GODAN: Global Open Data for Agriculture and Nutrition

gvSIG Suite: open source software for geographic information management in agriculture. Technology and case studies
GODAN
A short introduction...
Join us at https://dgroups.org/fao/godan_cd/join

GODAN Capacity Development Working Group

Join GODAN Capacity Development Working Group

Title:  First Name:  Last Name:

Email:

Organisation:

Position:

Address:

Country:

Reason to Join:

Participation in this community is subject to the Terms of Engagement.

Accept Terms of Engagement and Join

So join us and contribute to GODAN Capacity Development efforts worldwide

We welcome your ideas and contributions
gvSIG Suite: open source software for geographic information management in agriculture. Technology and case studies
gvSIG Association
A short introduction...
gvSIG Association

Who are we?

- It was born in 2010 within the frame of the gvSIG Project.
- Composed of companies and non business entities (universities, geographical institutes,...).
- It constitutes the biggest international network of experts in free geomatics.
- References and clients in more than thirty countries.
- Model based on the shared knowledge and the collaboration. Knowledge is transferred to the client.
- We offer learning, consulting, supporting, developments...
gvSIG Association

Clients and references: Some consulting examples

- Spatial Data Infrastructure. PDVSA (Venezuela)
- Migration from ArcGIS to gvSIG. Munich City Council (Germany)
- GIS analysis for urban areas. UN-Habitat (Kenya)
- Multimodal transport geoportal in Valencia (Spain)
- gvSIG development for cadastral management (Mexico)
- GIS for solid waste management in Basque Country (Spain)
- GIS for road management in the region of Valencia (Spain)
gvSIG Association

Awards and recognitions

- 2016: “Europa Challenge” awarded by NASA (World Wind integration with gvSIG Online). “Best open source mobile software” y “Most revolutionary software” Open source software awards
- 2015: “Europa Challenge” awarded by NASA (World Wind integration with gvSIG Desktop)
gvSIG Project

Some data...

- Translated to more than 30 languages
- Downloaded in more than 160 countries
- Several mailing lists; + 4,000 users
- Conferences in Spain, Germany, Italy, United Kingdom, Brazil, Russia, France, Argentina, Venezuela, Uruguay, Chile...
gvSIG Suite
A whole catalog of open source software solutions
gvSIG Suite

• 'Horizontal' products:
  • **gvSIG Desktop**: Geographic Information System for editing, 3D analysis, geoprocessing, maps, etc.
  • **gvSIG Online**: Integral platform for Spatial Data Infrastructure (SDI) implementation.
  • **gvSIG Mobile**: Mobile application for Android to take field data.

• Sector products:
  • **gvSIG Roads**: Platform to manage roads inventory and conservation.
  • **gvSIG Educa**: gvSIG adapted to geography learning in pre-university education.
  • **gvSIG Crime**: Geographic Information System for Criminology management.
Components of a GIS

- **Spatial Data Infrastructure**
  - Database (spatial), Map server
  - Geoportal(s), Catalog, Gazetteer

- **Desktop GIS**

- **Mobile GIS**
Components of a GIS

- **gvSIG Online**
  - Database (spatial), Map server
  - Geoportal(s), Catalog, Gazetteer
- **gvSIG Desktop**
- **gvSIG Mobile**
Components of a GIS

- Database (spatial), Map server, Geoportal(s), Catalog, Gazetteer
- Desktop GIS
- Mobile GIS

Open Source software
Interoperable
Standards
Built-in
Components of a GIS

- Free geomatics suite totally built-in
- With professional support
- Sustainability and maintenance guaranteed
gvSIG Desktop

Desktop Geographic Information System
gvSIG Desktop

Characteristics

- Multi-platform: Linux, Windows, Mac OS X
- Multi-language
- Simple interface: user friendly
- Customizable
- GIS + SDI client (Spatial Data Infrastructure / OGC standards)
gvSIG Desktop

