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SPATIAL

Oracle Spatial User Conference

May 23, 2012

Ronald Reagan Building and International Trade Center

Washington, DC USA

Alexander Stavitsky
CSoft group, Head of GIS department, PhD

Russia

Multi-level Distributed Oracle-Based Urban GIS: Implementations in Russia

What is CSoft group:

✓CSoft group founded in 1989 is the largest Russian system integrator and consultancy provider in CAD and GIS.

✓CSoft Group includes 21 regional branches, employs more than 600 specialists, proprietary software tools portfolio contains more than 60 units

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Our partners:

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Multi-level Distributed Oracle-Based Urban GIS: Implementations in Russia

CSoft группа компаний

OVERVIEW

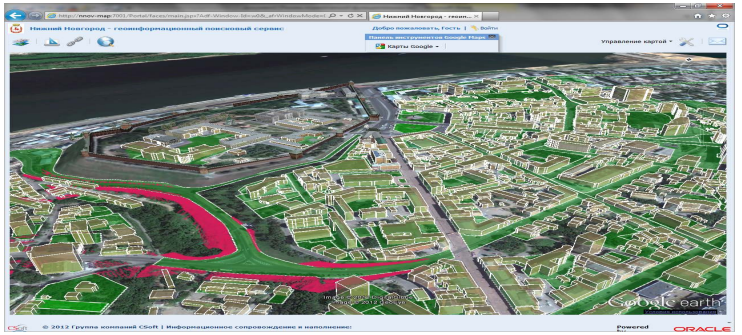
- Centrally managed, distributed database
- Incorporates 20-40 municipal databases and 1 central database for each region
- Serve as platform for a branch-specific applications (Utilities, Environmental monitoring)

CHALLENGES / OPPORTUNITIES

- Need to integrate disparate data sets of different coordinate systems
- Need to fulfill new legislation requirement
- Need to issue a solution able to use with no stable data channels
- Retrospective analysis option
- Web portal with direct database publishing option

SOLUTIONS

- Oracle Database Standard/ Enterprise Edition
  - Spatial Option with GeoRaster, Oracle Workspace Manager
- Oracle Fusion Middleware
  - MapViewer



RESULTS

- Consolidation of raster, vector, document data in 400-500 GB sized central repository and 20-40 local servers
- Authorities now get the decision making support on both municipal and regional levels
- Average 200 users for each big municipality and 400 users for the region
- Ease of branch-specific systems implementation due solid platform and up-to-date basic information available
- Web portals to inform the population of the decisions to issue and as workforce management tool

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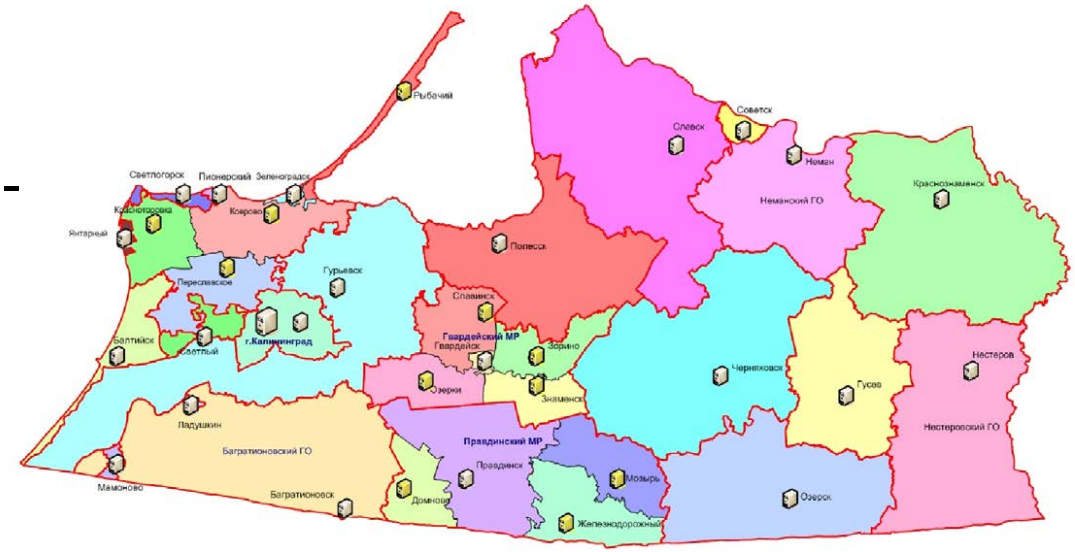

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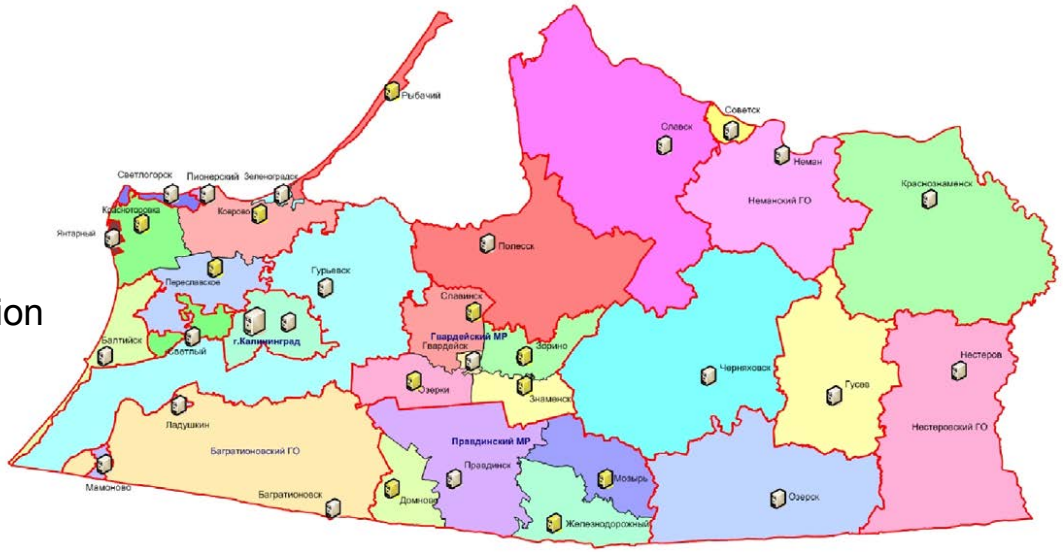

