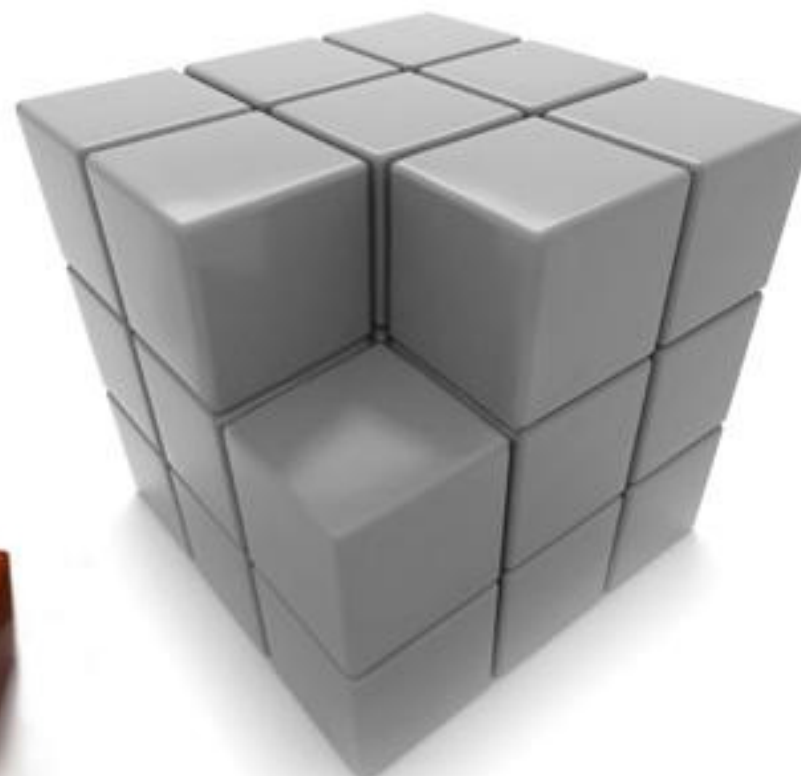


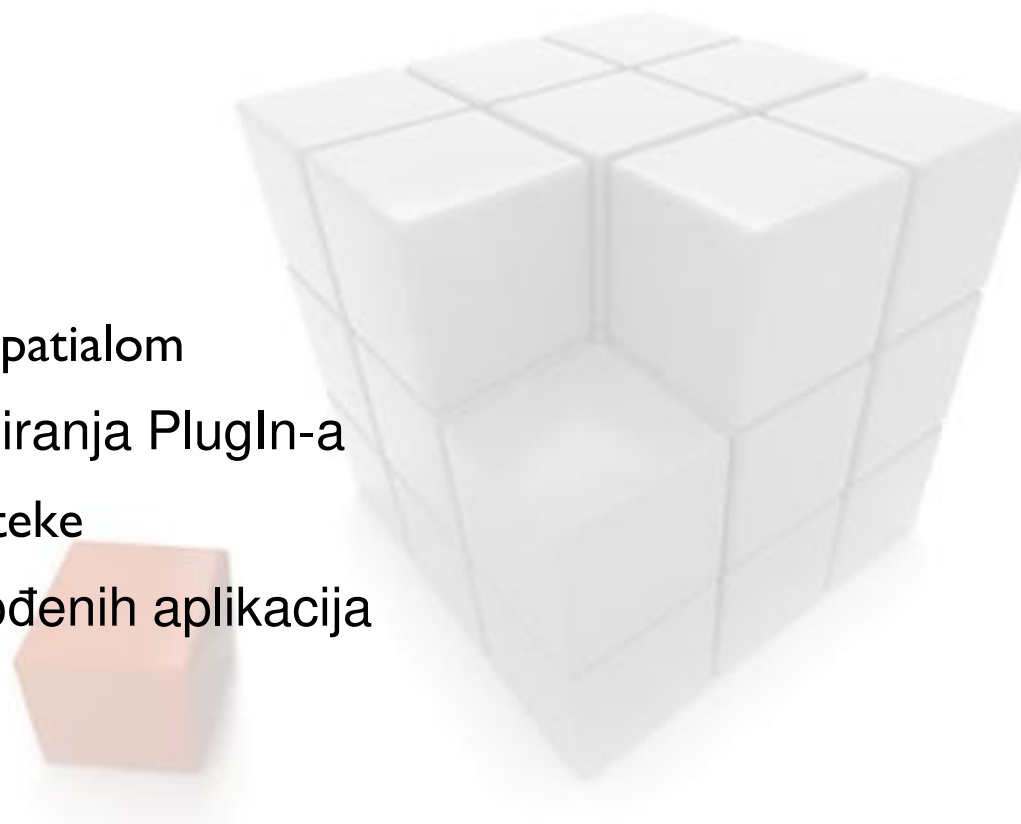
## Izazovi razvoja desktop GIS alata na JUMP platformi

Marko Turković, mag. ing.  
Tomislav Obad, mag. inf.



