gvSIG

Lecture 3

gvSIG: an advanced GIS client

GENERALITAT VALENCIANA
CONSELLERIA D'INFRAESTRUCTURES I TRANSPORT

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- Features
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- Developers guide to gvSIG
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What is gvSIG (I)

- Project funded by Generalitat Valenciana (Regional Government of Comunidad Valenciana - Spain)
- Multiplatform
- Open Source (GPL)
- Follow standards (OGC)
- Modular (prepared to grow)
- SDI compatible

What is gvSIG (II)

- 3 organization in collaboration (IVER, CIT, Universidad Jaume I)
- Open to any other collaborations
- Mastered and controlled by CIT
- Strong support by IVER
- Big team (developers, tester, support...)

Features (I)

- Advanced GIS client. Query, analysis, edition and map creation.
- Useful
- Powerful
- Customizable

Features (II)

- Supported Formats:
  - VECTORIALS
    - .SHP (R/W)
    - .DGN (v7) (R)
    - .DXF (ASCII) (R/W)
    - .DWG (AutoCAD 14) (R)
    - PostGreSQL + POSTGIS (R/W)
    - MySQL (R/W)
    - ….

Features (III)

- Supported Formats:
  - RASTER
    - ErMapper (.ECW)
    - MrSID => GDAL
    - .TIFF (geotif, .TFW)
    - JPEG2000
    - .JPG, .PNG, .GIF (geo-referenced)
    - ...
  - Standars OGC:
    - WFS Client (Web Feature Server) (R/W)
    - WMS Client (Web Map Server)
    - WCAT Client (Web Catalog Server)
    - WCS Client (Web Coverage Server)

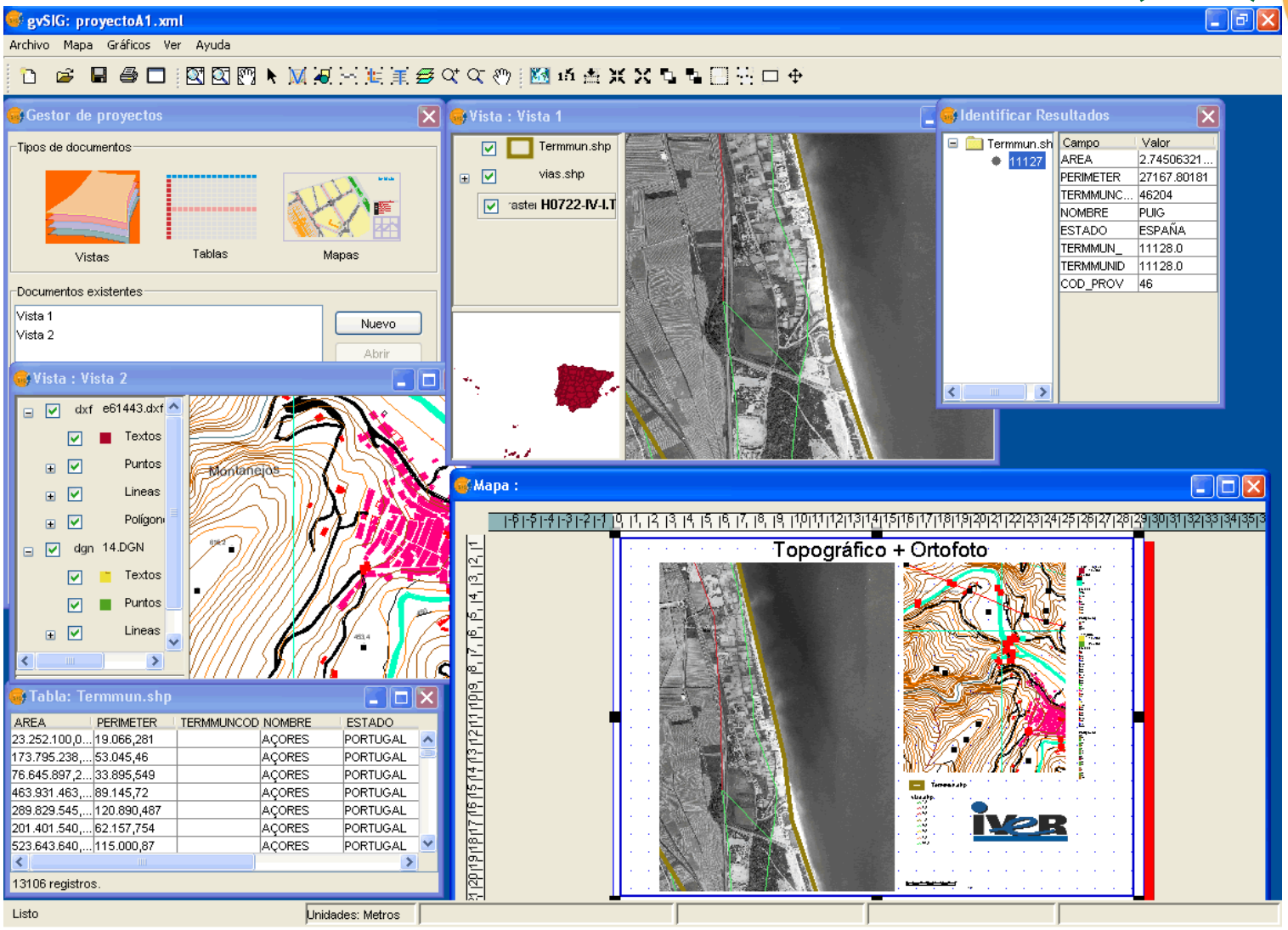
Features (IV)

