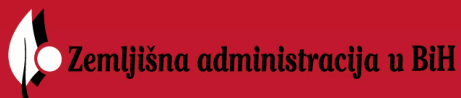




CAMPUS

Cadastre Application Management Processing Updating System

CAMPUS software is a product of cooperation between Government of Brčko District and Land Administration Project in BH.



Project CAMPUS

Land Cadastre Maintenance Tool

Spokeperson: Vladimir Perić, dipl. el. ing.

Company: BEOGIS [Belgrade, Serbia]

The third Trieste gvSIG user meeting, 13-14 April 2010

Overview

- Project goals
- Architecture
- Extension Campus
- Directions of further development

Project goals

- Spreading of open source within public administration
- Exploit and extend widely used solutions
- Data storage in open source database
- Multi-platform support
- Multi-language support
- Extensibility

Why open source?

- Advantages
 - Lower development costs
 - GPL
 - Community
 - Existence of specific functionalities
 - Independence from manufacturer

Open source minuses

- Variety and incompatibility of versions
- Constant improvements need to be monitored – consulting needed
- Documentation

Geospatial data base

- Open source data base
- Geospatial data support
- Data base model
 - ER model
 - Procedures
 - Checks
 - Data consistency checks
 - Topology checks

Database implementation

- PostgreSQL database
 - PostGIS
 - Geo-spatial data
 - Point
 - Line
 - Poliline
 - Polygon
 - Multipolygon...
 - Geo-spatial functions
 - Intersection
 - Union
 - Difference
 - Buffer...



Opensource GIS

- Candidate solutions
 - GRASS
 - QuantumGIS
 - Kosmo
 - GvSig
- Criteria
 - Supported data sources
 - User-friendliness
 - Adaptability
 - Extensibility
 - Variety of functionalities

GvSig

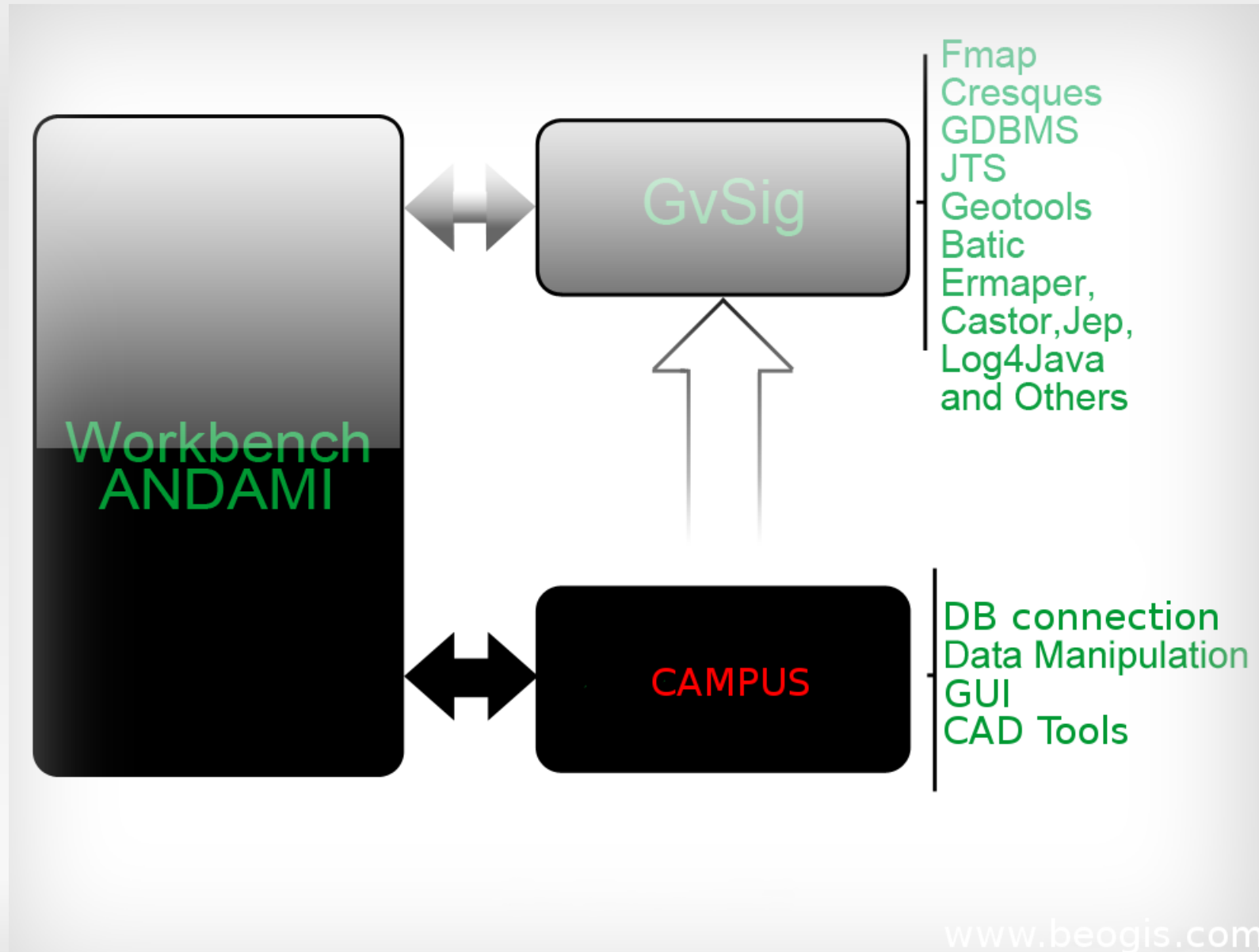
- Variety of supported data sources
- User friendly GUI
- Multi-language support
- Multi-platform orientation
 - Windows, Linux, OS X
- Extensibility
- www.gvsig.gva.es



Extension CAMPUS

- Architecture
 - Database model
 - Applicative solution tends not to depend on database model
 - GvSig extensions
 - Custom CAMPUS extensions
 - Split polygon
 - CAD tools

Application architecture



Extensions

The screenshot shows a 'Preferences' dialog box with a list of extensions on the left and configuration options for the selected extension on the right.

