

gvSIG a real tool for GIS technicians

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Agenda

- **Origins** of the project
- **What** is gvSIG?
- OK, but what can gvSIG **do** for me now?
- The near and mid-term **future**
- **Conclusions**

Origins of the project

- In 2003 CIT decides to **migrate** to Free Software (gvPONTIS), **why?**
 - Better usage of incoming budget
 - Promote local industry
 - Technology independence
- At this time, no free CAD or GIS **available**
- Launch a brand **new** project
- From a local to a **global** project

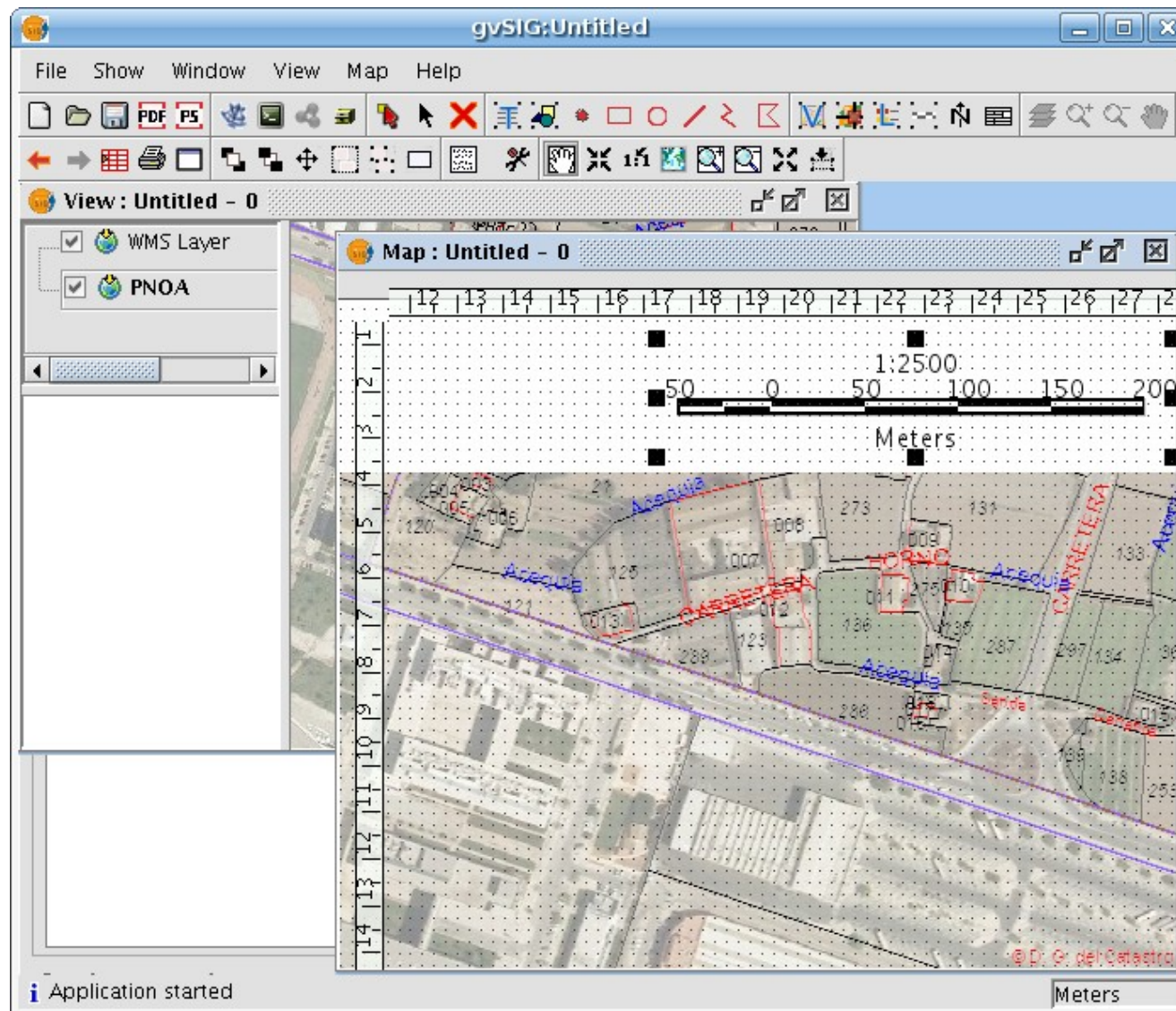
a desktop GIS

A classical geographical information tool



a desktop GIS

Origins
What is gvSIG?
Capabilities
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Conclusions



a desktop GIS

Main characteristics:

- Developed in **Java**
- **Runs** in Windows, GNU/Linux and MacOS
- **Modular** and **extensible**
- **Fast** development
- Quite similar to ESRI ArcView 3.2 **interface**
- Uses the **best** Free Software components

