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Efficient visualization, streaming and services

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EDM, Androme

Objectives

- **Visualization**
  - Scalable
    - Both low-end and high-end systems
- **Streaming**
  - Small client installation
  - Data is streamed on demand
  - File cache
- **Services**
  - Easy service creation
  - Easy integration into application

Visualization + Streaming: 3D City Viewer

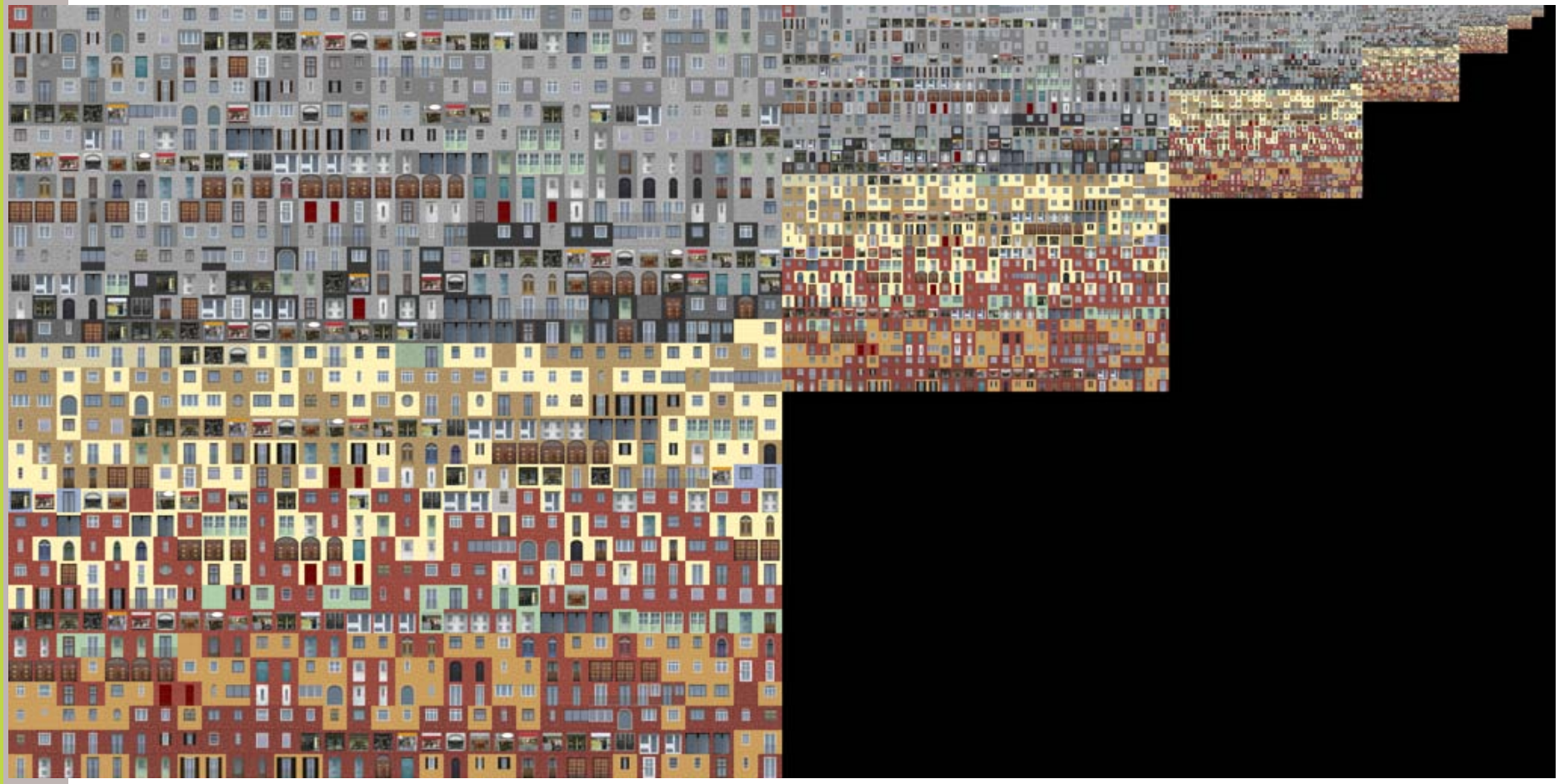


