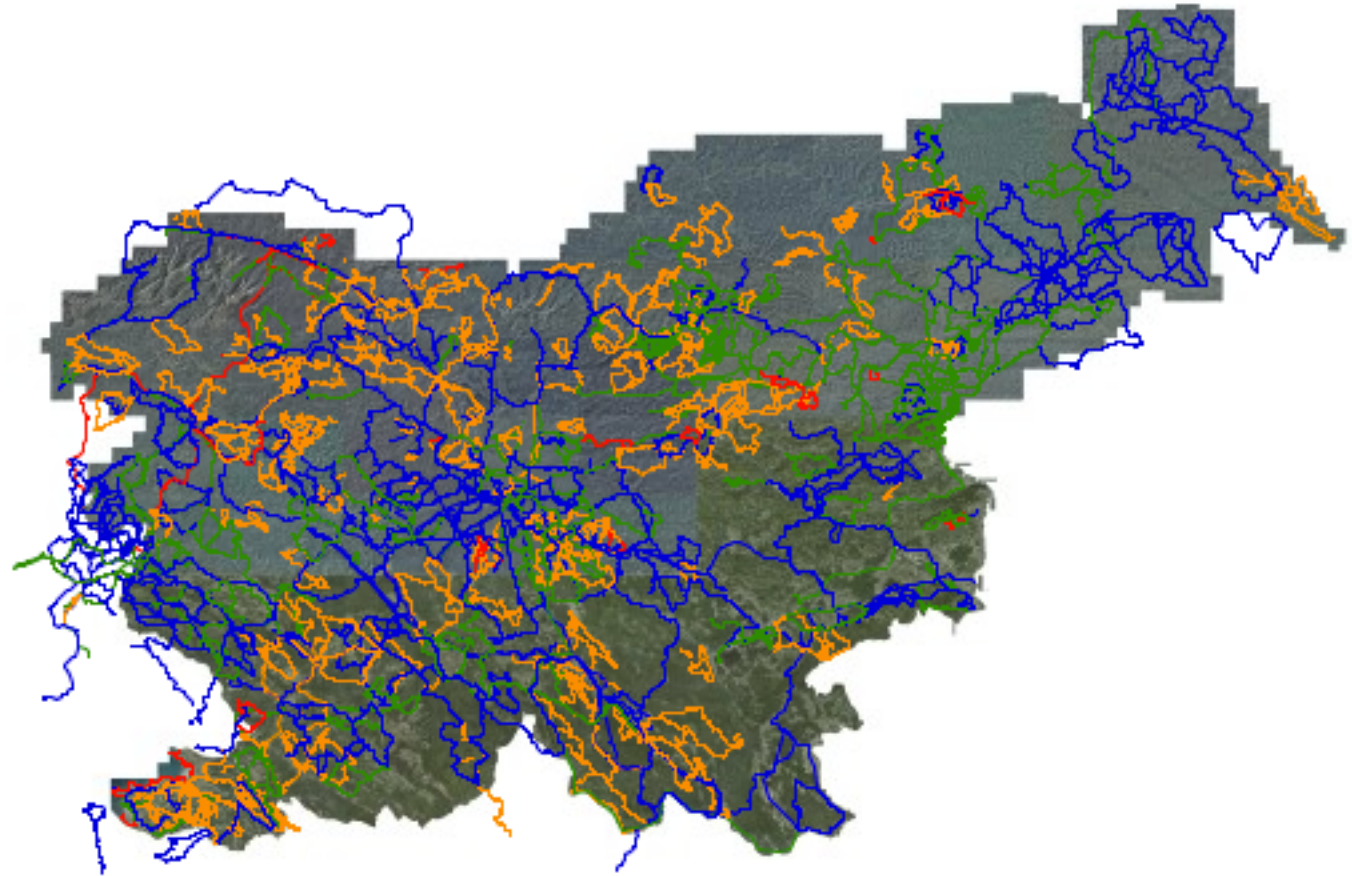
Geopedia.si – cycling




The rise of crowd-sourcing - how valuable data can we get out of VGI, CAPIGI 2011

Geopedia.si – cycling

- 800 paths
- 25.000 km







Geopedia.si – illegal dump-site registry





REGISTER DIVJIH ODLAGALIŠČ


Pozdravljeni na Registru divjih odlagališč. Uporabite spodnje povezave za iskanje ali prijavo divjega odlagališča. Več informacij o popisu divjih odlagališč dobite na www.očistimo.si.