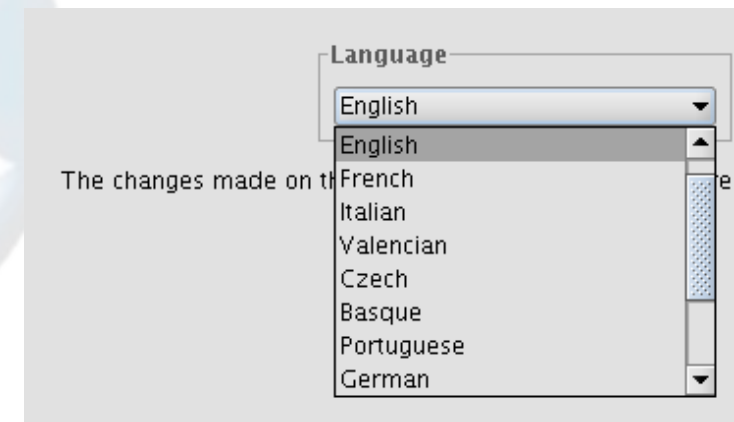
It's **Free Software** (GPL), so you can

- Use it for whatever you want
- Study how it works (and adapt it)
- Redistribute it
- Improve it
 - translating
 - adding new features
 - ...



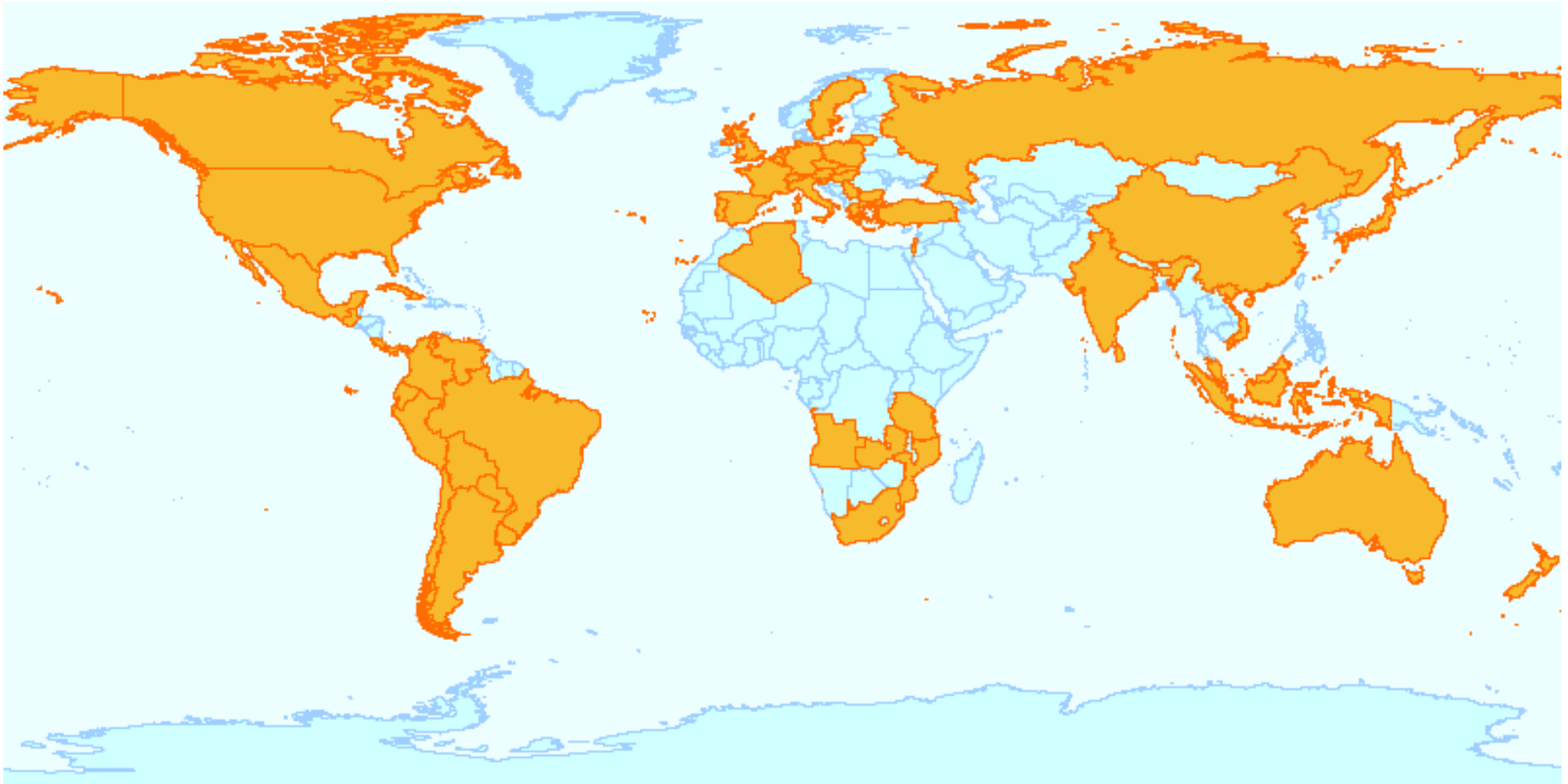
A community

- 4 mailing lists with **+1500** subscribers
- Joined the **OSGeo** Foundation
- Translated into **13** languages
- Based on the **synergy** of:
 - Public administrations
 - Companies
 - Universities



A global project

