

Open Source GI Solutions for the Management of Geological Data and Mining Cadastre

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GIMCS

Geological Information and Mining Cadastre System

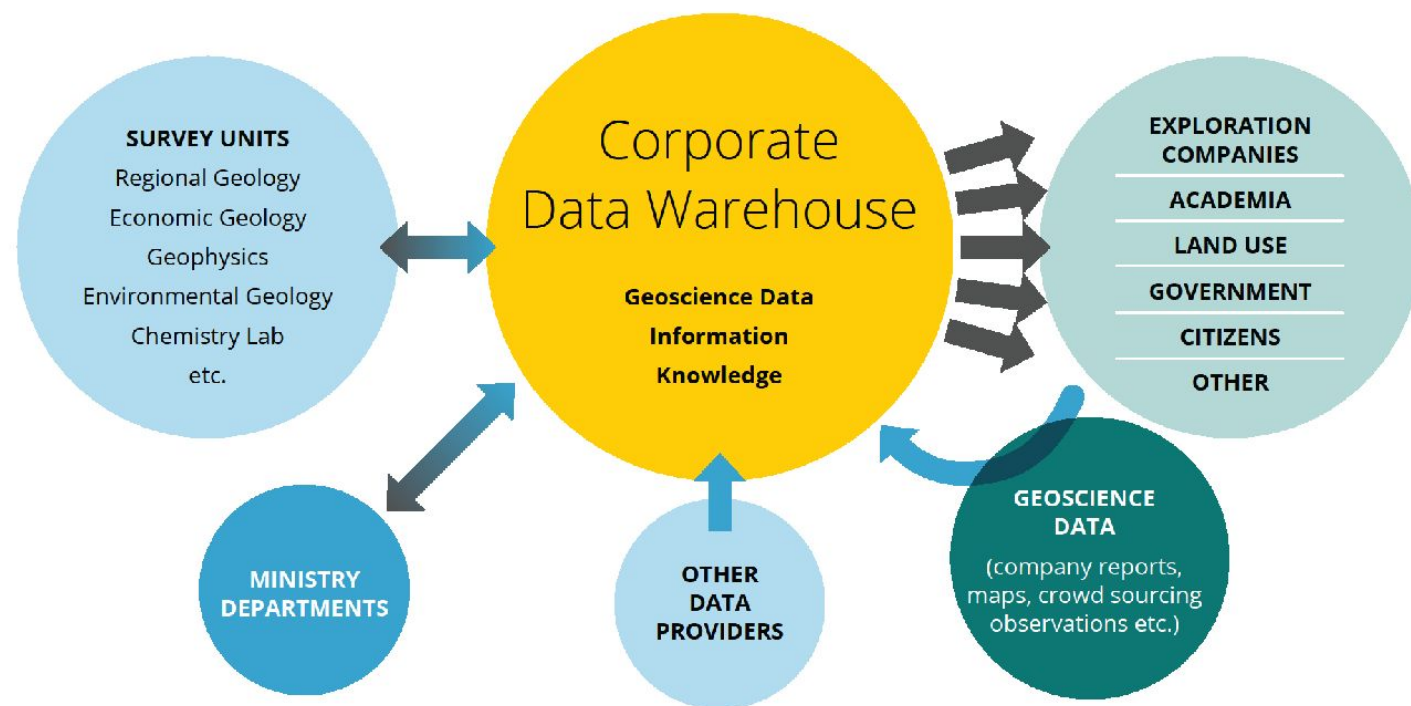


GIMCS - GEOLOGICAL INFORMATION AND MINING CADASTRE SYSTEM

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- The Geological Information and Mining Cadastre System (GIMCS) is one kind of implementation of the national geodata centre concept to support decision making and promote the possibilities to invest in the country
- Capacity building is an essential part of the project

