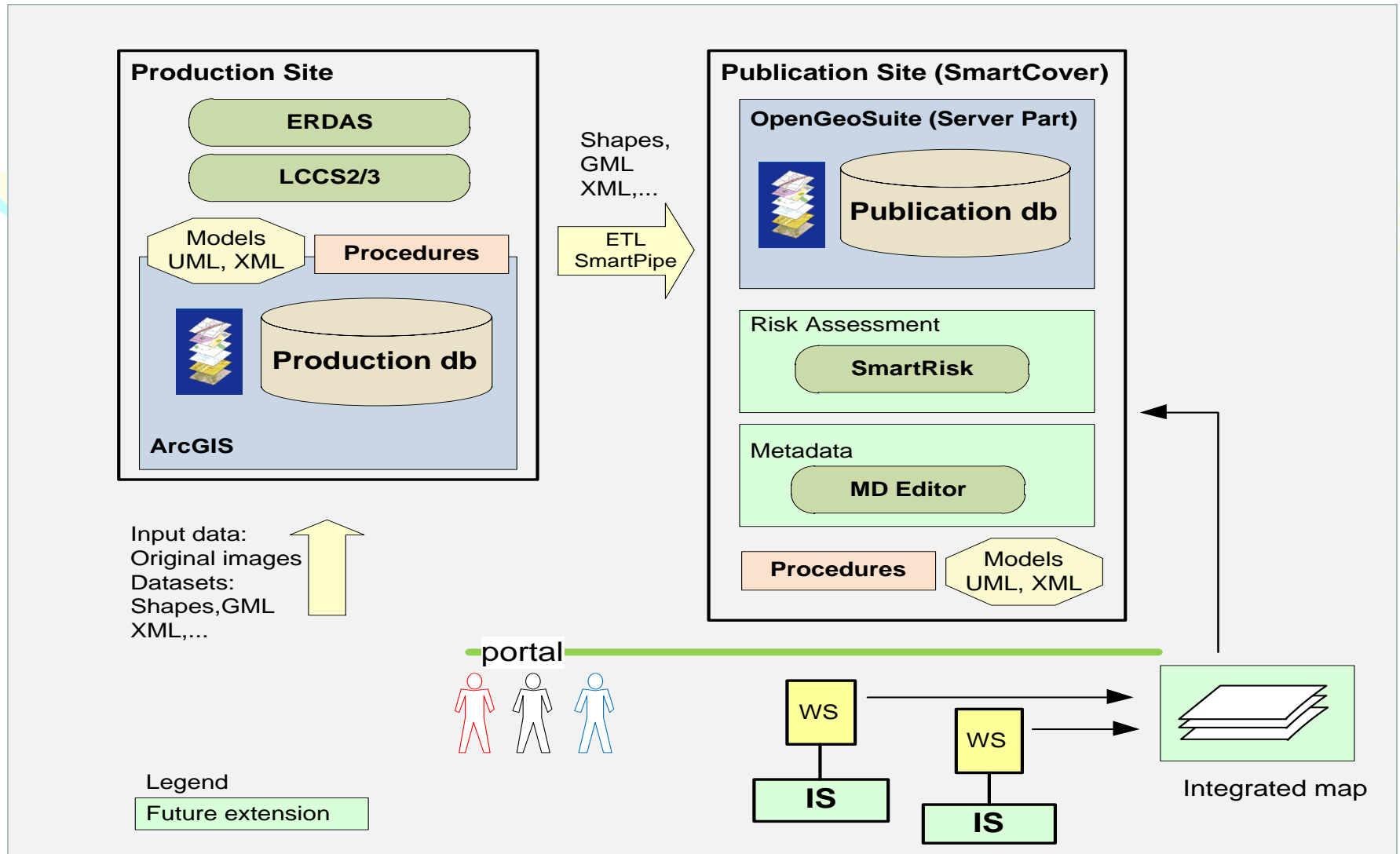


WP 3. Elaboration database

Architecture Features (Software Architecture Document)