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3D Building Data structure

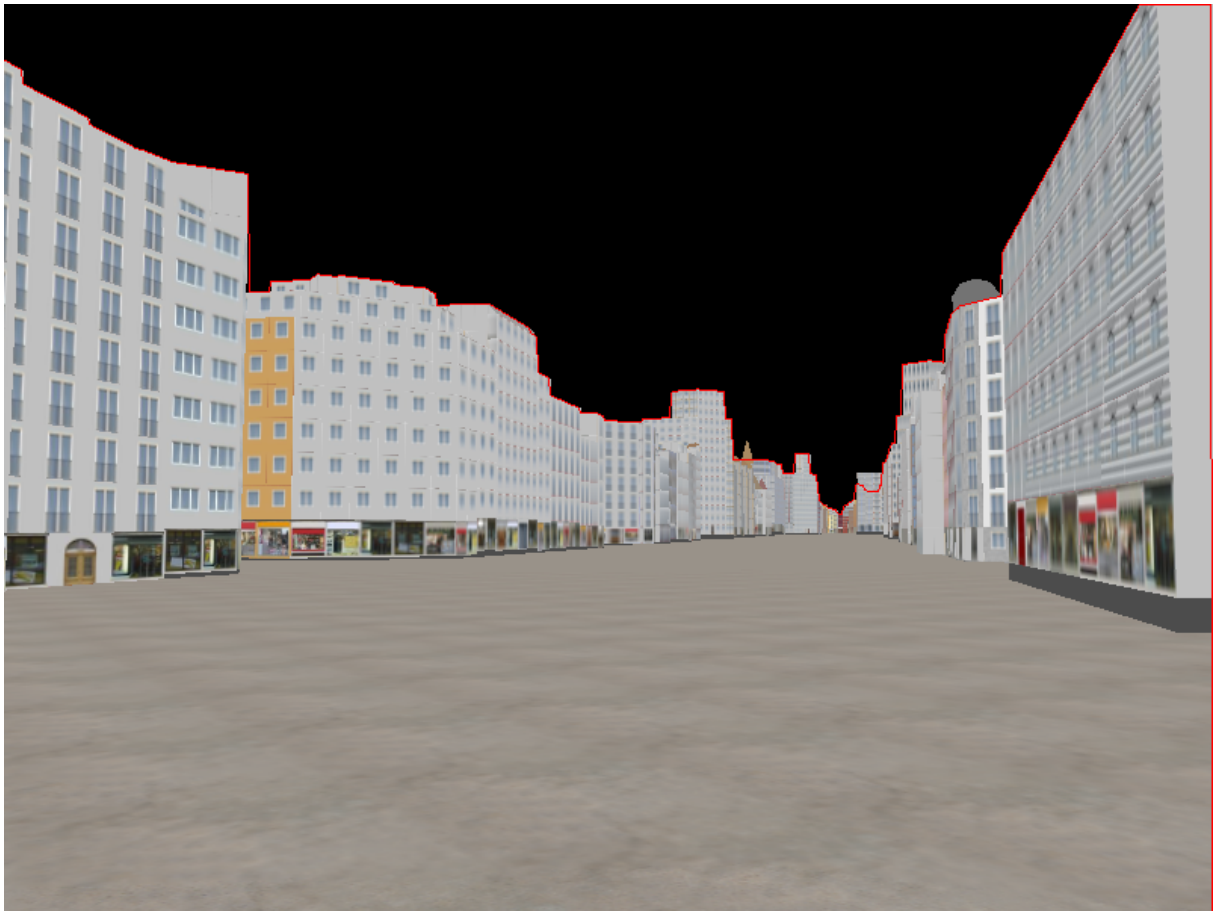
- 3D City Maps source data kindly provided by Tele Atlas
- Preprocessed into efficient binary format for rendering
- Quadtree
  - Splitting rule: number of buildings
  - Leaf cells store building data
    - Geometry
    - Collision geometry
    - Segments for horizon culling (building tops)
- Each cell can be requested separately
- Texture atlas for the whole city

