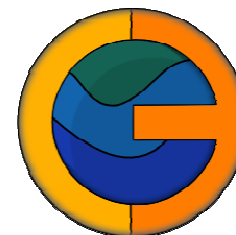




Introduction to gvSIG CE



and

geo-processing with



Karsten Vennemann



TERRA GIS

TERRESTRIAL ENVIRONMENT REGIONAL ANALYSIS

www.terragis.net

Seattle, WA, USA

karsten@terragis.net

206 905 1711

Workshop Goals

- **Overview of gvSIG CE & Sextante**
- **Get impression of gvSIG & Sextante functionality**
- **Introduce some of the basic functionality hands on**



Workshop Outline



Introduction - presentation style

about 60 minutes

to gvSIG CE Desktop GIS

Using gvSIG CE

about 75 minutes

"Hands-on" exercises and examples

General use of gvSIG: editing of GIS data, layout & cartography and accessing spatial databases

Spatial Analysis & Geo-processing with gvSIG CE & SEXTANTE

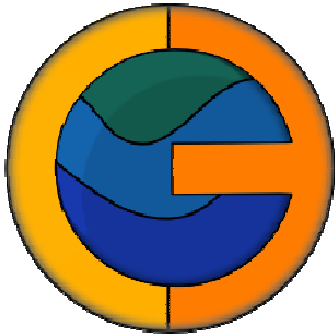
about 75 minutes

"Hands-on" exercises and examples

The exercises will cover the use of spatial analysis and geo-processing tools in gvSIG for raster and vector data

Part I

Introduction
to



gvSIG CE
Desktop GIS

■ What is Open Source (GIS)?

Open source means that the source code is available to the general public for use, distribution, and modification from its original design free of charge (among a long list of other requirements)

Open Source ≠ Open Standards



While most open source geospatial software is built on the standards of the Open Geospatial Consortium (OGC) the term "Open Source" it is not synonymous with Open Standards because both proprietary and open source software can be compliant with the OGC Open Standards.
<http://www.opengeospatial.org>



OSGeo is the organization that supports the development of the highest quality open source geospatial software.
<http://www.osgeo.org>

■ Why use it ? General and incomplete listing

■ User is in control

- Pick you favorite operating system: supports many operating systems: Windows-Linux-Solaris-...
- No licensing issues (did we install one to many PCs with software XY?)
- Vendor independency
- Access to source code: don't like something, need changes to the core system, need extensions – hire somebody to change it right now

■ High performance, high quality, high interoperability

- Distributed programming effort, highly modular...
- System heterogeneity - less prone to hacker attacks and viruses
- Interoperable – very advanced support of OGC open standards

■ Exceptional Support - Commercial and non commercial

- Mailing lists, user groups, Conferences, IRC channels
- Fast response times for bug fixes
typically tracked on the web accessible and open to everybody to report or fix a bug

■ It is free

■ Licenses

Table 1: List of common FOSS software licenses

Name	Style	software
GNU-GPL	strong copyleft license, derived works have to be available under the same copyleft	GRASS, QGIS, gvSIG, Mapbender, PostGIS, GeoServer, AveiN!
LPGL	compromise between copyleft and more permissive licenses, has copyleft restrictions on the program itself, but not on other software linking with the program.	Mapnik, MapGuide
MIT	permissive license, permits reuse within proprietary software (license has to be distributed with that software)	MapServer, GDAL/OGR, Proj4
BSD	permissive license, little restriction, close to the public domain	Ka-Map, Feature-Server, TileCache, OpenLayers
Mozilla (MPL)	hybrid of modified BSD and GPL.	MapWindow, Mozilla Firefox

PROJ4 Library - EPSG Definitions

```
# USA Contiguous Albers Equal Area Conic
<102003> +proj=aea +lat_1=29.5 +lat_2=45.5 +lat_0=37.5 +lon_0=-96 +x_0=0 +y_0=0 +ellps=GRS80 +datum=NAD83 +uni
# Spherical Mercator
<900913> +proj=merc +a=6378137 +b=6378137 +lat_ts=0.0 +lon_0=0.0 +x_0=0.0 +y_0=0 +k=1.0 +units=m +nadgrids=@nu
# SR-ORG Projection 6627 - Google Mercator - Open Street Map
<6627> +proj=merc +lon_0=0 +k=1 +x_0=0 +y_0=0 +ellps=WGS84 +datum=WGS84 +units=m +no_defs

# Anguilla 1957 / British West Indies Grid
<2000> +proj=tmerc +lat_0=0 +lon_0=-62 +k=0.999500 +x_0=400000 +y_0=0 +ellps=clrk80 +units=m +no_defs no_defs
```

Projection definition

USA Contiguous Albers Equal Area Conic

```
<102003> +proj=aea +lat_1=29.5 +lat_2=45.5
+lat_0=37.5 +lon_0=-96 +x_0=0 +y_0=0
+ellps=GRS80 +datum=NAD83 +units=m
no_defs <>
```

```
<2008> +proj=tmerc +lat_0=0 +lon_0=-55.5 +k=0.999900 +x_0=304800 +y_0=0 +ellps=clrk66 +units=m +no_defs no_de
# NAD27(CGQ77) / SCoPQ zone 3
<2009> +proj=tmerc +lat_0=0 +lon_0=-58.5 +k=0.999900 +x_0=304800 +y_0=0 +ellps=clrk66 +units=m +no_defs no_de
# NAD27(CGQ77) / SCoPQ zone 4
<2010> +proj=tmerc +lat_0=0 +lon_0=-61.5 +k=0.999900 +x_0=304800 +y_0=0 +ellps=clrk66 +units=m +no_defs no de
```

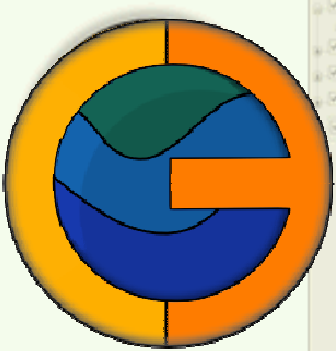



gvSIG – Generalidad Valenciana

Conselleria d'Infraestructures i Transport

- project - Spanish Community of Valencia
- mid range Desktop GIS
- based on open standards
- part of gvPONTIS [project](#)

http://www.gvpontis.gva.es/fileadmin/conselleria/images/Documentacion/memoria/gvpontis_ingles.pdf



- based on gvSIG
- Community effort, started 2011
- Open International Edition
- many plug-ins integrated
ArcSDE, Postgis, Grass, SAGA & 
- <http://gvsigce.org>

[Mailing Lists](#)[Wiki](#)[Bug Reports](#)[Forums](#)[Blog](#)[gvSIG CE Team](#)[Download](#)[Screenshots](#)[Get involved](#)[FAQ](#)

- [tmpServiceAreaLine7](#)
- [tmpServiceAreaPa71](#)
- [tmpServiceAreaLine31](#)
- [tmpServiceAreaPa100](#)
- [ejescdhp](#)



SEXTANTE - 526 Algorithms

SEXTANTE

- Algorithms
- GRASS
 - Raster (r.*)
 - Vector (v.*)
 - v.buffer
 - v.clean
 - v.clean(error)
 - v.delaunay

[Home](#)[Community](#)[About gvSIG CE](#)[News](#)[Events](#)[Documentation](#)

Welcome

gvSIG CE is a community driven GIS project based on a version of gvSIG bundled with SEXTANTE, GRASS GIS and SAGA that is maintained by gvSIG enthusiasts and open source supporters.

[READ MORE: WELCOME](#)

Team Introduction

Currently a group of GIS specialists from several countries are involved in gvSIG CE.

[READ MORE: TEAM INTRODUCTION](#)

Downloads

A technical preview of the upcoming gvSIG Community Edition 1.0 is available for download now!

[READ MORE: DOWNLOADS](#)

gvSIG Products

- gvSIG & gvSIG CE
- gvSIG Mobile
- gvSIG Mini
- Extensions
 - Raster and Remote Sensing
 - Network
 - Sextante
 - Navtable
 - 3 D
 - ArcSDE

Extensions

3 D

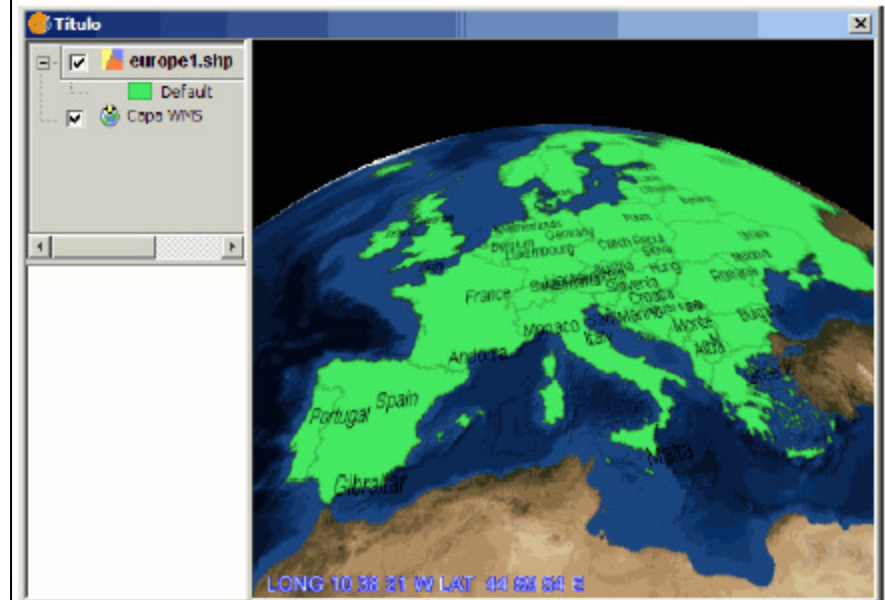
Navtable

NavTable: sp_provinzen.shp

Selected Select Always Zoom Fixed Scale

Attribute	Value
OBJECTID	1
AREA	7.98074764672E9
PERIMETER	1032580.03328
P20099_	2
P20099_ID	1
NOMBRE99	Coruña (A)
SHAPE_LEN	1032579.97286
SHAPE_AREA	7.98074766336E9
PROV	15
COM	12
DPROV	15
test	0
Hotlink	
Geom_LENGTH	1032580
Geom_AREA	7980747663

Navigation controls: Home, Previous, 1 / 116, Next, End, Print, Zoom, Pan, Close



gvSIG Mobile

- Compatible gvSIG 2.0
- Mobile GIS
- WFS
- Legend
- Labeling
- Editing
- Routes
- POI



gvSIG Mini



2 Versions

- Android
- Java – CLDC

GNU/GPL

<http://www.gvsigmini.org>

Visualization of map tiles on mobile phones

GPS

OSM Maps, Yahoo Maps, Microsoft Maps, etc.