# Pregled prezentacije

- ❑ Dostupna GIS desktop rješenja
- ❑ Zašto Kosmo?
- ❑ OpenJUMP obitelj
- ❑ OpenJUMP arhitektura
- ❑ Kosmo
- ❑ Integracija Kosma sa Oracle Spatialom
- ❑ Pojednostavljen primjer kreiranja PlugIn-a
- ❑ Korištene open source biblioteke
- ❑ Pristup izradi visoko prilagođenih aplikacija



# Dostupna GIS desktop rješenja (I)

## □ **proprietary** desktop GIS alati

- GeoMedia
- ArcGIS
- AutoCAD Map 3D
- Bentley Map
- MapInfo
- NETCAD GIS
- ERDAS IMAGINE



## Dostupna GIS desktop rješenja (2)

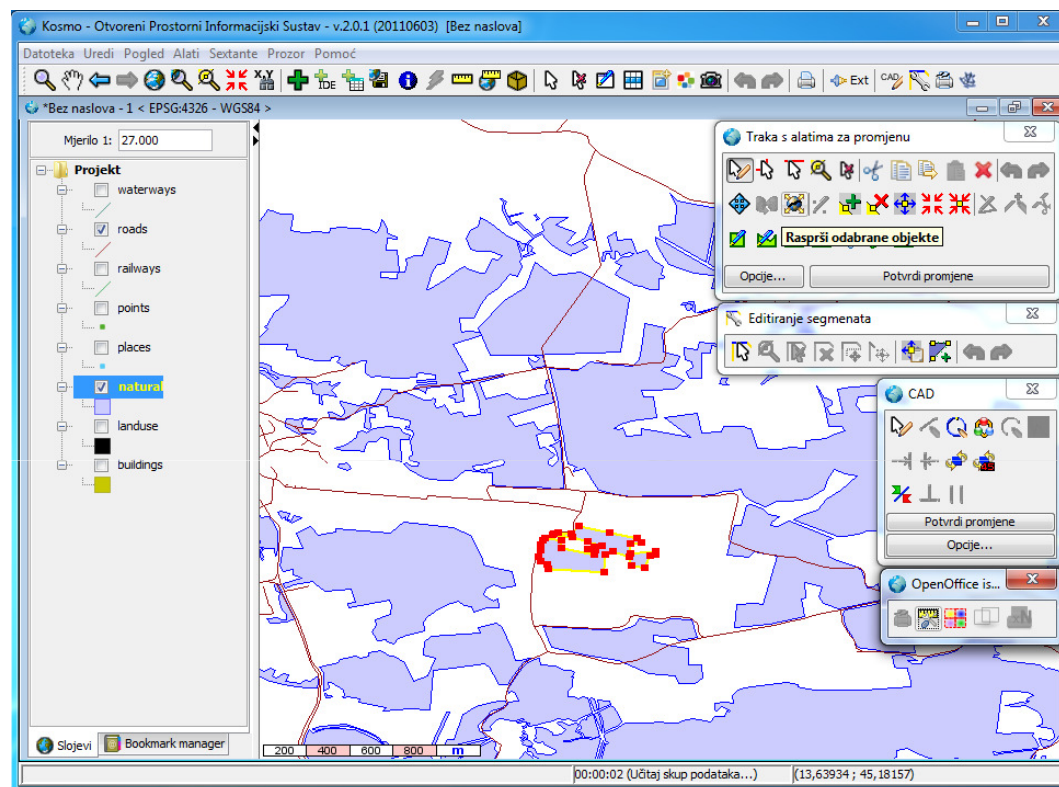
### ❑ free software GIS desktop alati

- OpenJUMP obitelj
- gvSIG
- uDIG
- QuantumGIS
- MapWindow GIS
- GRASS GIS
- SAGA GIS
- ILWIS



# Zašto Kosmo?

- Java baziran
- podrška za Oracle
- open-source
- lokaliziran
- pogodan za projekt koji je zahtijevao visok stupanj prilagodbe zahtjevima korisnika