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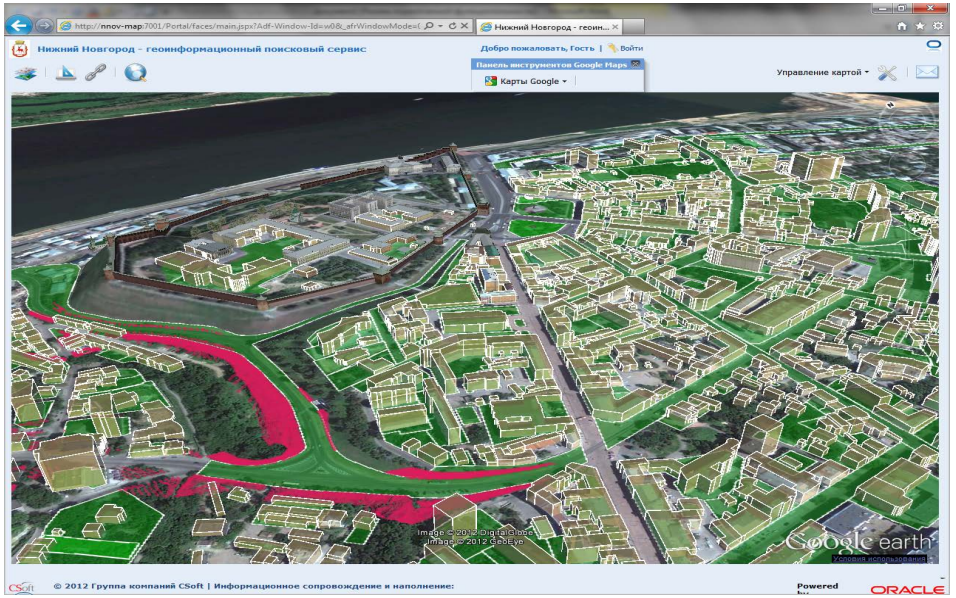

Program Agenda

- The task description
- The solution architecture
- Scope of functionality achieved

The task description

Federal Urban Code requires urban cadastre to be created as a decision-making support system

Known issues to be solved:

- Disparate spatial data sets with different coordinate systems;
- Insufficient data channels;
- Secrecy limitations

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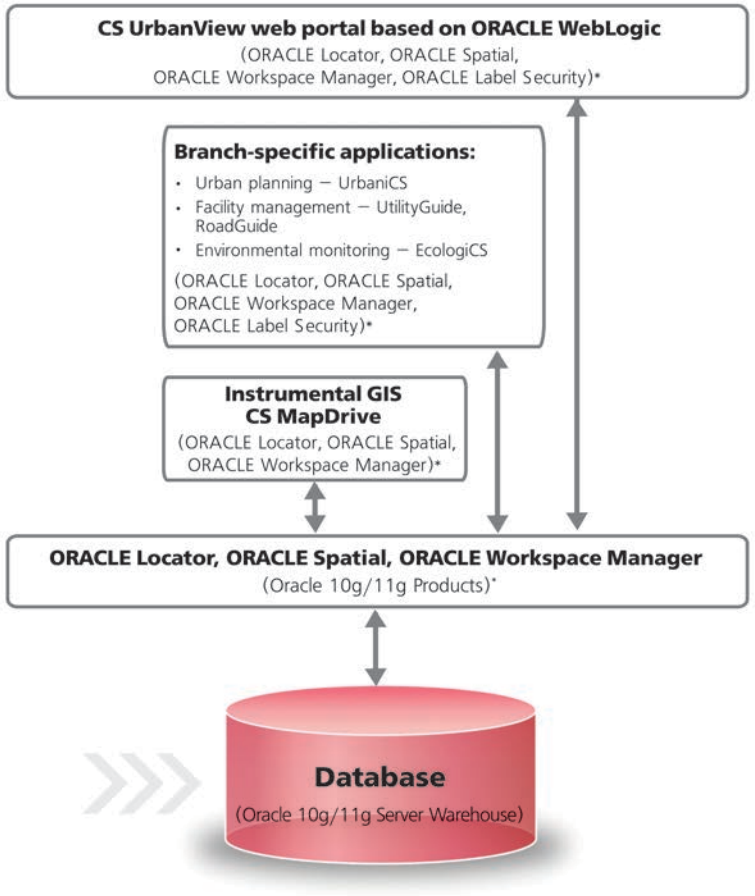
The solution architecture



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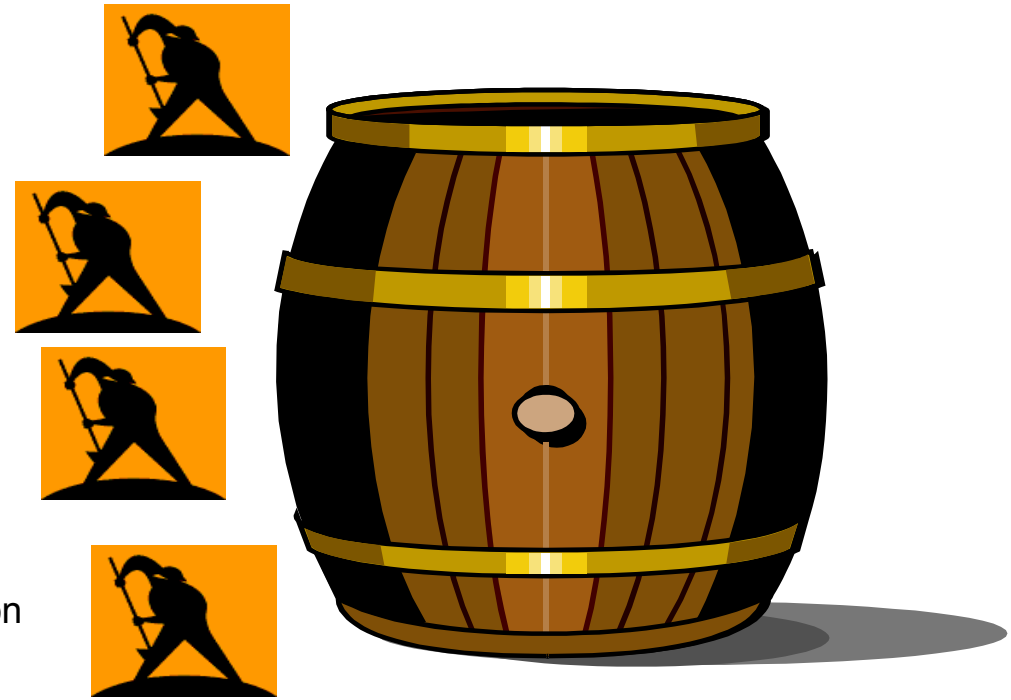
Scope of functionality achieved