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Capabilities

Retrieve data

- Inputs
- Information display



Edit and analyse

- Graphic and alphanumeric editing
- Geoprocessing
- SEXTANTE



Output results

- Export data
- Edit maps

GIS client of several **formats**

• **Local** (files)

- Raster: Erdas, ENVI, GeoTIFF, ECW,...
- Vector: Shapefile, KML, DWG, DGN, DXF,...

• **Databases**

- Oracle, PostGIS, MySQL, ArcSDE

• **Remote** servers

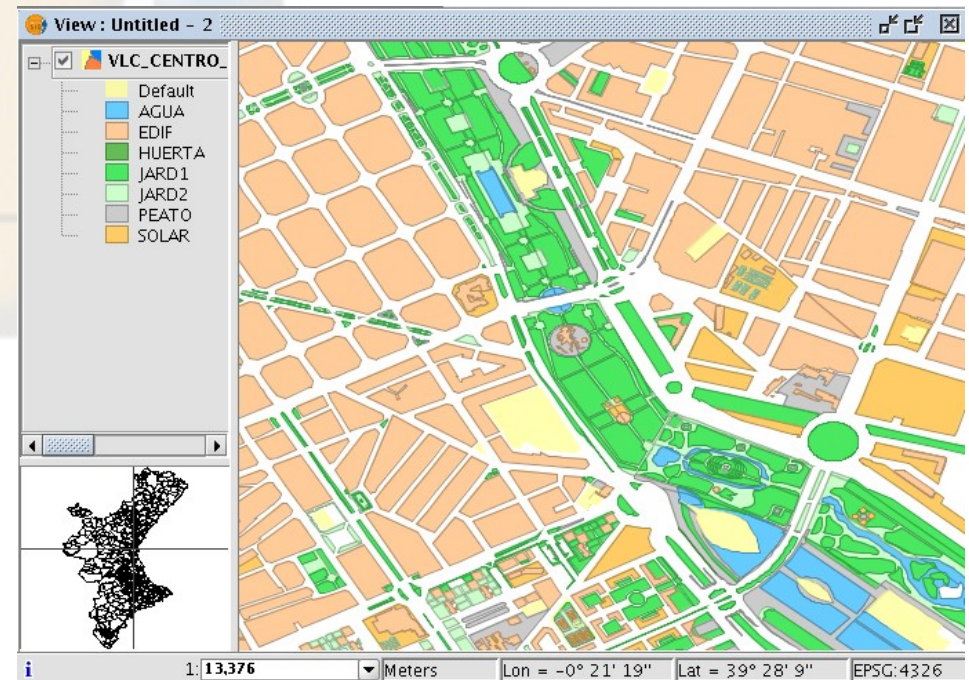
- ECWP
- ArcIMS feature and image services