The concept of a National Geoscience Information Centre

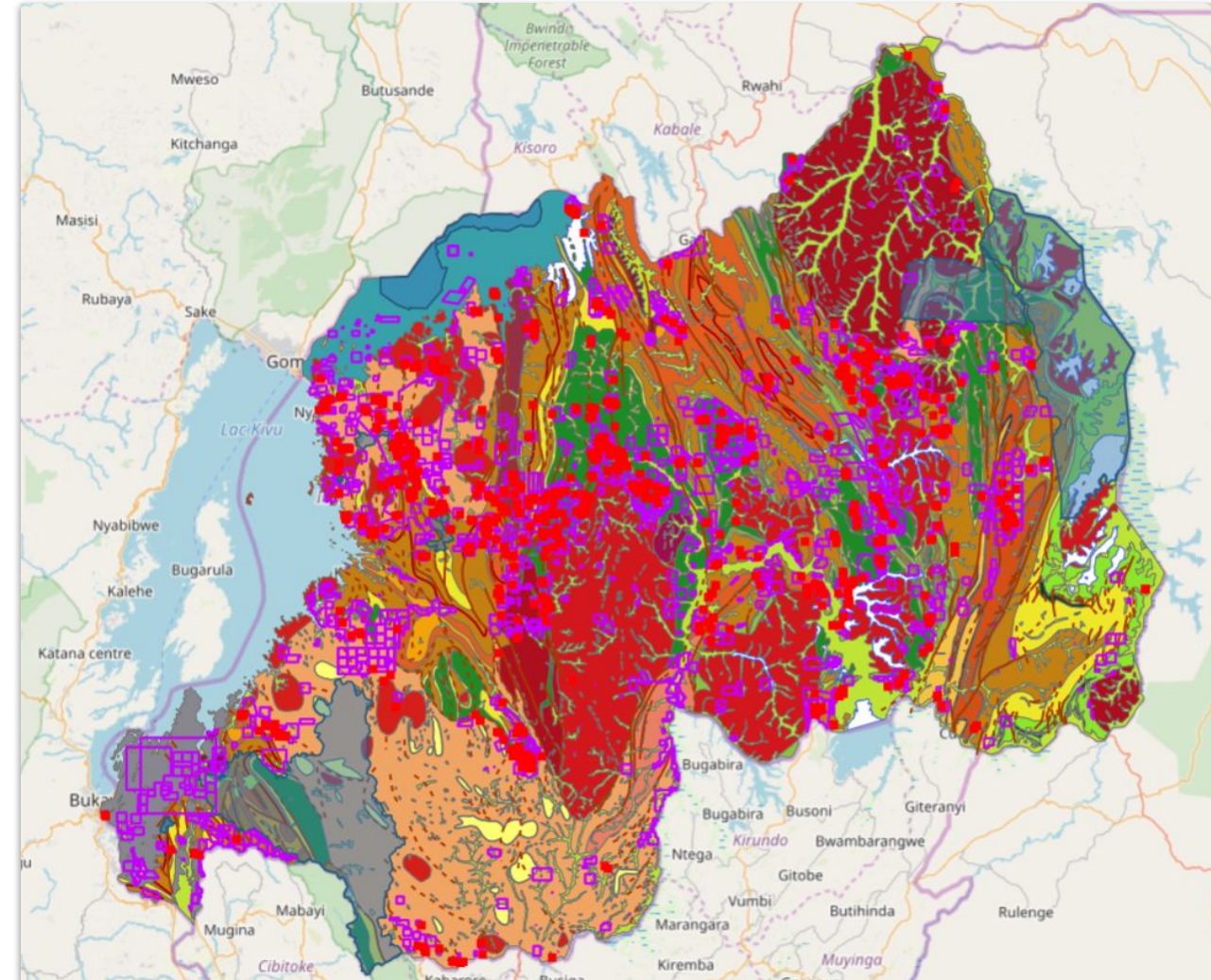


GIMCS - GEOLOGICAL INFORMATION AND MINING CADASTRE SYSTEM

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Geological Information Management

- Web site
- Web Map for the distribution of geological, geophysical and exploration data
- Web Shop
- Metadata Application
- The design of the scanning process for the digitization of old data
- Geodatabase (PostGIS), File share
- Desktop GIS (QGIS)
- Server GIS (GeoServer)
- Training