- Main Functions (I)
  - Visualize and query
  - Selection tools
    - Alphanumeric
    - Graphic
  - Legend tools
  - Database access

Features (V)

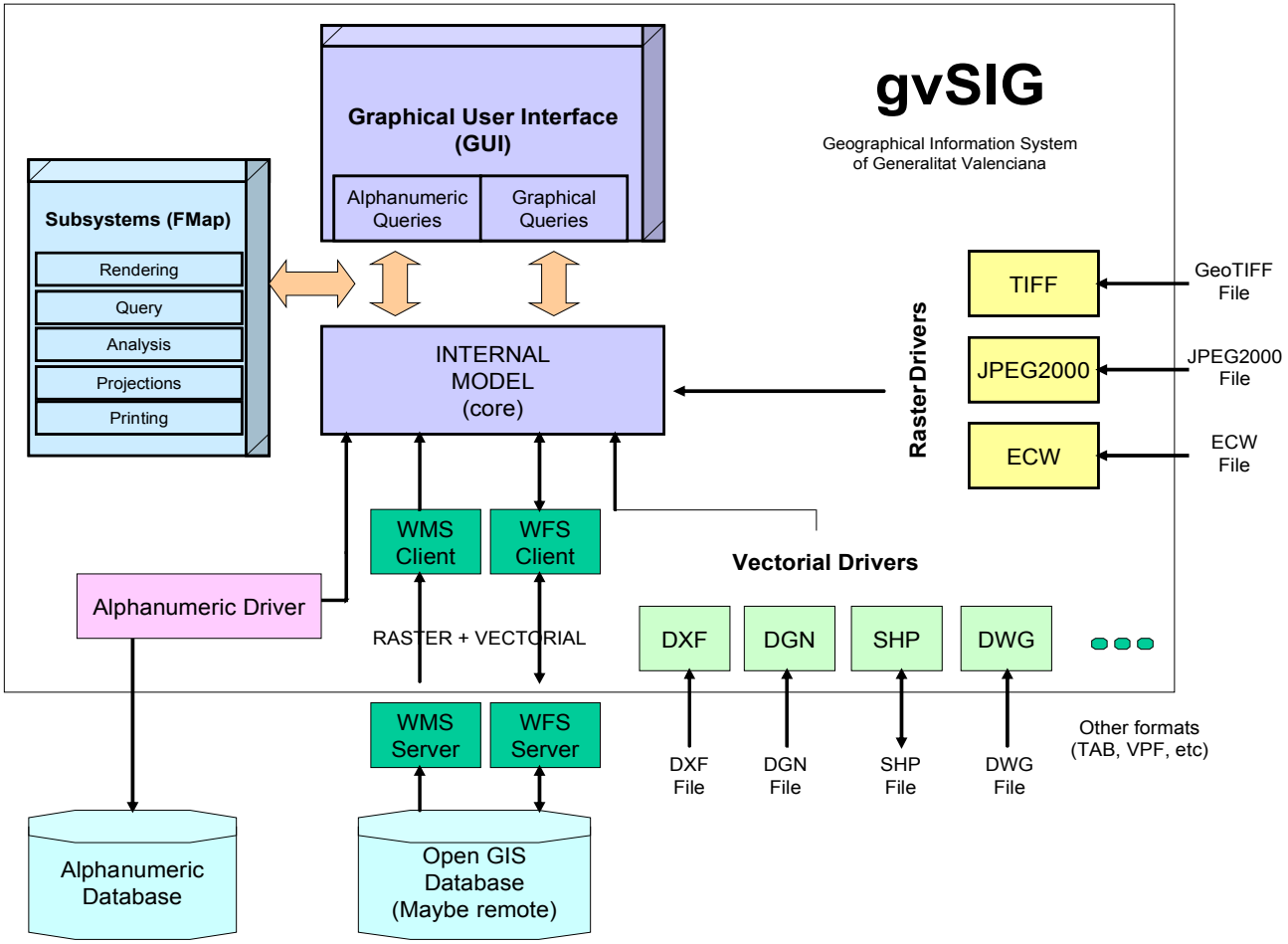
- Main Functions (II)
  - Analysis and Geoprocessing
    - Clip, Intersection, Union, Merge
    - Buffers
  - Edit tools
  - Layouts
  - Projections