SDI client of many **standards** of the OGC

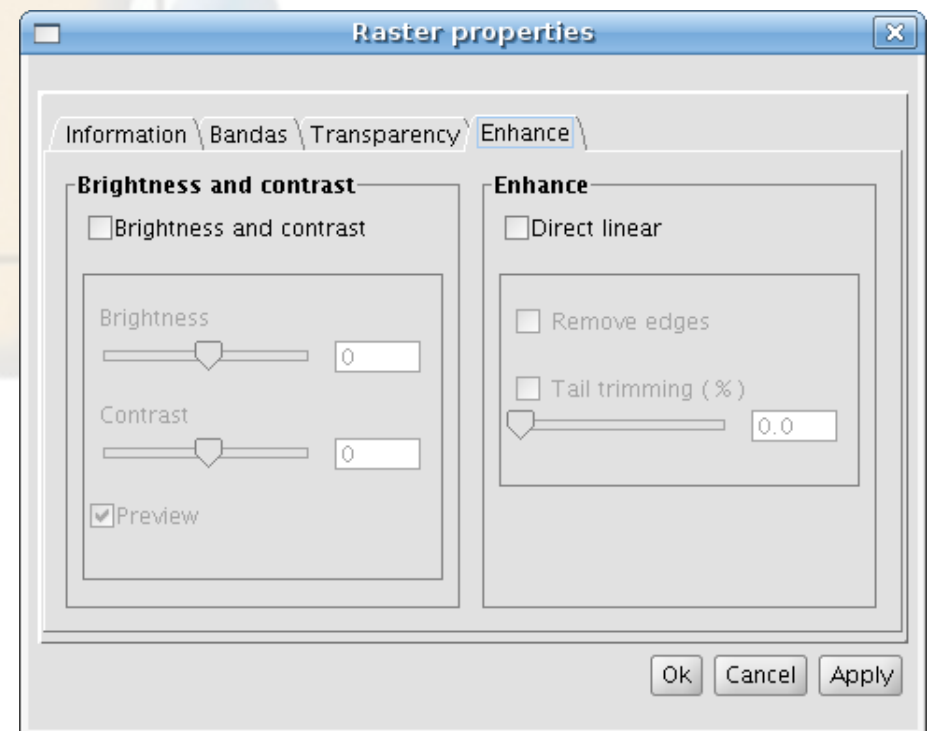
- **Web Map, Coverage and Feature Service**
- **Catalogue Service**
- **Gazetteer Service**
- Others
 - Geography Markup Language
 - Web Map Context
 - Style Layer Descriptor
 - Filter encoding



- **Overview** map
- **Hyperlink** to PDF, images, ...
- Simple **symbolology** (being improved)
- **Thematic** maps
- Attribute tables
- Smart selection



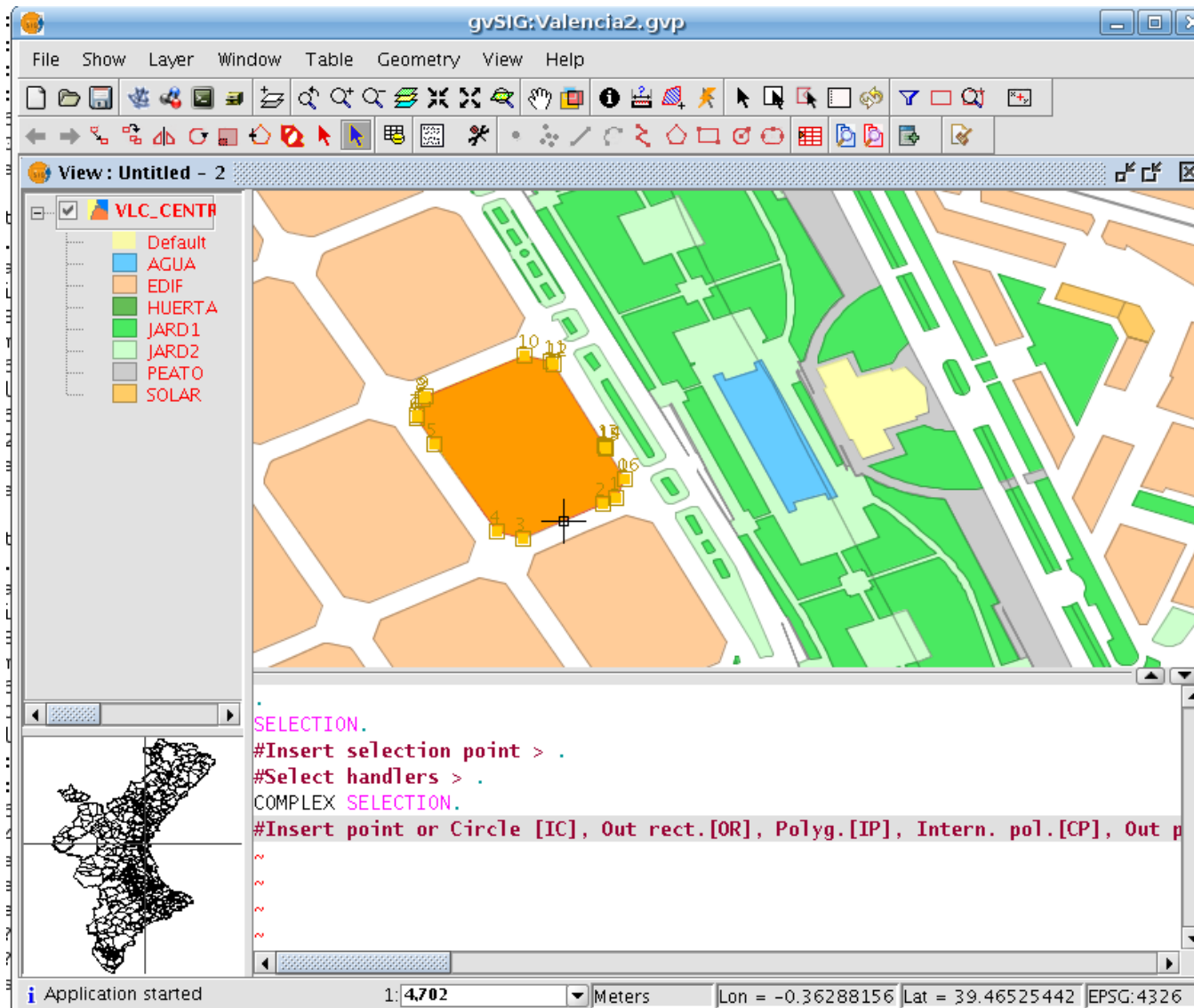
- Raster data visualization
 - **Brightness** and **contrast** controls
 - **Transparency** by pixel
 - **Opacity**
 - **Band** selecting
 - **Enhance** controls