Extensions List:

- ba.campus.driver.extension.VectorialFileReadExtension
- ba.campus.edit.append.extension.AppendLayerExtension
- ba.campus.edit.buildings.AddBuildingExtension
- ba.campus.edit.buildings.RemoveBuildingExtension
- ba.campus.edit.cad.parallelline.extension.CParallelLineExtension
- ba.campus.edit.cad.point.extension.CInsertPointExtension
- ba.campus.edit.cad.rotatetext.extension.RotateTextExtension
- ba.campus.edit.culturechange.CultureChangeExtension
- ba.campus.edit.merge.MergePolygonsExtension
- ba.campus.edit.split.extension.SplitPolygonExtension
- ba.campus.export.extension.ExportPointLayerExtension
- ba.campus.gui.dialogs.extensions.AboutCampusExtension
- ba.campus.gui.dialogs.extensions.ChoseConnectionExtension
- ba.campus.info.CampusInfoToolExtension
- ba.campus.map.extension.CMapExtension
- ba.campus.printing.extension.PrepareForPrintingExtension
- ba.campus.util.layer.refreshlayer.RefreshExtension
- ba.campus.windowconfiguration.InitialDBLoginWindowExtension
- ba.campus.windowconfiguration.InitialWindowExtension**
- com.iver.cit.gvsig.About
- com.iver.cit.gvsig.AboutExpresionFieldExtension
- com.iver.cit.gvsig.AddLayer
- com.iver.cit.gvsig.Annotation_AboutExtension
- com.iver.cit.gvsig.Annotation_Extension
- com.iver.cit.gvsig.Annotation_ToolExtension

Preferences for ba.campus.windowconfiguration.InitialWindowExtension:

Description:
Initializes CAMPUS windows. This is the main CAMPUS project extension. Setting it inactive will inactivate all other CAMPUS extensions.

Active extension. Priority

The changes made on these values will be applied when restarting the application

Buttons: Restore defaults, Accept, Cancel

CAMPUS: Key features

- Multi-user surrounding
 - Client-server architecture
 - Data locking
 - Administrative features
 - Task history
- Automated procedures
- Additional user features
 - CAD tools
 - Specific files source support
 - .txt point files

Automatized procedures

- Split / merge parcels
- Add / remove buildings
- Modify land usage / culture
- Copy of Cadastre plan

Other functionalities

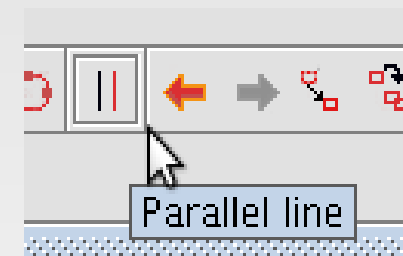
- Topology checks
- Automatic documents creation
- History survey
- Info tool
- Additional drawing tools
 - Extension CAD
 - Extend line tool
 - Parallel line tool, distance set from a dialog
 - Text rotation tool

Extension CAD

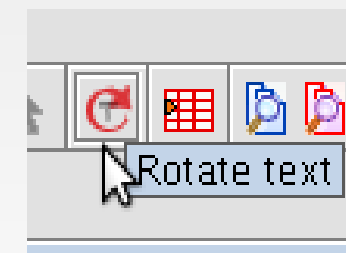
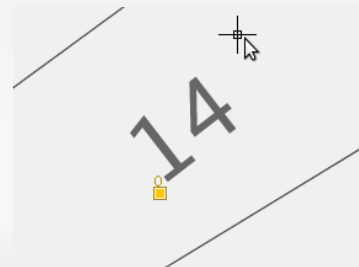
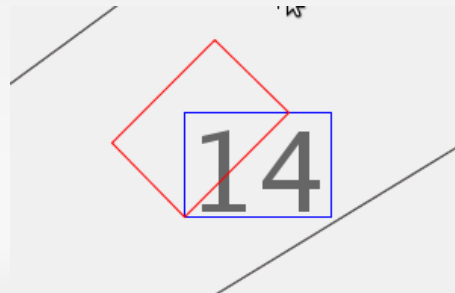
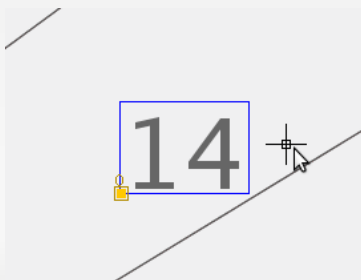
- Extend line tool



- Parallel line on distance tool



- Text rotation tool



Topology checks

- Check conditions specified by db model
- Relationship table

	dbid [PK] bigseri	prva_tabela_naziv text	druga_tabela_naziv text	relacija_naziv text	bafer real
1	1	kat_parcela	kat_zgrada	Contains	0.001
2	2	kat_katastarska_opcina	kat_parcela	Contains	0.001
3	3	kat_parcela	kat_nacin_koristenja	Contains	0.0
4	4	kat_medjna_tacka	kat_medjna_tacka	Disjoint	0.001
5	5	kat_zgrada	kat_zgrada	Touches	0.001
6	6	kat_parcela	kat_simbol	Contains	0.001
7	7	kat_zgrada	kat_nacin_koristenja	Touches	0.001

Usage example: log-in

Connection parameters

Connection parameters

Connection name:

Driver:

Server URL:

Port:

Database name:

Warning: exact DB name is needed. DB name is cas...

User:

Password:

Connected:

Ok Cancel

Project dialog

Edit requirement

Office tasks

Task/Job type: Choose job

Requirement number: 11061036

Requirement initiator:

Requirement start date: Nov 6, 2009

Requirement finish date: ---

DB user: madimir

Remark:

Jobs

- Split parcel - Input[76/1]
- Split parcel - Input[13/3]
- ... New job ...

