

A horizontal banner with a red background featuring a faint, detailed map of a city area. The text "Oracle Spatial User Conference" is written in large, white, sans-serif font across the center of the banner.

# 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



## Our partners:





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



### 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)

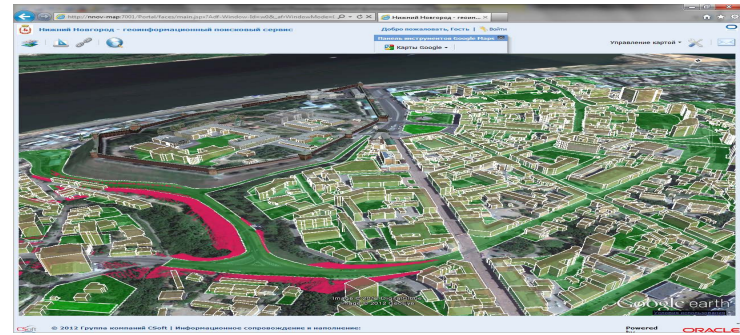
### CHALLENGES / OPPORTUNITIES

- 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

6



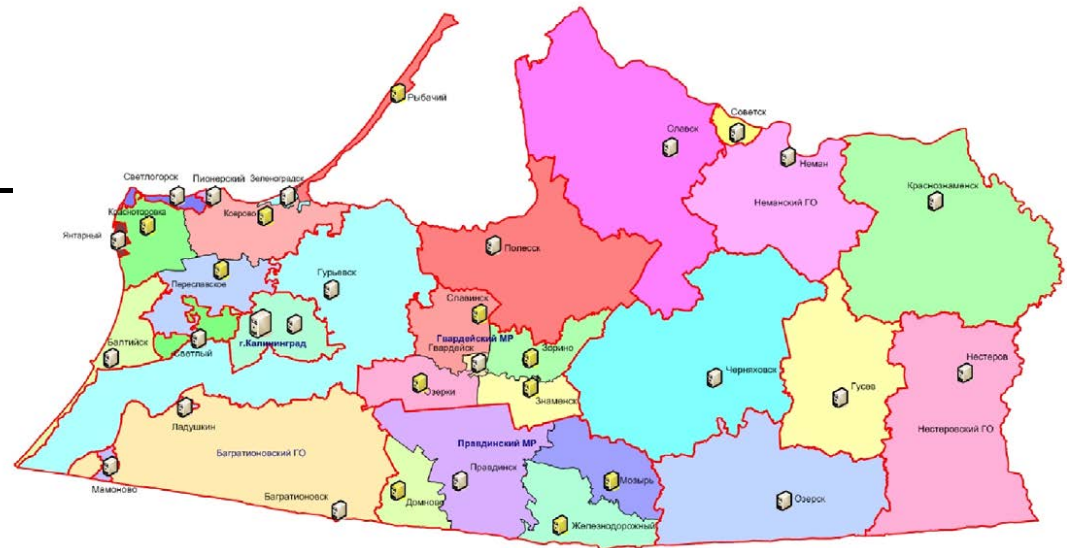
### RESULTS

- 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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# CSoft group

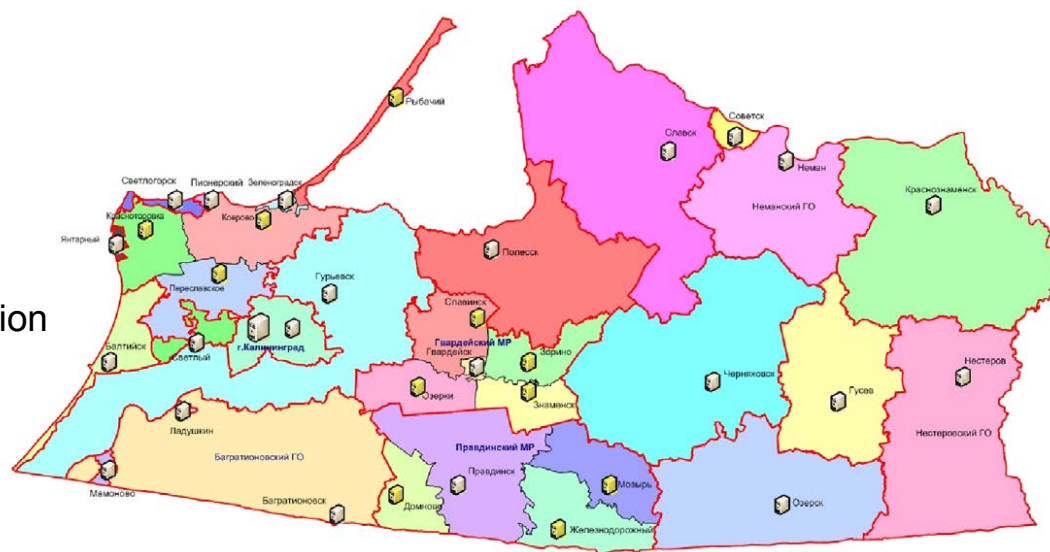
## Multi-level Distributed Oracle-Based Urban GIS: Implementations in Russia