Phone Cache





- Project of the Spanish province of Extremadura
Sistema Extremeno de Analisis Territorial
- Geo-processing tool set - software library
- more than 280 spatial functions
raster and vector processing
originally targeted at forestry usage, initially based on SAGA GIS
- Java based plug-ins for Desktop GIS
 - gvSIG and OpenJUMP 1.3
 - ArcGIS 9.3.1 and 10.X
 - QGIS 1.7 +



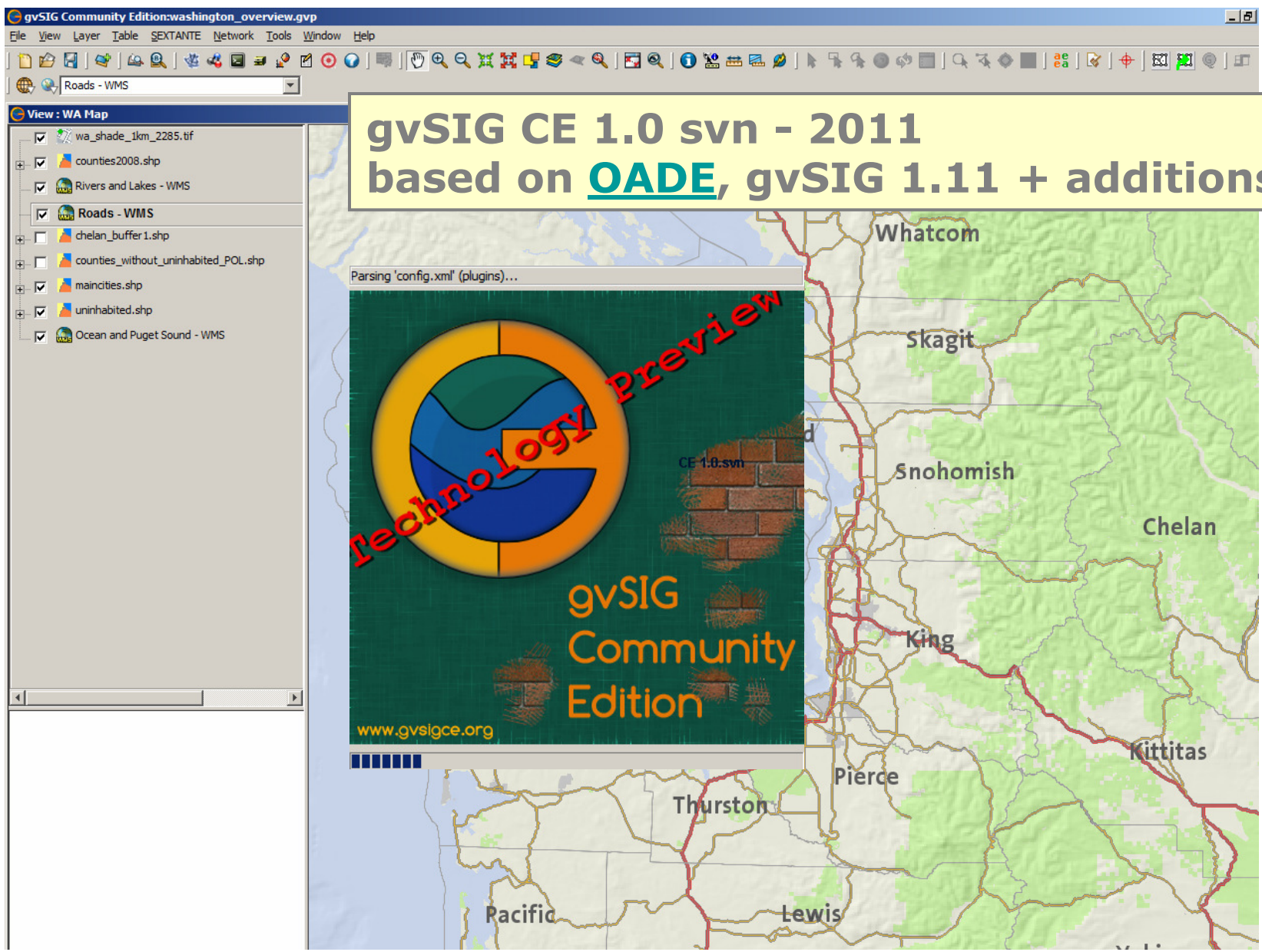
Main supporter of Generalitat Valencia (GVA) - Province of Valencia, Spain
gvSIG

Type	Desktop GIS
Functionality	Multilingual Desktop GIS - Analysis functions can be greatly extended when installing Sextante. Many extensions.
Operating systems	Unix/Linux, Windows
Project started	2003
Implementation	Java
OS libraries	GeoTools and JTS
PostGIS support	Yes
License	GPL

gvSIG and Sextante facts

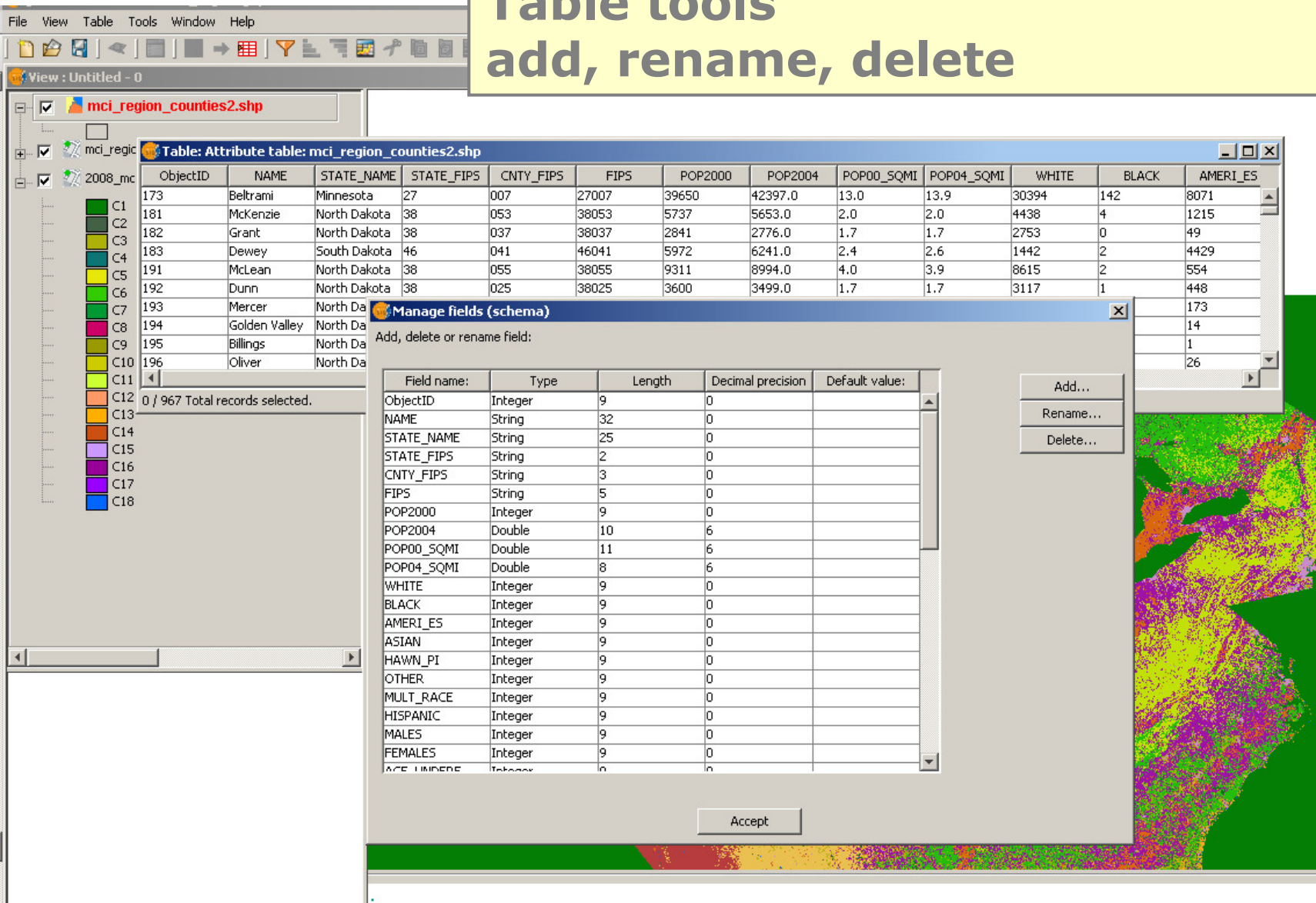
Main supporter of Sextante Team, Victor Olaya, Juan Carlos Giménez
Sextante

Functionality	Comprehensive set of spatial vector data and image analysis tools
Operating systems	Unix/Linux, Windows
Project started	2004
Implementation	Java
OS libraries	built on top of SAGA GIS functionality
PostGIS support	Yes
License	GPL



gvSIG CE 1.0 svn - 2011
based on OADE, gvSIG 1.11 + additions

Table tools add, rename, delete



The screenshot shows the gvSIG interface with a table of county data and a 'Manage fields (schema)' dialog box open. The table lists various counties with their attributes, and the dialog box allows for adding, renaming, or deleting fields in the schema.

ObjectID	NAME	STATE_NAME	STATE_FIPS	CNTY_FIPS	FIPS	POP2000	POP2004	POP00_SQMI	POP04_SQMI	WHITE	BLACK	AMERI_ES
173	Beltrami	Minnesota	27	007	27007	39650	42397.0	13.0	13.9	30394	142	8071
181	McKenzie	North Dakota	38	053	38053	5737	5653.0	2.0	2.0	4438	4	1215
182	Grant	North Dakota	38	037	38037	2841	2776.0	1.7	1.7	2753	0	49
183	Dewey	South Dakota	46	041	46041	5972	6241.0	2.4	2.6	1442	2	4429
191	McLean	North Dakota	38	055	38055	9311	8994.0	4.0	3.9	8615	2	554
192	Dunn	North Dakota	38	025	38025	3600	3499.0	1.7	1.7	3117	1	448
193	Mercer	North Dakota										173
194	Golden Valley	North Dakota										14
195	Billings	North Dakota										1
196	Oliver	North Dakota										26

Field name:	Type	Length	Decimal precision	Default value:
ObjectID	Integer	9	0	
NAME	String	32	0	
STATE_NAME	String	25	0	
STATE_FIPS	String	2	0	
CNTY_FIPS	String	3	0	
FIPS	String	5	0	
POP2000	Integer	9	0	
POP2004	Double	10	6	
POP00_SQMI	Double	11	6	
POP04_SQMI	Double	8	6	
WHITE	Integer	9	0	
BLACK	Integer	9	0	
AMERI_ES	Integer	9	0	
ASIAN	Integer	9	0	
HAWN_PI	Integer	9	0	
OTHER	Integer	9	0	
MULT_RACE	Integer	9	0	
HISPANIC	Integer	9	0	
MALES	Integer	9	0	
FEMALES	Integer	9	0	
RACE_UNDEFR	Integer	9	0	

Raster and remote sensing

Vista: Raster and remote sensing

seattle_montlake.tif

seattle_montlake

- Raster layer
- Processing tools
- Geographic transformations
- Export image

Georeferencing...

Free transformation...

Reprojection...

Grab from view...

Save as...

Clipping...

Select raster layers

- Regions of interest
- Scatterplot
- Image profile
- Histogram
- Colour table
- Create overviews
- Analysis view
- Raster properties...

Classification...

Mosaic...

Transformations

Vectorization...

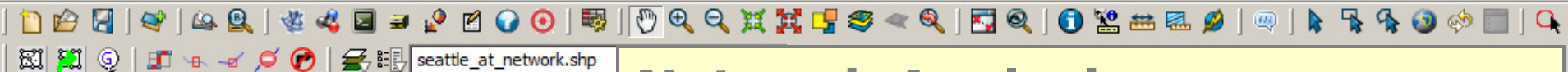
Filters

Radiometric enhancement...

Image fusion...