Texture Atlas Example



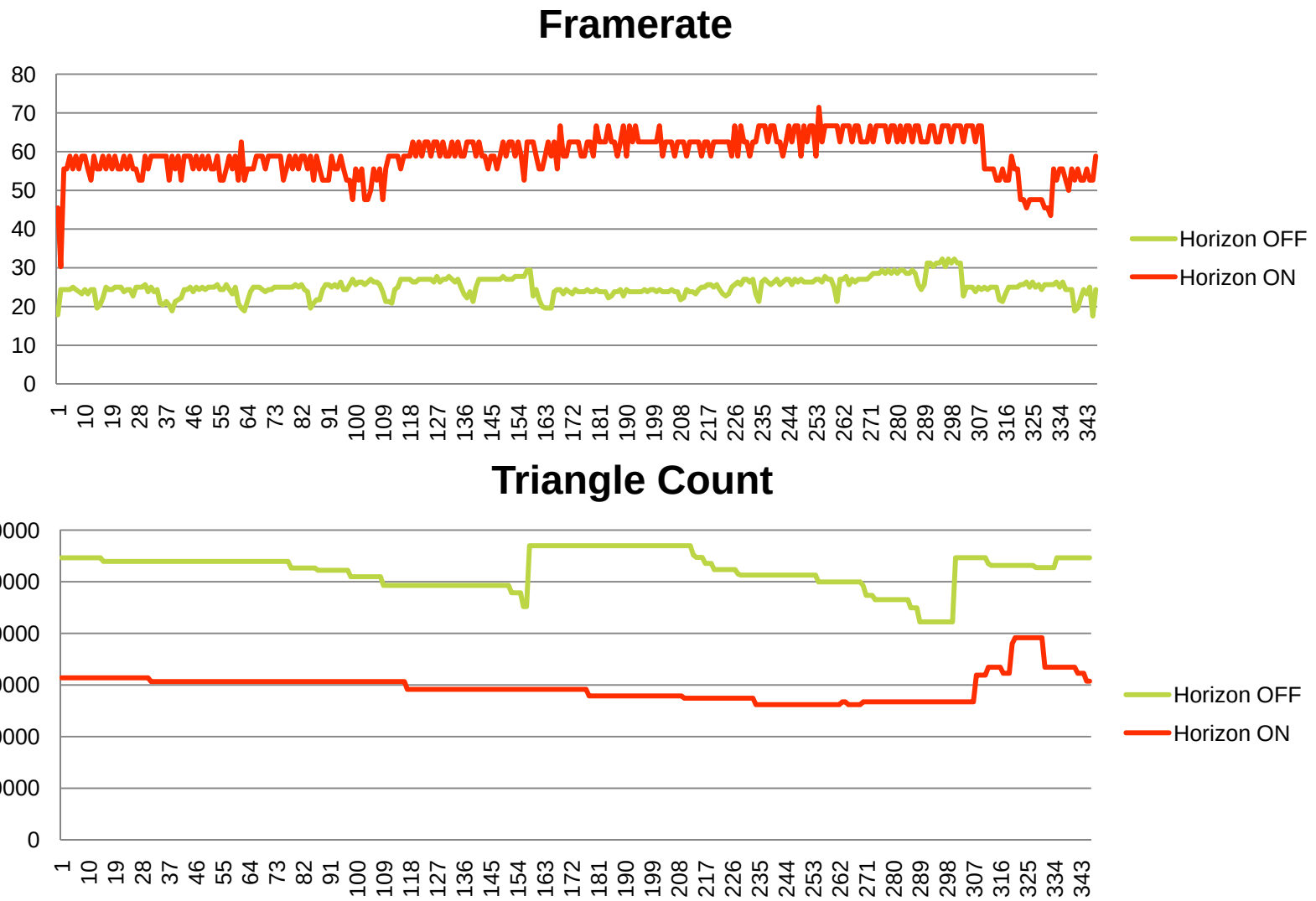
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Horizon Culling