-  **PREIŠČI REGISTER**
-  **PRIJAVI ODLAGALIŠČE**
-  **DOSTOP ZA ČLANE**
-  **IZVOZI PODATKE**

Pozdravljeni, [Prijava se](#) | [Registracija?](#)


 

Interaktivna karta za iskanje in prijavo divjega odlagališča



Ortofoto Višine Relief Topo

Links Help

Language  Login

Karta potresne nevarnosti 3/14/11

Geopedia.si Lite

INFO CONTENT RESULTS

Lega > [Ravnina](#)

Površina [m2] > 2500

Prostornina > 500-1000m3 (100 avtomobilov)

Organski odpadki % > 0

Gradbeni odpadki % > 85


Komunalni odpadki % > 0

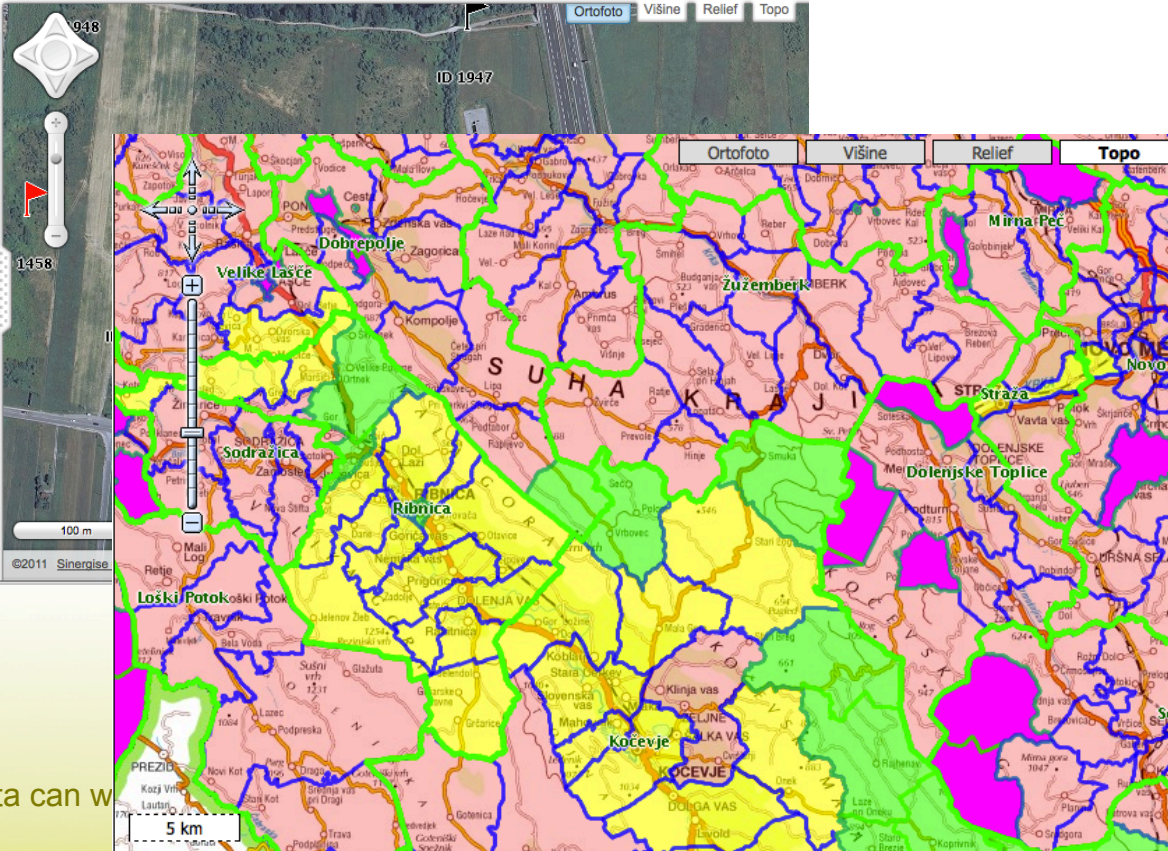
Kosovni odpadki % > 0

Nevarni odpadki % > 15

Opis in količina nevarnih odpadkov > Veliko salonitnih plošč, asfalt.