The image shows the 'Raster and remote sensing' toolbar in gvSIG. A red dashed arrow points from the toolbar to the main map area. Green arrows highlight the following tools and their corresponding menus:

- Raster layer** points to the 'Raster layer' menu.
- Processing tools** points to the 'Processing tools' menu.
- Geographic transformations** points to the 'Geographic transformations' menu.
- Export image** points to the 'Export image' menu.
- Grab from view...** points to the 'Grab from view...' menu.
- Save as...** points to the 'Save as...' menu.
- Clipping...** points to the 'Clipping...' menu.
- Classification...** points to the 'Classification...' menu.
- Mosaic...** points to the 'Mosaic...' menu.
- Transformations** points to the 'Transformations' menu.
- Vectorization...** points to the 'Vectorization...' menu.
- Filters** points to the 'Filters' menu.
- Radiometric enhancement...** points to the 'Radiometric enhancement...' menu.
- Image fusion...** points to the 'Image fusion...' menu.



seattle_at_network.shp

Network Analysis

Vista: Seattle Aterials - Network

- seattle_at_network.shp
- Puget Sound
- Seattle Arterials



Route report

Route report: W COMMODORE WAY-E YESLER WAY

Depart from: W COMMODORE WAY
 Arrive at: E YESLER WAY
 Total length: 40,513.05

1. Depart from: W COMMODORE WAY
[Show on map](#)

2 Follow W COMMODORE WAY for 4,347.04 and turn **Right** into 21ST AVE W
 Accumulated distance:4,347.04
[Show on map](#)

3 Follow 21ST AVE W for 1,353.1 and turn **Left** into W EMERSON PL
 Accumulated distance:5,700.14
[Show on map](#)

4 Follow W EMERSON PL for 917.56 and turn **Left** into W EMERSON ST

Print... Export

gvSIG Geoprocessing Tools

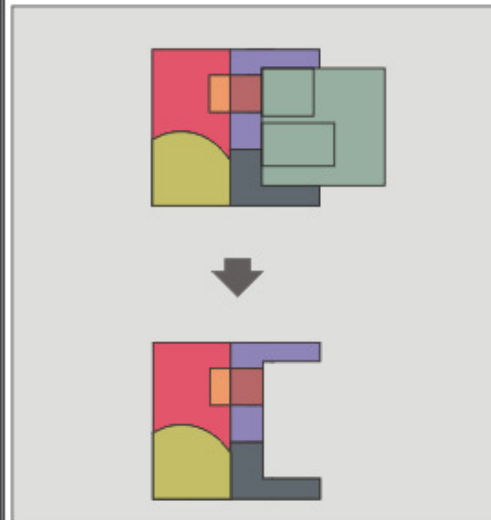
Geoprocessing tools...

- [-] Geoprocessing tools
 - [-] Analysis
 - [-] Proximity
 - Buffer zones
 - Spatial join
 - [-] Overlay
 - Clip
 - **Difference**
 - Intersection
 - Union
 - [-] Computational geometry
 - Convex hull
 - Voronoi/Delaunay
 - [-] Aggregation
 - Dissolve
 - [-] Data conversion
 - Merge
 - XY shift (2D)
 - Reproject
 - Generalize
 - Smooth
 - Transform
 - [-] Topology
 - Flip lines
 - Reduce to lines
 - Reduce to points
 - Clean
 - Build polygons

Difference

This tool performs a geometric *overlay* operation. It works on two layers, an input layer **A** and an overlay layer **B**. The procedure is also called a "spatial NOT" operation, because it includes all geometries of **A** that are *not* present in **B**.

Owing to its geometric nature, this operation only works for *polygon* type layers. The result layer will have a copy of the attribute table of the input layer.

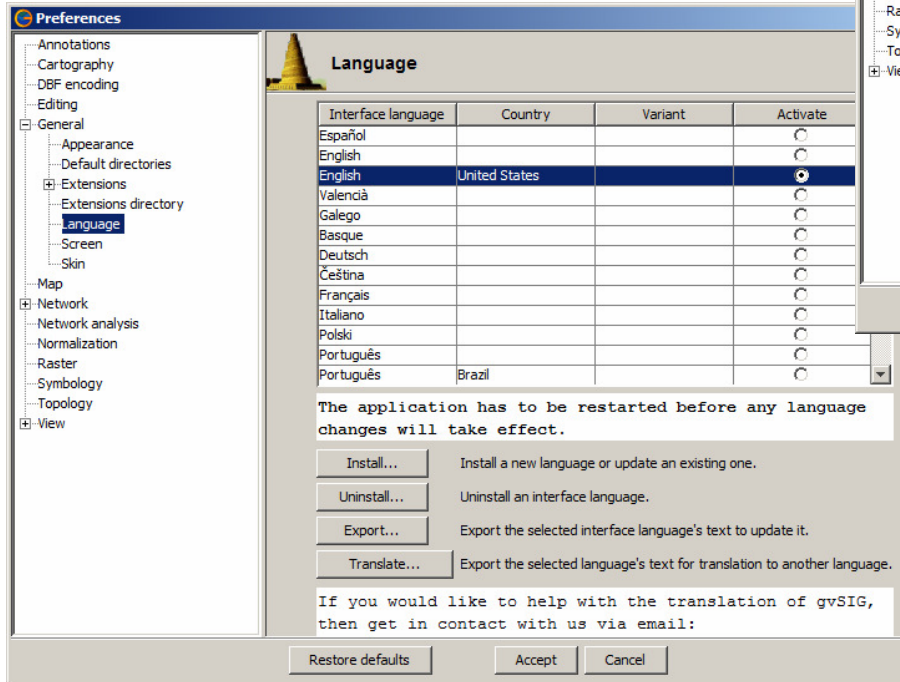


Open tool...

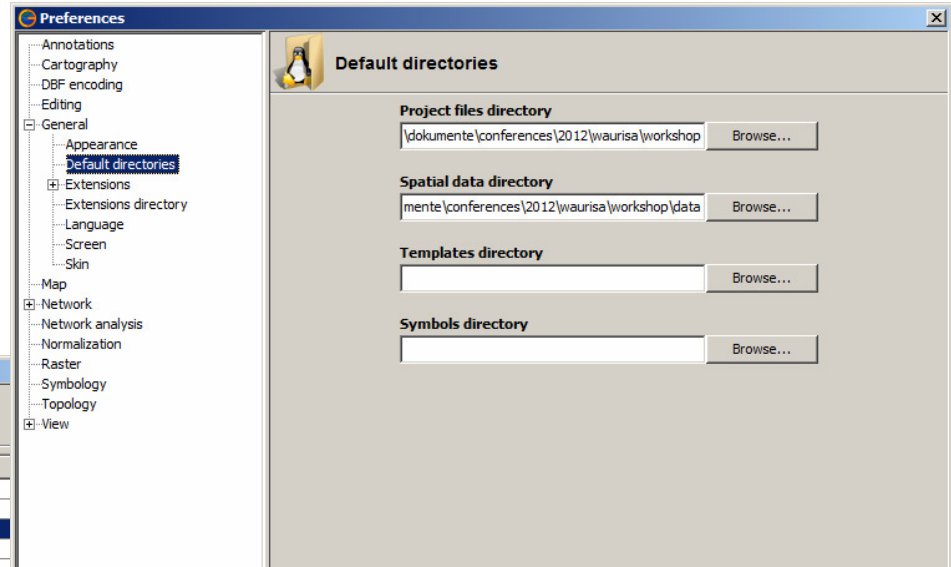
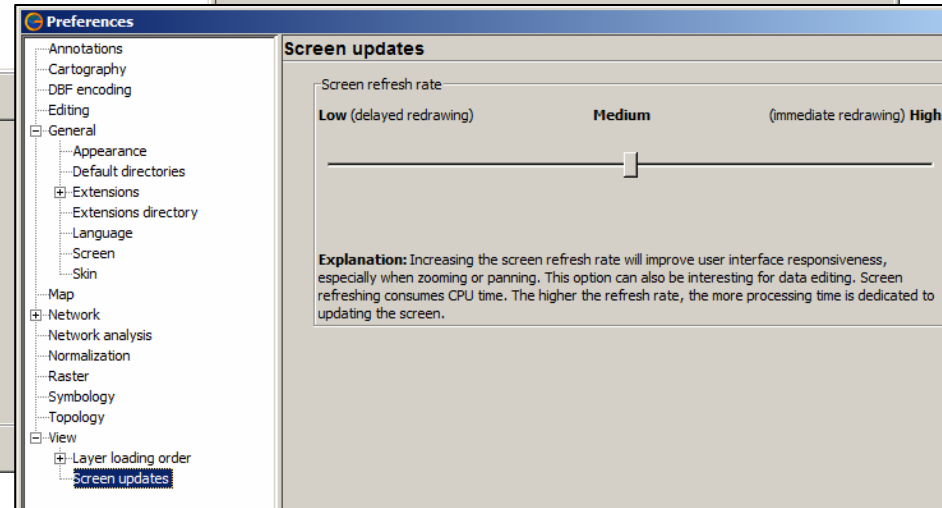
Close

General Settings

- language
- default directories
- screen updates

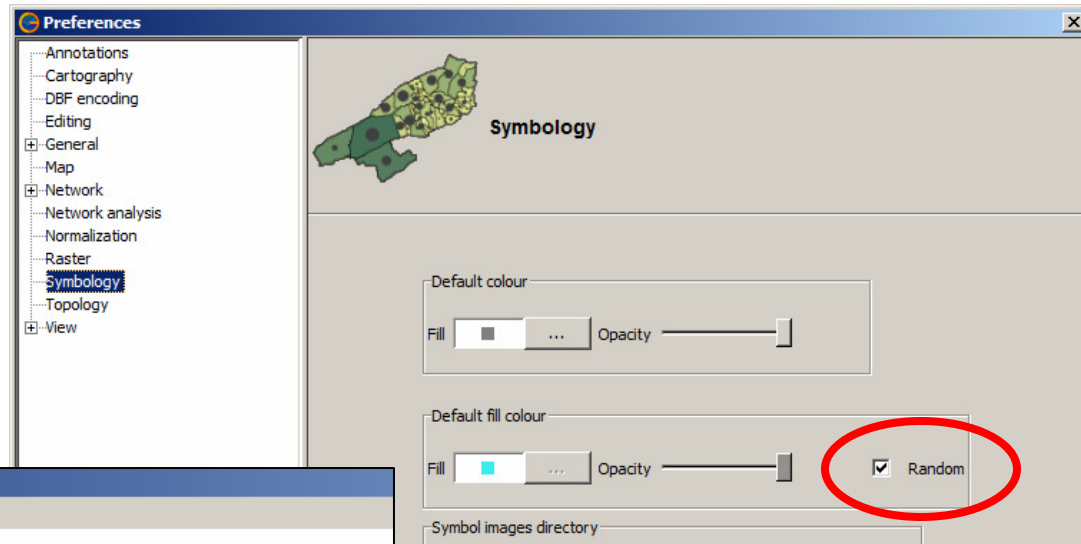


Interface language	Country	Variant	Activate
Español			<input type="radio"/>
English			<input type="radio"/>
English	United States		<input checked="" type="radio"/>
Valencià			<input type="radio"/>
Galego			<input type="radio"/>
Basque			<input type="radio"/>
Deutsch			<input type="radio"/>
Čeština			<input type="radio"/>
Français			<input type="radio"/>
Italiano			<input type="radio"/>
Polski			<input type="radio"/>
Português			<input type="radio"/>
Português	Brazil		<input type="radio"/>