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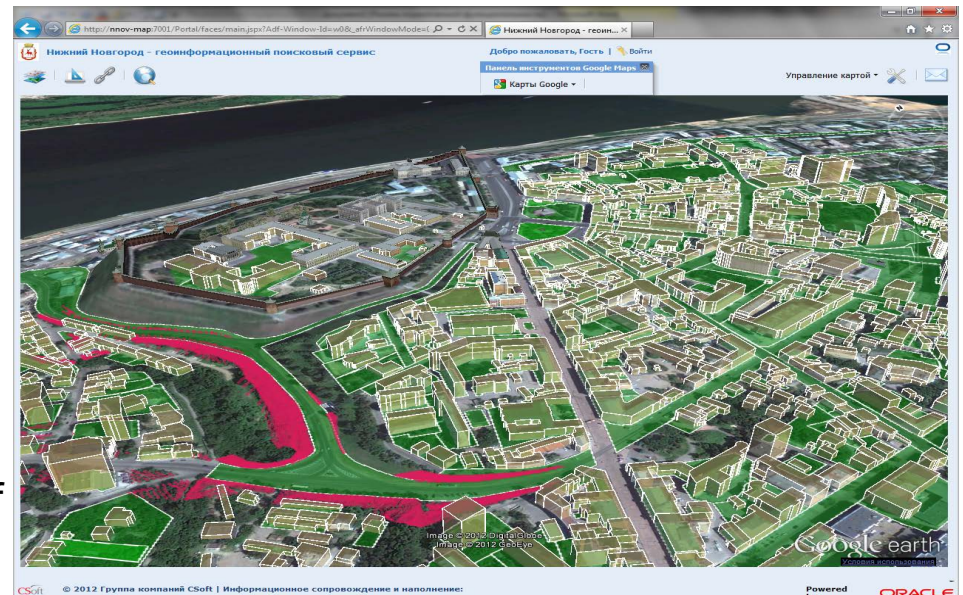




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## Program Agenda

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



## **The task description**

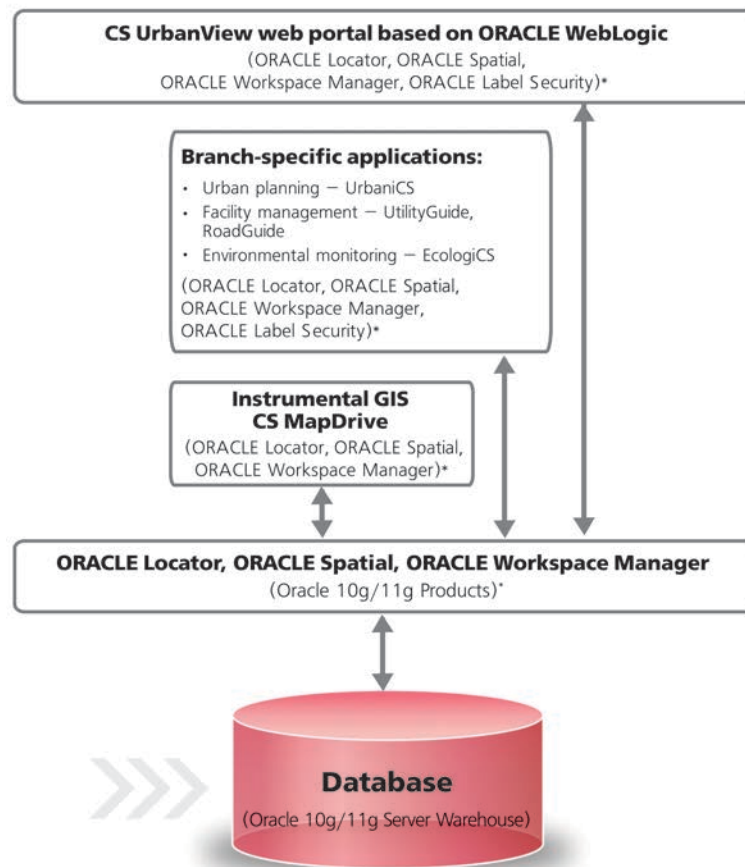
**Federal Urban Code requires urban cadastre to be created as a decision-making support system**