**Parcel \ DB Connection **

Commune: Bukvik Donji

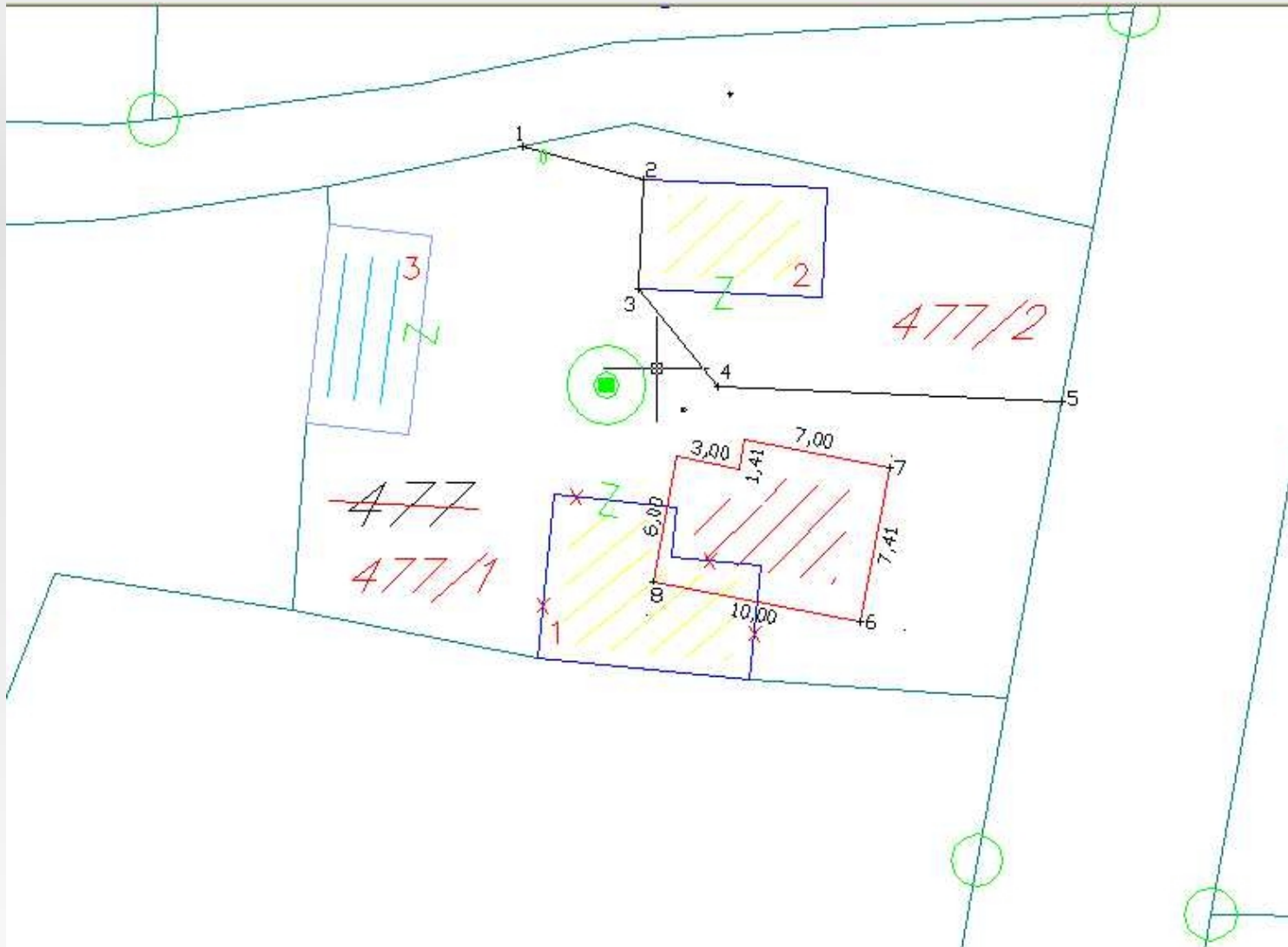
Number: 1

Subnumber: 0

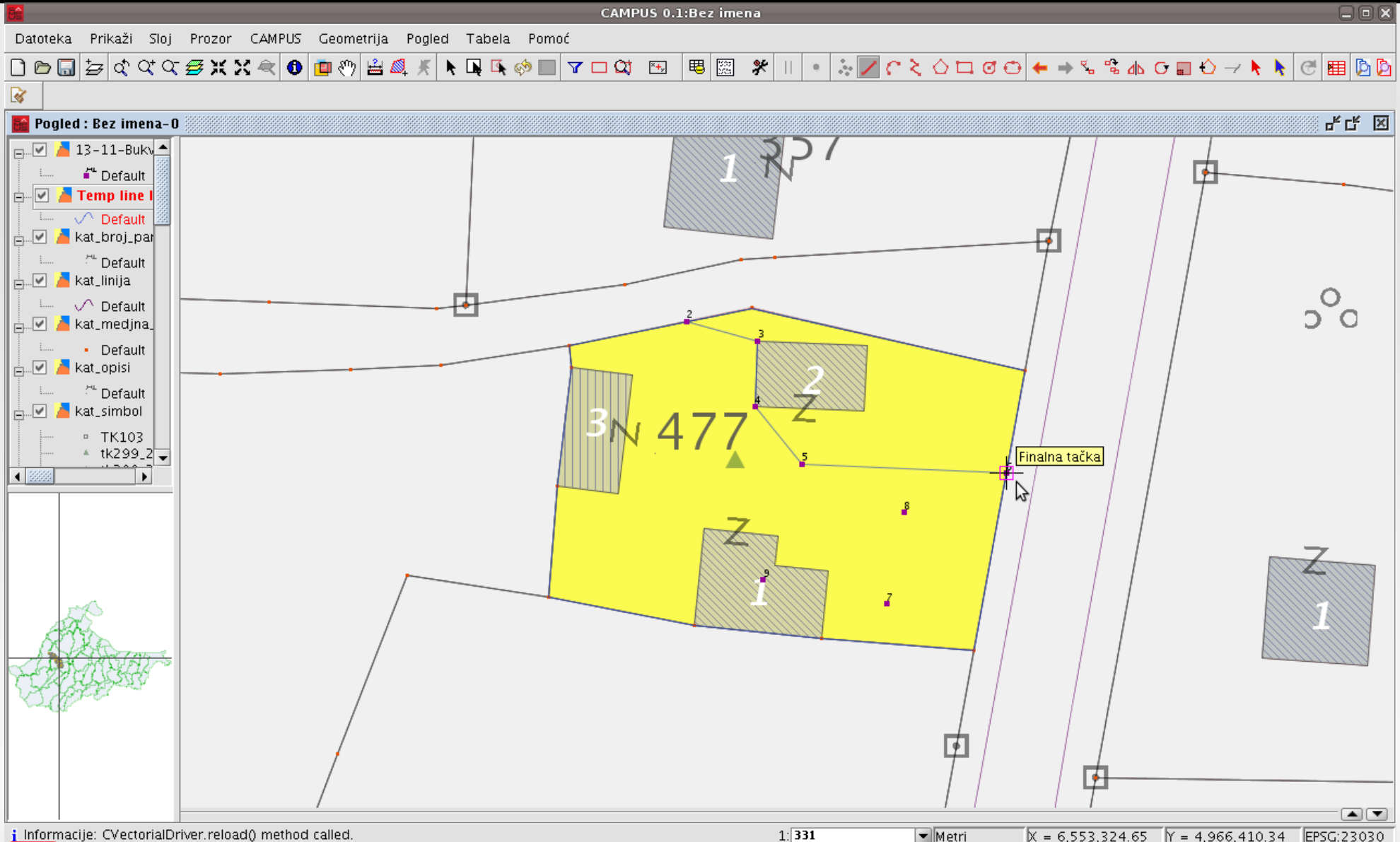
Add Remove

Add job Finish requirement Cancel

Task definition drawing



Split parcel procedure initialized



Split parcel

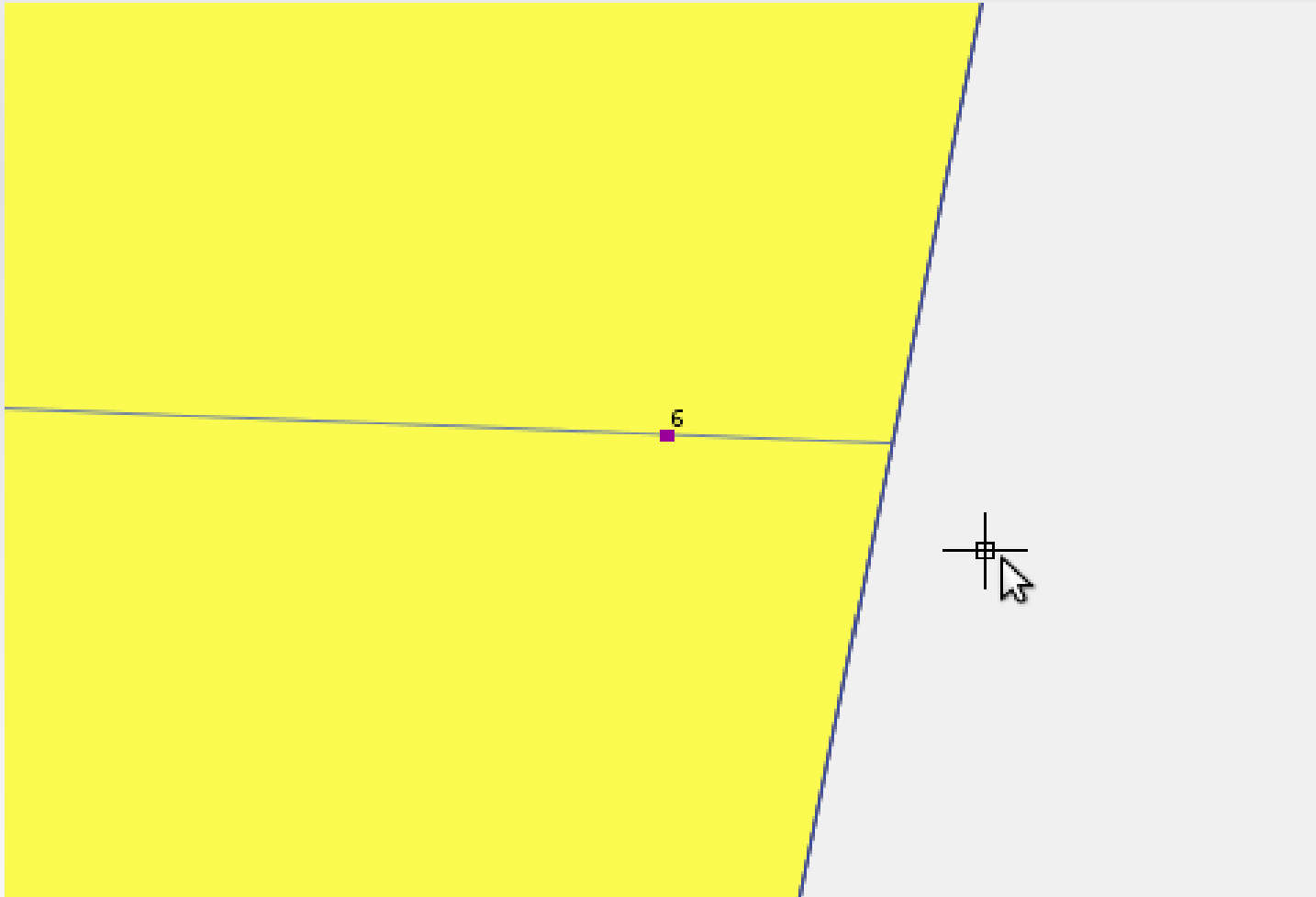
The screenshot displays a GIS application interface with a menu bar (Datoteka, Prikaži, Sloj, Prozor, CAMPUS, Geometrija, Pogled, Tabela, Pomoć) and a toolbar. The main window, titled "Pogled : Bez imena-0", shows a yellow parcel being split by a blue line. A purple point labeled "2" is positioned on the blue line. The left sidebar contains a layer list with items like "13-11-Bukv", "Temp line 1", "kat_broj_par", "kat_linija", "kat_medjna", "kat_opisi", and "kat_simbol". A small inset map in the bottom-left corner shows the current view's location within a larger geographic context. The status bar at the bottom provides information: "i Informacije: CVectorialDriver.reload() method called.", a scale of "1: 331", units "Metri", and coordinates "X = 6,553,299.18 Y = 4,966,422.4" in "EPSG:23030".