- **Best in class solution**, using EC recommendations for IT in this field
- Implementation based on free **open source**
- Based on **OGC standards**, high level of harmonization and standartization
- Interoperability and future integration. System architecture facilitates elaboration of interfaces with other systems based on SOA/OGC
- Using **PostGIS** - high performance, object-relational DBMS. (PostGIS adds types, functions and indexes to support the storage, management, and analysis of geospatial objects)
- Prerequisite for covering of all project requirements (Interoperability, **INSPIRE**, etc.)
- Could be used effectively for the needs of spatial planning
- Reusable, easy to maintain and extend, Low operational cost
- Part of **WEB GIS portal** which provides the integration interface to other systems
- **Proven feasibility**

WP 3. Elaboration database SmartCover Architecture





WP 3. Elaboration database Publication site. Tasks

- **Publication site** (PS) hosts the spatial database (SDB) - the **Publication database** which is the main result of the project
- PS hosts **OGC** services which are accessible from any compatible client application
- Provides several services through user interface
- SDB contains objects at least for: **LandCover**, **LandUse**, Part of selected datasets related to the spatial planning.
- Creates thematic layers/maps/reports
- Supports open interface to other systems based on SOA.
- Supports different formats: shapes, XML, GML, KML,...
- Etc.

WP 3. Elaboration database Publication site. Architecture

Integrating the following open source technologies:

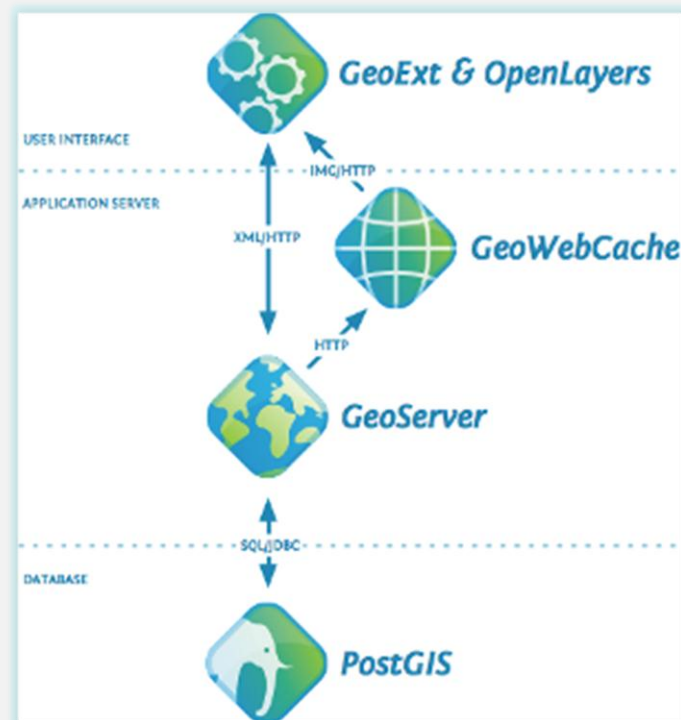
- Geo-database: **PostgreSQL** with PostGIS spatial extension
- Map server and map services (view, download, SRS transform):
Geoserver
- Catalogue management and services: **GeoNetwork** (optional)
- Thin client (web front-end): based on **Geoexplorer**, **GeoExt**, **Openlayers**
- Thick client (desktop front-end, GIS authoring, thematisation): uDig, etc