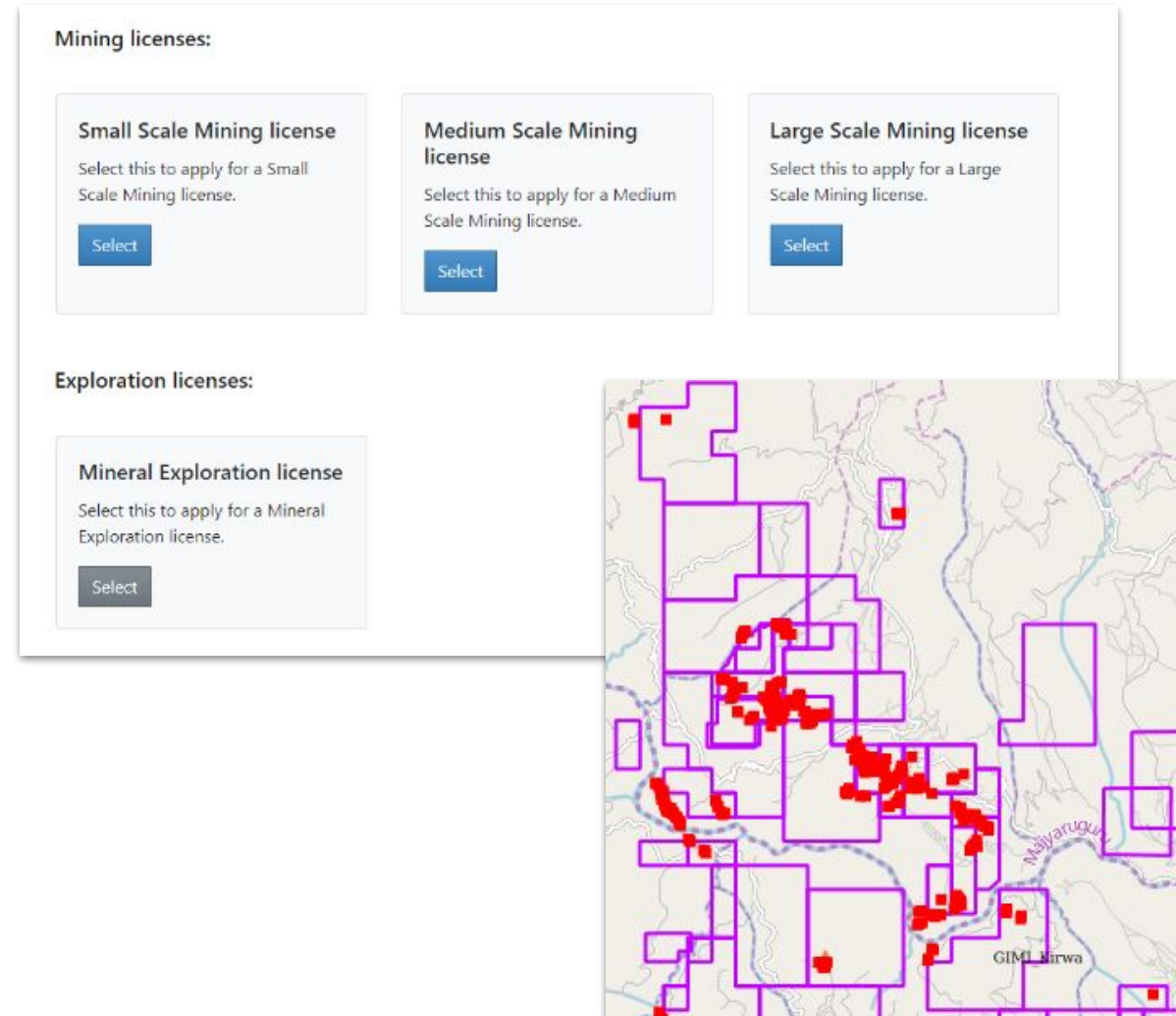


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Mining Cadastre

- Identity Management Module
- External Web Application for Applicants
- API (backend system)
- Internal Web Application for RMB employees
- Geodatabase
- Database
- Training