Opombe > To je območje bивše gramozne jame. Sedaj so tu ogromne količine gradbenih odpadkov (beton). Za očiščevanje bi bili potrebni bagri. Poleg tega so odpadki posejani vse okoli v krogu 200 m.

Fotografija > 

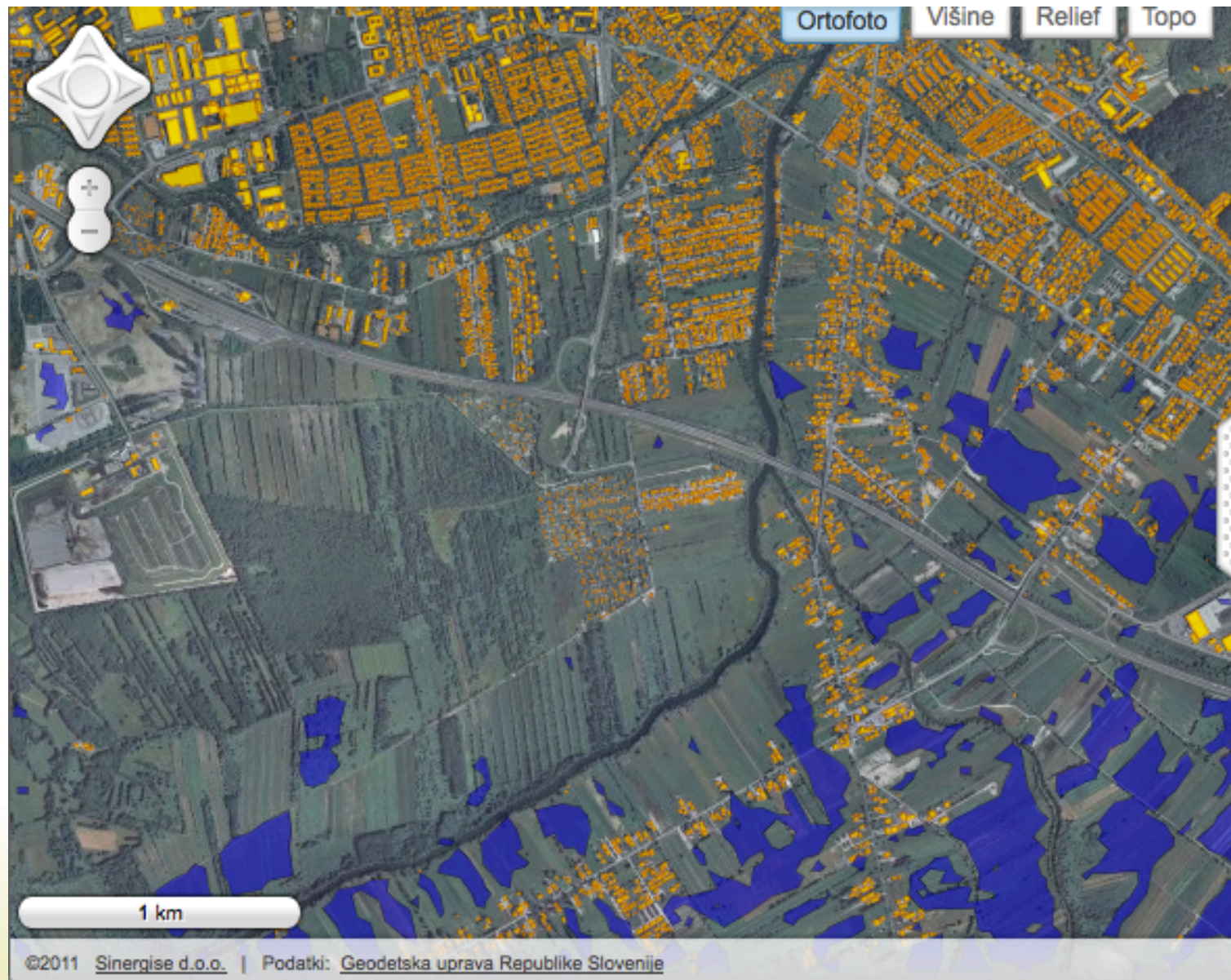


Ortofoto Višine Relief Topo

5 km

The rise of crowd-sourcing - how valuable data can w

Geopedia.si - floods



The rise of crowd-sourcing - how valuable data can we get out of VGI, CAPIGI 2011