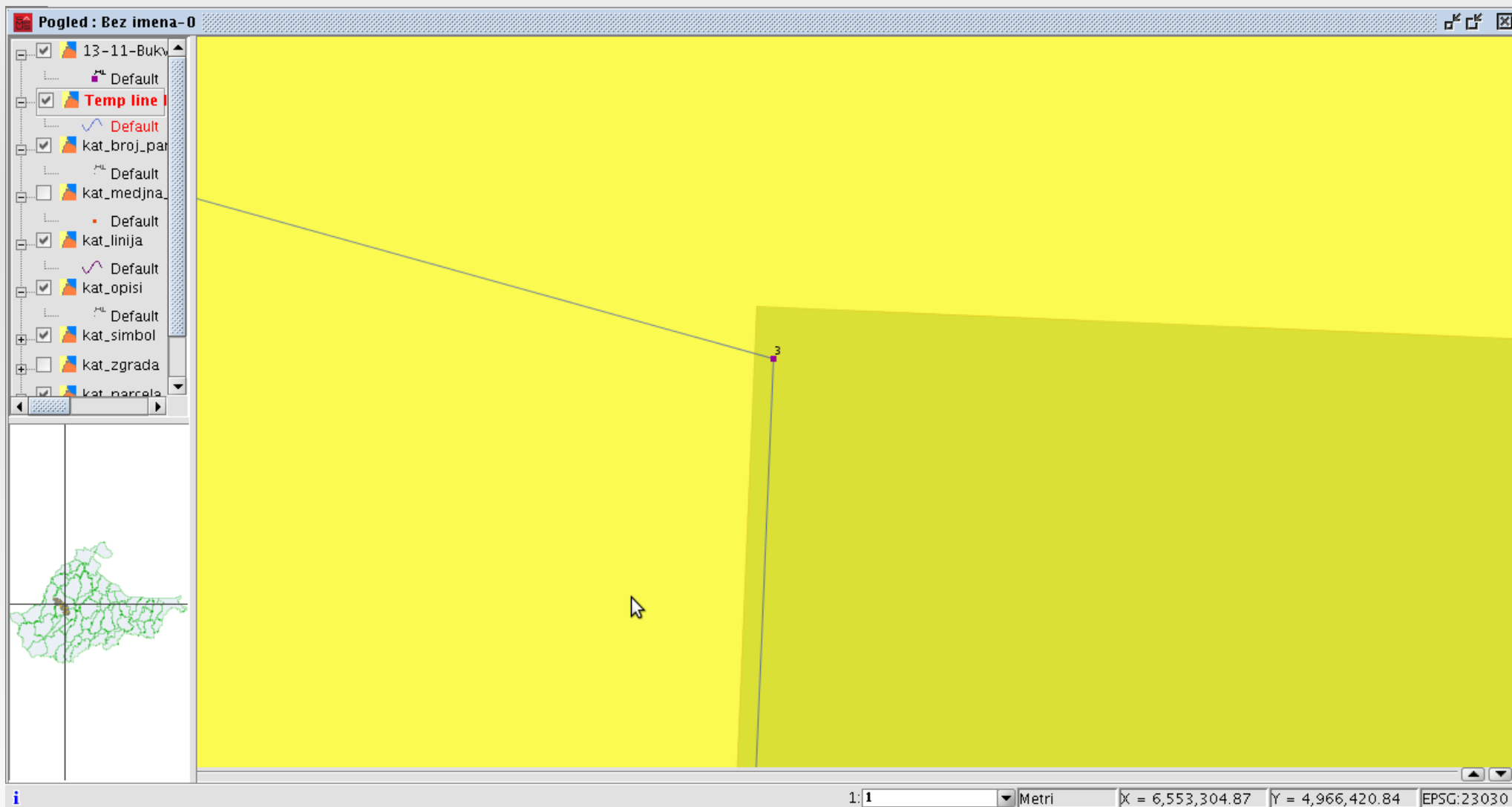
Extend line



Extend line



Overlaying a building



Split parcel

Datoteka Prikaži Sloj Prozor CAMPUS Geometrija Pogled Tabela Pomoć

Pogled : Bez imena-0

Informacije o novonastalim parcelama

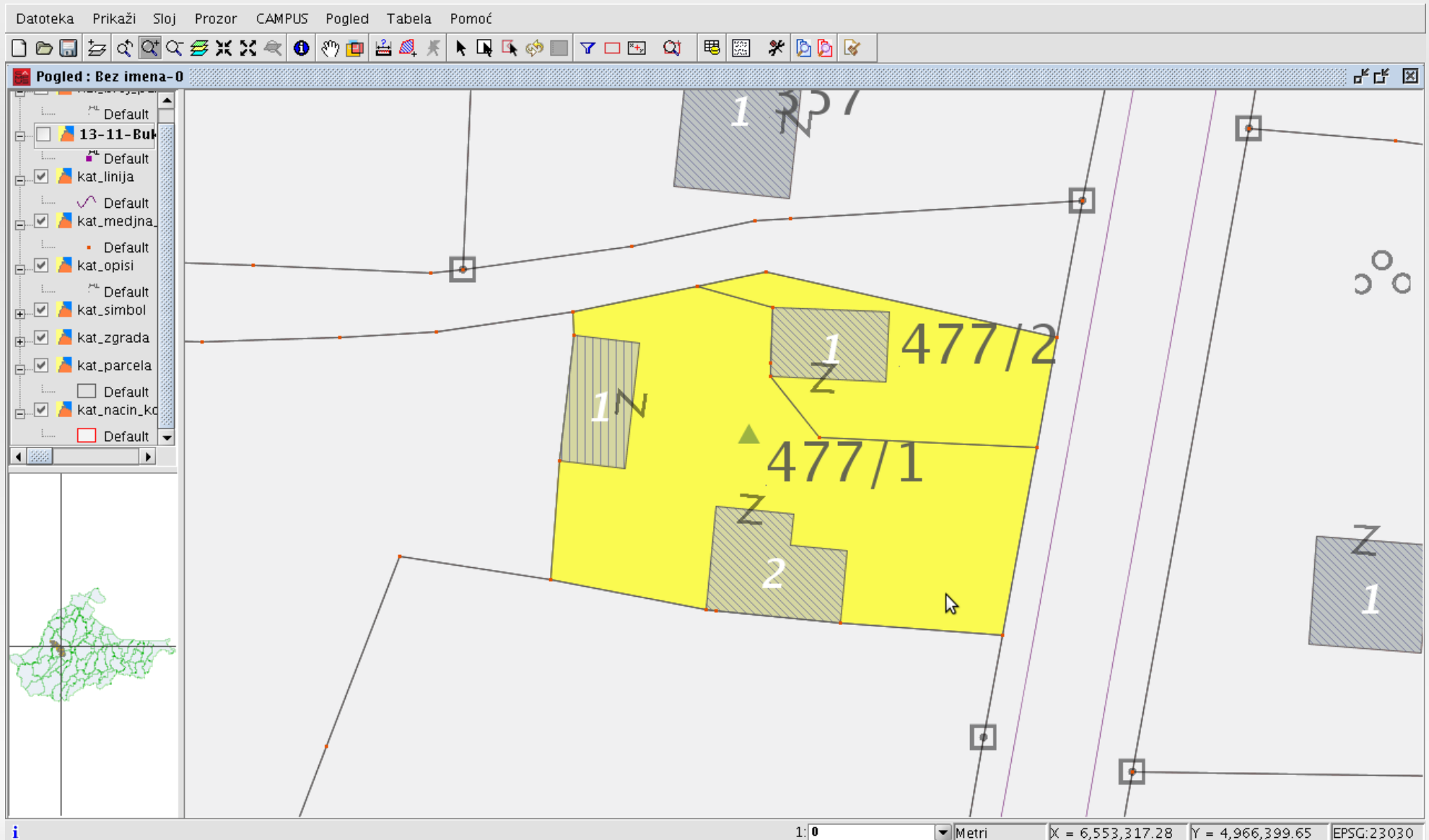
Cjepanje parcele - info

Stanje pre		Stanje posle	
Broj/Podbroj	Povrsina	Broj/Podbroj	Povrsina
477/0	833.45	477/1	621.09
		477/2	212.36