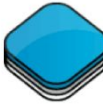


Use of FOSS4G software in GIMCS

FOSS4G = Free and Open Souce Software for Geospatial

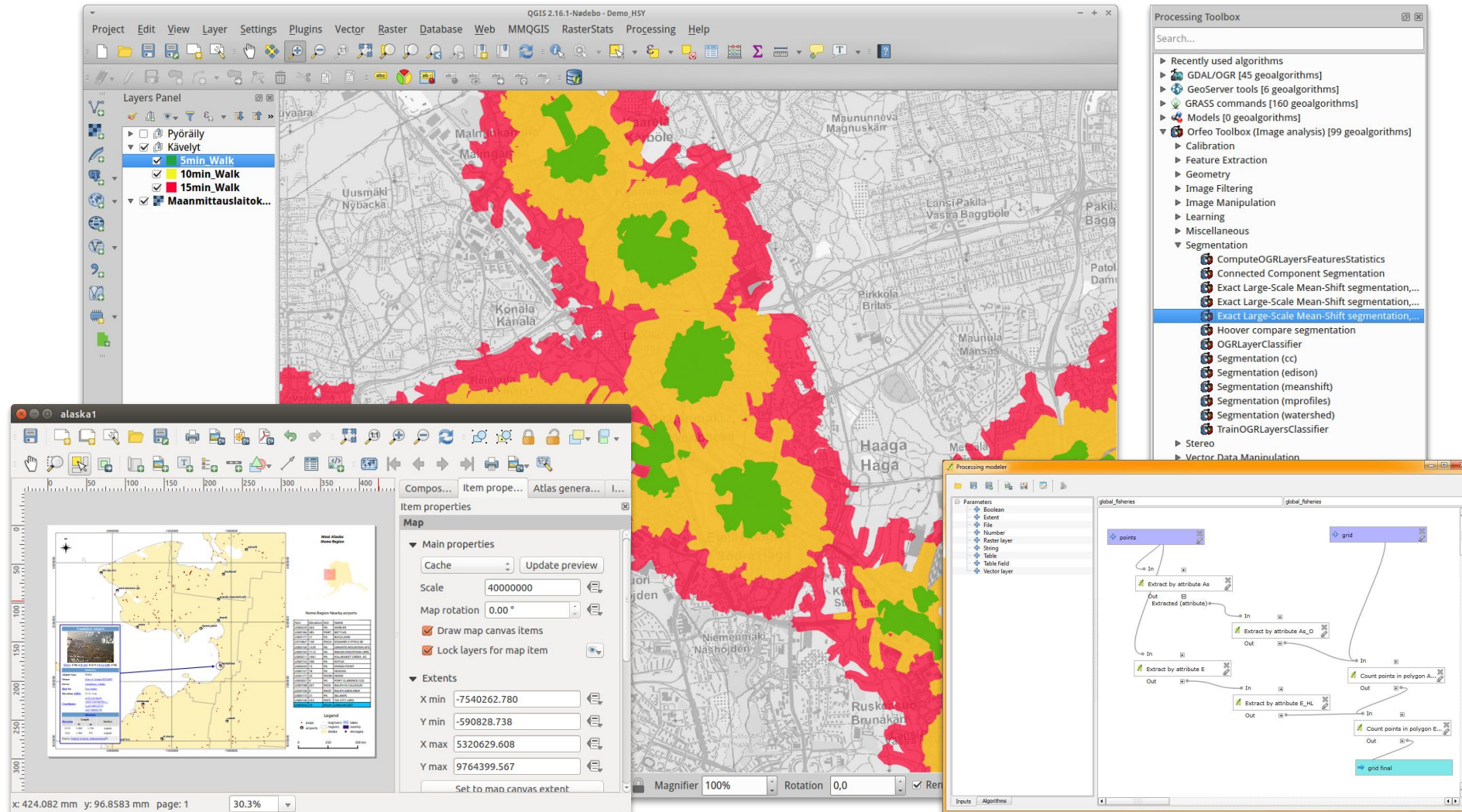


Open Source GIS Stack

Desktop	GIS Server	Database	Front End and Libraries
    	   	   	    