General Settings

- symbology
- relative path (session)
- Java RAM: gvSIG.ini

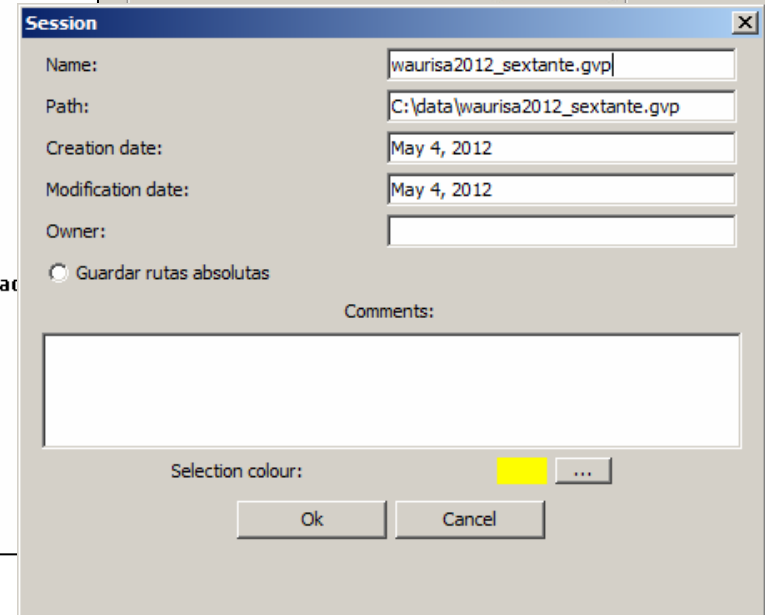


```

Lister - [C:\Program Files\gvSIG-ce-1.0.svn-windows\bin\gvSIG.ini]
File Edit Options Help
[default]

; Ruta al achivo Jar a lanzar
jar =

; Comando a ejecutar:
; Admite remplazo de variable:
; * #JAVA# ejecutable de java
; * #JAVA_HOME# path del Java_home
; * #JAR# el valor de la variable 'jar' de este fichero
; * #ARGS# cadena con todos los argumentos con los que se ha llamado al lanzar
; * #ARG1#, #ARG2#, ... #ARG9#: parametro recibido en 'n' lugar
; * #ARG0#: Nombre del ejecutable del lanzador
; * #CLASSPATH#: path declarados en la seccion classpath
; Tambien admite los valores de la seccion 'Variables' encerrados entre
; el caracter almudilla '#'
; * Nota: los nombres de las variables son case sensitive
command = #JAVA# -DPlastic.defaultTheme=Silver
-Djava.library.path="#GUSIG_INSTALL_PATH#\lib" -cp #CLASSPATH# -Xmx512M -Xss1024k
com.iver.andami.Launcher gvSIG gvSIG/extensiones #ARGS#
    
```



Resources

■ gvSIG CE

- gvSIG CE <http://gvsigce.org>
- gvSIG <http://www.gvsig.org>
- Information at [CSGIS](#)
- OSGEO [quickstart tutorial](#)

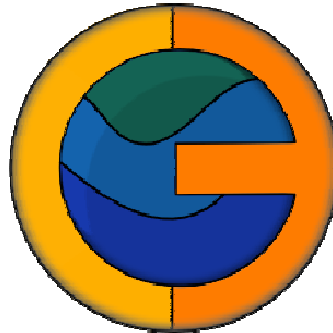
■ SEXTANTE

- www.sextantegis.com
- [sextante videos](#)
- Grass GIS <http://grass.fbk.eu/>
- Saga <http://www.saga-gis.org/en/index.html>

Part II

"Hands-on" exercises
and examples

using gvSIG CE





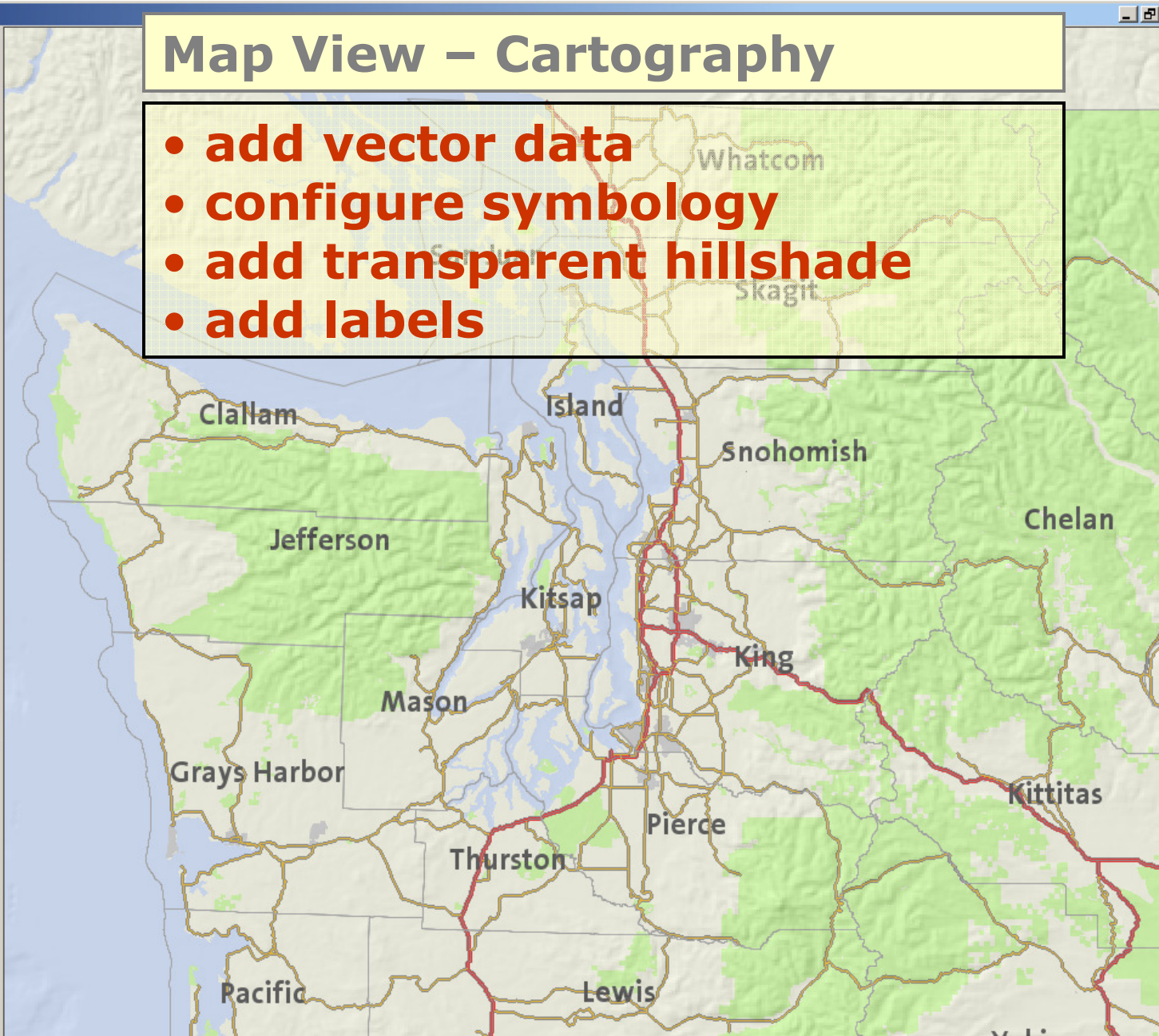
Roads - WMS

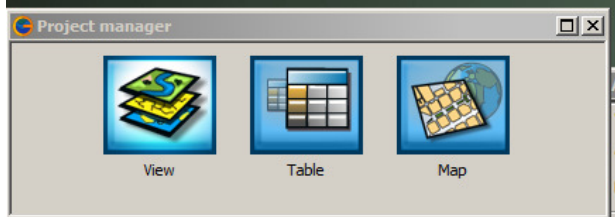
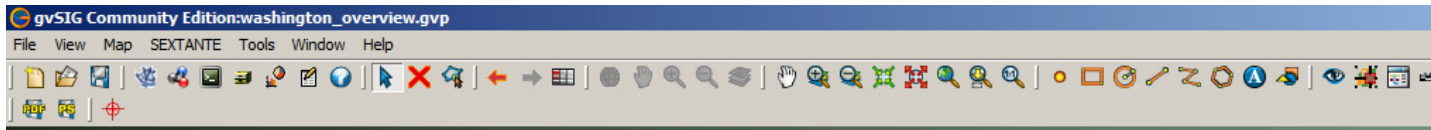
View : WA Map

- wa_shade_1km_2285.tif
- counties2008.shp
- Rivers and Lakes - WMS
- Roads - WMS
- chelan_buffer1.shp
- counties_without_uninhabited_POL.shp
- maincities.shp
- uninhabited.shp
- Ocean and Puget Sound - WMS

Map View – Cartography

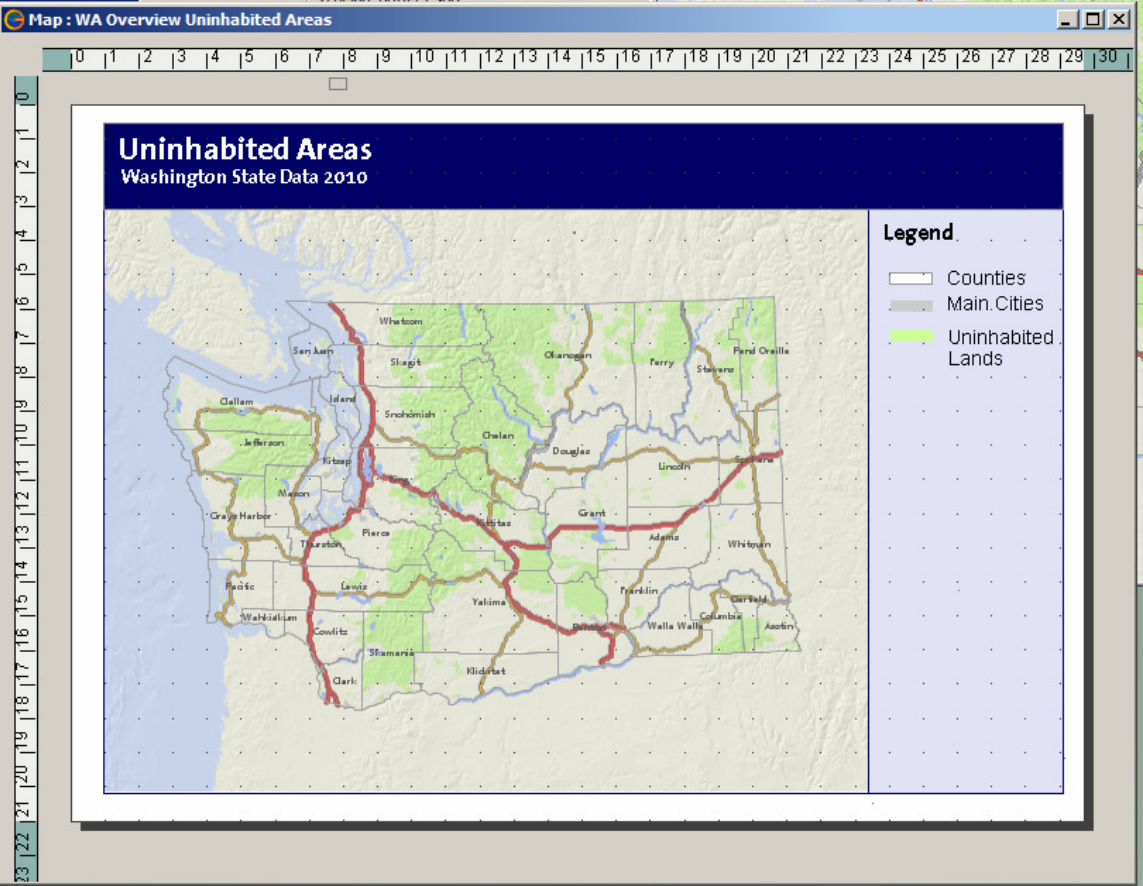
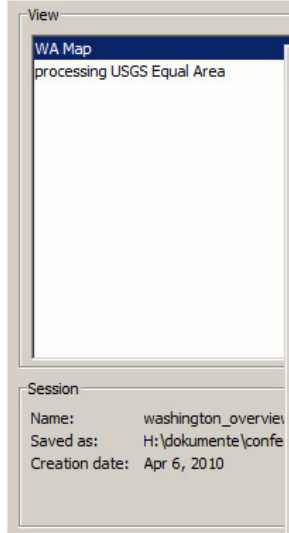
- add vector data
- configure symbology
- add transparent hillshade
- add labels