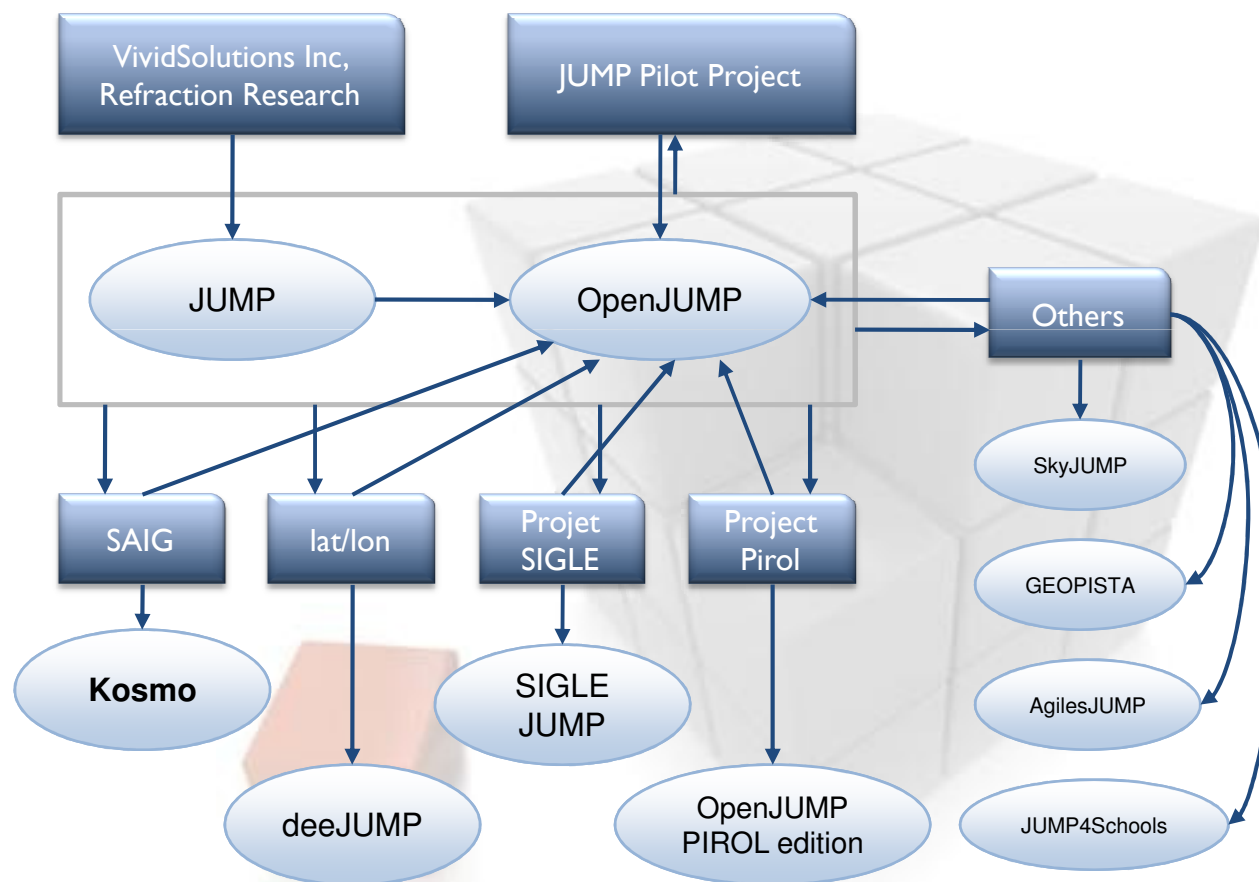


# OpenJUMP obitelj

□ roditelj JUMP, OpenJUMP

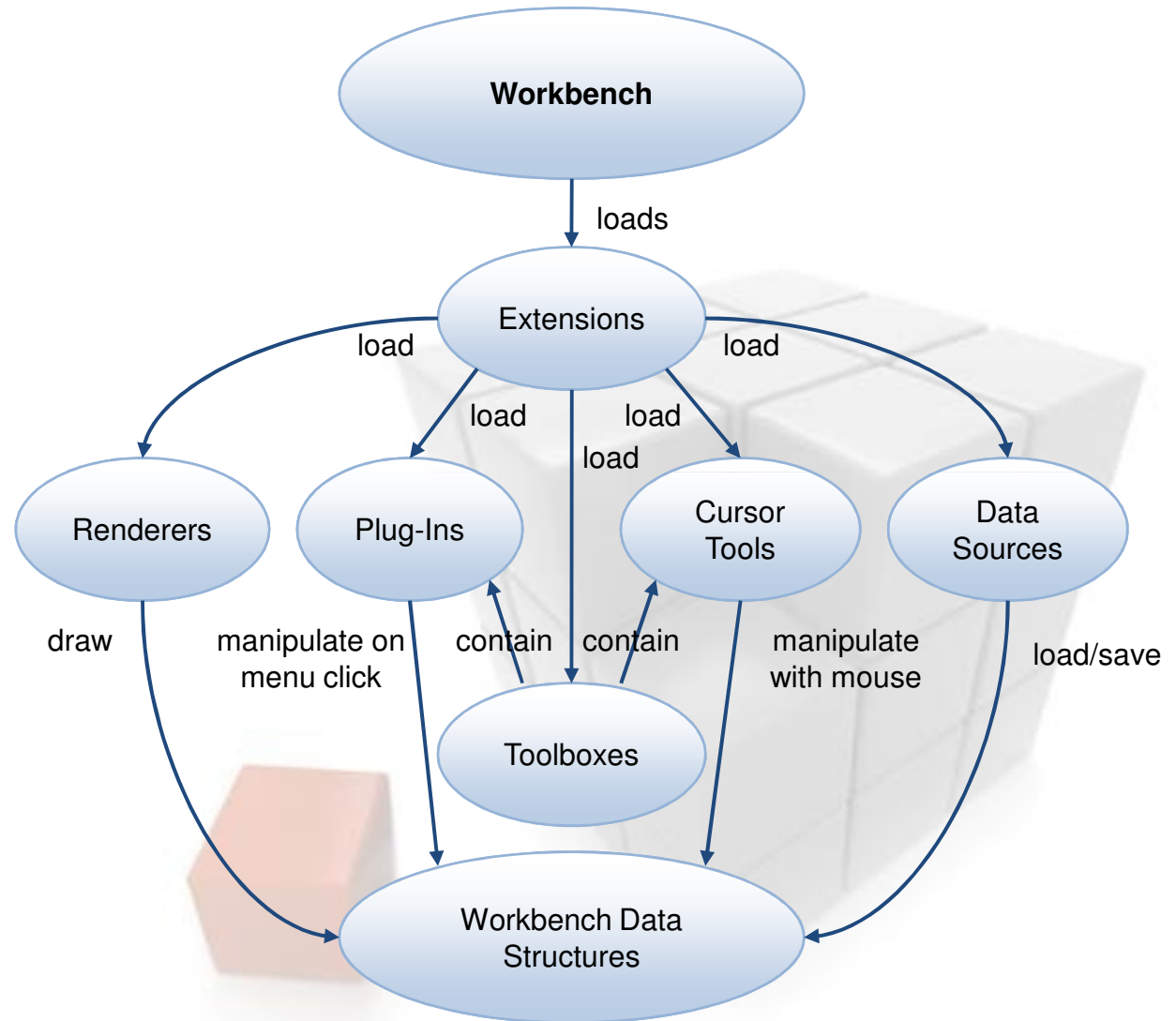
□ djeca

- **Kosmo**
- deeJUMP
- SIGLEJUMP
- PirolJUMP
- SkyJUMP
- GEOPISTA