- CAD editing
- **Snapping** capabilities
- AutoCAD-like **terminal**
- Command stack for **undoing**
- Grid
- Complex selection

graphic editing

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- View and edit file and database tables
- Filter and order
- Field **calculator** (scriptable)
- Change the table **structure** (add/remove/...)

tables

The screenshot shows the gvSIG interface with a table of attributes and a 'Calculate expression' dialog box open. The table has columns for GUIA, GUIA_ID, and TIPO. The dialog box is currently set to calculate the TIPO column.

GUIA	GUIA_ID	TIPO
5	2	EDIF
6	16	JARD1
7	3	JARD1
8	4	JARD1
9	5	JARD1
10	17	PEATO
11	6	PEATO
12	18	JARD1
13	7	JARD1
14	8	EDIF
15	9	EDIF
16	10	JARD1
17	20	JARD1
18	11	SP1
19	12	SP2
21	13	EDIF
22	14	EDIF
23	15	JARD1
24	54	PEATO
25	16	EDIF
26	55	SP1
27	17	JARD1
28	18	SOLAR
29	19	EDIF
30	26	EDIF
31	27	EDIF
32	28	EDIF
33	29	SOLAR
34	30	EDIF
35	31	EDIF
36	32	SOLAR
27	22	EDIF

Calculate expression dialog box details:

- Information: Eval expression will be carried out right now with current values in table.
- General / Advanced tabs.
- Field: [GUIA_], [GUIA_ID], [TIPO]
- Type: Numeric, String, Date
- Commands: abs, acos, area, asin, atan, ceil
- Expression: Column : TIPO
- Buttons: Clear expression, OK, Cancel

geoprocessing

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The image shows the gvSIG software interface. On the left is the **Geoprocess toolbox** with a tree view containing:

- Geoprocesses
 - Analysis
 - Proximity
 - Buffer**
 - Spatial join
 - Overlay
 - Clip
 - Diference
 - Intersect
 - Union
 - Computational Geometry
 - Convex Hull
 - Aggregation
 - Dissolve
 - Data conversion
 - Merge
 - XY Shift
 - Reproject

The main window displays the **Buffer** tool. The description reads: "This geoprocess creates buffers of a certain distance around a line or polygon or many external or internal geometries." The tool parameters are set to "Input layer: Horta.shp", "Distance: 100", and "Buffer type: External".

Two map views are shown: "View: Untitled - 0" displays a street network with a pink buffer around a central area, and "View: Untitled - 1" displays a street network with a brown buffer around a central area. The status bar at the bottom indicates a scale of 1:19,140, units in Meters, and coordinates (Lon = -0° 21' 50", Lat = 39° 28' 23", EPSG:4326).

- Independent project: University of Extremadura
- Complete **analysis framework**
- Raster and vector **algorithms**
- **Easy** to implement custom algorithms
- Nice adds:
 - **Model** builder
 - **Batch** execution
 - **Terminal** interface (only for geeks and power users)



SEXTANTE

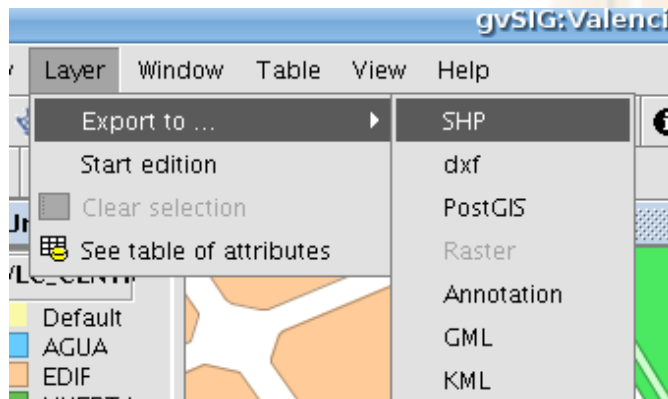
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The screenshot displays the SEXTANTE software interface, which is a graphical user interface for building workflows. It is divided into several panels:

- SEXTANTE Toolbox (202 extensions):** A sidebar on the left containing a tree view of tool categories. The 'Models' category is expanded, showing a list of tool groups such as 'Analysis tools for raster layers', 'Basic hydrological analysis', 'Basic tools for raster layers', 'Buffers', 'Calculus tools for raster layer', 'Cost, distances and routes', 'Focal statistics', 'Fuzzy logic', 'Geomorphometry and terrain analysis is', 'Geostatistics', 'Image processing', 'Indices and other hydrological parameters', 'Local statistics', 'Location/allocation', 'Pattern analysis is', 'Point analysis is', 'Profiles', and 'Raster creation tools'. A search bar is located at the bottom of this panel.
- Models:** A central panel with an 'Inputs' tab selected. It lists various input types: Numerical value, Boolean value, Raster layer, Band, Field, String, Table, Coordinate, Multiple input, Fixed table, Selection, and Vector layer. Below this list are 'Inputs' and 'Procedures' tabs, and 'Help' and 'Add' buttons.
- IT (Graphical description):** A workspace on the right showing a workflow diagram. The diagram consists of several boxes connected by arrows:
 - 'MDF' (with a plus icon) and 'Sink filling' (with a gear icon) are inputs to 'Flow accumulation' (with a gear icon).
 - 'MDT' (with a plus icon) is an input to 'Slope' (with a gear icon).
 - 'Flow accumulation' and 'Slope' are inputs to 'Topographic indices' (with a gear icon).At the bottom of this panel are 'Run', 'New', 'Save', and 'Open' buttons.