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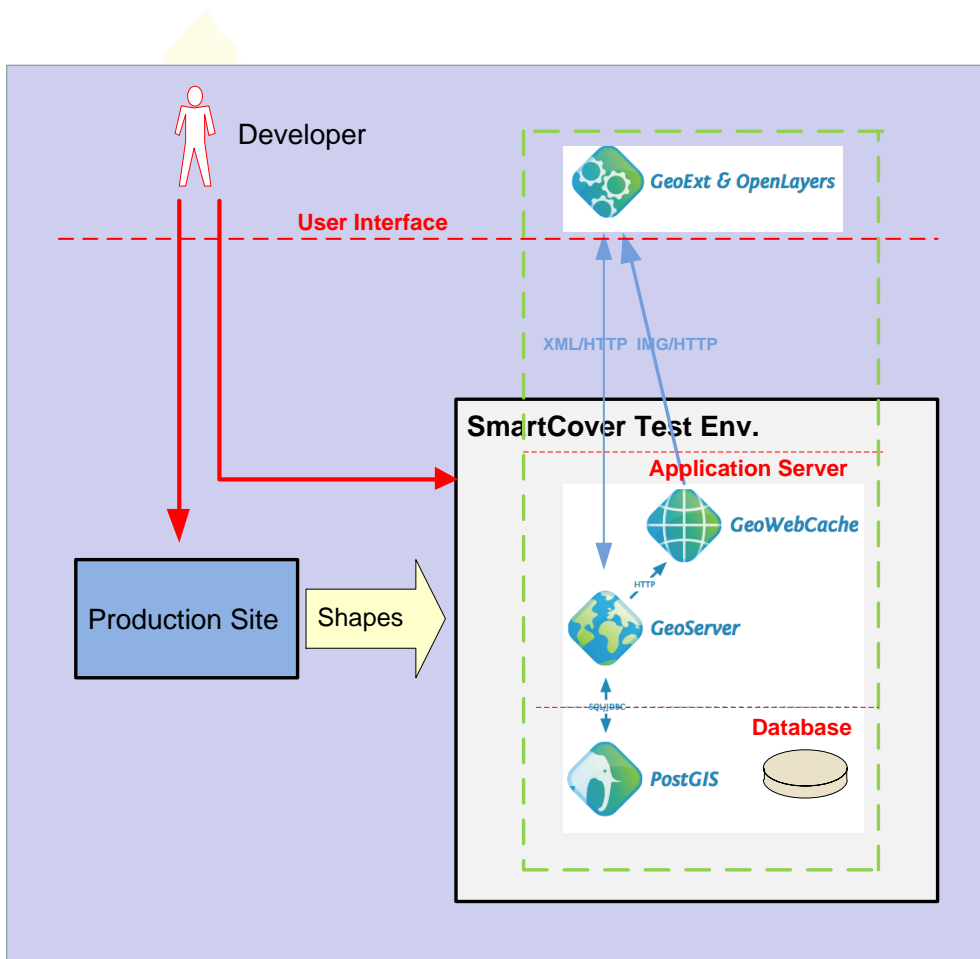
WP 3. Elaboration database Publication Server. OpenGeo Suite

the power of best-of-breed open source geospatial software

User interface framework	GeoExt / ExtJS
User interface map component	OpenLayers
Application server	GeoServer map/feature server
Storage	PostGIS / PostgreSQL spatial database