Features (VI)


gvSIG: proyectoA1.xml
Archivo Mapa Gráficos Ver Ayuda
Gestor de proyectos
Tipos de documentos
Vistas
Tablas
Mapas
Documentos existentes
Vista 1
Vista 2
Nuevo
Abrir
Vista : Vista 1
Termmun.shp
vias.shp
Identificar Resultados
Campo Valor
AREA 2.74506321...
PERIMETER 27167.80181
TERMMUNC... 46204
NOMBRE PUIG
ESTADO ESPAÑA
TERMMUN_ 11128.0
TERMMUNID 11128.0
COD_PROV 46
Vista : Vista 2
dxf e61443.dxf
Textos
Puntos
Lineas
Polígon
dgn 14.DGN
Textos
Puntos
Lineas
Montanejos
Mapa :
Topográfico + Ortofoto
Tabla: Termmun.shp
AREA PERIMETER TERMMUNCOD NOMBRE ESTADO
23.252.100,0... 19.066,281 AÇORES PORTUGAL
173.795.238,... 53.045,46 AÇORES PORTUGAL
76.645.897,2... 33.895,549 AÇORES PORTUGAL
463.931.463,... 89.145,72 AÇORES PORTUGAL
289.829.545,... 120.890,487 AÇORES PORTUGAL
201.401.540,... 62.157,754 AÇORES PORTUGAL
523.643.640,... 115.000,87 AÇORES PORTUGAL
13106 registros.
Listo
Unidades: Metros

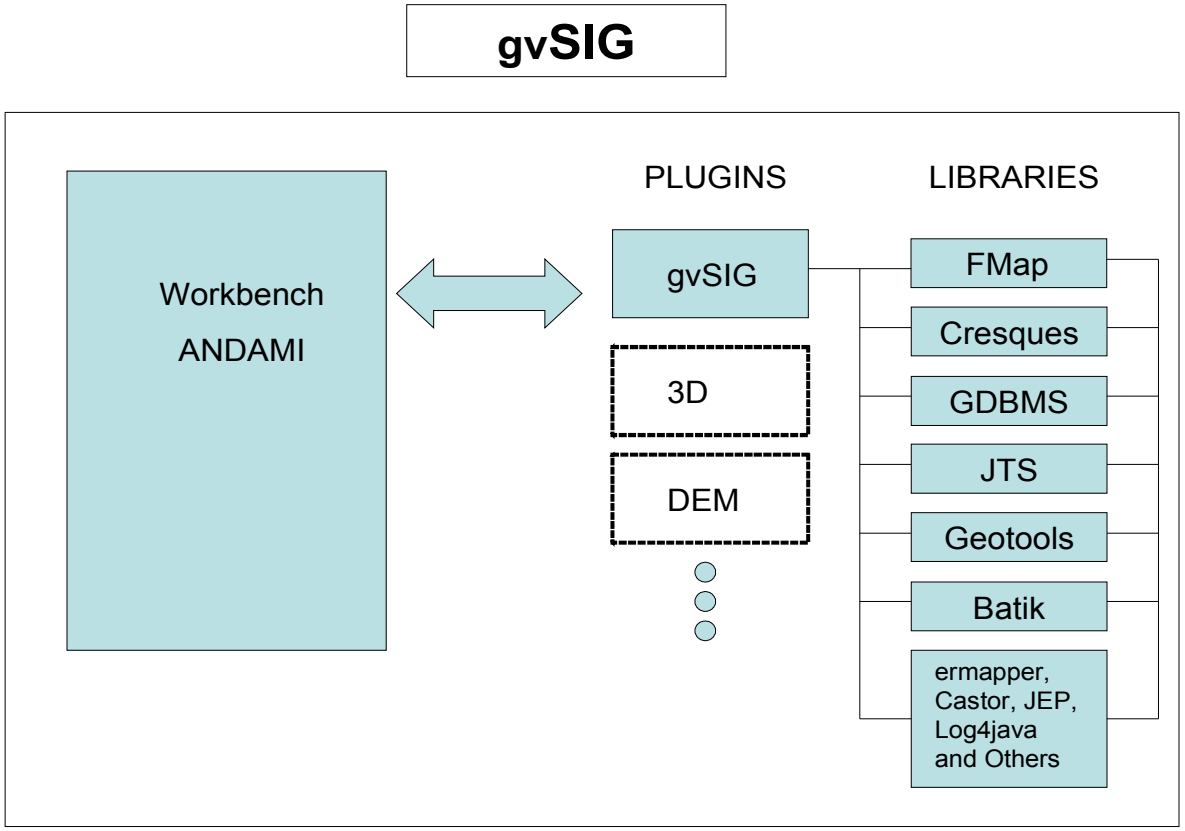
Developers Guide (I)