CS MapDrive

Intergraph GeoMedia , MapInfo, ArcGIS

Autodesk Map 3D, Bentley MicroStation



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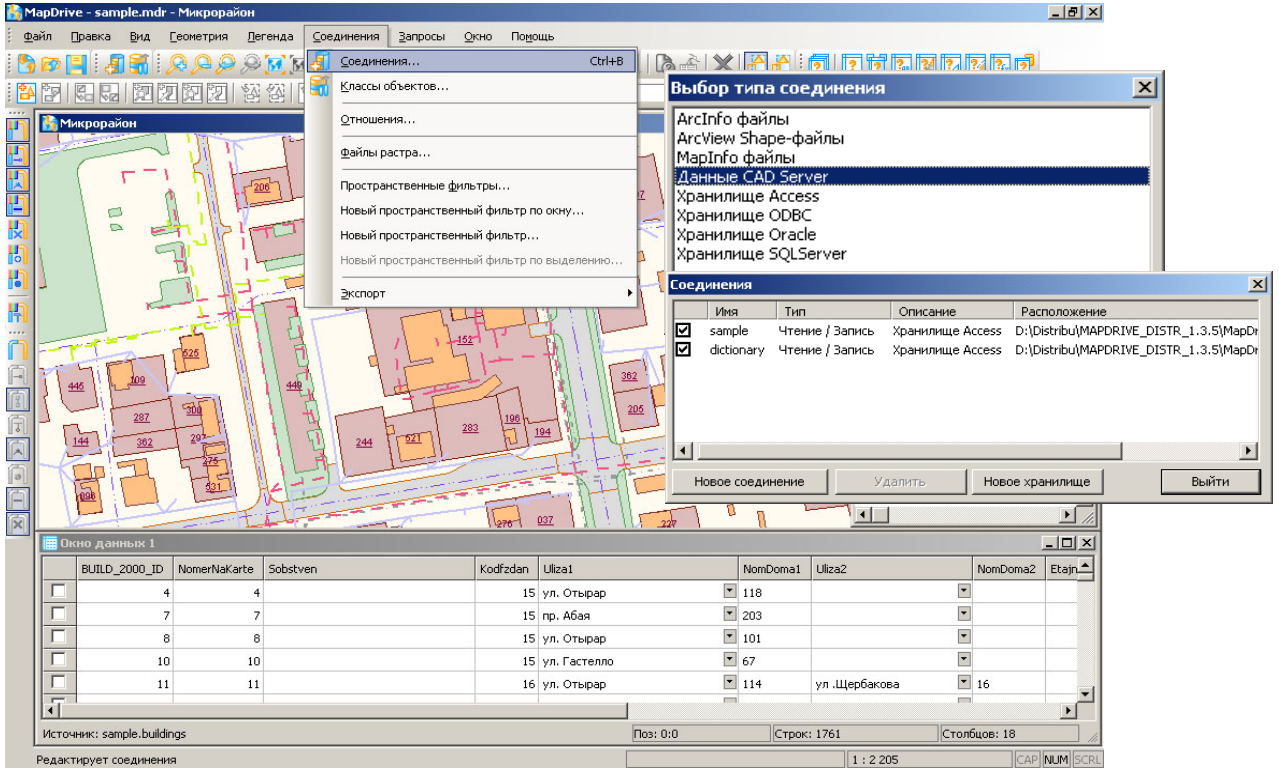
Scope of functionality achieved

CS MapDrive: database-driven GIS tool:



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Scope of functionality achieved

Branch-specific applications:

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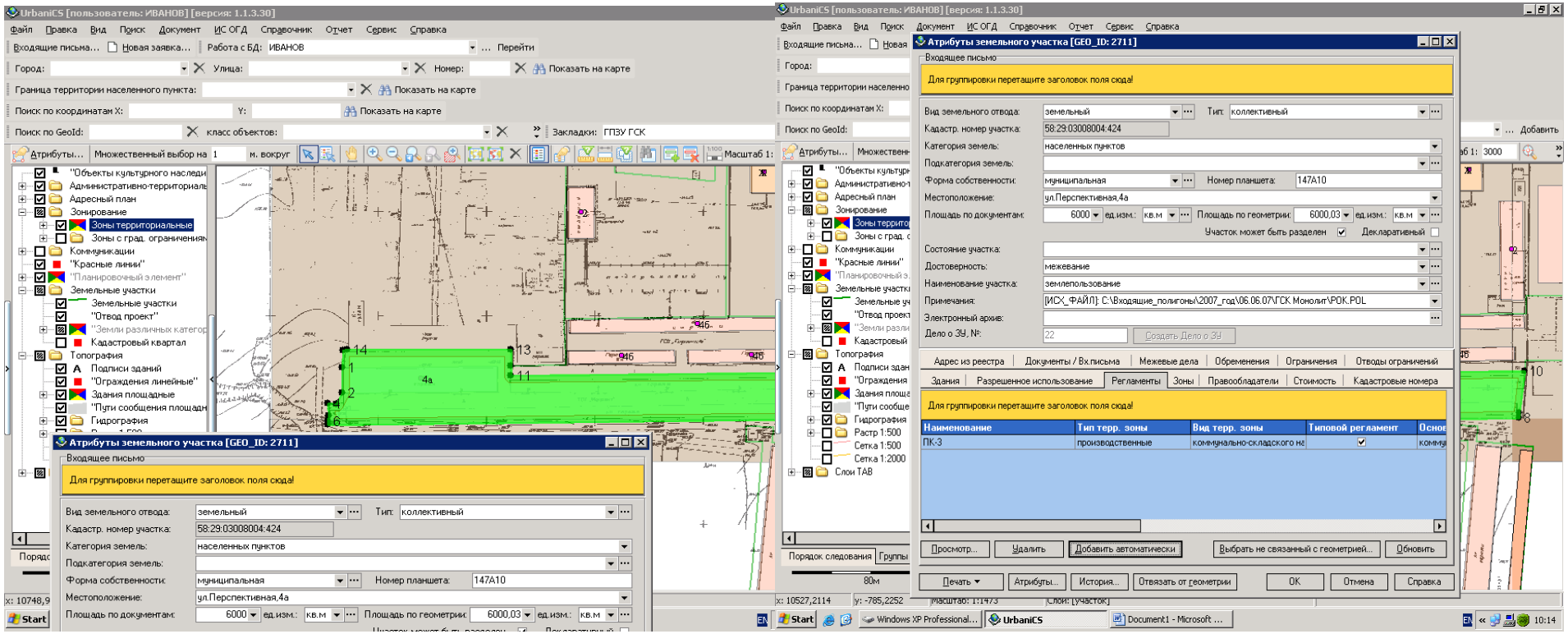
Scope of functionality achieved

Vertical-specific applications: Urban cadastre



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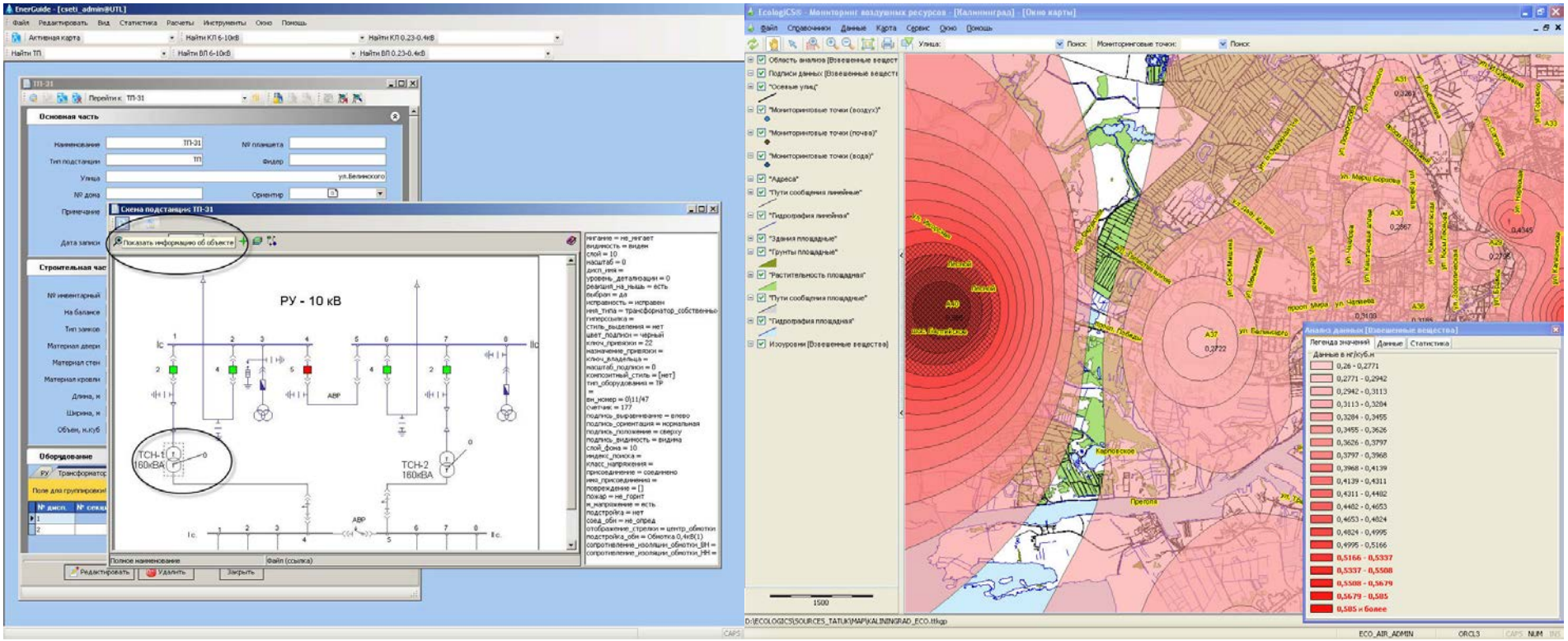
Scope of functionality achieved

Vertical-specific applications:

energy supply and pollution control:



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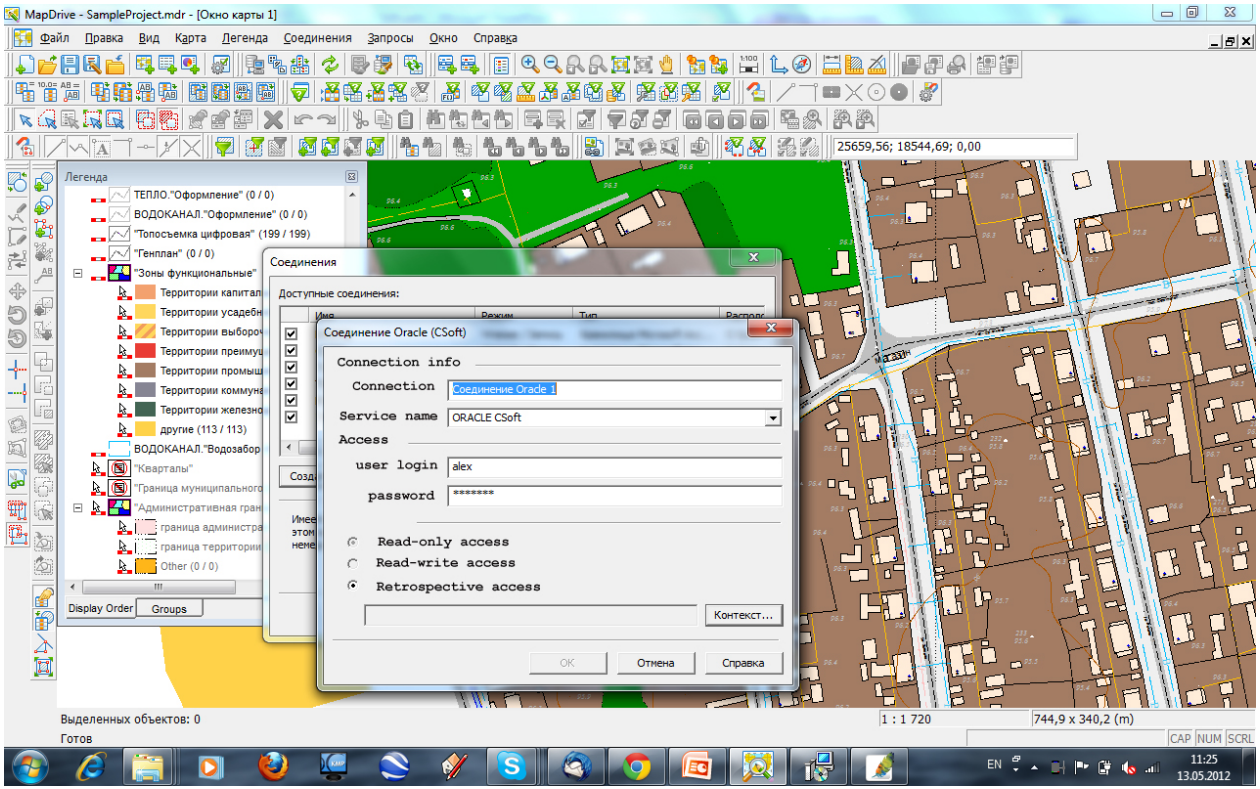
Scope of functionality achieved

Retrospective analysis:



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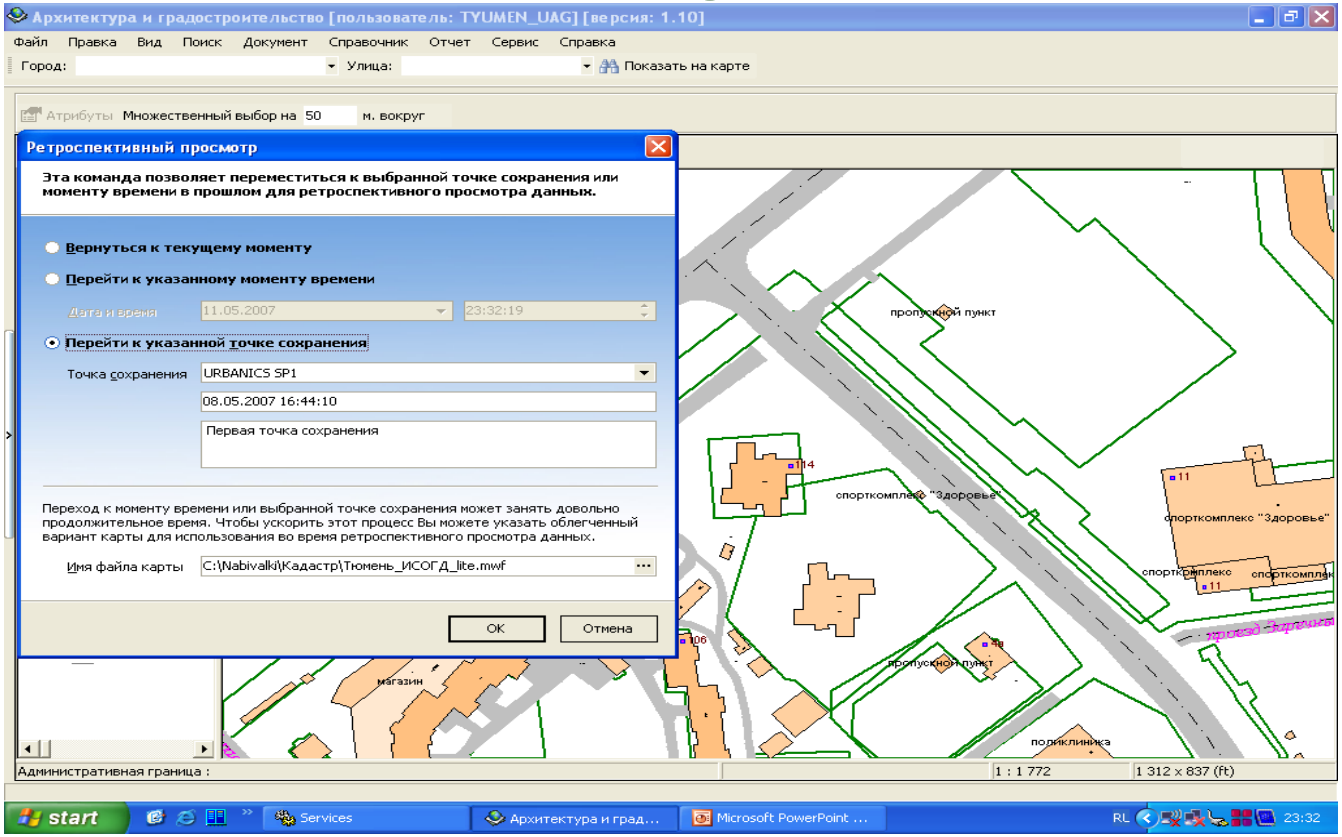
Scope of functionality achieved

Retrospective analysis:



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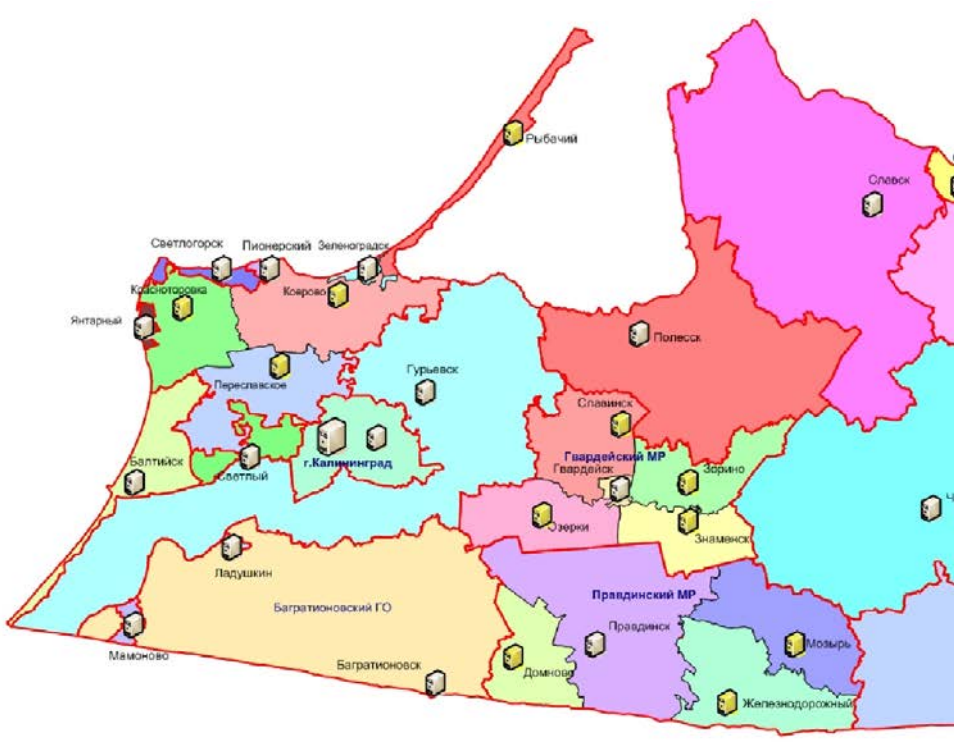
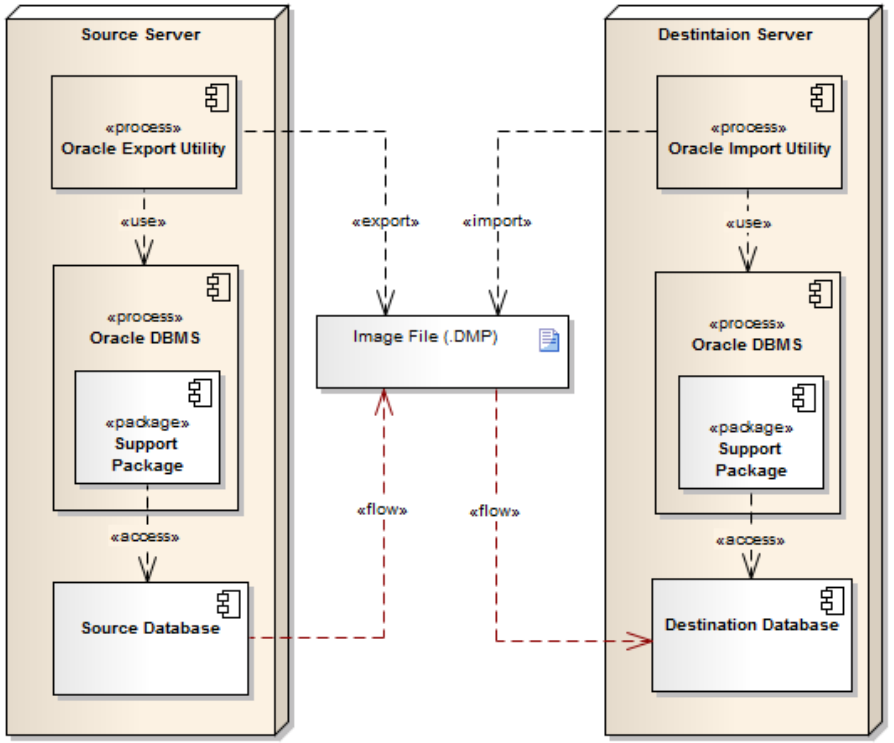
Scope of functionality achieved

Postponed incremental replications:





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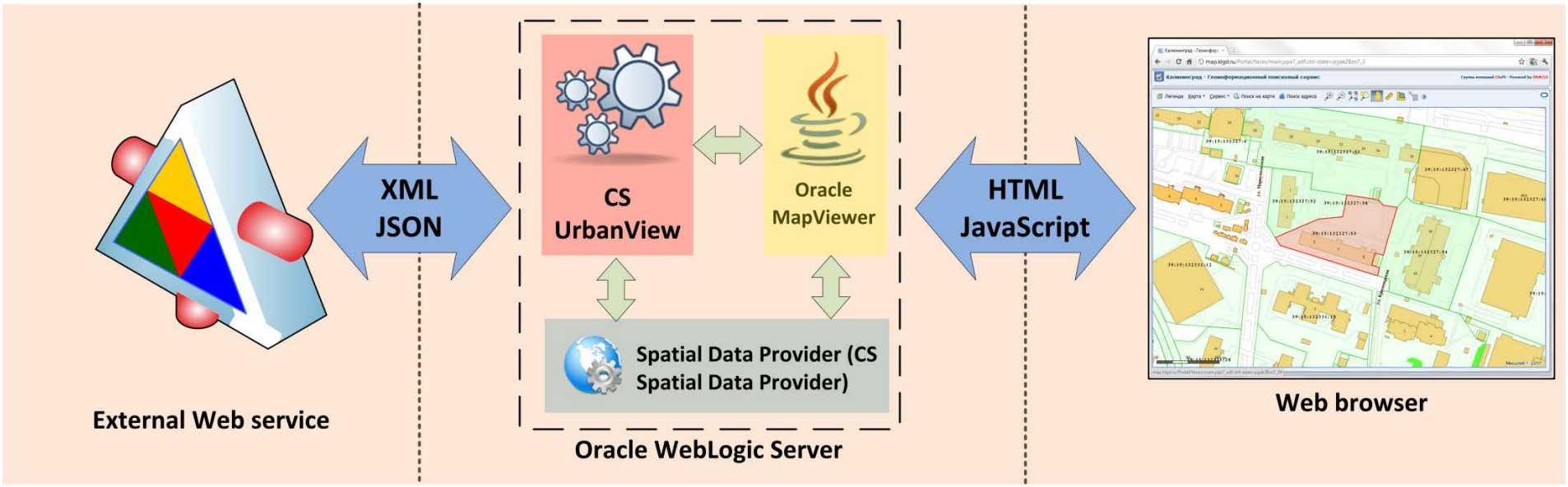
Scope of functionality achieved