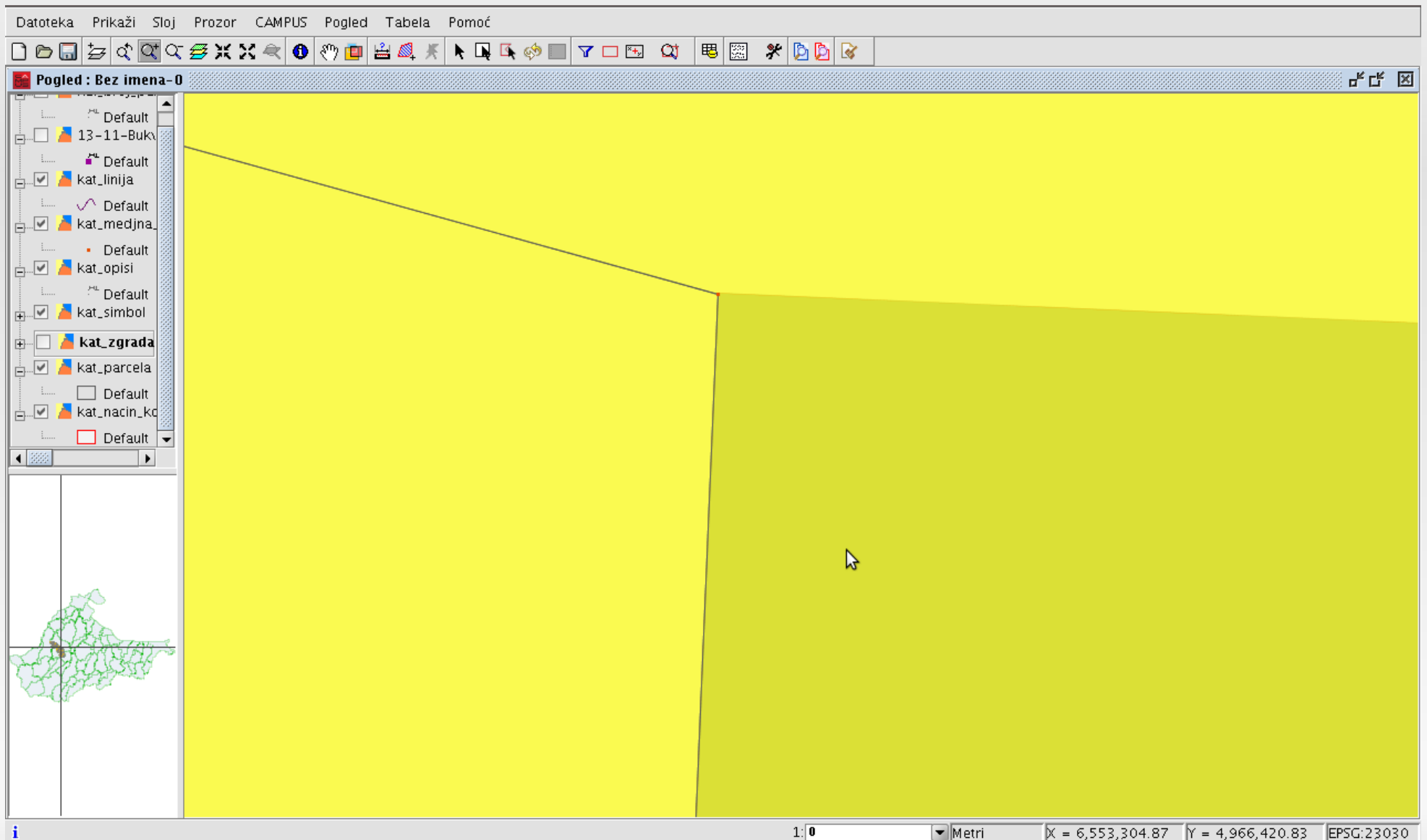
OK Prekini

Informacije: Izvršavanje SQL upita: SELECT * FROM campus_sp_subparcels_numbers(7298, 2), auto-commit: true 1: 0 Metri X = 6,553,284.6 Y = 4,966,420.44 EPSG:23030