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Horizon Culling - Results

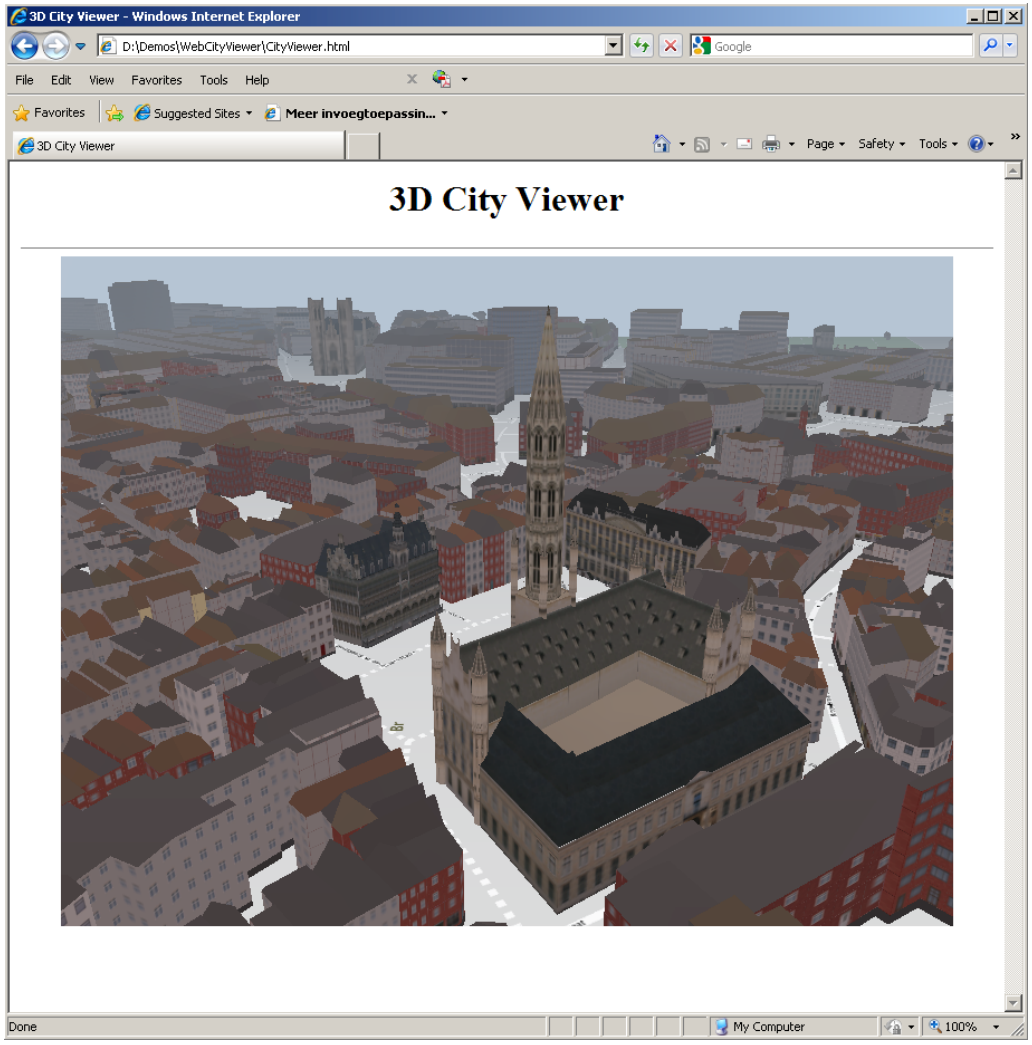


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Example data sizes

- Paris
  - Geometry: 1.4 GB
  - Collision geometry: 89 MB
  - Texture Atlas: 5 texture atlas files (2048x2048)
    - 106 MB (.dds format with mipmap levels)
  - Segments: 40 MB
- Barcelona
  - Geometry: 600 MB
  - Collision geometry: 31 MB
  - Texture Atlas: 4 texture atlas files (2048x2048)
    - 87 MB (.dds format with mipmap levels)
  - Segments: 14 MB

Browser plugin (IE via ActiveX)



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Flexible Interaction Specification

- Framework is fully enabled for scripting
  - Lua scripting language
  - Bindings to C++ through Swig
    - Option for other bindings such as Java, PHP, C#, …
- Interaction specification through scripting
  - Triggers – events