- AgilesJUMP
- JUMP4Schools

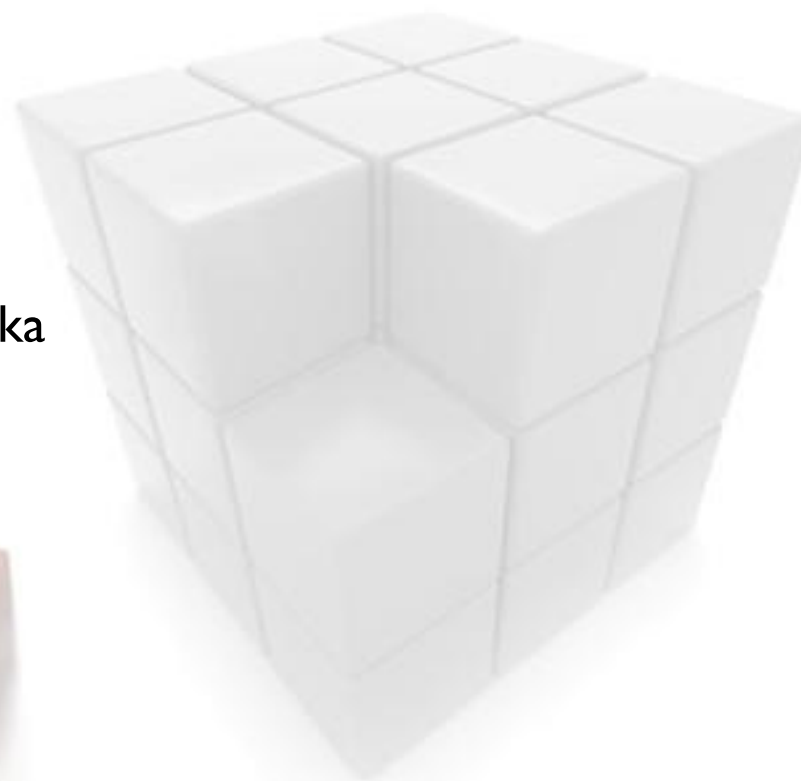


# OpenJUMP arhitektura

- ❑ Workbench
- ❑ Extensions
  - Plug-Ins
  - CursorTools
  - Renderers
  - DataSources
  - Toolboxes