- Export to other formats

- Oracle, PostGIS
- SHP, DXF, GML, **KML**

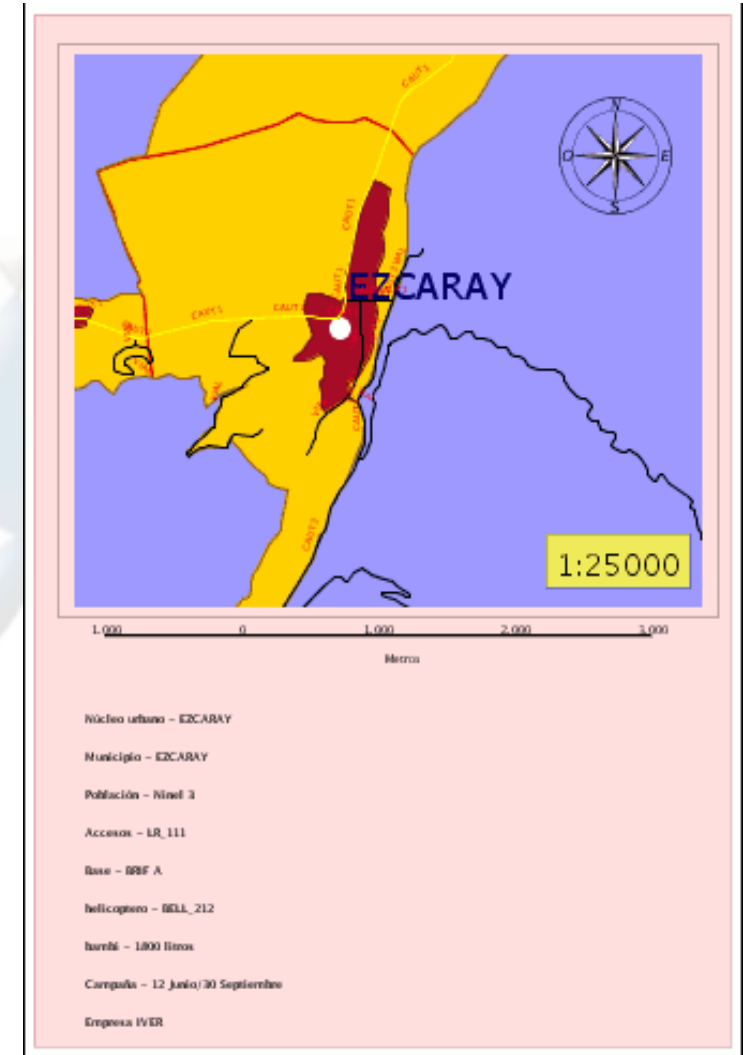
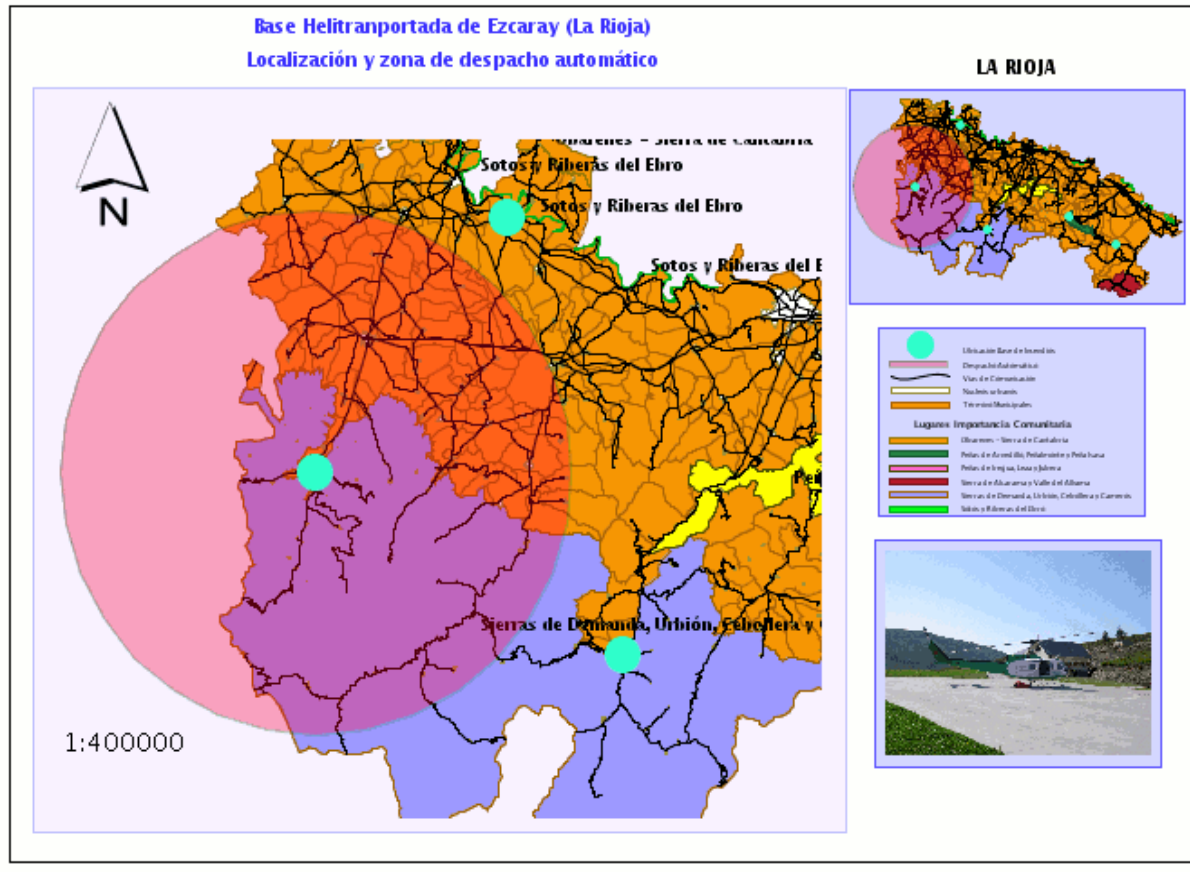


- Create map layouts

- North arrows
- Legends
- Scales
- Images
- Graphics
- ...

outputs

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- **Event** layers
- **Annotation** layers
- Searching **catalogues** and **gazetteers**
- Powerful **reprojection engine** (PROJ4 wrapper)
- Scripting capabilities with **Python**



What's going on?

- Next **releases**
- **Future** developments (not started)
- New **organizational structure**



Next releases: with pilots

• **Raster**

- Histograms, filters, classification, more formats supported, ...

• **Network**

- Shortest path, TSP, service area, distance matrix,...

• **3D**

- Spherical and planar, 3D symbols, animation, ...

• gvSIG for **mobile** devices

- Display and editing, remote services, GPS, ...

Next releases: soon ;-)

- **Publishing** extension
 - Smart publishing in map servers
- New **symbolology**
 - New legends and symbolology capabilities
- **Geocoding** and **normalization**
- **Charts** and graphics
 - Better layouts and reports with graphics, tables, ...
- Roadmap available

<http://www.gvsig.gva.es/index.php?id=funcionalidades&L=0&K=1&L=2>

Future developments

- **Geostatistics**
- **4D** representation and analysis
- **Surveying**
- **Sensors** connection