FOSS4G: Free Open Source Software for Geospatial

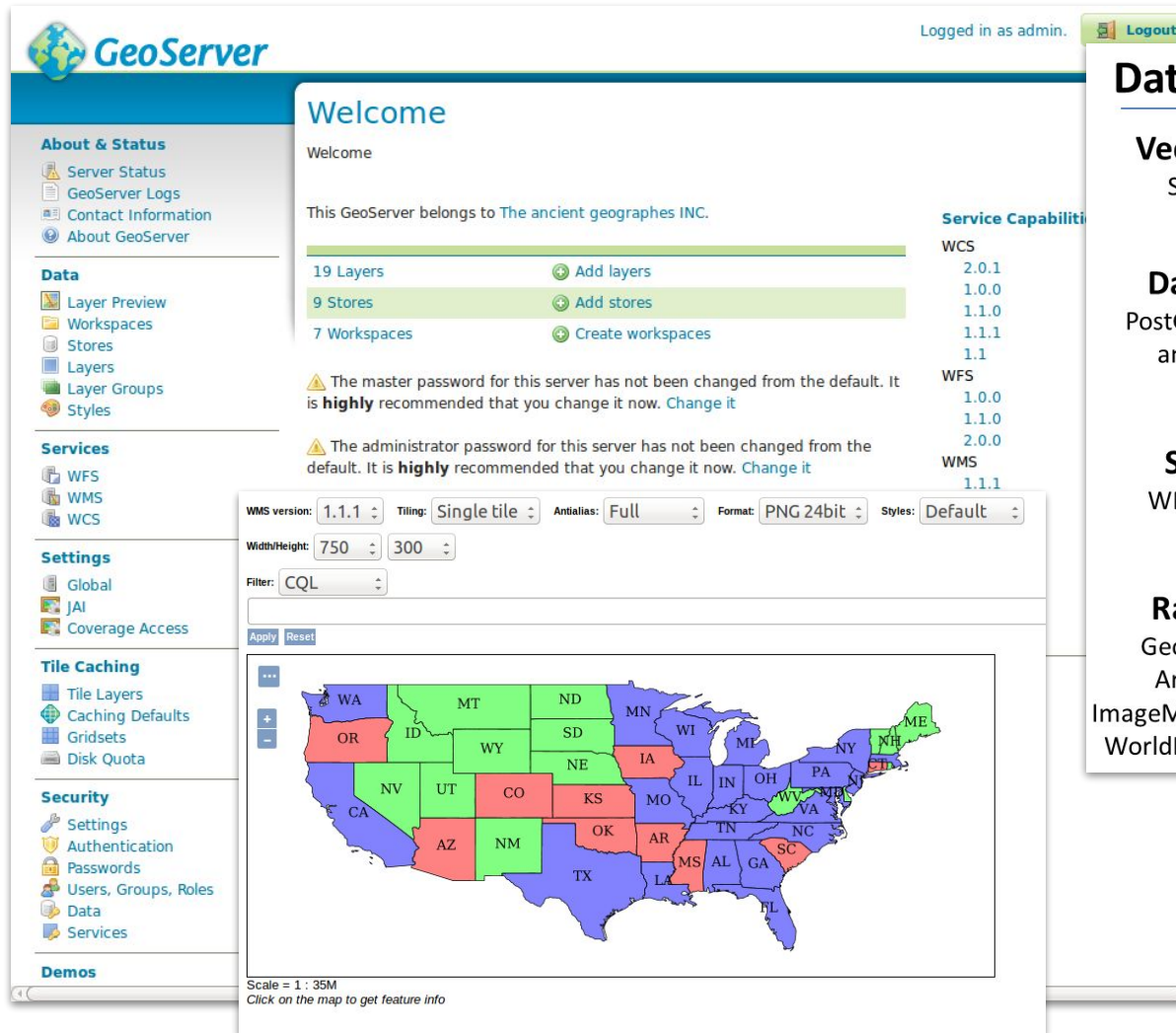
QGIS - Desktop GIS application



QGIS in GIMCS

- Tool for GIS experts
- Data import, export
- Geological information analysis
- Creating maps, reports
- Data management