- Internal Organization (I)



Developers Guide (II)

- Internal Organization (II)



Developers Guide (III)

- Object Model (FMap)
  - Most important classes:
    - FMap => Holds layers and info about main projection, draw, print and handle some events (Listen and fire). Maybe seen as FLayers + ViewPort.
    - MapControl => Component that knows how to render (thread enabled) a FMap instance. It is close-related to tools also.
    - ViewPort => Holds information about all transforms that must be done (Affine or not). It fires extent events.
    - Flayers => Collection of layers. It can be hierarchic.
  - Packages:
    - Core => Base interfaces like IFeature and IGeometry. Some implementations.
    - Layers => All kind of layers (raster, vectorial, wms...)
    - Drivers => The entities that actually read the data.
    - Rendering => All about legends and symbols.
    - Strategies => The way you can explore your data (for rendering or analysing)
    - Tools => Behaviors, tools and their events.

Developers Guide (IV)

- Object Model (Andami)
  - Andami: Framework that permits the construction of MDI swing applications, extensible by plugins.
  - Most important classes:
    - Launcher => Starts the application. Compatible with Java Web Start.
    - PluginServices => Base class to obtain all the services offered to plugins. It has methods to obtain MainFrame, MDIManager, translate strings, execute in background, instances of other extensions, etc.
    - Extension => Interface that must implement each extension of a plugin. It permits to add menus, buttons, tools, and/or new algorithms.
    - View=> Every window added to the framework must implement this interface. It defines how it will be shown. (Modal, resizable, iconifiable, etc).
  - The extensions are controlled by the file "config.xml". The schema is defined by the file "plugin-config.xsd".

Developers Guide (V)

- Object Model (gvSIG)
  - gvSIG: Extension that converts Andami in a GIS client. It uses FMap to do the job. The majority of classes are related to gui (user interface).
  - Most important classes:
    - Those in the package com.iver.cit.gvsig. They are the "extensions" to andami, the classes that implements Extension and are related to "config.xml" file.
    - Some examples:
      - Abrir: Executed when a layer has to be added. It opens a dialog that permits to add layers (file based, wms, etc)
      - ViewControls: Defines most of the buttons and tools of the View Window. (zoom, pan, info, select, etc).
      - LayoutControls: Most of the buttons and tools related to Layout Window.
      - ProjectExtension: Handles the project, the start point to the rest of the documents (View, Tables and Layouts).
    - Other interesting classes: View, TOC, FlegendManagerWindow, Table and Layout

Developers Guide (VI)

- Used Libraries
  - JTS (Java Topology Suite)
  - Geotools2
  - Log4java
  - Batik
  - Castor
  - ErMapper
  - MrSID
  - GDMS

Developers Guide (VII)

- Related projects
  - Geoserver
  - Mapserver
  - Deegree
  - DGNLib
  - GDAL
  - JUMP
  - UDIG

gvSIG: The Future

- Web gvSIG (http://www.gvsig.gva.es): How to
  - Download.
  - Use mailing lists.
  - Contact the team.
- Future developments:
  - WFS
  - Editing
  - Dwg
  - Styling SLD
  - CAD editing
  - Raster analysis
  - 3D
  - ...???...