Geopedia.si – stats

- 150.000 monthly visits (3 MIO page-views)
- average time on site – 8 minutes
- 6.000 spatial layers (1000 marked as “good quality”)
- 10 MIO of spatial entries
- (only in Slovenia)

Comparison to non-VGI

Michael Jones, Google:

The chief Internet evangelist at Google Inc., and one of the founding fathers of the Internet, says he'd like to see a geographic equivalent of Wikipedia — “Geopedia,” he dubs it — where anyone could add to the world's geographic know-how.

Jack Dangerman, ESRI:

He worries that even the best-intentioned amateur could provide inaccurate data that could lead to a disaster. “Who wants to dig a hole and run into a pipe?” Dangerman asks.

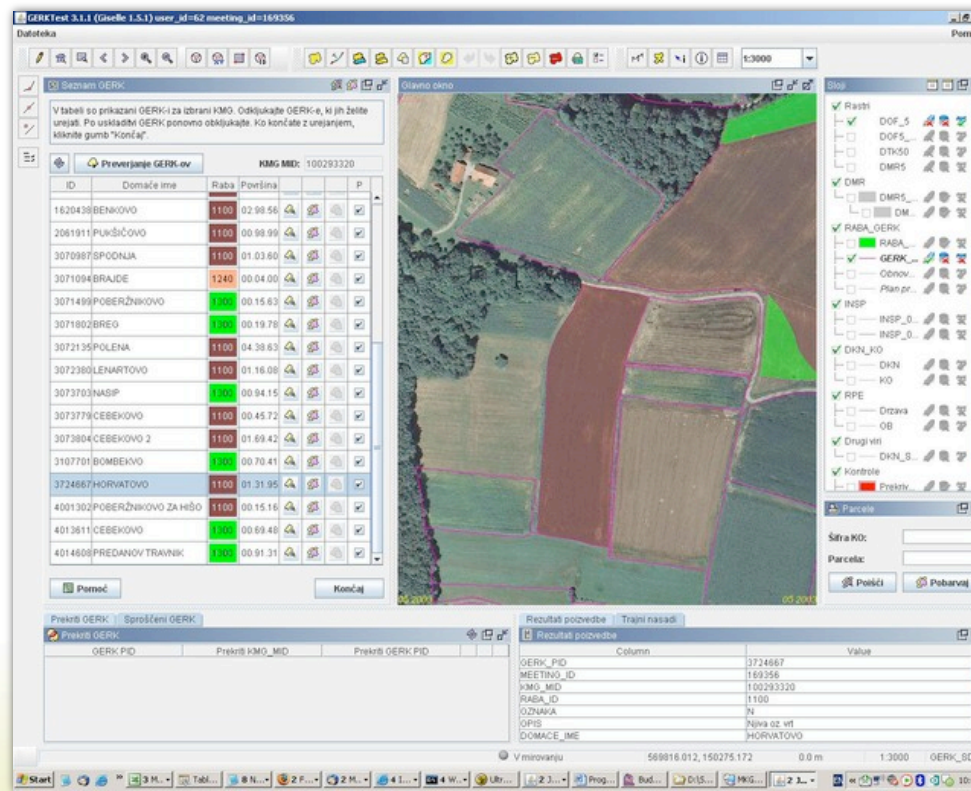
(GeoWeb, summer 2007)

Comparison to non-VGI

- LPIS
- Land Cadastre

LPIS

- Government operated, based on farmer's input
- Used for distribution of agriculture subsidies