### **Known issues to be solved:**

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



# The solution architecture



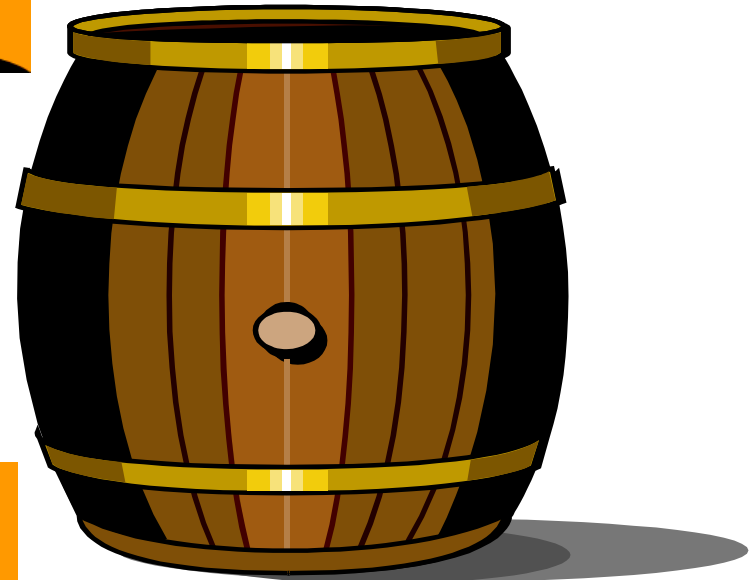


# Scope of functionality achieved

CS MapDrive

Intergraph GeoMedia , MapInfo, ArcGIS

Autodesk Map 3D, Bentley MicroStation





# Scope of functionality achieved

## CS MapDrive: database-driven GIS tool:

The screenshot shows the CS MapDrive application interface. The main window displays a map of a city area with various buildings and streets. A menu is open, showing options like 'Соединения...', 'Классы объектов...', 'Отношения...', 'Файлы раstra...', 'Пространственные фильтры...', 'Новый пространственный фильтр по окну...', 'Новый пространственный фильтр...', 'Новый пространственный фильтр по выделению...', and 'Экспорт'. Two dialog boxes are also visible: 'Выбор типа соединения' (Select connection type) and 'Соединения' (Connections).

**Выбор типа соединения (Select connection type)**

- АrcInfo файлы
- АrcView Shape-файлы
- MapInfo файлы
- Данные CAD Server**
- Хранилище Access
- Хранилище ODBC
- Хранилище Oracle
- Хранилище SQLServer

**Соединения (Connections)**

Имя	Тип	Описание	Расположение
<input checked="" type="checkbox"/> sample	Чтение / Запись	Хранилище Access	D:\Distrib\MAPDRIVE_DISTR_1.3.5\MapDr
<input checked="" type="checkbox"/> dictionary	Чтение / Запись	Хранилище Access	D:\Distrib\MAPDRIVE_DISTR_1.3.5\MapDr

Buttons: Новое соединение, Удалить, Новое хранилище, Выйти

**Окно данных 1 (Data Window 1)**

BUILD_2000_ID	NomerNaKarte	Sobstven	Kodfzdan	Ulica1	NomDoma1	Ulica2	NomDoma2	Etajn
<input type="checkbox"/> 4	4		15	ул. Отырар	118			
<input type="checkbox"/> 7	7		15	пр. Абая	203			
<input type="checkbox"/> 8	8		15	ул. Отырар	101			
<input type="checkbox"/> 10	10		15	ул. Гастелло	67			
<input type="checkbox"/> 11	11		16	ул. Отырар	114	ул. Щербакова	16	

Источники: sample.buildings  
Пос: 0:0 Строк: 1761 Столбцов: 18  
Редактирует соединения 1 : 2 205 CAP NUM SCRL





# Scope of functionality achieved

## Branch-specific applications:







# Scope of functionality achieved

## Vertical-specific applications: Urban cadastre

UrbanICS [пользователь: ИВАНОВ] [версия: 1.1.3.30]

Файл Правка Вид Поиск Документ ИС ОГД Справочник Отчет Сервис Справка

Входящие письма... Новая заявка... Работа с БД: ИВАНОВ

Город: Улицы: Номер: Показать на карте

Граница территории населенного пункта: Показать на карте

Поиск по координатам X: Y: Показать на карте

Поиск по GeoID: класс объектов: Закладки: ГПЗУ ГСК

Множественный выбор на 1 н. вокруг Масштаб 1:

Атрибуты... Земельные участки

Атрибуты земельного участка [GEO\_ID: 2711]

Входящее письмо

Для группировки перетащите заголовок поля сюда!

Вид земельного отвода: земельный Тип: коллективный

Кадастр. номер участка: 58.29.03008004.424

Категория земель: населенных пунктов

Подкатегория земель:

Форма собственности: муниципальная Номер планшета: 147A10

Местоположение: ул.Перспективная, 4а

Площадь по документам: 6000 кв.м Площадь по геометрии: 6000.03 кв.м

Участок может быть разделен Декларативный

Состояние участка:

Достоверность: межевание

Наименование участка: землепользование

Примечания: [ИСК\_ФАЙЛ]: C:\Входящие\_полигоны\2007\_год\06.06.07\ГСК Монолит\POK.POL

Электронный архив: Дело о ЗУ, №: 22 Создать Дело о ЗУ

Адрес из реестра | Документы / Вх.письма | Межевые дела | Обременения | Ограничения | Отводы ограничений

Задания | Разрешенное использование | Регламенты | Зоны | Правообладатели | Стоимость | Кадастровые номера

Наименование	Тип терр. зоны	Вид терр. зоны	Типовой регламент	Основ
ПК-3	производственные	конфуально-складского не	✓	конфу