Fusion Middleware MapViewer, Web portal:



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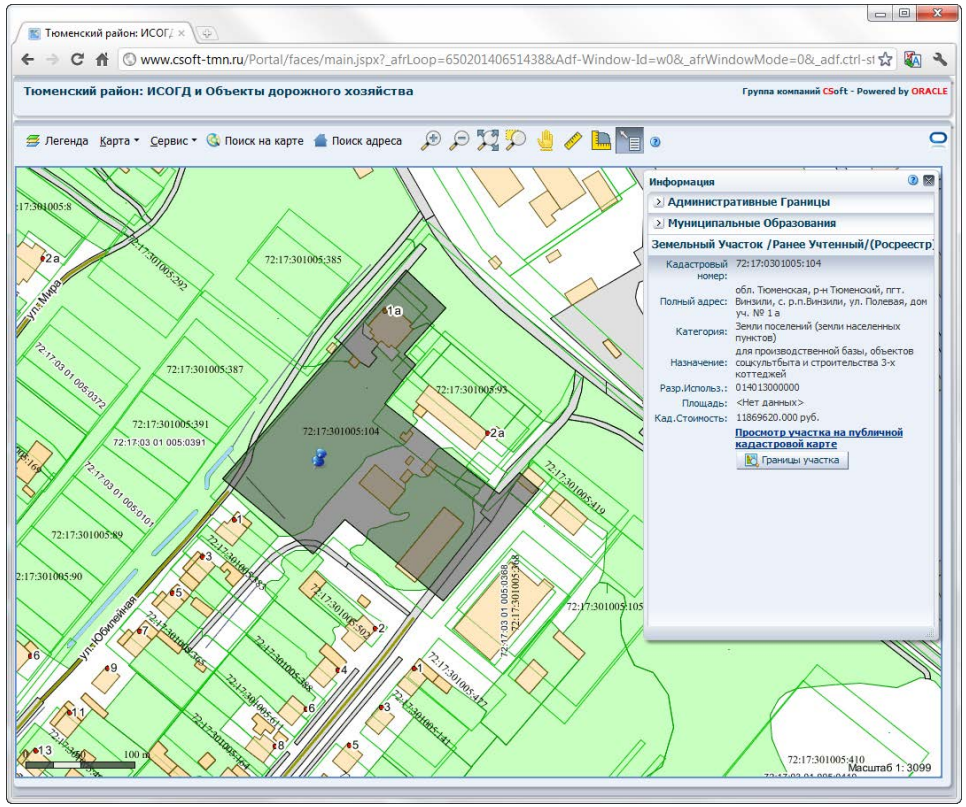
Scope of functionality achieved

Fusion Middleware MapViewer, Web portal:

Sample of SOA integration with federal resources :



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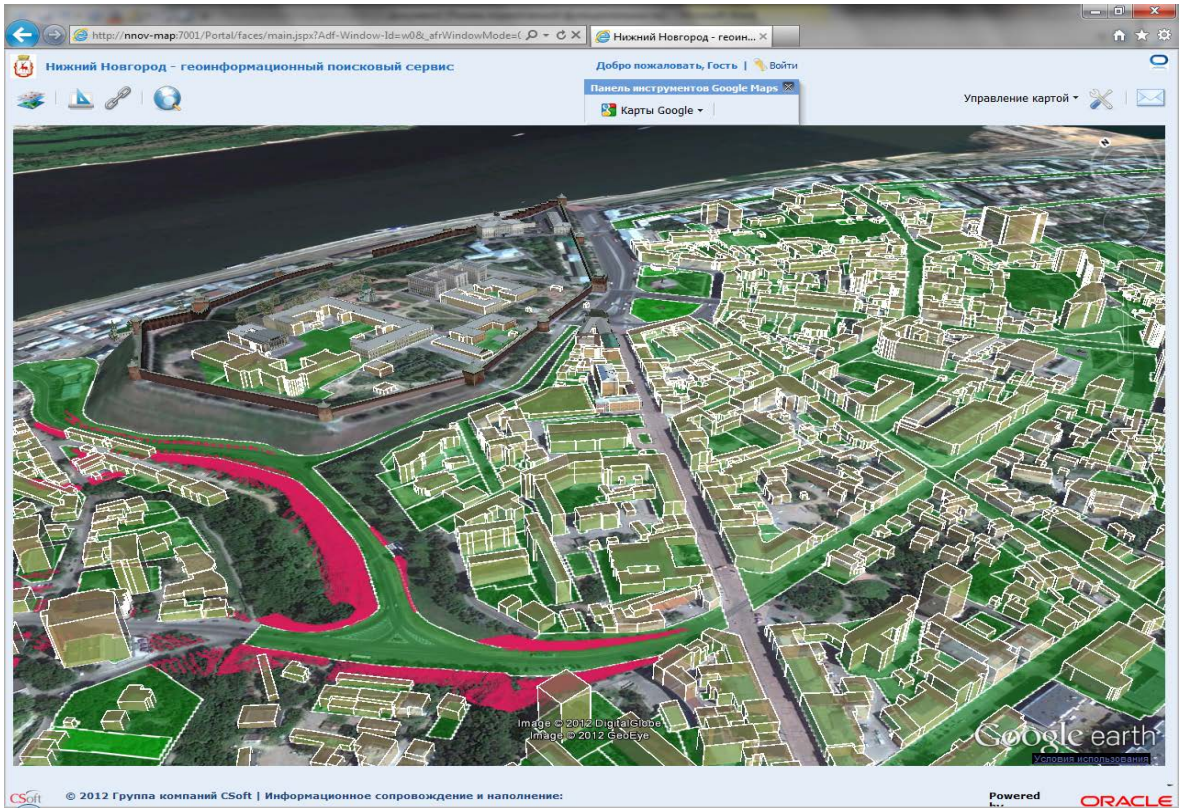
Scope of functionality achieved