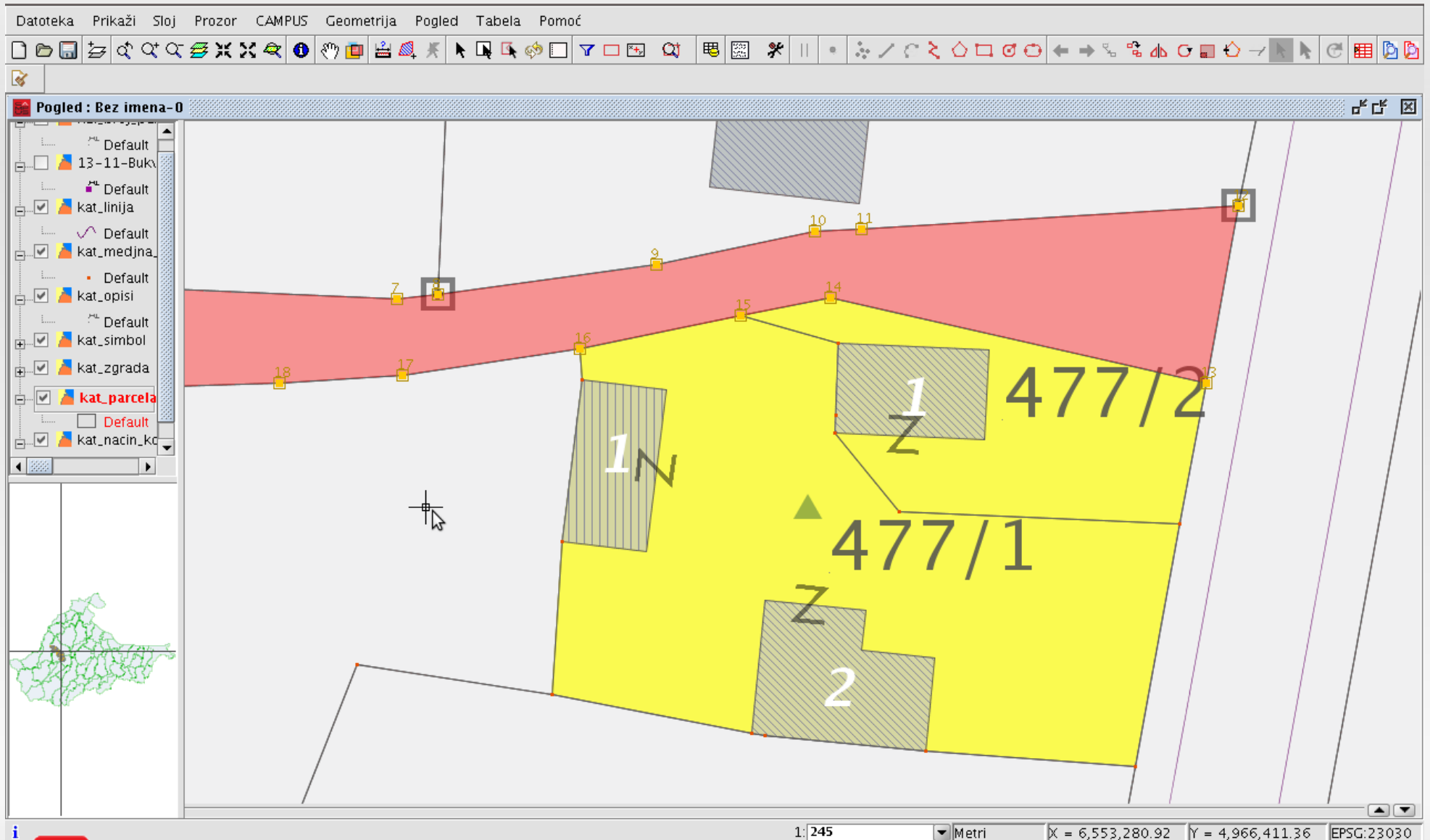
Split parcel – new parcels created



Split parcel – new parcels



Split parcel – neighbour parcel



Task finalization

Datoteka Prikaži Sloj Prozor CAMPUS Pogled Tabela Pomoć

Pogled : Bez imena-0

Novi Zahtjev

Kancelarijsko poslovanje

Vrsta zahtjeva / posla: Izaberi Posao

Broj zahtjeva: 10141116

Podnosilac zahtjeva:

Datum podnošenja zahtjeva: Oct 14, 2009

Datum završetka zahtjeva: ---

Operator: vladimir

Napomena:

Poslovi

Cijepanje parcele - Ulaz[477] Izla
... Novi posao ...

Parcela \ DB konekcija

K.O.: Bukvik Donji

Broj: 1

Podbroj: 0

Preuzimanje Brisanje

Dodaj posao Završi zahtjev Prekini

Informacije: Izvršavanje SQL upita: SELECT naziv FROM kop_vrsta_posla ORDER BY dbid, auto-commit: false 1: 245 Metri X = 6,553,295.29 Y = 4,966,401.27 EPSG:23030

Document creation: Before state

Datoteka Prikaži Sloj Prozor CAMPUS Mapa Pomoć

Campus_document

Strana 1 Strana 2 Strana 3

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

Bratstvo Slovenije
Mesto Brečko, Dvorčica
Opština - Odjel za javni registar

Na osnovu člana 40, 107, 108, 260 i 263 Zakona o registru zemljišta i prava na zemljištu (Sl. gl. Brčko Distrikt BiH br. 11/03) i člana 187 Zakona o upravnim postupcima (Sl. gl. Brčko Distrikt BiH br. 3/00) organ uprave nadležan za geodetske poslove donosi:

RJEŠENJE
dozvoljava se provođenje promjena
Provođenje se promjena u katastarskom operatu po spisku promjena 1/2009

DOSADAŠNJE STANJE

PODACI O PARCELAMA				
Broj parcele	Naziv	Kultura	Klasa	Površina
477		Zgrada 1		69
		Zgrada 2		45
		Zgrada 3		47
	SELETA	Dvorčica		500
	SELETA	rima		173

Mjesto i datum: Brečko 14.10.2009.

Strana 1 od 1

477/1
477/2

1
2

Centimetri | X = 6,553,268.89 | Y = 4,966,430.01 | EPSG:23030

Document creation: After state

Datoteka Prikaži Sloj Prozor CAMPUS Mapa Pomoć

Campus_document

Strana 1 | Strana 2 | Strana 3

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

Opština: Brčko Distrikt
 Općina: Brčko
 Katastarska općina: Bučak Donji
 Broj: 10141116
 Datum: 14.10.2009.

Mesto: Brčko Distrikt
 Odbijanje - Odbij za javni registar

Na osnovu člana 40, 107, 108, 260 i 263 Zakona o registru zemljišta i prava na zemljištu (Sl. gl. Brčko Distrikt BiH br. 11/01) i člana 187 Zakona o upravnom postupku Brčko Distrikt BiH (Sl. gl. Brčko Distrikt br. 3/00) organ uprave nadležan za geodetske poslove donosi:

RJEŠENJE
 dozvoljava se provođenje promjene
 Provodi se promjena u katastarskom operatu po spisku promjena 1/2009

NOVO STANJE

PODACI O PARCELAMA

Broj parcele	Naziv	Kultura	Klasa	Površina
477/1	Zgrada 1			47
	Zgrada 2			69
	SELETA	Dvoriste		500
	SELETA	trava		6
477/2	Zgrada 1			45
	SELETA	Dvoriste		167

Mjesto i datum: Brčko 14.10.2009.

Mjesta: 477/1, 477/2

Informacije: Izvršavanje SQL upita: SELECT * FROM campus_add_change_requirement('10141116', 'Vladimir', 'null'), auto-commit: true