Layout

• add Map (Layout)





buildings

Vista: Montlake Buildings - Editing

Data Editing

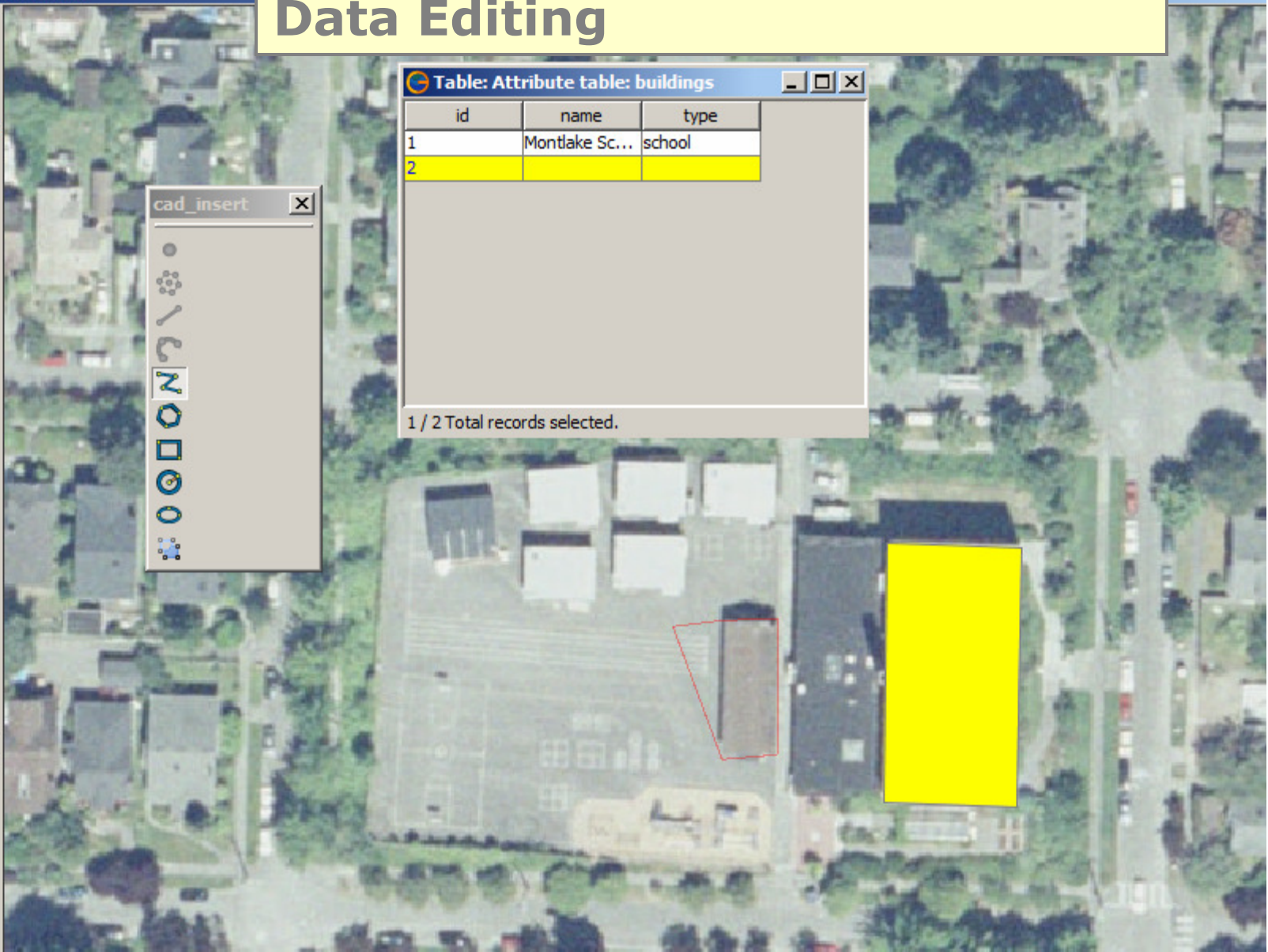
- buildings
- arterial
- seattle_montlake

cad_insert

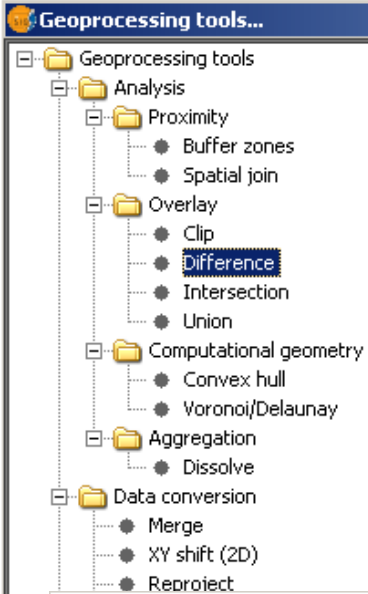
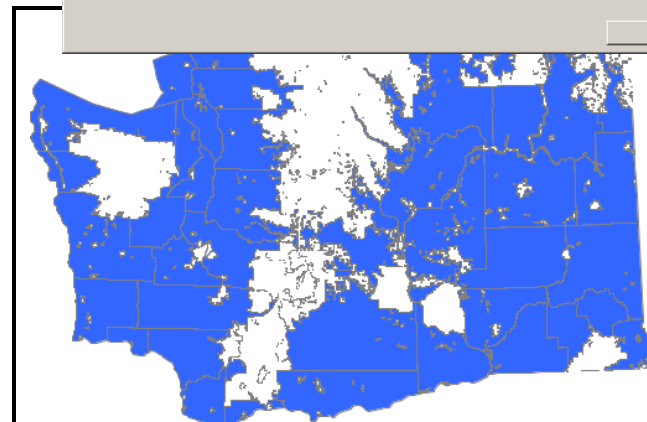
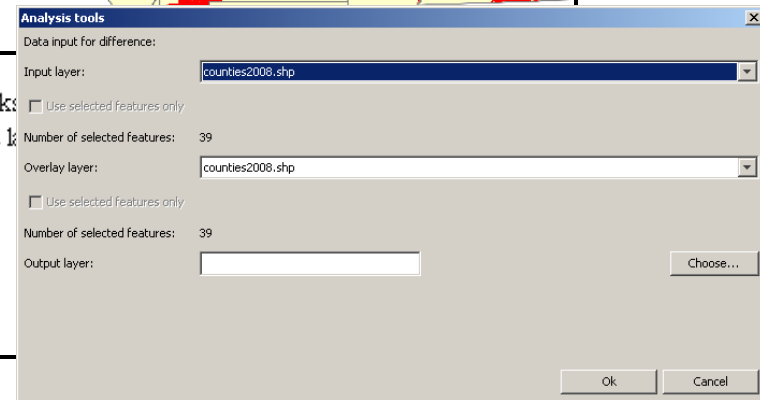
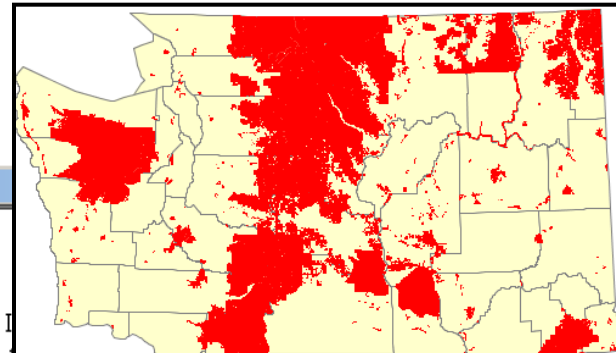
Table: Attribute table: buildings

id	name	type
1	Montlake Sc...	school
2		

1 / 2 Total records selected.



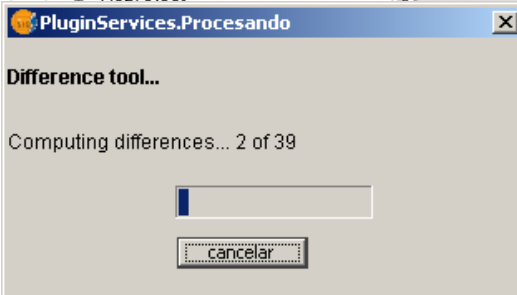
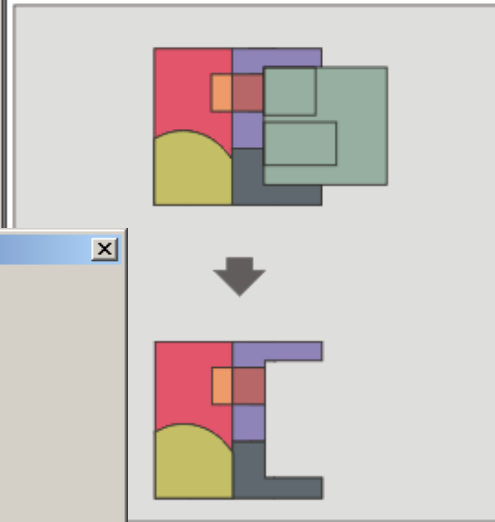
Overlay - Difference