Services: Geo-located Advertisements





GeoAds
SOAP
Service



OpenX
take control of your advertising

Users

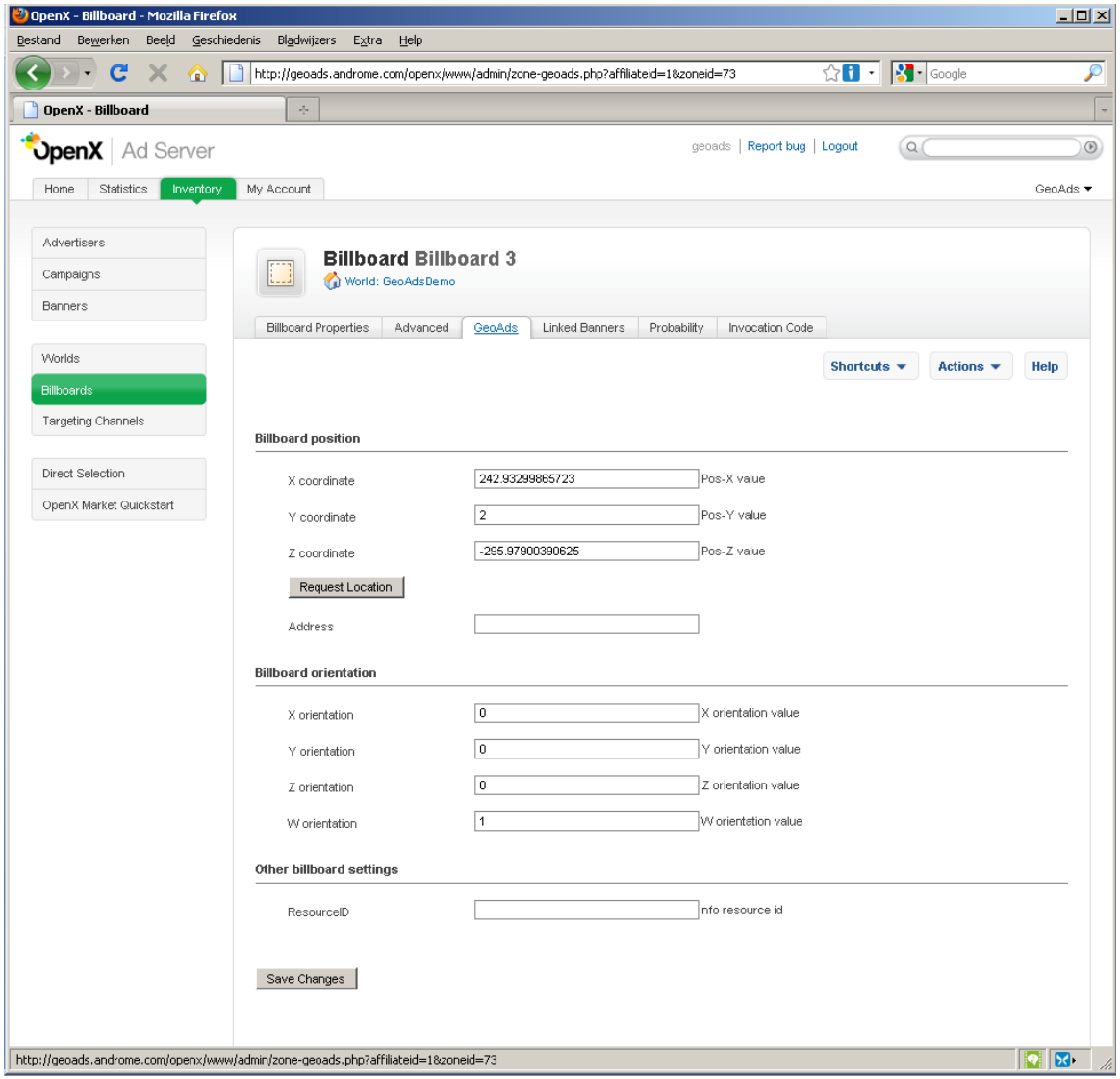
Publishers