Печать Атрибуты... История... Отказ от геометрии OK Отмена Справка

Порядок следования Группы

80м

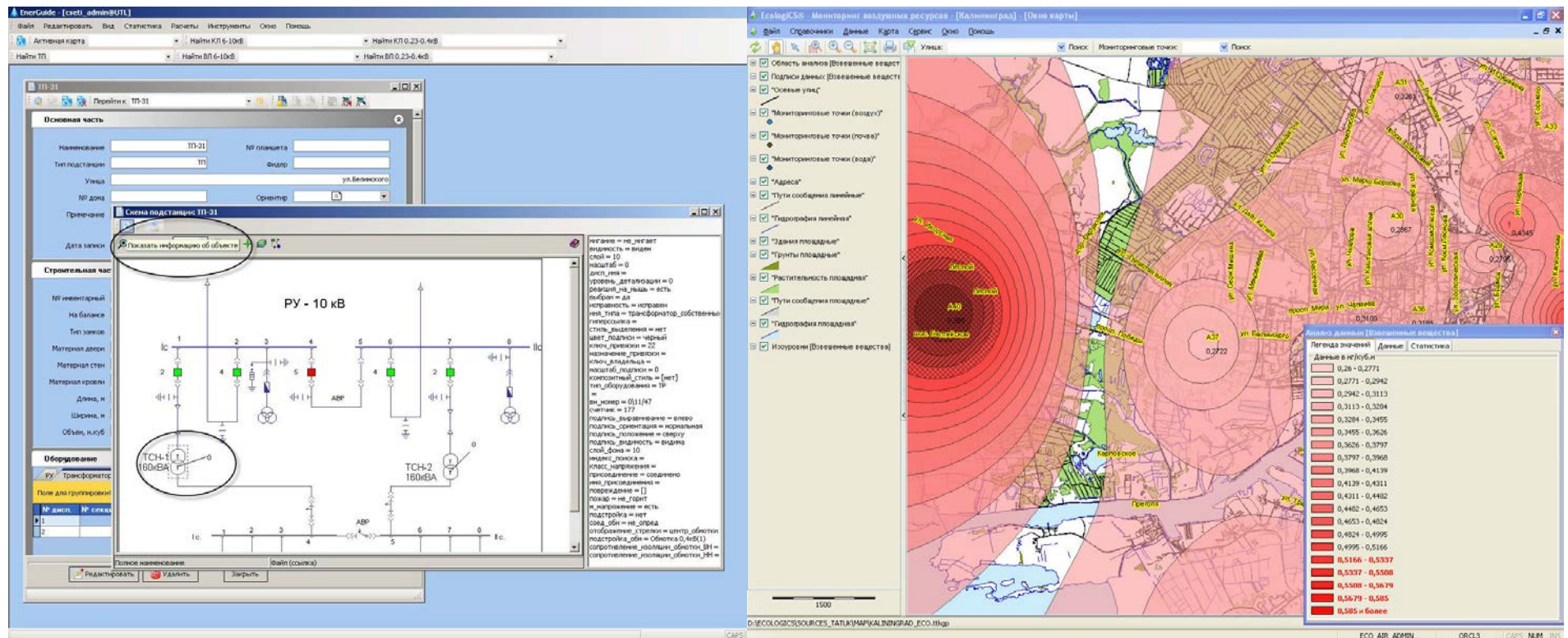
x: 10527,2114 y: -785,2252 масштаб: 1:147.3 Слой: участок

Windows XP Professional... UrbanICS Document1 - Microsoft ... 10:14



# Scope of functionality achieved

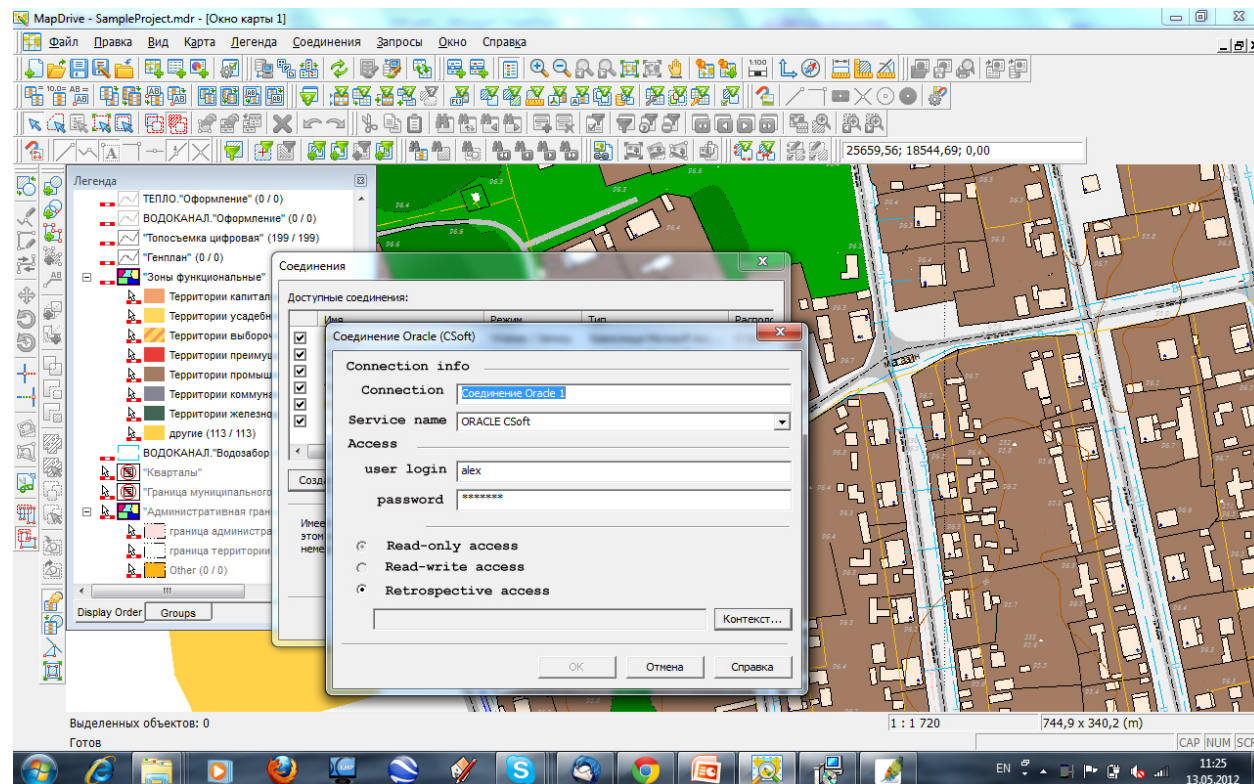
Vertical-specific applications:  
energy supply and pollution control:





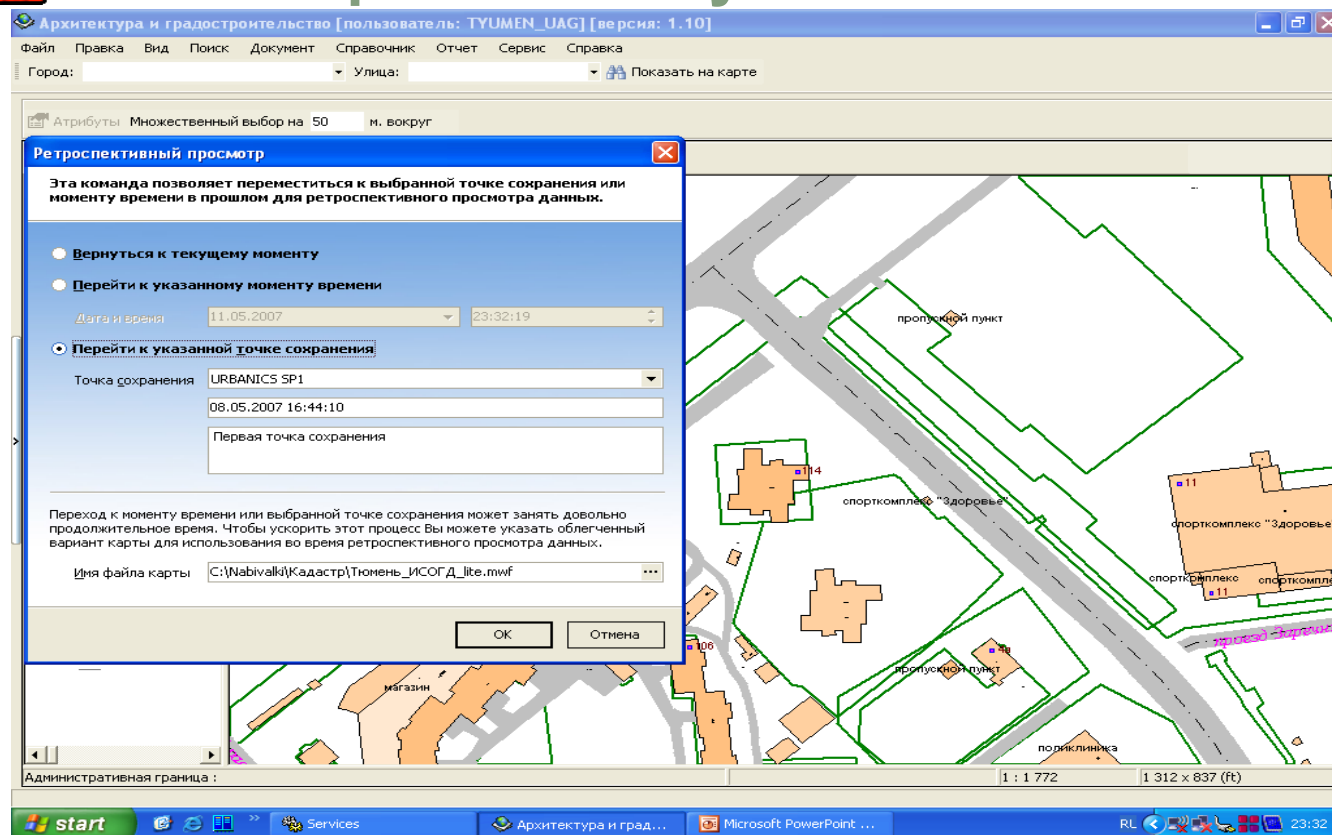
# Scope of functionality achieved

## Retrospective analysis:



# Scope of functionality achieved

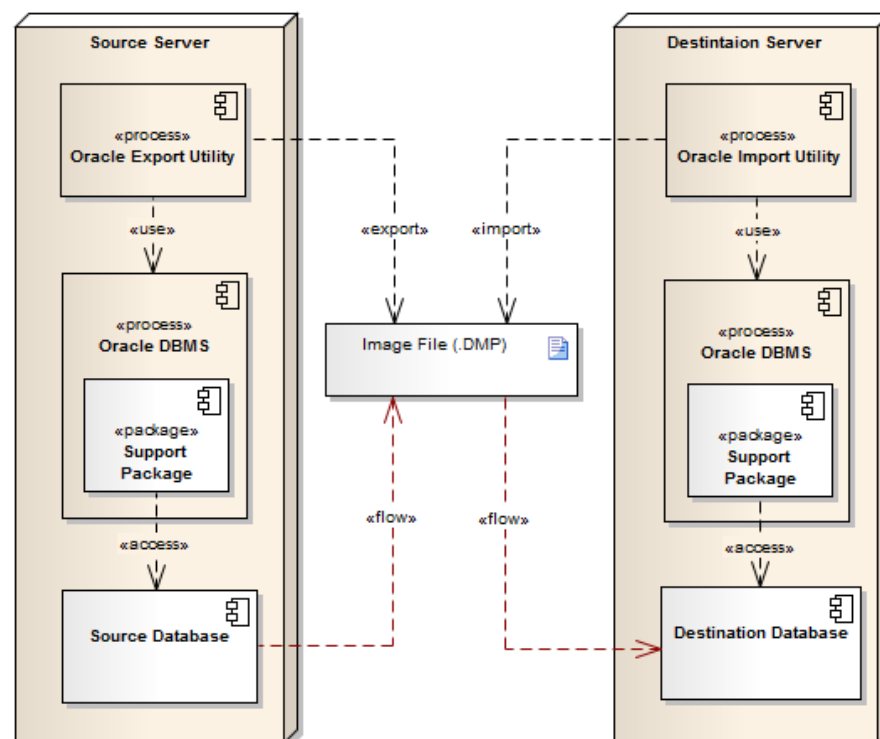