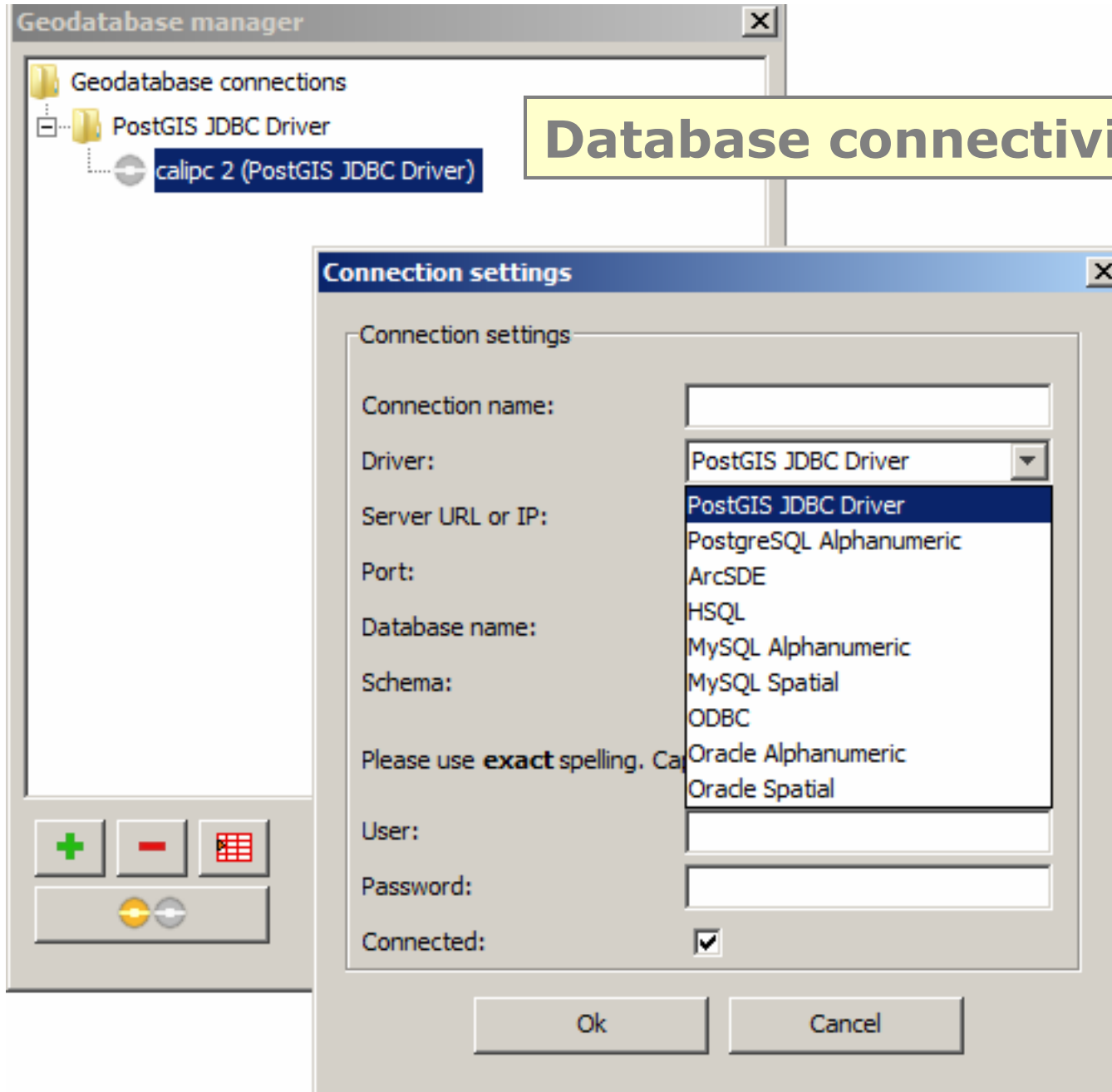
Difference

This tool performs a geometric *overlay* operation. It takes an input layer **A** and an overlay layer **B**. The procedure is also called *difference* because the resulting layer includes all geometries of **A** that are *not* present in **B**.

Owing to its geometric nature, this operation only works with vector layers. The resulting layer will have a copy of the attribute table of the input layer.



Database connectivity



Connectivity - Spatial Databases



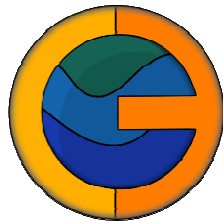
e.g. PostGIS – Spatial Database
and Oracle Spatial, ArcSDE, MySQL

- PostGIS is an extension for PostgreSQL
- adds support for geographic objects to PostgreSQL
- enables PostgreSQL server to be used as a backend spatial database for GIS
- Spatial operations and analysis simply mean running a (spatial) SQL query in the database
- Similar functions as SDE and much more

Part III

"Hands-on" exercises and examples for

Spatial Analysis and Geo-processing with gvSIG CE and SEXTANTE



sextante Functionality

- provides tools & toolbox
 - native algorithms
 - access to other libraries SAGA, Grass and R
- Model Builder
- Batch processing
- Programming environment
- WPS wrapper
- Command Line tools



SEXTANTE - 25 Algorithms

Algorithms

- GRASS
 - Raster (r.*)
 - Vector (v.*)
- gvSIG
 - Remote sensing
 - Vector geoprocesses
- Models
 - Models
- SAGA
- Scripts
 - Scripts
- SEXTANTE
 - 3D
 - Basic hydrological analysis
 - Basic tools for raster layers
 - Buffers
 - Calculus tools for raster layer
 - Cost, distances and routes
 - Development
 - Fire modeling
 - Focal statistics
 - Fuzzy logic
 - Geomorphometry and terrain analysis
 - Geosocial
 - Geostatistics
 - Image processing
 - Indices and other hydrological parameters
 - localiza
 - Local statistics
 - Location/allocation
 - Non-spatial
 - Pattern analysis
 - Profiles
 - Raster categories analysis
 - Raster creation tools

Search

i

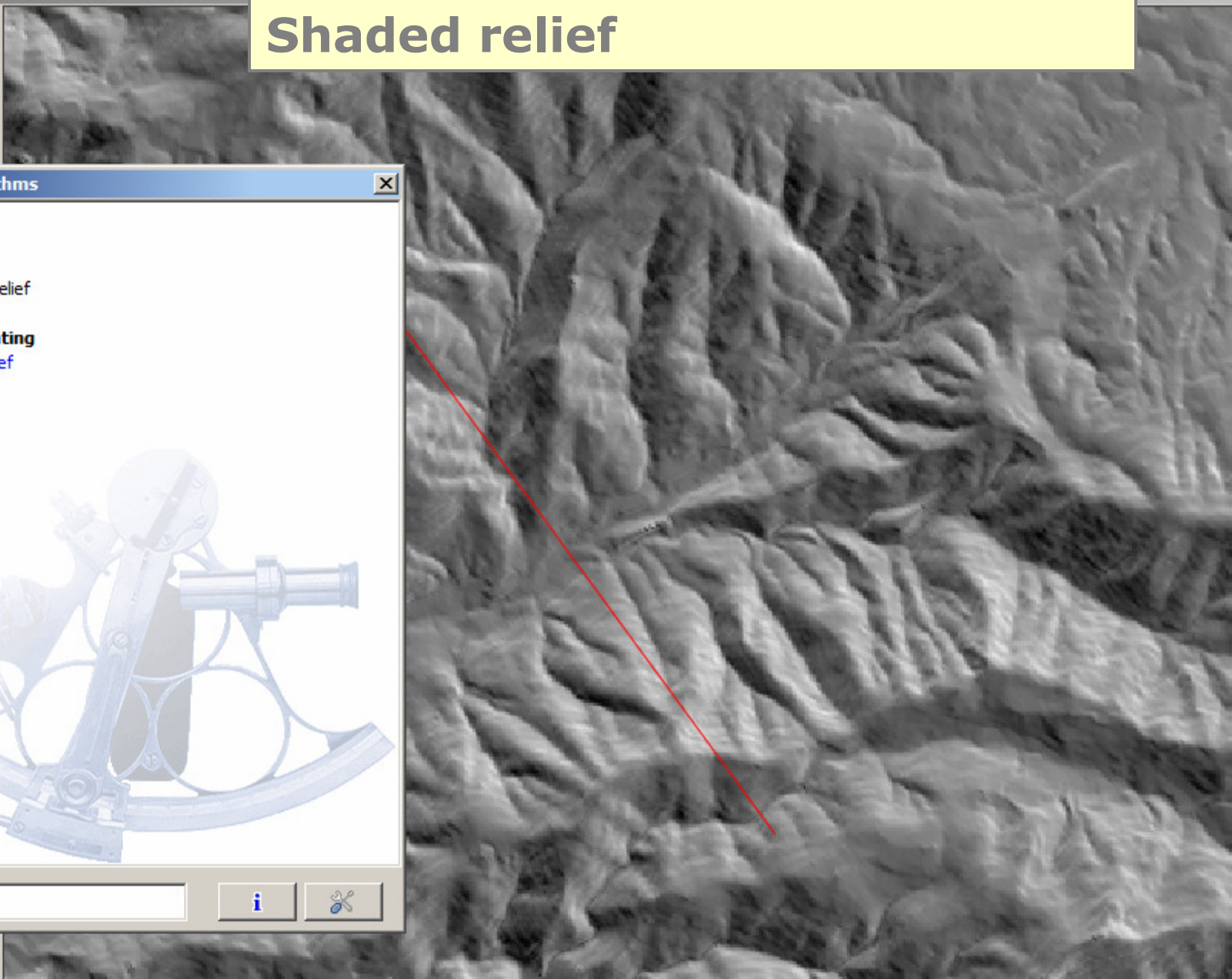
Sextante Toolbox in gvSIG CE

- Execute as batch process
- Execute as batch process (using layers from GIS app)
- Expand all
- Collapse all
- Show active only
- Show help



View : Sextante

Shaded relief



- Transect
- Shaded relief
- dem.asc

SEXTANTE - 2 Algorithms

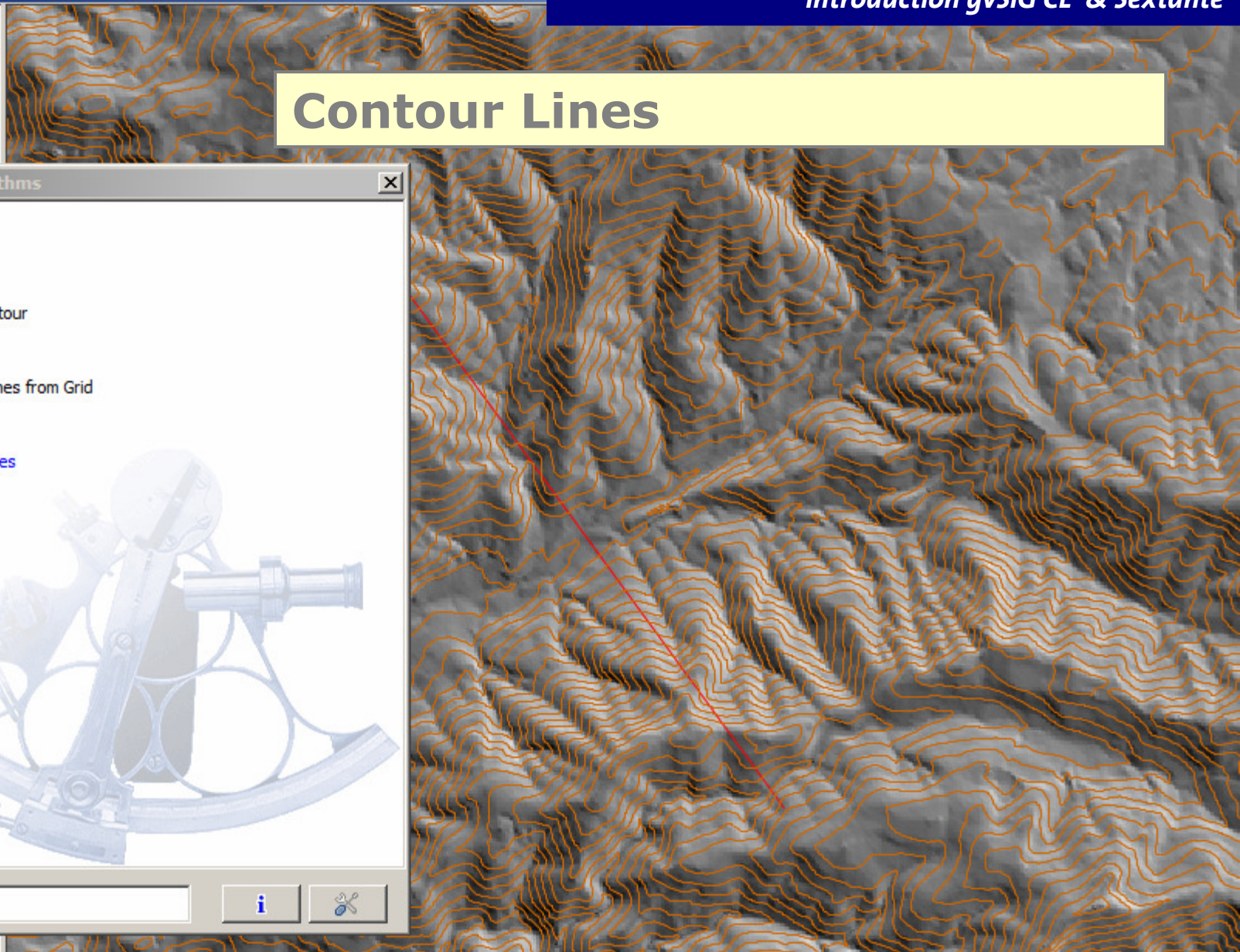
Algorithms

- GRASS
 - Raster (r.*)
 - r.shaded.relief
- SEXTANTE
 - Visibility and lighting
 - Shaded relief