Advertisers

http://geoads.androme.com

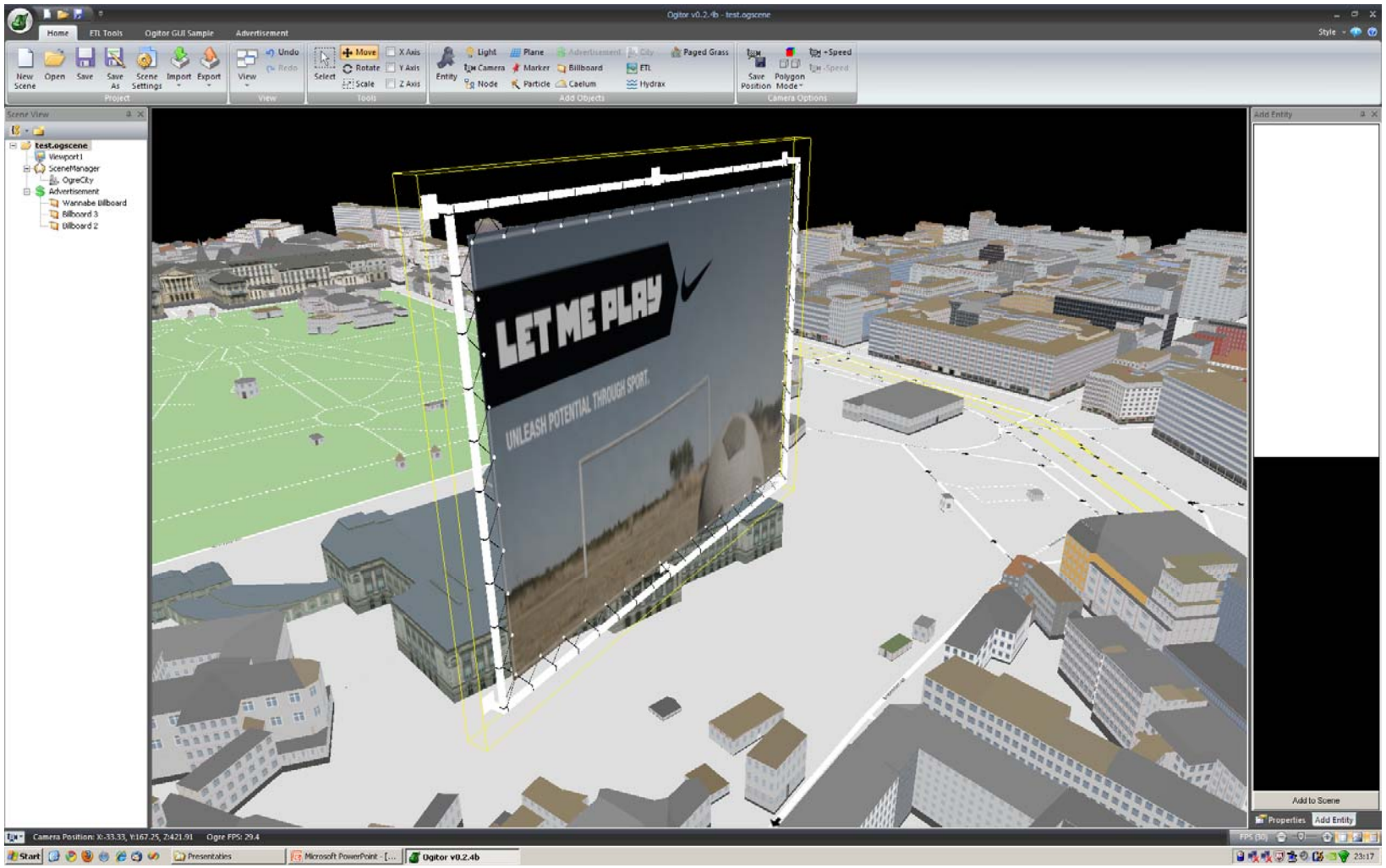
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GeoAds: OpenX backend