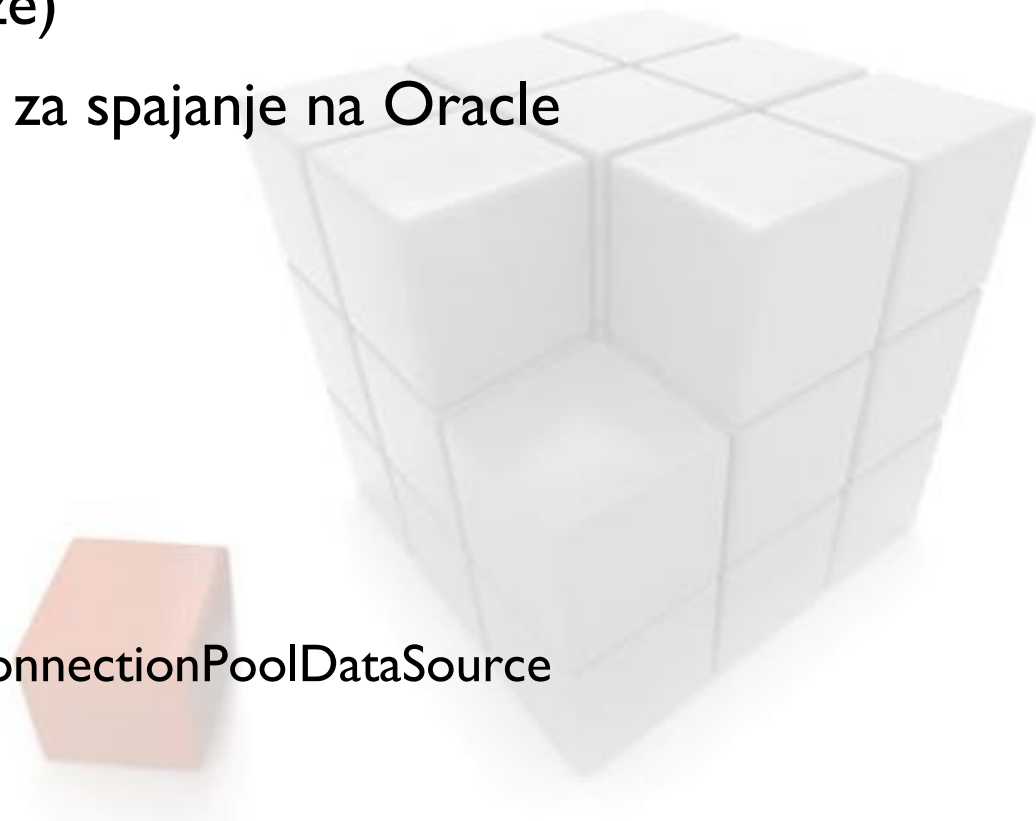
- ❑ GIS alat visokih performansi s velikim mogućnostima nadogradnje
- ❑ rad s vektorskim podacima
  - SHP, DXF, DWG, DGN, GML, CSV
- ❑ rad s rasterskim podacima
  - TIFF, GeoTIFF, PNG, JPEG, ECW, MrSid
- ❑ povezivost s prostornim bazama podataka
  - Oracle Spatial, PostGIS, MySQL
- ❑ implementacija OGC standarda
  - WMS, WFS
- ❑ I18N – I(nternationalizatio)N
  - u potpunosti preveden na hrvatski jezik





# Integracija Kosma sa Oracle Spatialom (I)

- ❑ koristi funkcije Oracle Locatora (mogućnost korištenja Oracle XE baze)
- ❑ THIN driver (ojdbc4.jar) za spajanje na Oracle
- ❑ podržane verzije:
  - Oracle 9i
  - Oracle 10g
  - Oracle 11g
- ❑ pool i cache konekcija:
  - `oracle.jdbc.pool.OracleConnectionPoolDataSource`

