



geomajas

www.geomajas.org

Geomajas 1.7 – 2010

Technical Product Overview

**The ideal software
for Rapid Application
Development (RAD)
of web-based
GIS applications**



Technical Features

Supported Browsers

- Internet Explorer (6+)
- Firefox (3+)
- Chrome
- Safari

Supported Platforms

- JDK 5.0 and higher (JSE and J2EE)
- Tomcat, JBoss, WebLogic, WebSphere, Jetty

Standards

- Inspire compliant
- OGC (WMS, WFS, WFS-T)
- XML
- JSON
- SVG
- VML

Built-in technologies

- GWT
- Dojo
- GeoTools
- JTS
- iText
- Hibernate
- Hibernate Spatial
- Spring framework

Architecture

- Service Oriented Architecture
- Integrated Client Server Architecture
- Model View Controller paradigm
- Modular design
- Extensible through plug-in mechanism
- Advanced security support (fine grained authorization at data and command level)

- Internationalization
- Lazy feature loading

Map Controls

- Map Navigation (incl. Continuous Zoom, Pan/Zoom to selection, etc.)
- Overview Map
- Map add-ons (scalebar, legend, north arrow, navigation buttons, etc.)

Spatial Editing (Create, Edit, Delete)

- Simple geometries
- Complex geometries (incl. Donuts)
- Custom workflow and data validation

Domain object geometries

- Point
- Linestring
- LinearRing
- Polygon
- MultiPoint
- MultiLinestring
- MultiPolygon

Geometry Calculations

- Equals
- Disjoint
- Intersect
- Touches
- Crosses
- Within
- Contains

Multi-layered Map Graphics

- Layer State: visible, selectable, editable, labeled
- Layer tree

- Advanced snapping capabilities (closest/nearest point)
- Cartesian rendering
- Advanced painters
- Layer style encoding/decoding
- Transparency
- Custom labeling

Data models - ORM

- Simple attributes
- Custom attributes
- Associations (One-to-many / Many-to-one)
- Inheritance

Supported Layers

- GeoTools DataStore (JDBC, shape, WFS)
- Google Maps
- OpenStreetMap
- WMS
- Hibernate Spatial
- ESRI shape

Filtering (CQL) based on

- Attributes
- Features
- Geographic extent
- Zoom level
- User roles
- Custom

Geometry Rendering

- All geometries can be rendered/edited
- Point rendering with custom vector symbols
- Custom line stroke, fill pattern (including texture/transparency)

OGC Web Server Suite

- WMS 1.3 command handler
- WFS-T 1.0 command handler (transactional)
- WFS 1.1

Coordinate Transformations

- Full CRS support
- On-the-fly layer-map projection

Supported Widgets

- MapWidget
- Toolbar
- LayerTree
- Legend
- FeatureListGrid
- FeatureSearch
- FeatureAttributeEditor
- ActivityMonitor
- ScaleSelect
- LocaleSelect
- LoadingScreen

Supported Input Formats

- Google Maps
- OpenStreetMap
- OGC (WMS, WFS, WFS-T)
- Hibernate Spatial (with support for PostGIS, Oracle Spatial, MySQL, MS SQL Server)
- GeoTools (with support for ESRI Shapefile, GML, OGC, PostGIS, Oracle Spatial, ArcSDE, MySQL, GeoMedia, TIGER)

Language Packs

- Extensible through Internationalization
- English
- Dutch

Modular Architecture

The Geomajas software framework is fully modular with a clear definition of a public API and extension points. This improves the overall system design and increases clarity and consistency. A lot of attention was given to assuring separation of concerns and break-up in clear responsibilities.

The modular architecture also benefits extensibility because it allows for easy creation of additional modules and plug-ins.

The public API describes both the supported/stable API as well as an experimental API. The latter allows the Geomajas community to peak ahead and give early feedback on future API extensions.

The plug-in system allows you to deploy only the pieces you need, and Geomajas will check that all dependent plug-ins are available and compatible.

GWT face: Google Web Toolkit for the Client Side

In addition to the dojo face, a GWT face has been added. This allows engineers to develop, test and debug applications in a single programming environment (Java).

It also helps in establishing cross-browser compatibility, as GWT solves many of the differences in browser behaviour. Users have access to a very extensive GWT showcase, samples and documentation.

Advanced Security

The security in Geomajas allows users to configure and apply access and restrictions on a fine-grained level. Geomajas supports both functional constraints (commands, tools) as well as data constraints (layers, geographical extent, features, attributes). Authentication and authorization can be administered through multiple external services.

System Configuration using Spring

Leveraging an industry standard technology, the Spring Framework, the overall flexibility and extensibility is substantially improved. Users can configure many aspects of the system, including client and server side features, transaction management and security.

Services for Rendering and Feature Handling

Geomajas now features state-of-the-art process configuration and extensibility thanks to the introduction of configurable pipelines and services for rendering and feature handling. This also enables the introduction of caching, additional rendering steps, spatial manipulation and analysis, etc.

Technical Documentation

As part of a well defined API, extensive Java documentation and a user guide (120+ pages) are provided. The latter covers amongst others the architecture, configuration guidelines, information on faces and explains how to extend Geomajas.