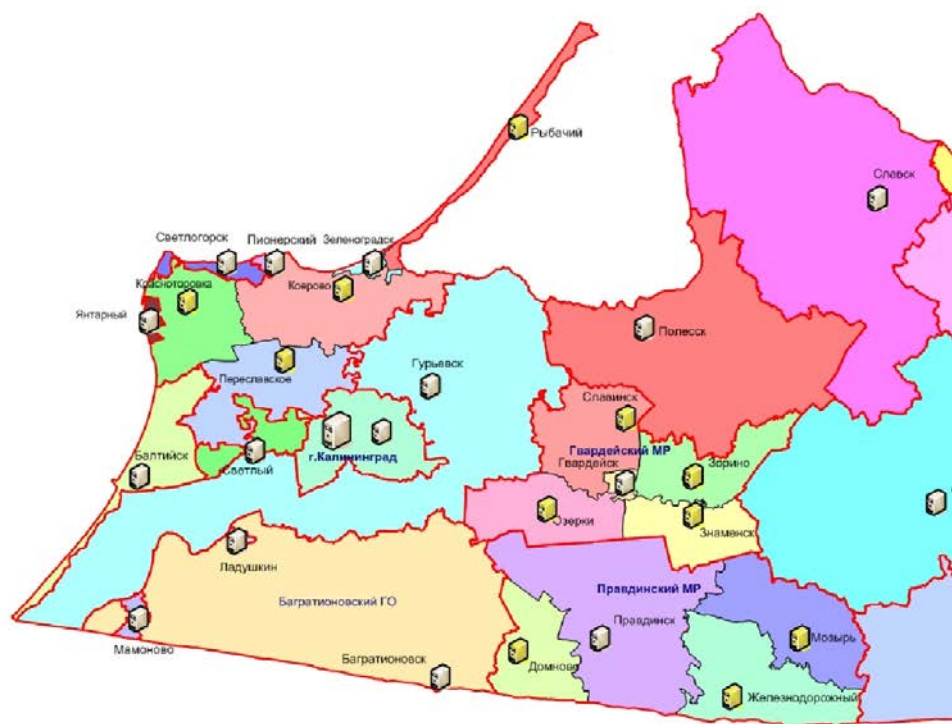
## Retrospective analysis:





# Scope of functionality achieved

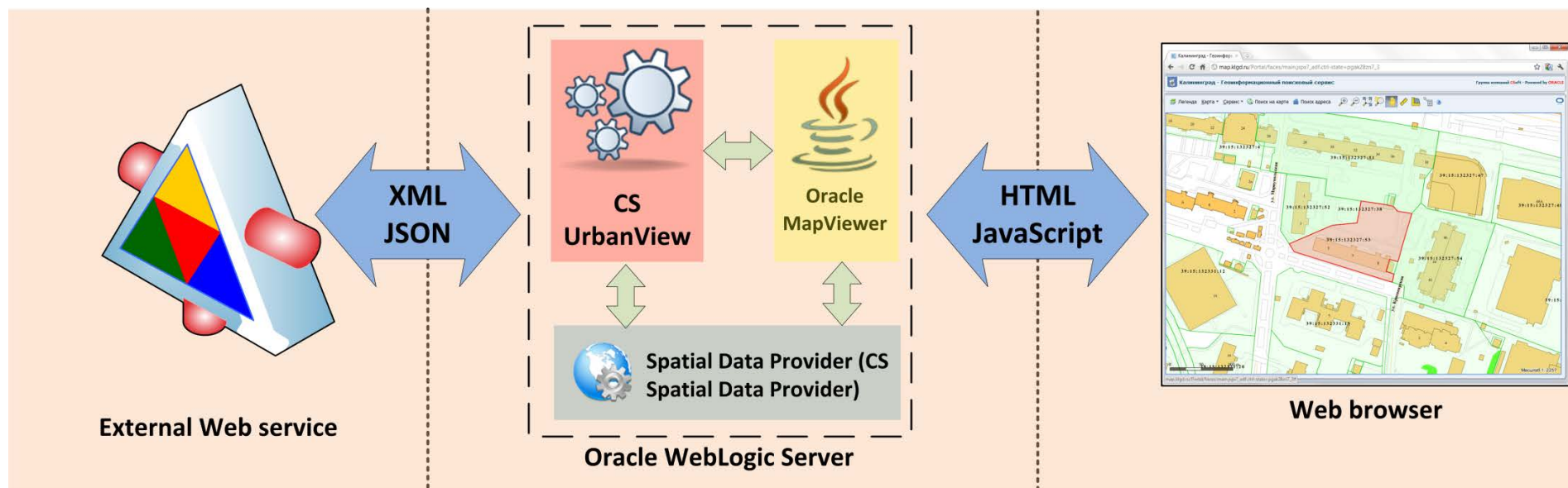
## Postponed incremental replications:





# Scope of functionality achieved

Fusion Middleware MapViewer, Web portal:

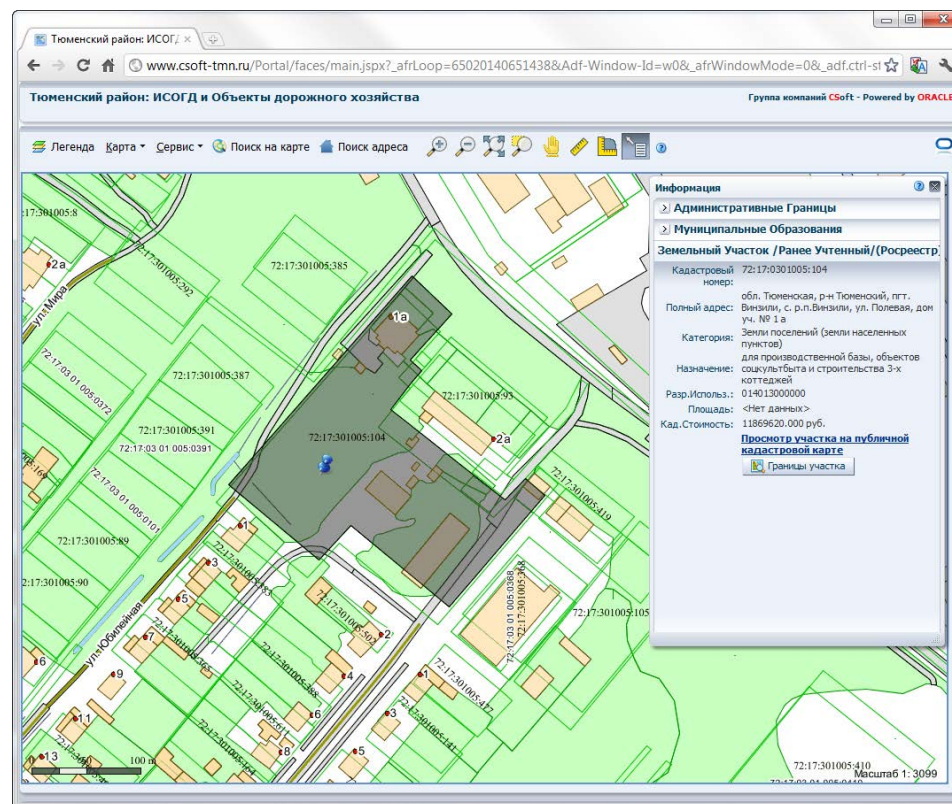




# Scope of functionality achieved

Fusion Middleware MapViewer, Web portal:

Sample of SOA integration  
with federal resources :