Fusion Middleware MapViewer, Web portal:

CS UrbanView and Google Earth: online 3D-modelling



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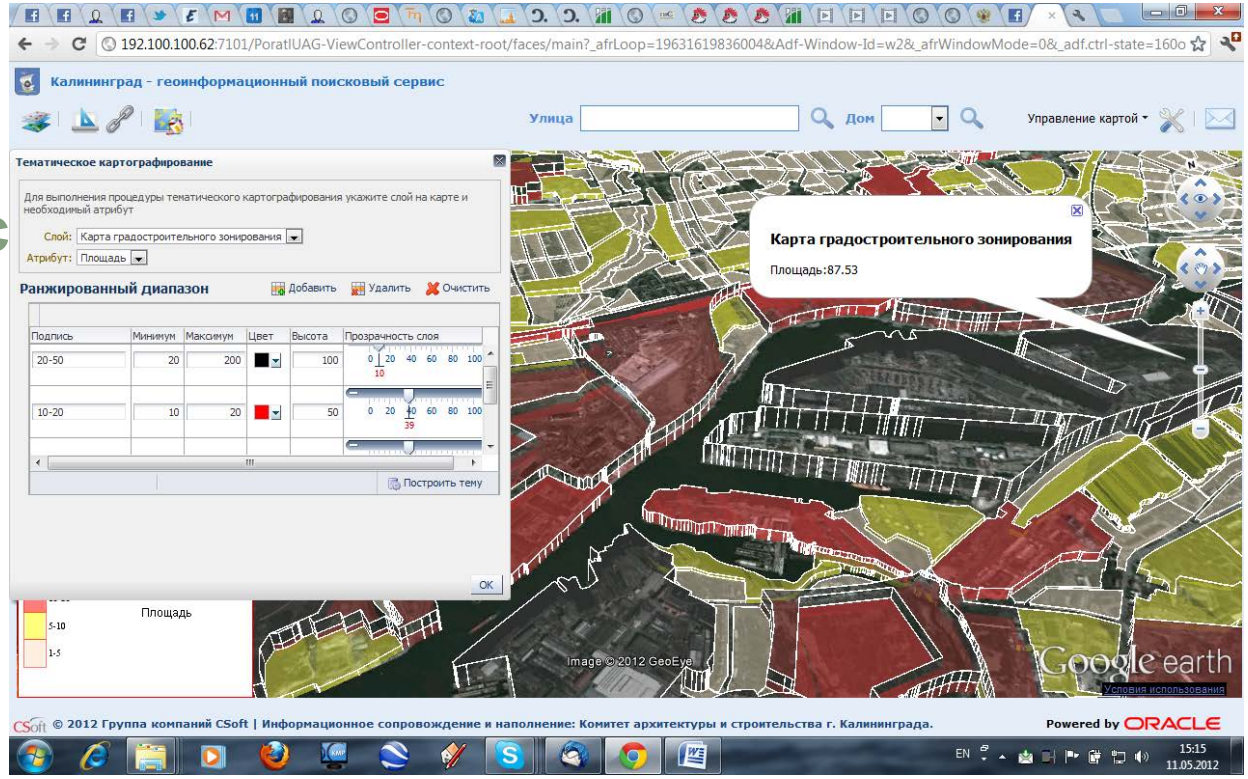
Scope of functionality achieved

Fusion Middleware MapViewer, Web portal:

CS UrbanView and Google Earth: online 3D-thematic mapping



Unite the efforts

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Why CSoft came in time?

❖Problem of disparate spatial data sets unification is rather actual in different countries

❖There also often exists a need of immediate Oracle-based GIS implementation, even without reliable data channels

Why deal with CSoft?

❖We give an unique combination of pure Oracle technology and additional flexibility

Why deal now?

❖It's time to establish links between Oracle partners to take into consideration tasks specific for the partner's country

❖It's "win-win" option adding our skills to partner's local experience and reputation

Spatial planning GIS projects

SP GIS of the Kaliningrad region – won the 'Best project of the RF Federal level' award at the all-Russian IT Awards in St-Petersburg (2009). The project includes SP GIS bundles for: 23 municipal formations of the upper level (regions, city districts); 54 municipal formations of the lower level (villages, settlements). The project also includes data analytical system of land management for Urban Development Agency of the Kaliningrad region (total number of users – approx. 150)

SP GIS of the Tyumen region – won in the 'Best project of the regional level' nomination in 2008. The project was highly appreciated by the RF State Council in 2009 and at the RF Government Session in 2010. The project includes: SP GIS for 26 municipal formations of the Tyumen region; data analytical system of land management for the Chief Department of Construction of the Tumen region (total number of users – over 220)

SP GIS of Mytischy-city and of the Mytischy sub-region of the Moscow region – won in the nomination of 'The brightest project of the city level in Russia' organized by the RF GIS Association in 2006 (total number of users - 70)

SP GIS for the city district of Domodedovo of the Moscow region

SP GIS for the Gatchina sub-region of Leningrad region

SP GIS for the city of Penza (approx. 200 users)

First stage of **Samara region SP GIS**
First stage of **Nizhny Novgorod region SP GIS**

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D E M O N S T R A T I O N

Live Demo of Fusion MiddleWare empowered urban Web portals

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D E M O N S T R A T I O N

Live Demo of Fusion MiddleWare empowered regional Web portals (“clouds”)

Q&A