LPIS – strict control

DOP VISUAL CONTROLS

Layers

Upper map Lower map

- ☒ ORTHO-PHOTO 1:5000
- ☐ NEW ORTHO-PHOTO 1:5000
- ☐ TOPOGRAPHIC MAP 1:25000
- ☐ COUNTIES
- ☐ MUNICIPALITIES
- ☐ CADASTRAL MUNICIPALITIES
- ☐ SETTLEMENTS

Tasks: 4/19 Show open or checked after: 2/11/11

LPIS ID	FARM ID	STATUS	UPDATED ON
226792	112690	No change	May 31, 2010
1467215	112690	Major change	May 31, 2010
9049249	127283	No change	Jan 27, 2011

COMMENTS

☒ No change ☒ Minor change ☒ Major change

© 2010 Agencija za plaćanja u poljoprivredi, ribarstvu i ruralnom razvoju

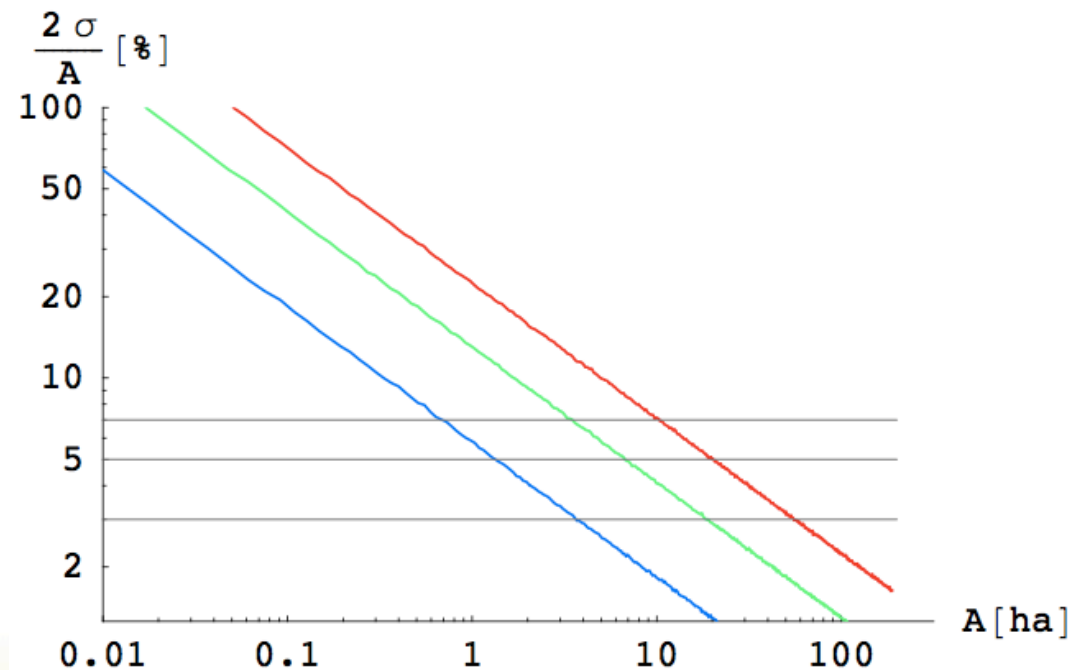
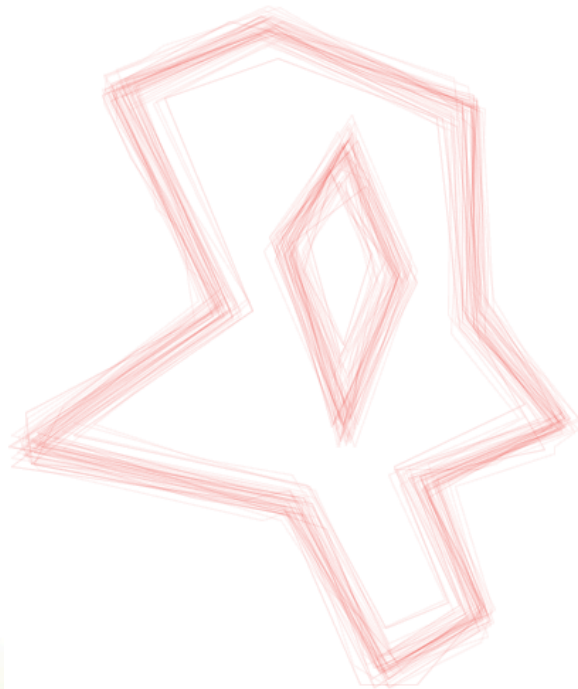
100 m

v0.0.01 (2011-01-17)