Search

Contour Lines

- Contour lines
- Transsect
- Shaded relief

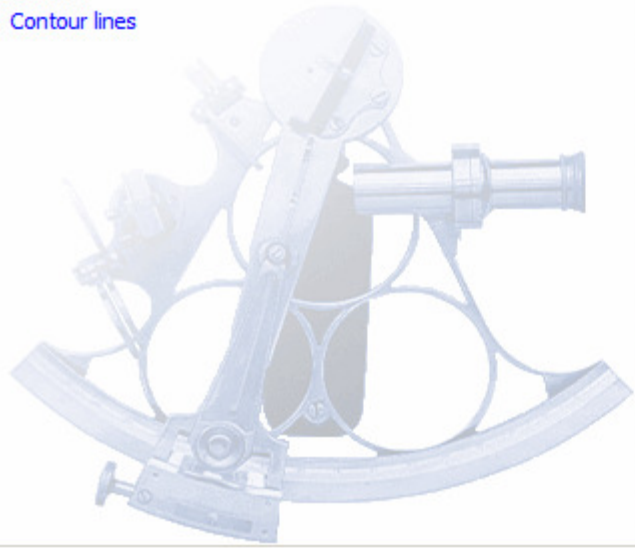


SEXTANTE - 4 Algorithms

Algorithms

- GRASS
 - Raster (r.*)
 - r.contour
 - r.surf.contour
- SAGA
 - Shapes - Grid
 - Contour Lines from Grid
- SEXTANTE
 - Vectorization
 - Contour lines

Search i ✂



- Contour lines
- Transsect
- Shaded relief

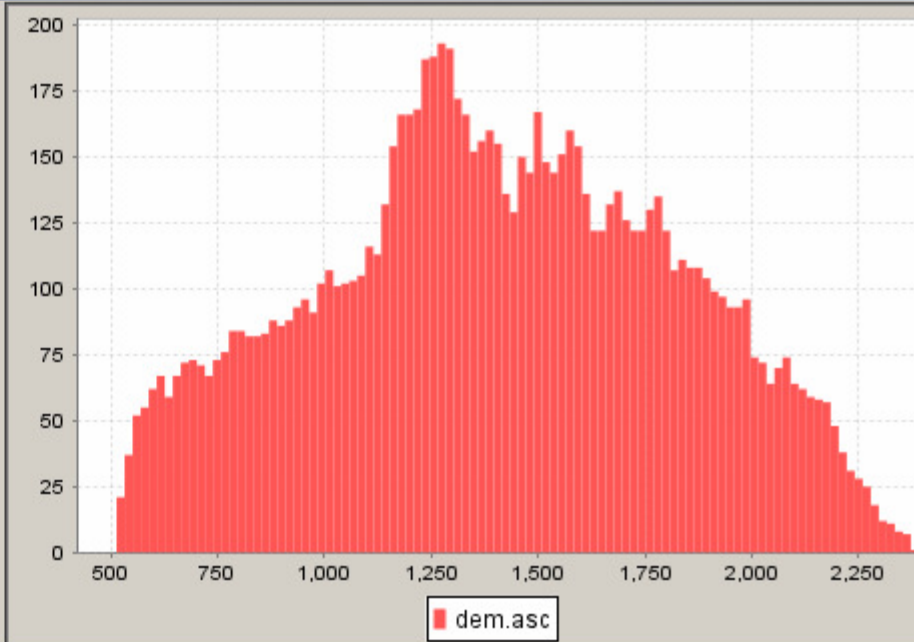
Histogram

SEXTANTE - 3 Algorithms

- Algorithms
- SAGA
 - Grid - Visualization
 - Histogram Surface
 - SEXTANTE
 - Basic tools for raster layers
 - Histogram
 - Tools for vector layers
 - Histogram

Result

- SEXTANTE
 - Result
 - Histogram[dem.asc]



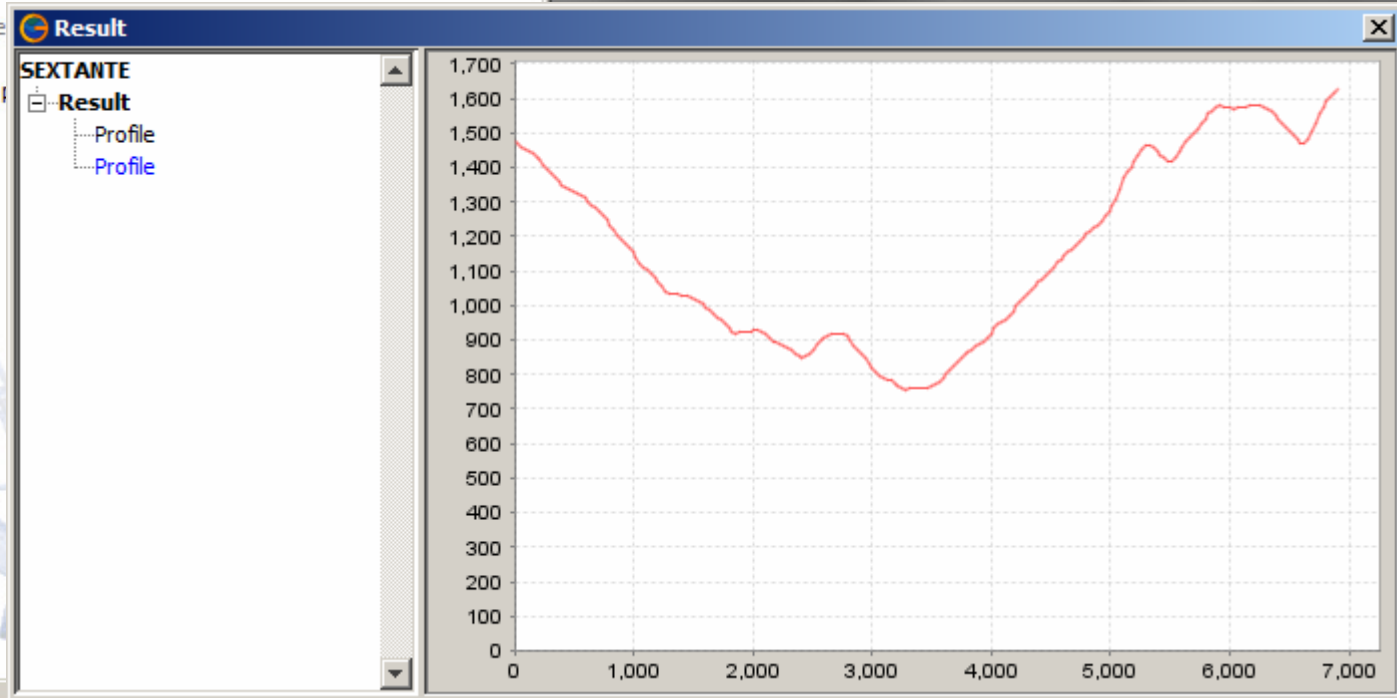
Search histo  



SEXTANTE - 4 Algorithms

- Algorithms
 - GRASS
 - Raster (r.*)
 - r.profile
 - SEXTANTE
 - 3D
 - 3D Profile
 - Profiles
 - Flow line
 - Profile

Elevation profile along line



- Result
 - SEXTANTE
 - Result
 - Profile
 - Profile

Search profil





View : Sextante

- Shaded relief
- dem.asc

Topographic Indexes Model

Modeler

Name: Topographic Index Group: Models

Inputs

- Numerical value
- Boolean value
- Raster layer
- Band
- 3D Raster layer
- Field
- String
- Table
- Coordinate
- Multiple input
- Fixed table
- Selection
- Vector layer

```

graph TD
    DEM[DEM] --> Slope[Slope]
    DEM --> Sink[Sink filling]
    Slope --> Indices[Topographic indices]
    Sink --> Accum[Flow accumulation]
    Accum --> Indices
            
```

Inputs Processes
Help Add
New Save Open

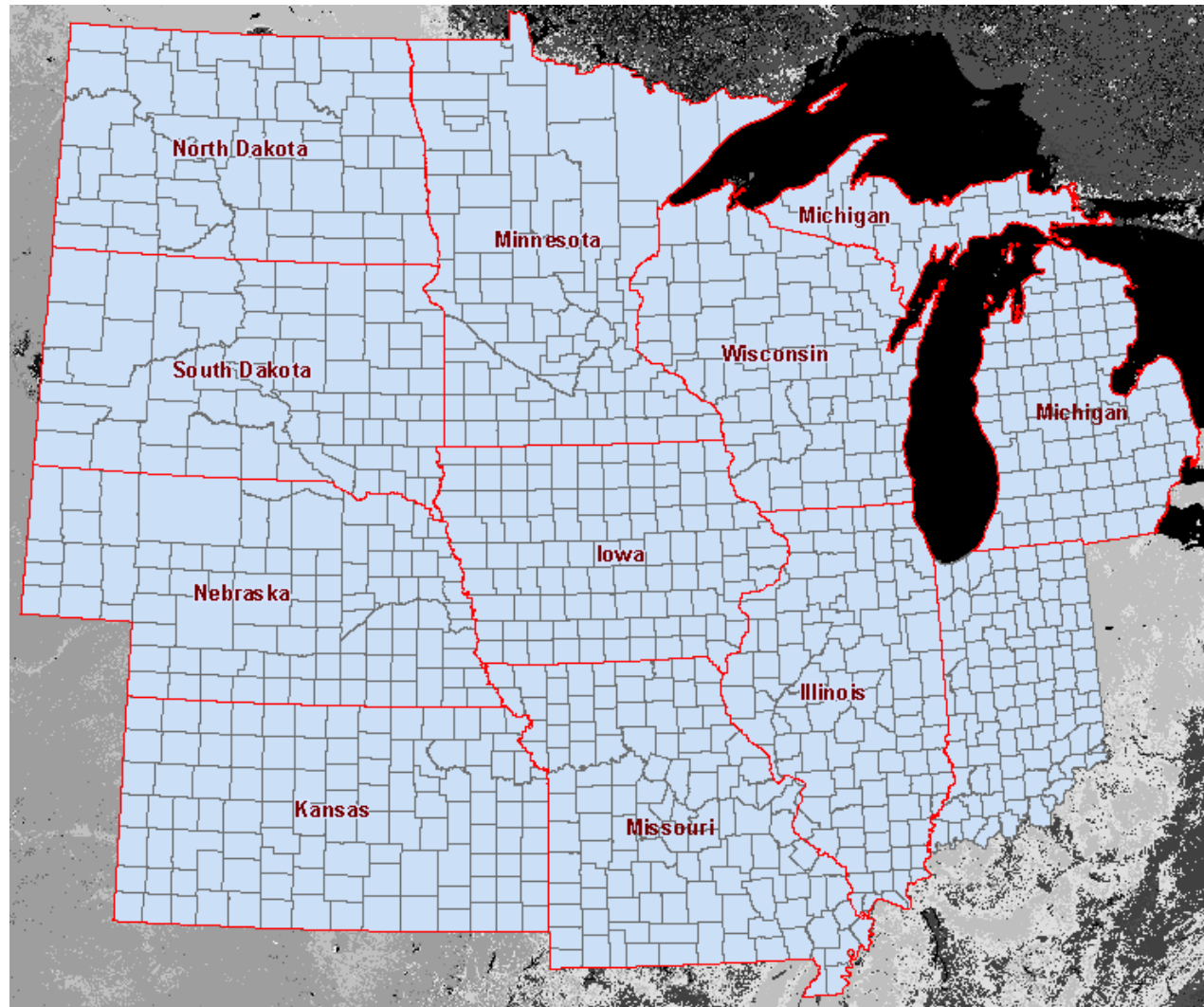
SEXTANTE - 761 Algorithms

- Algorithms**
- GRASS
 - Raster (r.*)
 - Vector (v.*)
 - gvSIG
 - Remote sensing
 - Vector geoprocesses
 - Models
 - Models
 - Topographic Index
 - SAGA
 - Contributions
 - Geostatistics
 - Grid - Analysis
 - Grid - Calculus
 - Grid - Filter
 - Grid - Spline
 - Grid - Tools
 - Grid - Visualization
 - I/O

Land cover area/county

example: determine land cover classes coverage for each State and break down by County.