Metri X = 6,553,293.75 Y = 4,966,417.61 EPSG:23030

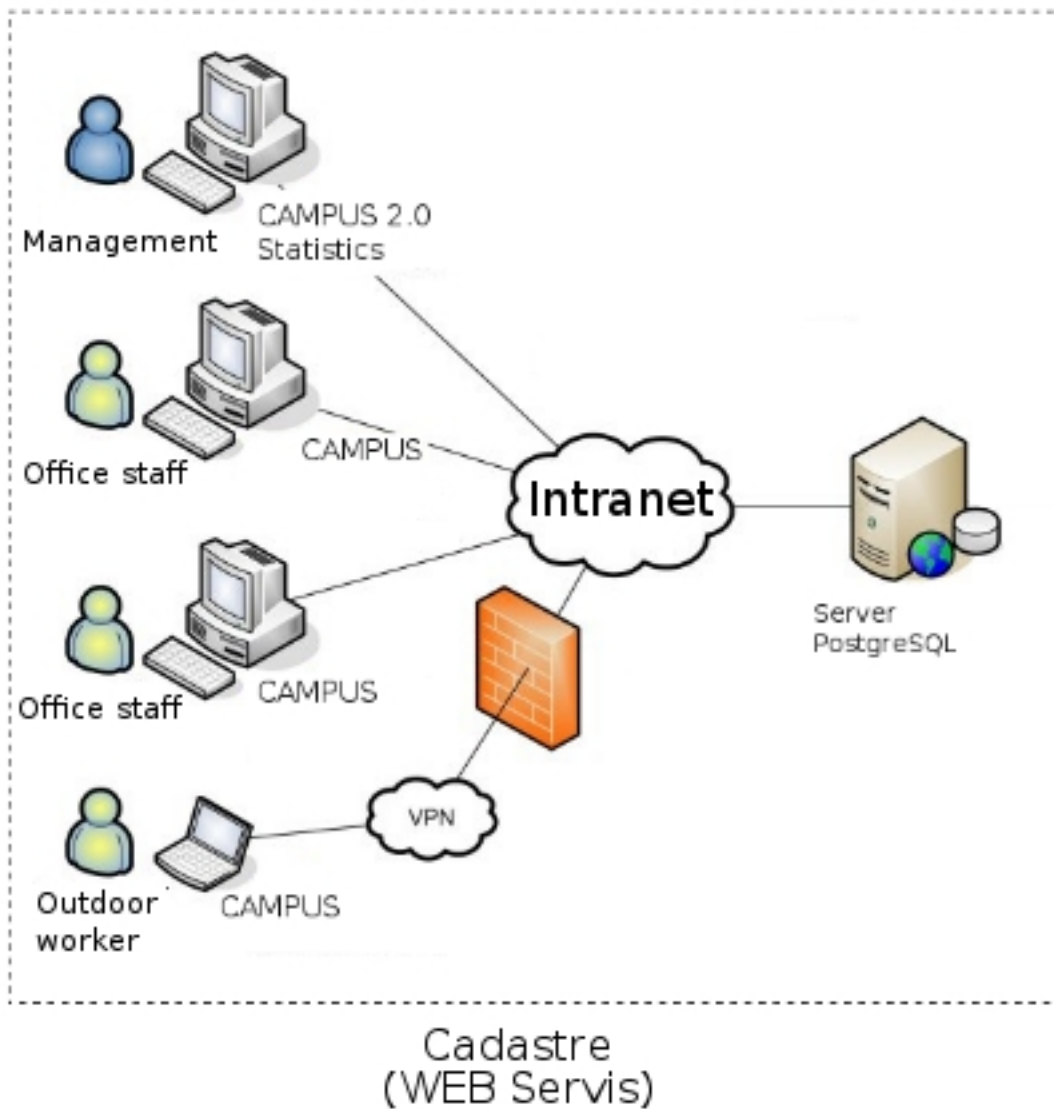
Project results

- User friendly graphical interface
- Multi-user surrounding
- Specific user privileges
- History tracking
- Documents creation
- Editing tools

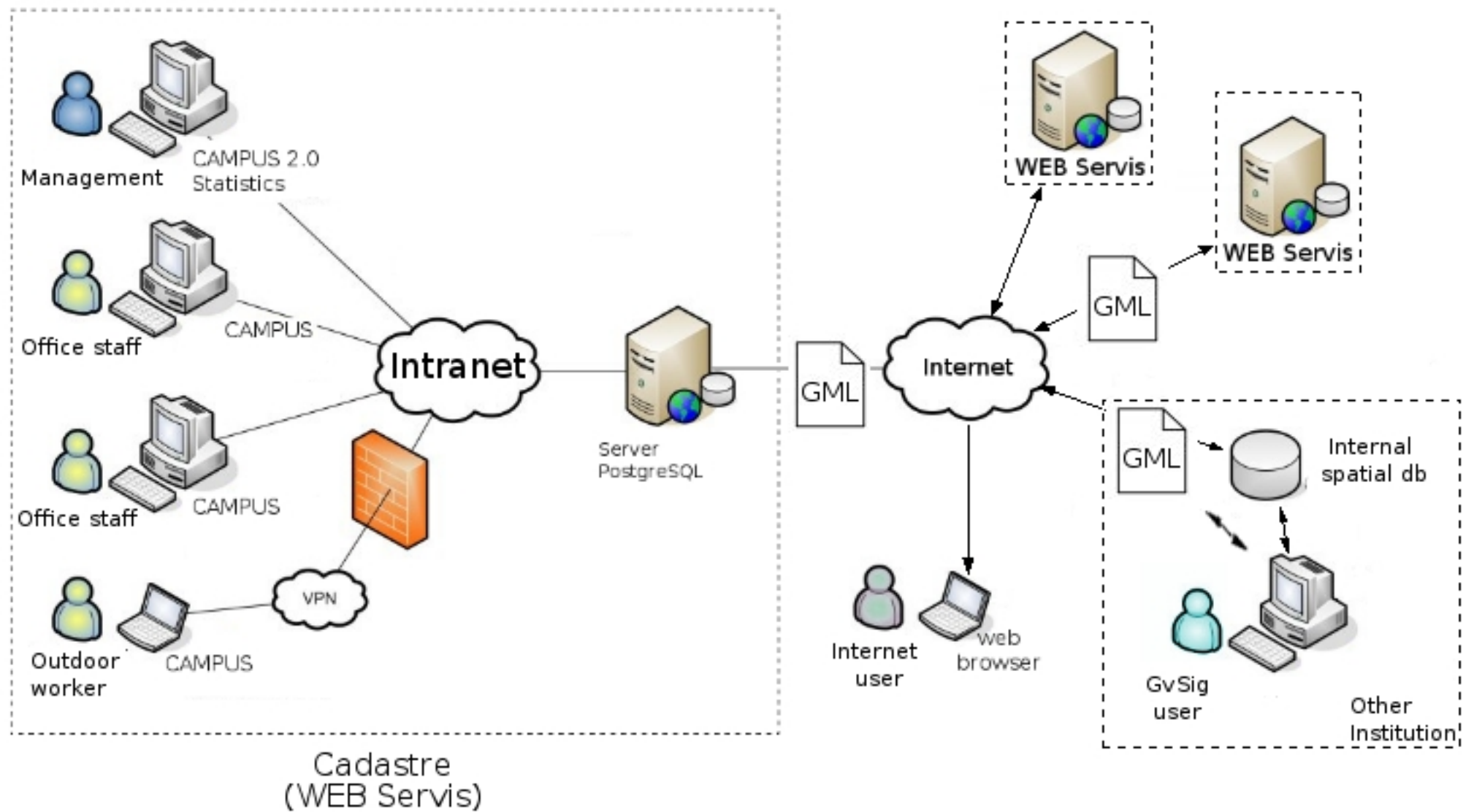
Further development directions

- Integration with other projects
 - Public administration databases
 - DMS (Lotus)
- Public web service for publishing data
- Complete independence from data model used
- Publishing single extensions suitable for other GvSig users

Further development: network



Further development: network



Thank you!

More info about the CAMPUS project can be found on site:

<http://trac.beogis.com/campus>