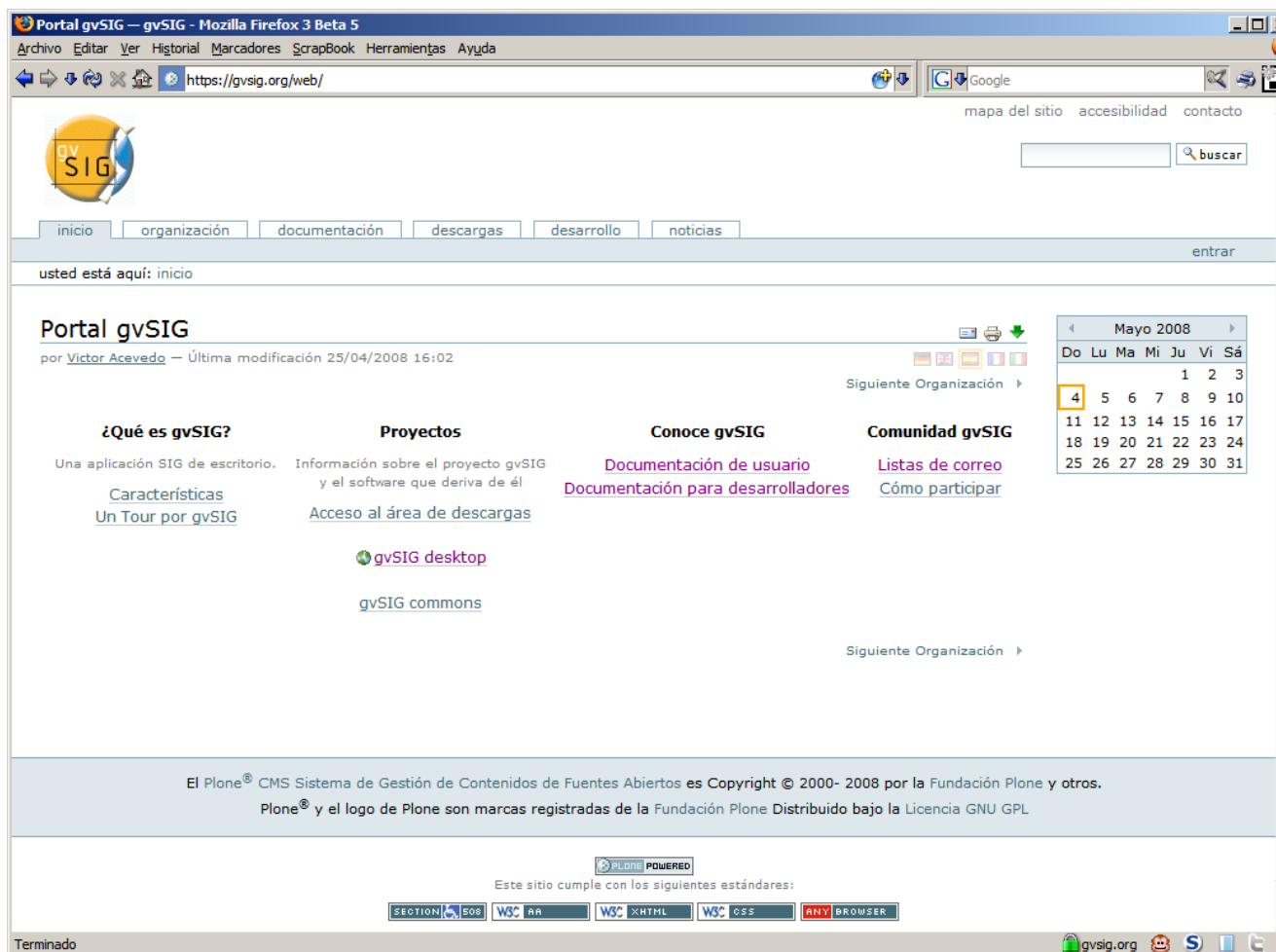
New organizational structure

- The project is **growing** really fast
- It needs a better organizational structure to:
 - Assure the **future** and **independence** of the project
 - Get **involved** more companies and administrations
 - Connect with other (geo) organizations
- Working projects in that context
 - Create a **translation** and **documentation** portal
 - Promote a **repository for contributions**
 - Collaborative **testing**

New organizational structure

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https://gvSIG.org



Conclusions

- gvSIG is a **mature** desktop GIS
- It can be used to perform **most common** tasks
- It can be **extended** and **improved**
- There are **many actors** involved in the project
- The community is **growing**

4th gvSIG meeting

- First week of December 2008
- All of you are invited (it's free)
- Last year +500 attendees



<http://www.jornadasgvsig.gva.es>

Thank you!!

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Questions and comments??

References

- <http://www.gvsig.gva.es>
- <https://gvsig.org/web>
- <http://www.jornadasgvsig.gva.es>
- <http://www.sextantegis.com>
- <http://www.gvpontis.gva.es/>
- <http://www.gnu.org/licenses/gpl.html>
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