Geoserver - GIS application server



Data Sources

Vector files

Shapefile

Database

PostGIS, Oracle,
and others

Servers

WFS, ArcSDE

Raster data

GeoTiff, NetCDF,
ArcGrid, ECW,
ImageMosaic, JPEG2000,
WorldImage and others



Services

Vector data

Shapefile, GML2,
GML3, GeoRss,
GeoJSON, CVS/XLS

Styled maps

PNG, GIF, JPEG,
TIFF, GeoTIFF, SVG,
PDF, KML/KMZ

Raster data

GeoTiff, ArcGrid,
Img+World

Google

KML superoverlays

Web Feature Service

Web Map Service

Web Coverage Service

KML

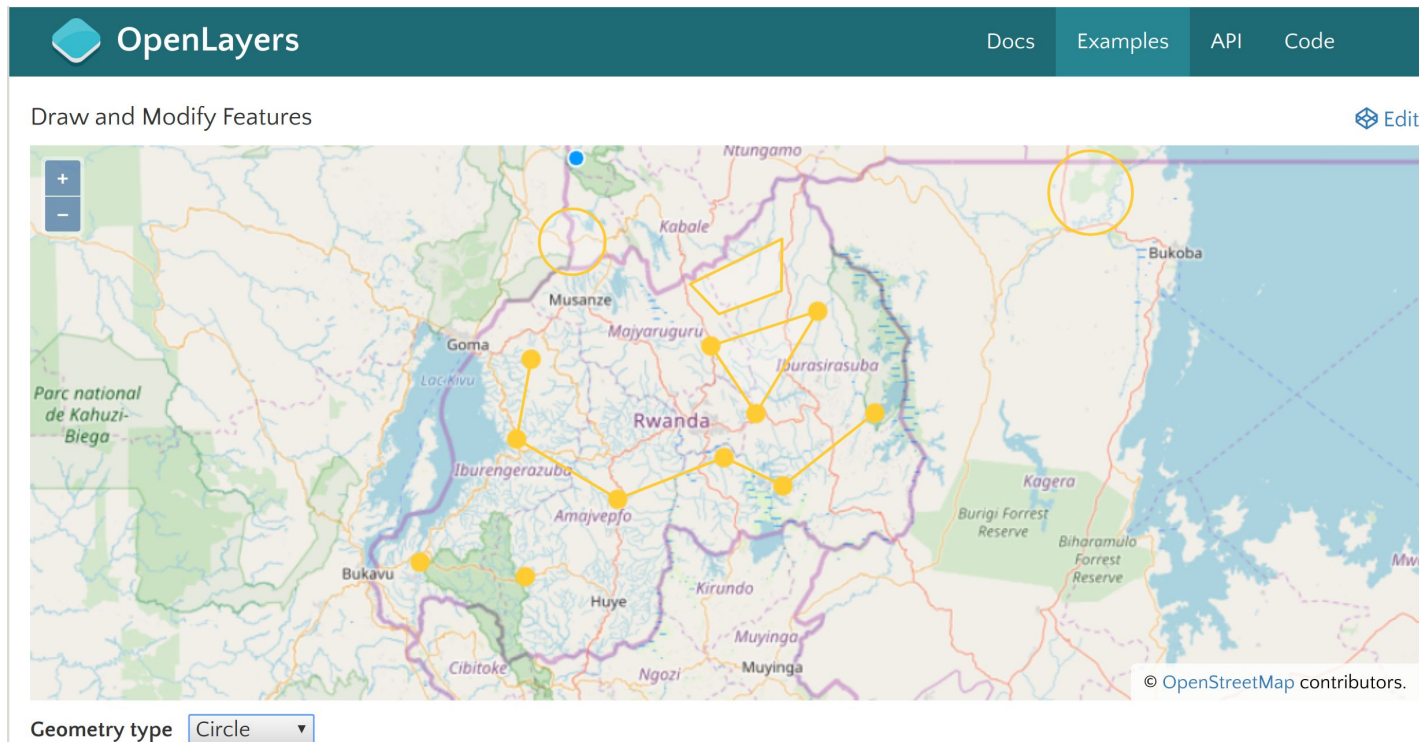
Geoserver in GIMCS

- Creating and managing WMS, WFS, WMTS services
- Data visualisation
- Data sharing