For each of the 962 Counties in the 12 State region report area in m^2



Land cover area/county

Using NASA MODIS 500m Imagery

Land Cover Type Yearly L3
Global 500m MCD12Q1

<ftp://e4ftl01u.ecs.nasa.gov/MOTA/MCD12Q1.005/>

+

Counties Layer

class	value
water	0
evergreen needleleaf forest	1
evergreen broadleaf forest	2
deciduous needleleaf forest	3
deciduous broadleaf forest	4
mixed forests	5
closed shrubland	6
open shrublands	7
woody savannas	8
savannas	9
grasslands	10
permanent wetlands	11
croplands	12
urban and built-up	13
cropland/natural vegetation mosaic	14
snow and ice	15
barren or sparsely vegetated	16
unclassified	254

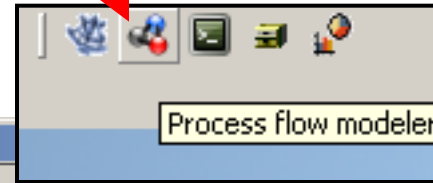
Land cover area/county

Result would be a table like this
(Counties shown with FIPS code ids)

FIPS	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12
26003	81.0	186.0	4.0	4330.0	5257.0	20.0	4.0	38.0	0.0	19.0	27.0
26009	102.0	31.0	11.0	79.0	86.0	0.0	0.0	39.0	0.0	4.0	35.0
26013	69.0	100.0	15.0	4491.0	5085.0	0.0	0.0	39.0	0.0	4.0	66.0
26019	169.0	85.0	0.0	1674.0	445.0	26.0	0.0	25.0	0.0	3.0	45.0
26029	72.0	46.0	0.0	263.0	449.0	6.0	0.0	21.0	0.0	14.0	26.0
26033	5.0	283.0	9.0	592.0	1855.0	0.0	0.0	32.0	0.0	0.0	15.0
26041	124.0	138.0	13.0	1214.0	9309.0	2.0	2.0	110.0	0.0	19.0	187.0
26043	5.0	38.0	6.0	2619.0	4956.0	4.0	0.0	10.0	0.0	4.0	5.0
26053	134.0	99.0	5.0	6964.0	5483.0	1.0	0.0	5.0	0.0	0.0	68.0
26055	125.0	114.0	5.0	1069.0	639.0	11.0	0.0	73.0	0.0	22.0	68.0
26061	166.0	196.0	12.0	5703.0	3782.0	0.0	1.0	21.0	0.0	5.0	121.0
26071	46.0	101.0	34.0	5517.0	7087.0	0.0	1.0	4.0	0.0	4.0	46.0
26083	255.0	460.0	5.0	1683.0	3812.0	0.0	0.0	38.0	0.0	0.0	103.0
26085	0.0	6.0	0.0	113.0	138.0	0.0	0.0	2.0	0.0	0.0	0.0
26089	279.0	187.0	7.0	969.0	436.0	37.0	3.0	55.0	0.0	24.0	109.0
26095	81.0	366.0	2.0	1994.0	7088.0	16.0	6.0	125.0	0.0	6.0	103.0
26097	215.0	74.0	12.0	746.0	3634.0	3.0	6.0	30.0	0.0	10.0	112.0
26101	34.0	52.0	0.0	2634.0	785.0	8.0	0.0	52.0	0.0	15.0	34.0
26103	183.0	586.0	37.0	4417.0	14183.0	25.0	2.0	210.0	1.0	21.0	171.0
26109	63.0	49.0	12.0	2007.0	6361.0	4.0	0.0	45.0	0.0	0.0	116.0
26131	117.0	48.0	2.0	7971.0	5276.0	15.0	0.0	18.0	0.0	13.0	54.0
26133	0.0	0.0	0.0	70.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0
26153	203.0	354.0	13.0	1391.0	8597.0	6.0	1.0	120.0	0.0	45.0	166.0
26165	20.0	57.0	4.0	2419.0	857.0	7.0	0.0	62.0	0.0	4.0	25.0
27031	140.0	172.0	10.0	566.0	3126.0	0.0	0.0	8.0	0.0	0.0	44.0
55003	0.0	0.0	0.0	374.0	169.0	0.0	0.0	0.0	0.0	0.0	0.0
55009	18.0	14.0	0.0	58.0	27.0	0.0	0.0	30.0	0.0	9.0	39.0
55019	0.0	1.0	0.0	457.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0
55029	251.0	160.0	4.0	182.0	714.0	1.0	4.0	66.0	0.0	8.0	117.0
55037	0.0	13.0	6.0	2721.0	2401.0	0.0	0.0	0.0	0.0	0.0	0.0

0 / 50 Total records selected.

Land cover area/county



The screenshot shows the QGIS Modeler interface. On the left is a 'Procedures' panel with a tree view of tool categories: Tools (Buffers, Cost, distances and routes, Fire modeling, Focal statistics for neighborhoods, Fuzzy logic, Geomorphometry and terrain analysis, Geostatistical simulations, Geostatistics, Hydrological analysis tools, Hydrological indices and parameters, Image processing, Local statistics, Location/allocation) and Models (calculate landcover type, tab area1, test1). Below the tree is a search box and 'Inputs'/'Procedures' tabs. At the bottom are 'Help' and 'Add' buttons. The main workspace shows a process flow diagram with the following steps: 'landcover' (input) and 'counties' (input) are connected to 'Rasterize vector layer' (process). 'landcover' and 'Rasterize vector layer' are connected to 'Tabulate Area' (process). The 'Name' field is 'tab area1' and the 'Group' is 'Models'. At the bottom are 'Run', 'New', 'Save', and 'Open' buttons.

Land cover area/county

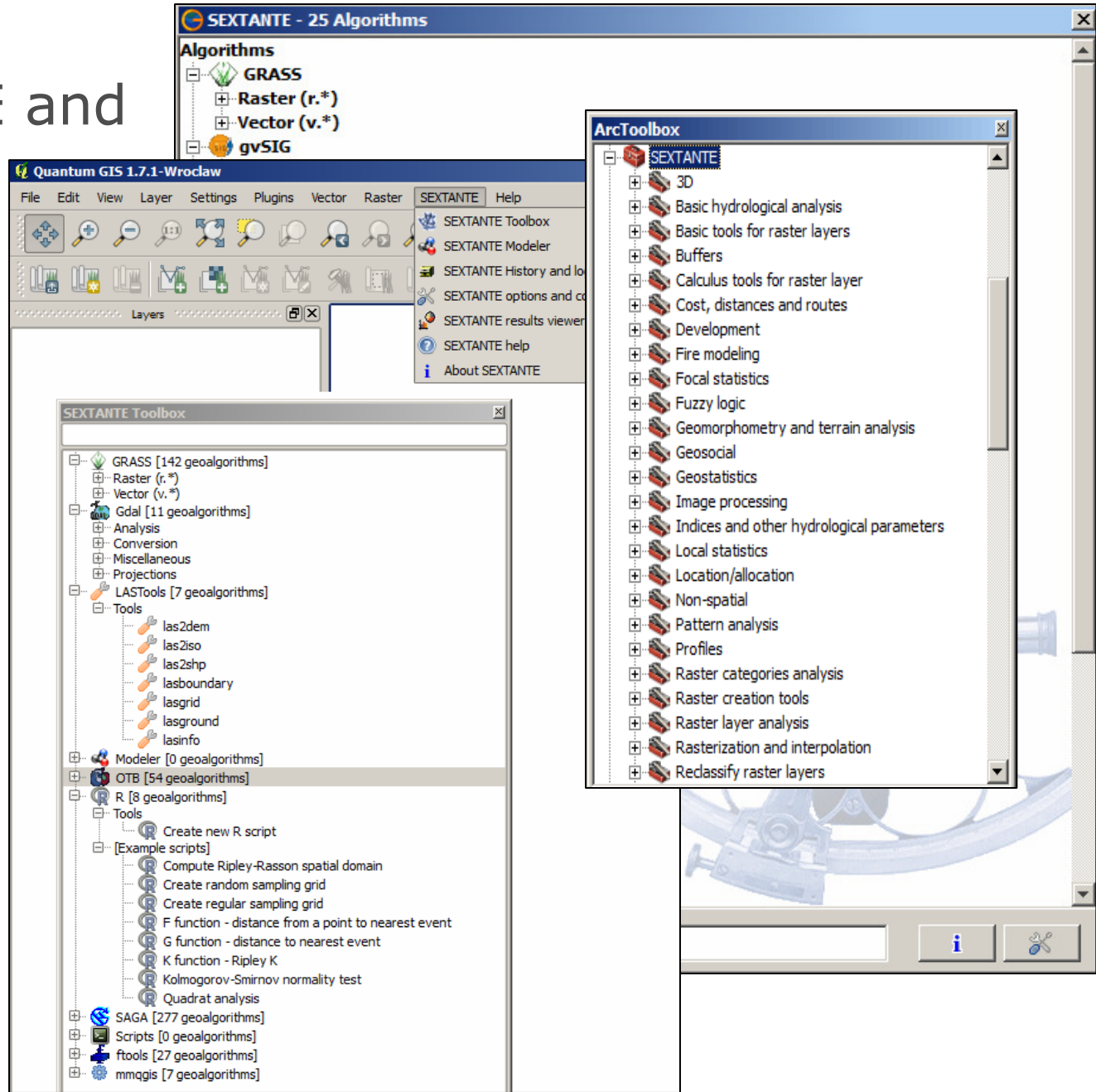
Create Model

- Input layer 1: counties in project area
- Input layer 2: land cover raster image (layer 3)

- Process step 1: rasterize County layer
- Process step 2: tabulate area operation:
 - input rasterized County layer (3) -> regions
 - land cover raster -> values
 - limit to view extent (not to start a lengthy analysis)
 - check tabulated result table
 - export to MS Excel (or open office/ libre office)
 - process in MS Excel (transpose)
 - join to Counties layer ...

SEXTANTE Everywhere

- gvSIG CE and
- **ArcGIS**
- **QGIS**
- ...



Contact me with questions

Karsten Vennemann



TERRA GIS
TERRESTRIAL ENVIRONMENT REGIONAL ANALYSIS

www.terragis.net

Seattle, WA, USA

karsten@terragis.net

206 905 1711

**Terra GIS offers
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