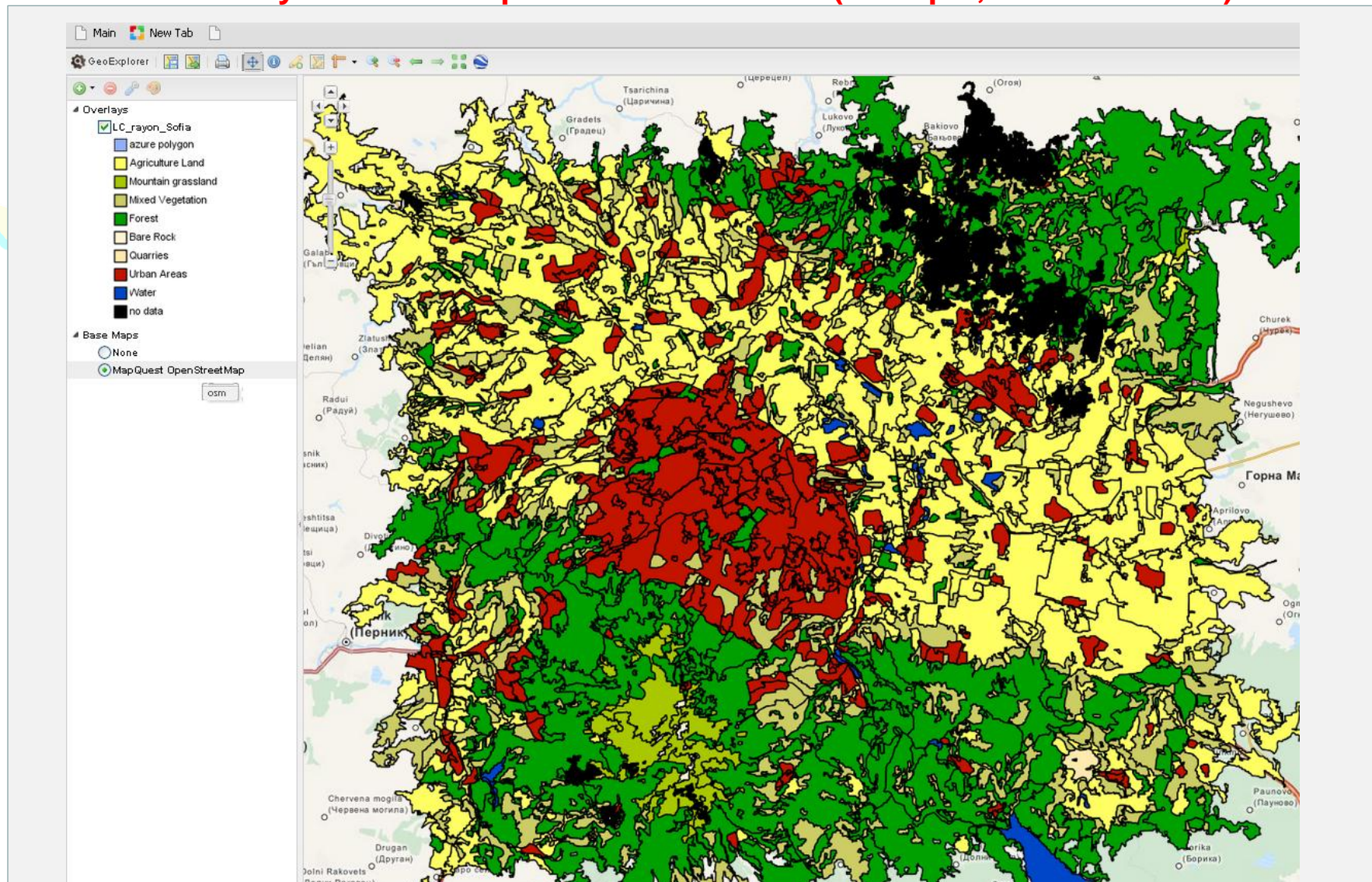
WP 3. Elaboration database Feasibility of the concept



- Setup the Development environment, incl. main components of the Production Site
- Proving the feasibility of the proposed architecture
- Loading of shape files (for land cover) in Geoserver using PostGIS for its workspace
- Research GeoServer SDK (incl. INSPIRE extension)