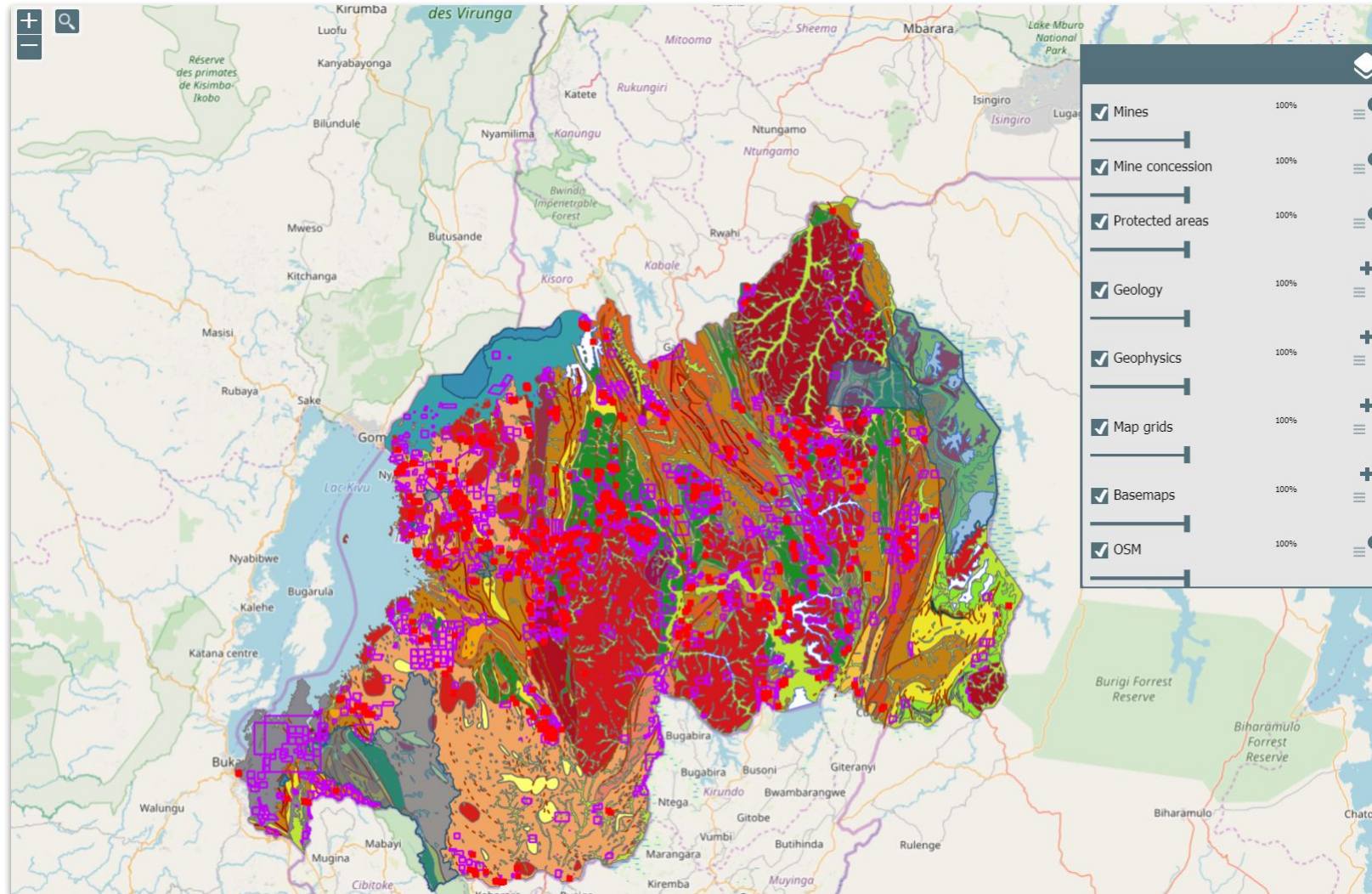


OpenLayers

- Interactive maps on the web
- High-performance, feature packed Javascript library