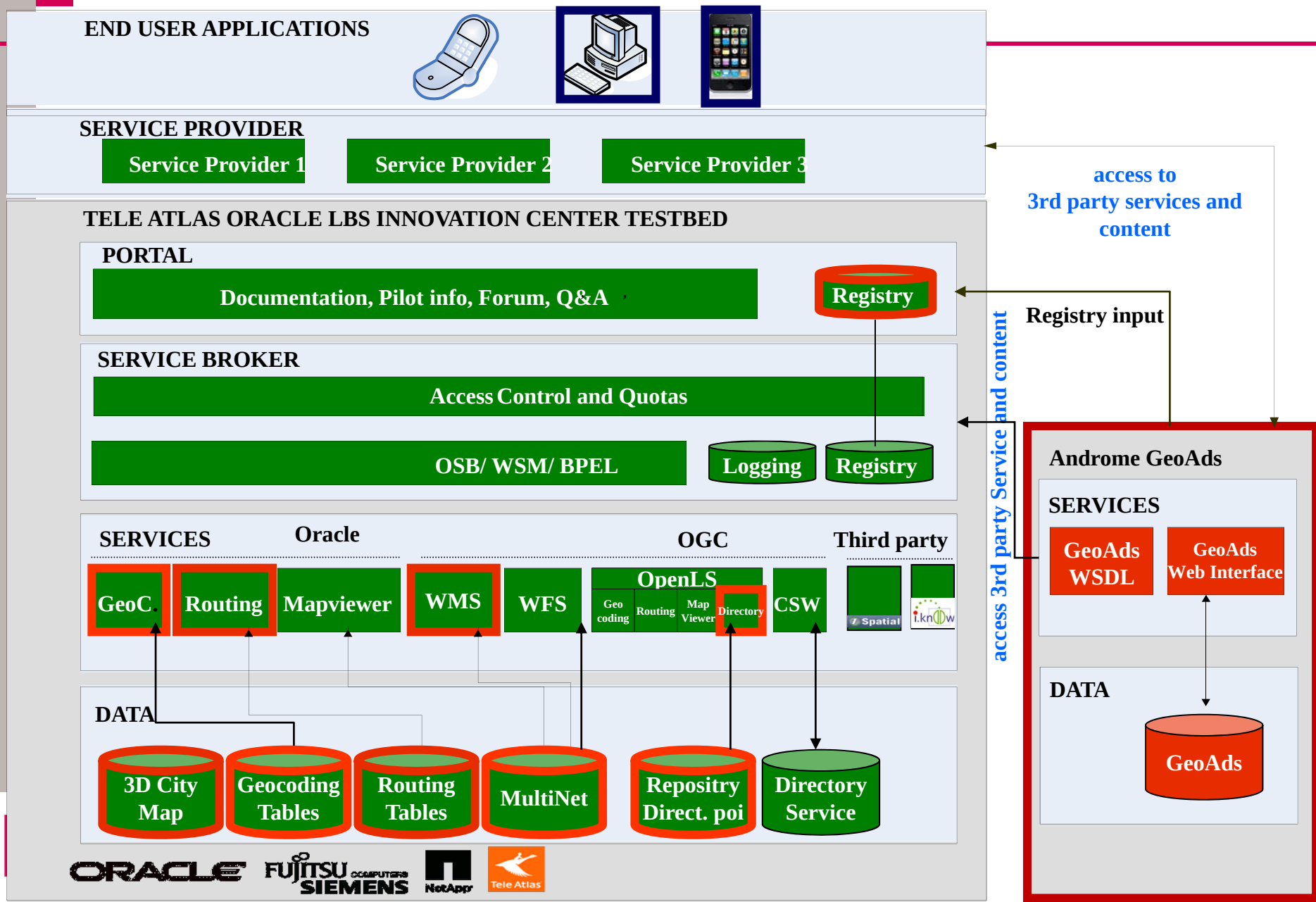
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GeoAds integrated into world editor



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Link to Tele Atlas/Oracle Innovation Center



Demonstrations

- 3D browser plugin demo available on Tele Atlas / Oracle Innovation Center
  - Free membership
  - http://innovation-geo-lbs.com/
  - Visit the Androme space
- GeoAds test version available
  - Free membership for testing purposes
  - http://geoads.androme.com
  - Or follow the links via the Innovation Center for the Androme space