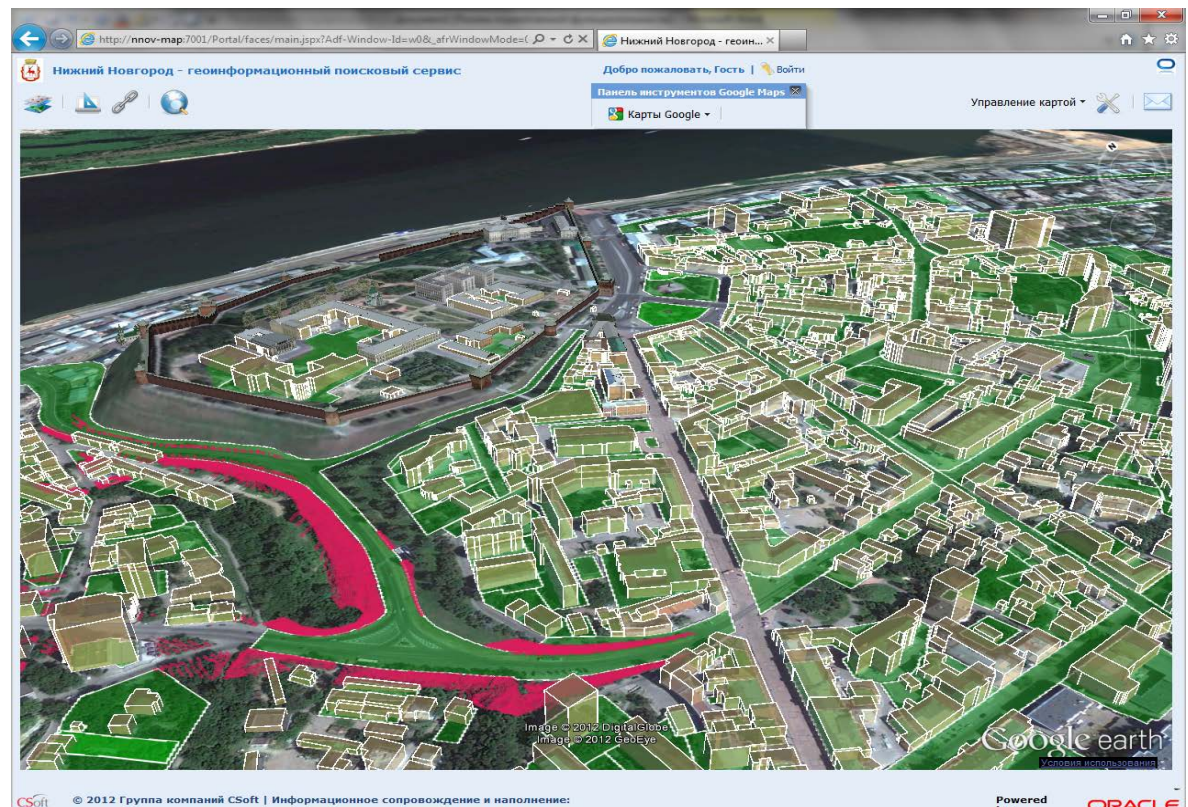




## Scope of functionality achieved

Fusion Middleware MapViewer, Web portal:

CS UrbanView  
and Google Earth:  
online 3D-modelling

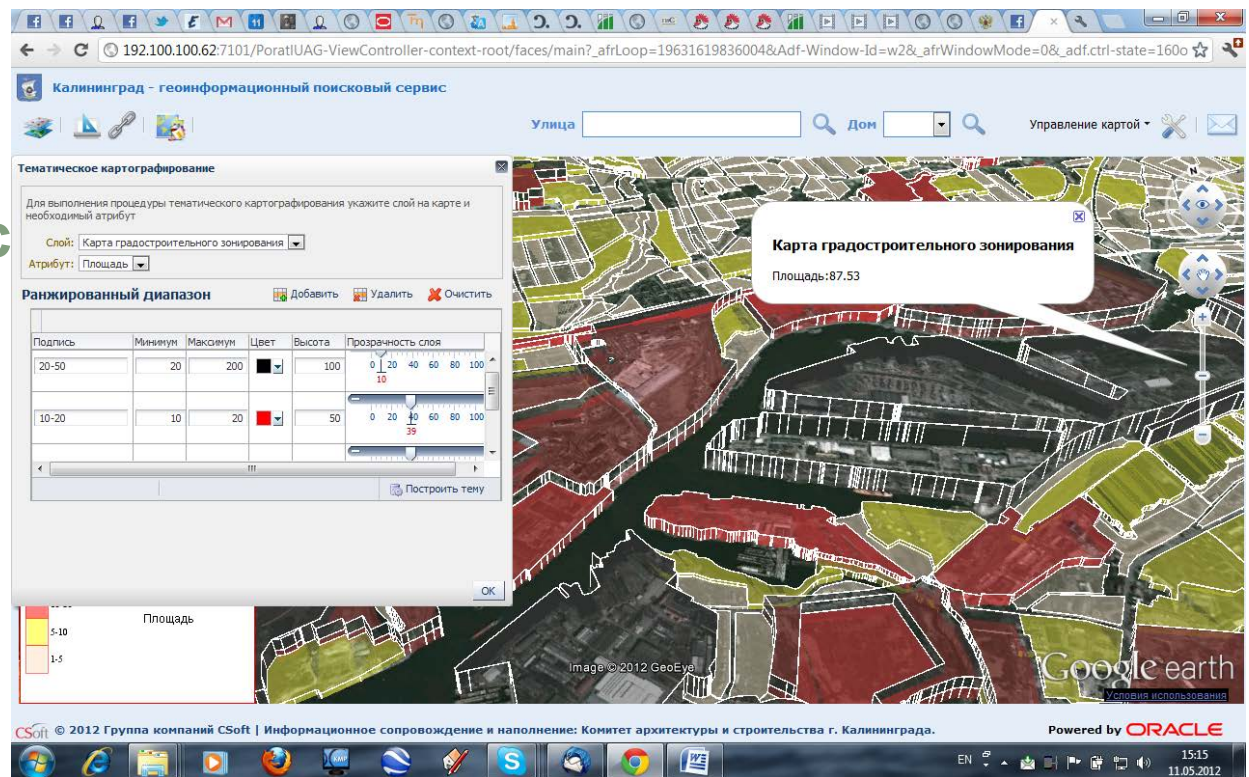




# Scope of functionality achieved

## Fusion Middleware MapViewer, Web portal:

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





## 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**





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

# **Live Demo of Fusion MiddleWare empowered urban Web portals**



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