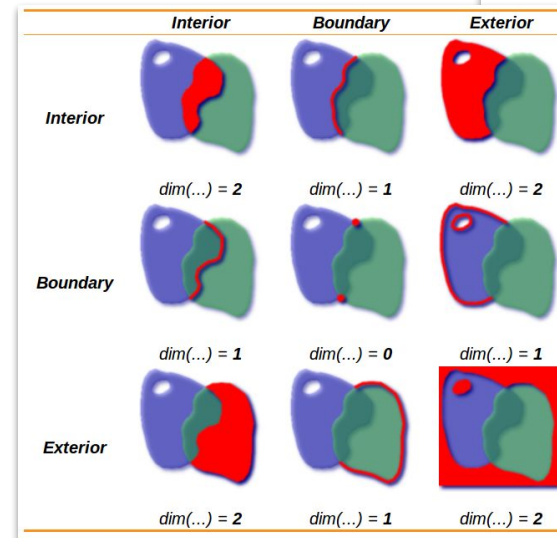
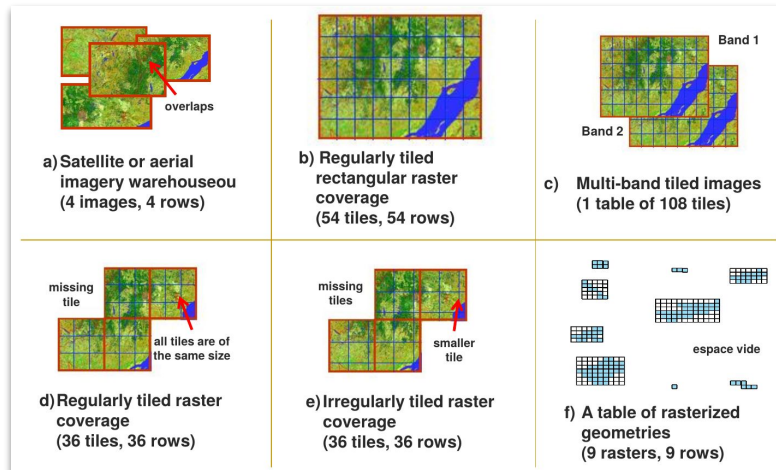


OpenLayers in GIMCS



PostGIS

- Extension to PostgreSQL database
- Manage and shares geospatial data
- Support vector and raster data
- Over 200 spatial functions



Prev **ST_Intersects** 8.9. Spatial Relationships and Measurements Next

Name

ST_Intersects — Returns TRUE if the Geometries/Geography "spatially intersect in 2D" - (share any portion of space) and FALSE if they don't (they are Disjoint). For geography -- tolerance is 0.00001 meters (so any points that close are considered to intersect)

Synopsis

```
boolean ST_Intersects( geometry geomA , geometry geomB );  
boolean ST_Intersects( geography geogA , geography geogB );
```

Description

If a geometry or geography shares any portion of space then they intersect. For geography -- tolerance is 0.00001 meters (so any points that are close are considered to intersect)

Overlaps, Touches, Within all imply spatial intersection. If any of the aforementioned returns true, then the geometries also spatially intersect. Disjoint implies false for spatial intersection.

! Do not call with a GEOMETRYCOLLECTION as an argument for geometry version. The geography version supports GEOMETRYCOLLECTION since its a thin wrapper around distance implementation.

the GEOS module (for geometry), geography is native

5 support for geography was introduced.

! This function call will automatically include a bounding box comparison that will make use of any indexes that are available on the geometries.

! For geography, this function has a distance tolerance of about 0.00001 meters and uses the sphere rather than spheroid calculation.

! NOTE: this is the "allowable" version that returns a boolean, not an integer.

PostGIS IN GIMCS

- Data storing, management and sharing
- Vector and raster data
- Store of metadata information

Training of FOSS4G softwares in GIMCS



Murakoze
Kiitos
Thank you

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F@\$#!