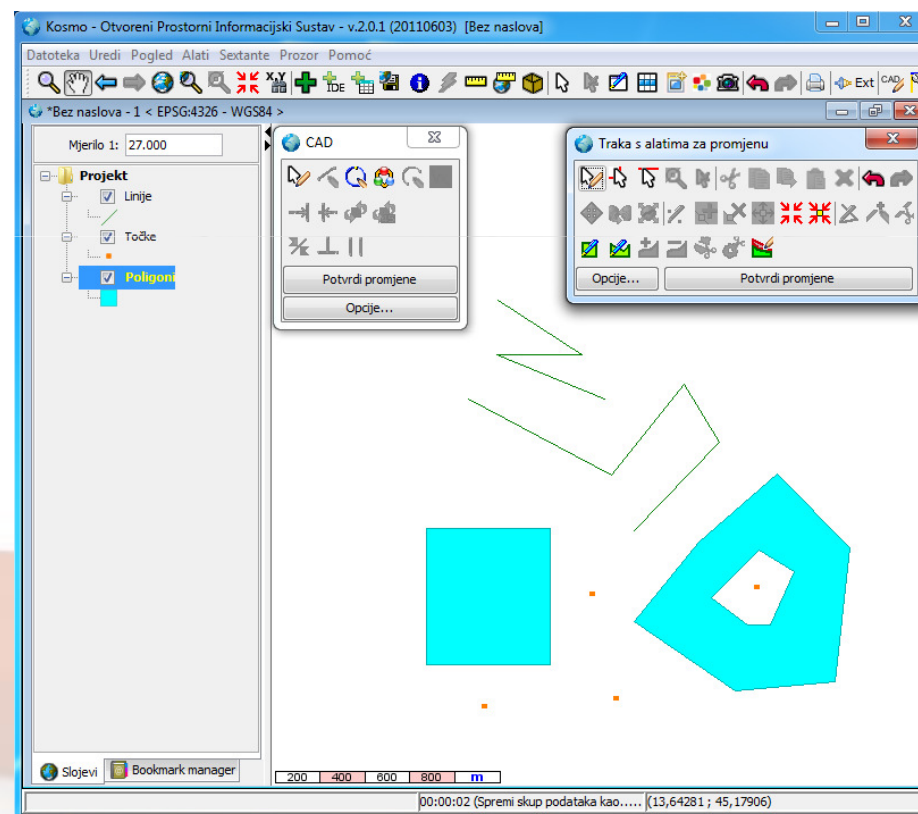


# Integracija Kosma sa Oracle Spatialom (2)

## Podržani geometrijski objekti (2D i 3D)

- POINT
- MULTIPOINT
- LINestring
- MULTILINestring
- POLYGON
- MULTIPOLYGON
- GEOMETRYCOLLECTION
- CURVE/MULTICURVE

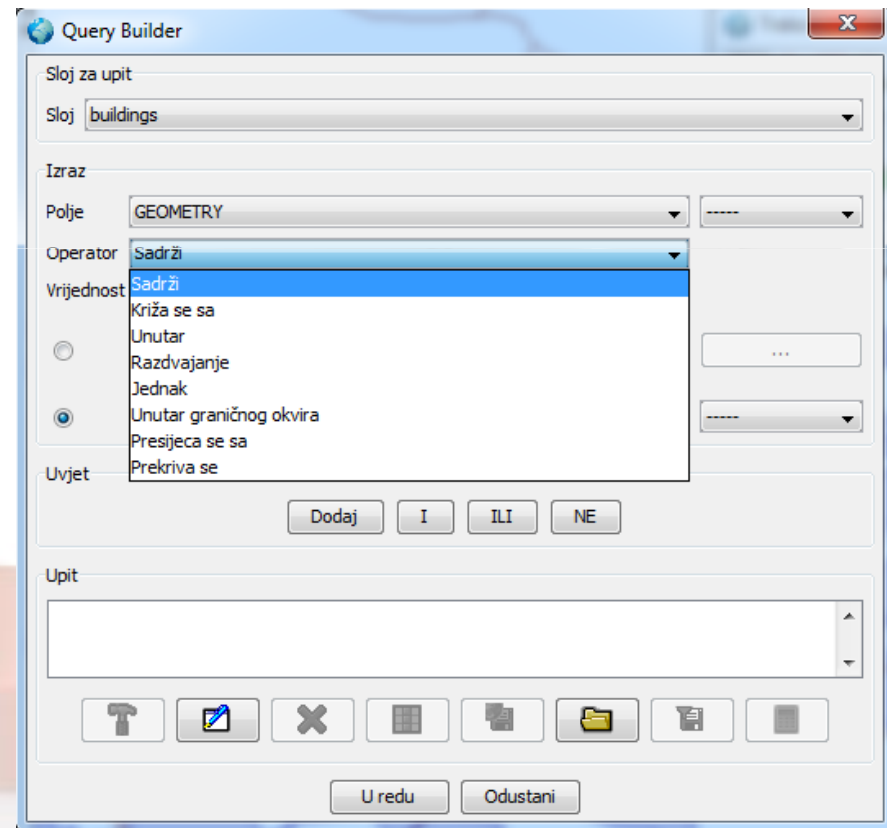
nisu podržani



# Integracija Kosma sa Oracle Spatialom (3)

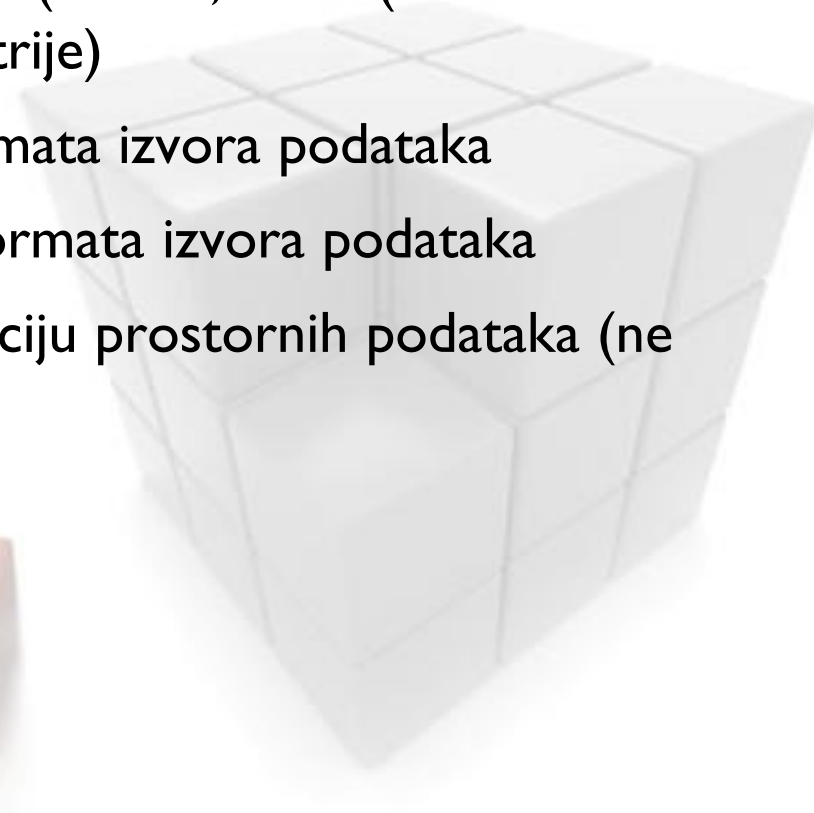
## Podrška za Oracle prostorne filtere:

- Contains (contains)
- Crosses (overlapbydisjoint)
- Equals (equal)
- Overlaps (overlapbyintersect)
- Touches (touch)
- Within (inside)
- Disjoint (disjoint)
- Bbox (anyinteract)
- Intersects (anyinteract)



## Integracija Kosma sa Oracle Spatialom (4)

- ❑ koristi MDSYS.ALL\_SDO\_GEOM\_METADATA za dohvaćanje metapodataka o geometrijskoj tablici (BBOX, SRID (oznaka koordinatnog sustava), vrsta geometrije)
- ❑ izvoz u Oracle iz svih podržanih formata izvora podataka
- ❑ uvoz iz Oracle-a iz svih podržanih formata izvora podataka
- ❑ koristi ugrađenu on-the-fly reprojekciju prostornih podataka (ne koristi Oracle-ovu)



# Pojednostavljen primjer kreiranja PlugIn-a

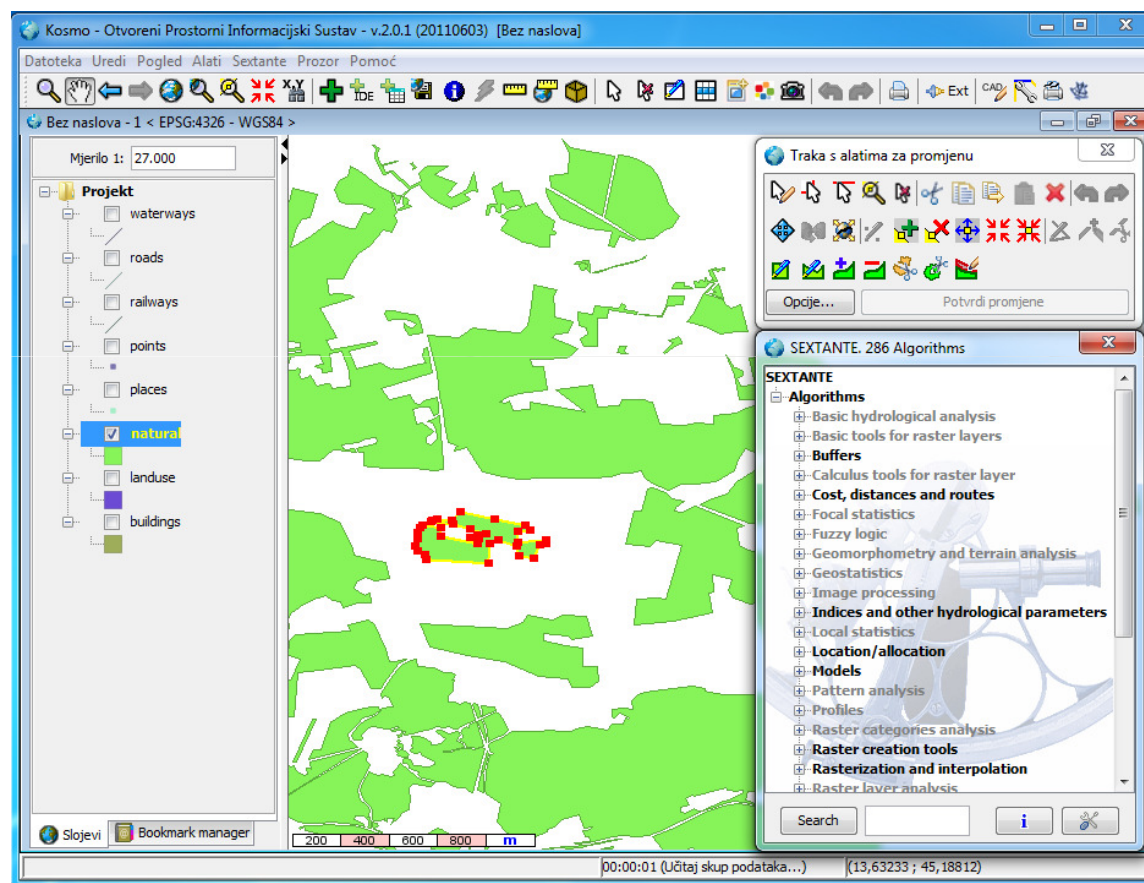
```

1 public class ExamplePlugIn implements AbstractPlugIn {
2
3     public ExamplePlugIn() {
4         super();
5     }
6
7     //metoda inicijaliziranja plugina
8     public void initialize(PlugInContext context) throws Exception {
9         context.getFeatureInstaller().addMainMenuItem(
10            this, new String[] { "menuName" }, false, true);
11     }
12
13    public boolean execute(PlugInContext context) throws Exception {
14        //funkcionalnost plugina - poziv procedure, forme...
15        return true;
16    }
17
18    //metoda se pokreće nakon završetka run metode
19    public void finish(PlugInContext context) {
20    }
21
22    public static EnableCheck createEnableCheck(final WorkbenchContext workbenchContext) {
23        EnableCheckFactory checkFactory = new EnableCheckFactory(workbenchContext);
24        enableCheck.add(checkFactory.createWindowWithLayerNamePanelMustBeActiveCheck());
25
26        return enableCheck;
27    }
28 }