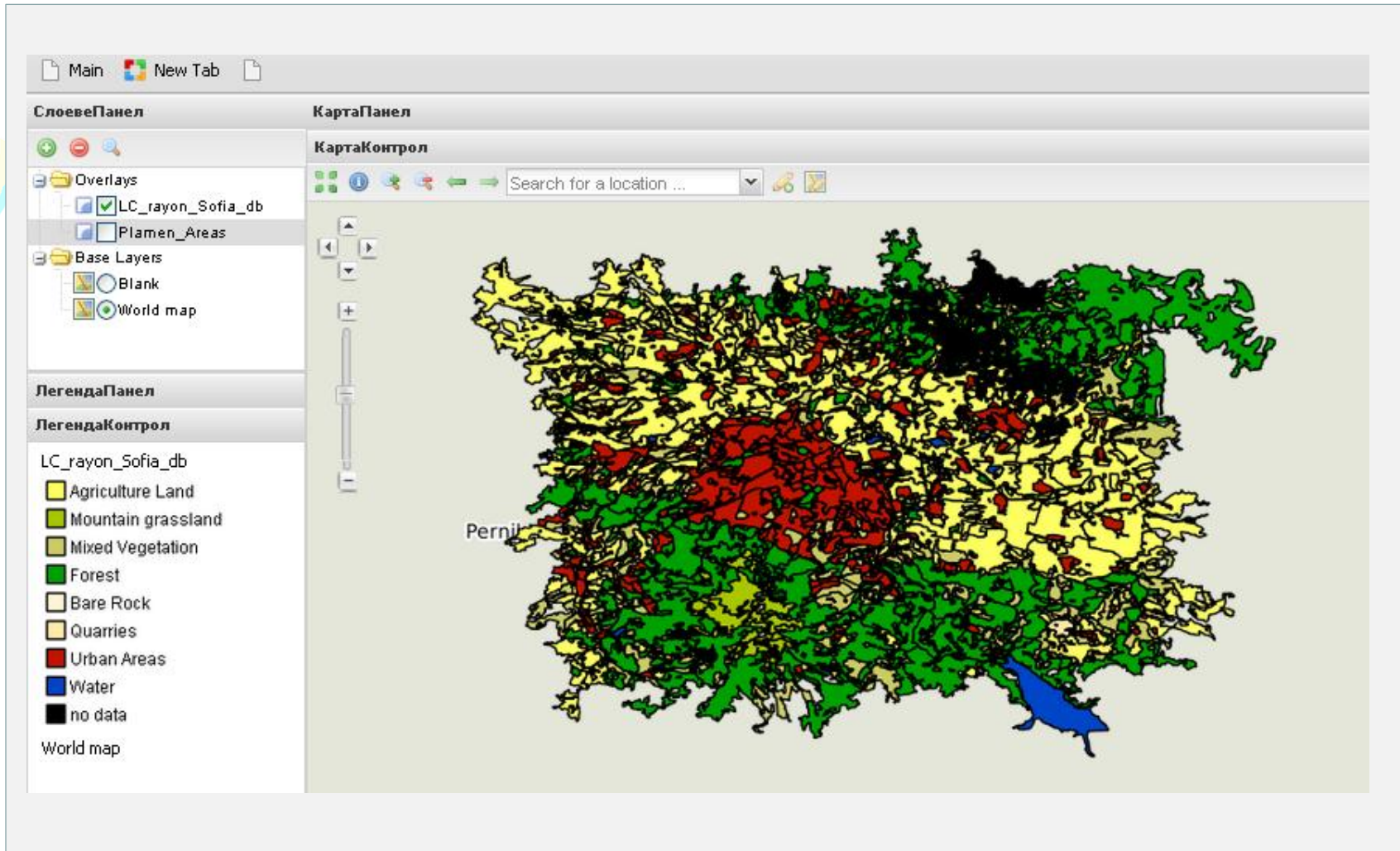
WP 3. Elaboration database

Feasibility of the concept. Sofia Land Cover (example, Publication db)



WP 3 Elaboration database

Feasibility of the concept. Search Engine (Publication db)



WP 3. Elaboration database Production site. Tasks

- **Collecting data from different source of information**, organizing it in datasets. It collects and validates data from:
 - Original satellite images and ancillary data
 - Available shape files
 - LCCS2/LCCS3 classes, etc.
- Provision of harmonized data for the thematic layers within the project
- Creates **LandCover/LandUse datasets** related to the spatial planning as well as to other points of interest
- Using LCML (**LCCS3**) for description of LandCover classes. (Could be used **LCCS2** also)
- Provides interface to Publication Site (SmartPipe, shp2pgsql)
- Creates and manages metadata

WP 3. Elaboration database

Production site. Architecture features

- Uses commercial software - ArcGIS.
- Partially uses FOS
- Software: ERDAS, ArcGIS, LCCS3 (and LCCS2 if necessary)
- Production Site is the single source of information for initial loading of Publication DB.

Montana

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Dobrich