Characteristics
gvSIG Desktop

**Characteristics**

- Local data loading
- Database management
- Data export
- Navigation
- Query and information
- Symbology and Labeling
- Annotations
- Geoprocessing
- Georeferencing
- Graphical editing
- Field calculator
- Layout constructor
- Layout templates
- Scripting, ...
gvSIG Desktop

Characteristics

Advanced geoprocessing:
- More than 300 vector and raster geoprocessing modules
  - Buffer
  - Dissolve
  - DEM
  - Clip
  - Intersect
  - Hydrological parameters
  - ...
gvSIG Desktop

Characteristics

Raster and Remote Sensing:
- Bands
- Layer export and clip
- Colour tables and gradients
- Transparency by pixel and opacity
- Statistics, filters, and histograms
- Region of Interest (ROI)
- Geolocation
- Enhance
- Vectorization
- Raster reprojection
- Mosaics
- ...
gvSIG Desktop

Characteristics

Spatial Data Infrastructure (SDI):

- WMS Service
- WMTS Service
- WFS Service
- WCS Service
- Searching serv. (Catalogue client)
- Location serv. (Gazetteer client)
gvSIG Desktop

Characteristics
Symbols:
Symbols for Forestry, Criminology, Infrastructures, Tourism, Health, Geology...
gvSIG Desktop

Symbols: Forestry

Complemented with line and fill symbols, used frequently in forestry maps
gvSIG Desktop DEMO
gvSIG Mobile
Geographic Information System for mobile devices
gvSIG Mobile

Characteristics

- gvSIG Mobile is a GIS complement to be used on field work.
- Main characteristics:
  - Display: several formats, CRS management
  - Symbology and Labeling
  - GPS Support: manual and automatic
  - Editing tools
  - Selection and searching
  - SDI/OGC access: WMS, WFS...
  - Measurement and information
  - ...
gvSIG Mobile
gvSIG Mobile DEMO
gvSIG Online
Platform for Spatial Data Infrastructure implementation
**gvSIG Online**

- **Characteristics:**
  - Full platform for Spatial Data Infrastructure (SDI) implementation and open source corporative GIS
  - It allows to share geographic information in the cloud and to create maps and 2D and 3D applications easily
  - Connected with gvSIG Desktop and gvSIG Mobile
gvSIG Online
gvSIG Online

Legend
Alphanumerical information
Browser
Map
Toolbar
Control panel access

Table of contents with layers and base layers
Graphic scale
Coordinates
Locator

Transports and Infrastructures
- Railway stations
- Main roads
- Motorways
- Airports
- Lighthouses
- Railways
- Harbours

Spanish Official Cartography
DEMO gvSIG Online
gvSIG Case studies
Successful gvSIG case studies in agriculture and forestry
Case studies: gvSIG Desktop

Application of gvSIG in a study related to forest fire monitoring

Comparative of the vegetation renewal of Karst woodland and pine forest in an area damaged by a fire, with the natural evolution of the same vegetation typologies in unburnt areas.
Case studies: gvSIG Desktop

gvSIG in forestry, firefighting and environmental management in the provinces of Trieste, Gorizia (Italy) and Sežana (Slovenia)

The administrations of both countries (Italy and Slovenia) collaborated and shared data and knowledge on gvSIG. They used gvSIG Desktop for office work and gvSIG Mobile for field work.
Case studies: gvSIG Desktop

gvSIG use applied to study the Ribeira river bank erosion (Brazil)

Study of the changes at the Ribeira River bank, and the advance of the Atlantic Ocean over the continent.
Case studies: gvSIG Desktop

Analysis of contaminants and salinity in the Minho river for the European Project

Determination of the spatial distribution of different physicochemical parameters (salinity, phosphate, ammonium, nitrate and nitrite), at both at low and high tide, at the estuary of the Minho river.
Case studies: gvSIG Desktop

gvSIG usage for defining forest stands

Delimitation of the forest stands in a hill, on an ortophoto, using gvSIG. Data got during field work are included at the Geographic Information System.
Case studies: gvSIG Desktop

gvSIG applied to the management of the agricultural lands of the Lipetsk Region (Russia)