```

# Korištene open source biblioteke i projekti

- ❑ JTS
- ❑ GeoTools
- ❑ log4j
- ❑ Castor
- ❑ JCalendar
- ❑ Sextante
- ❑ ogr2ogr (iGOR)
- ❑ L2FProd
- ❑ JScience
- ❑ ... i mnogi drugi



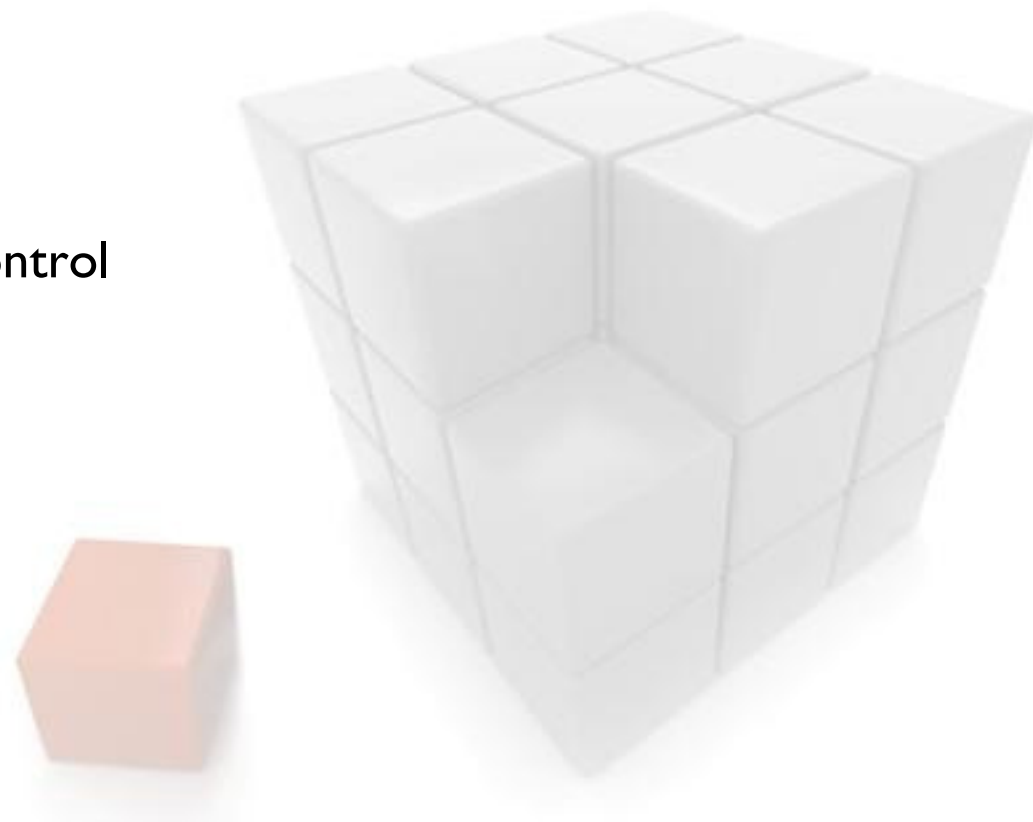
# Pristup izradi visoko prilagođenih aplikacija

## ❑ razvojno okruženje

- Eclipse
  - Swing editori
  - korištenje templatea
- verzioniranje i revision control
- issue management
- wiki

## ❑ modularnost

## ❑ code reuseability





Pitanja???

Hvala na pažnji i  
strpljenju! 😊

[marko.turkovic@igea.hr](mailto:marko.turkovic@igea.hr)

[tomislav.obad@igea.hr](mailto:tomislav.obad@igea.hr)

IGEA d.o.o.  
Frana Supila 7/b  
42 000 Varaždin, HR  
tel: +385 42 556 700  
[www.igea.hr](http://www.igea.hr)