SINERGISE

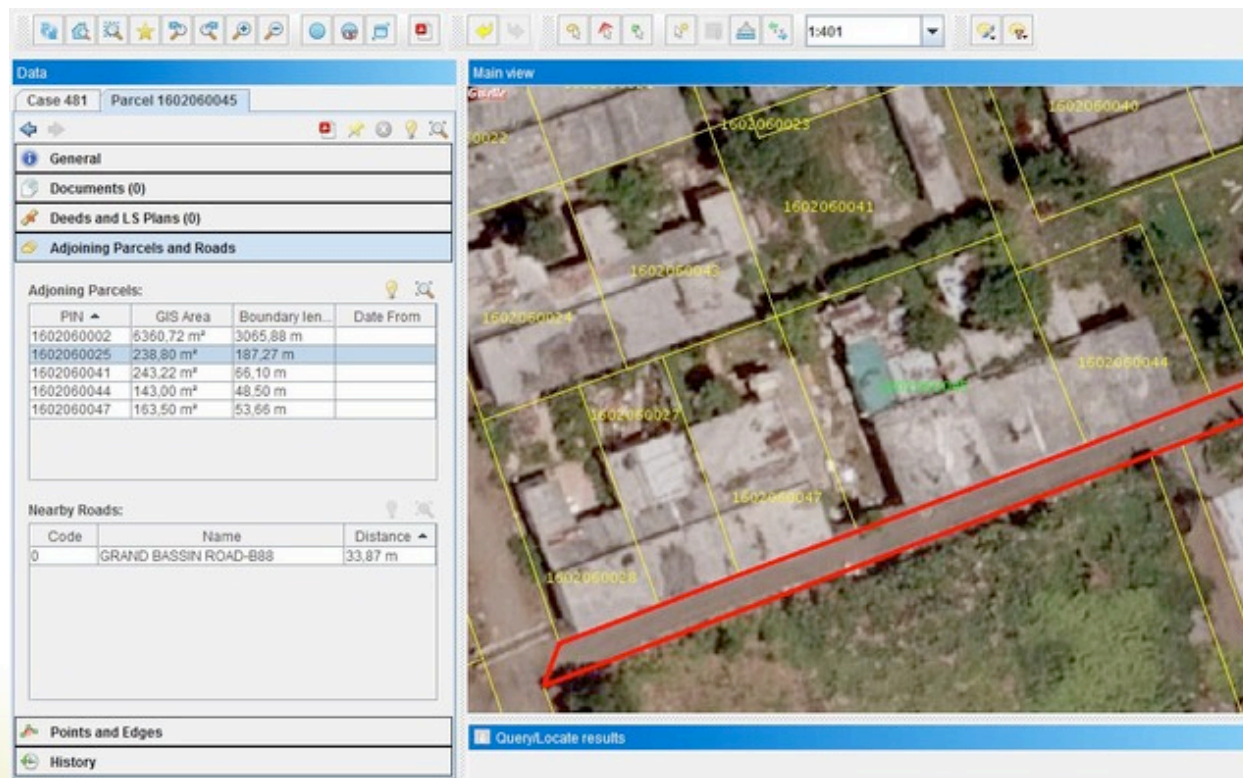
LPIS - Quality

- Theoretically not possible to meet EU requirements in some cases (max 3% of area difference).



Land Cadastre

- Government operated, based on field survey
- Used for land administration, taxation



Land Cadastre – strict control



Land Cadastre – quality

- Not good enough as a base for LPIS (in Slovenia and some other cases)



Conclusion

- VGI does not produce perfect results
 - Neither do “professional” systems
- Good enough for practical purpose



- Improving in the future (mobile GIS, etc.)

Thank you



Questions?