Centralized storage of the information about agricultural lands and supporting of remote access to display spatial data and generate reports on the base of the developed web mapping application.

gvSIG Desktop is used as a client geospatial software to create the draft data sets and to edit final spatial data and their attributes.
Case studies: gvSIG Desktop

gvSIG for Forestry Management: SIFOMAP 3.0

Customized applications that allow to manage, administrate, update... the forestry heritage information. It's composed of different modules, like Forestry Management Planning, Sustainable Development Indicator, Forest Fire...
Case studies: gvSIG Desktop

Spatial characterization of lightning strikes in Castilla y León (Spain)

The spatial analysis of lightning strikes allows to prevent and warn about natural disasters (forestry fires, hailstones...) at the agroforestry means, in order to minimize economic losses.
Case studies: gvSIG Desktop

Spatial Data Infrastructures in developing countries: The climate change problem in Ebinat (Ethiopia)

Management of the geographical information related to a real problem: drought and climate change. Analysis of the climatic conditions at the region and their relation with the type of farming.
Case studies: gvSIG Desktop

gvSIG applied to the monitoring of protected flora in the Region of Murcia

Monitoring of this species of flora, as well as the detection of new locations.
Use of gvSIG to create potential distribution models of invading exotic species under different climate change scenarios

Analysis of the invading plants potential distribution at the Valencian Community, under different climate change scenarios in order to help the managers to confront these plagues in the future.
Case studies: gvSIG Desktop

Other related gvSIG Desktop case studies

- Using gvSIG to compute light pollution from night satellite images (Spain)
- gvSIG in a small ecological consulting firm, for representing plant or animal populations, extent and quality of vegetation types... (Australia)
- Variation of Neptune Grass in an area at the Calviá coast (Mallorca, Spain)
- Design and implementation of a GIS for underwater characterization (San Luis, Argentina)
- gvSIG use on precision agriculture (Argentina)
- gvSIG for modelling the Holocene landscape (Spain)
- ...

http://outreach.gvsig.org/case-studies
Case studies: gvSIG Mobile

The New York Natural Heritage Program

Mapping invasive species in the iMapInvasives program
Case studies: gvSIG Mobile

FAO landuse survey in Zimbabwe

Creation of a landuse survey crowdsourcing application
Case studies: gvSIG Mobile

INEGI: field data collection

Geological and hydraulics surveys at the Instituto Nacional de Estadística y Geografía (INEGI) of Mexico.
Case studies: gvSIG Mobile

International Union for Conservation (IUCN) of Nature SDI

Spatial Data Infrastructure of the International Union for Conservation of Nature
Case studies: gvSIG Online

International Union for Conservation (IUCN) of Nature SDI

Spatial Data Infrastructure of the International Union for Conservation of Nature
Case studies: gvSIG Online

Agriculture Ministry of Valencian Regional Government

Spatial Data Infrastructure to manage subsidies given by European Union
Case studies: gvSIG Online

Pre-emptive conservation SDI at IPCE

Spatial Data Infrastructure for pre-emptive conservation at Spanish Cultural Heritage Institute
gvSIG Events

- **3rd gvSIG Festival:**
  March 21st and 22nd 2018
  *Virtual conference*
  [http://www.gvsig.com/festival](http://www.gvsig.com/festival)

- **14th International gvSIG Conference:**
  October 24th to 26th 2018
  *Valencia (Spain)*
  [http://jornadas.gvsig.org](http://jornadas.gvsig.org)
Training

• Learning gvSIG in 30 minutes:
  https://blog.gvsig.org/2017/05/23/learning-gvsig-in-30-minutes/

• Learning GIS for free:
  https://blog.gvsig.org/2017/08/01/learn-gis-for-free-the-complete-course/

• GIS applied to Municipality Management:
  https://blog.gvsig.org/?s=GIS+applied+to+Municipality+Management

• “Learning GIS with Game of Thrones” free book:
Contact Details

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