

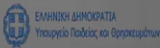
ΓΓΕΤ ΙSR_3013



5DMuPLIS 5 Dimensional Multi-Purpose Land Information System

5D MuPLIS 5D CADASTRE GIS

Sivan design
www.sivandesign.com



ΕΣΠΑ 2007-2013, Δράση «Διμερής Ε&Τ Συνεργασία Ελλάδα- Ισραήλ 2013-2015»
ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ ΚΑΙ ΘΡΗΣΚΕΥΜΑΤΩΝ
Γ.Γ.Ε.Τ.
ΕΥΔΕ - ΕΤΑΚ

Με τη συγχρηματοδότηση της Ελλάδας και του Ευρωπαϊκού Ταμείου Περιφερειακής Ανάπτυξης της Ευρωπαϊκής Ένωσης, στο πλαίσιο του ΕΠ Ανταγωνιστικότητα & Επιχειρηματικότητα και των ΠΡΠ Αττικής, Μαιονίδας-Φθιώτιδας, Κρήτης & Νήσων Αγαίου, Θεσσαλίας-Στερεάς Ελλάδας & Ήπειρου

Presentation Topics



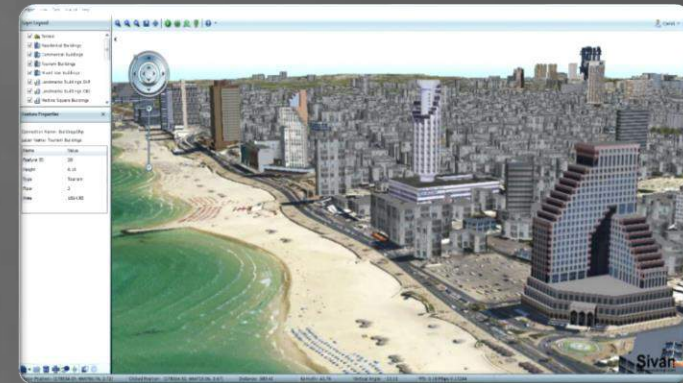
- Introduction
 - 3D GIS in the Cloud - Proposes and Uses
 - 3D Cadastre GIS: Previous R&D Highlights
- Project Objectives and challenges
- 3D GIS in the cloud and 3D Cadastre
- What Next?
- Live Demo

What is 3D GIS in the Cloud?



The web GIS platform of 5D MuPLIS
Technology and key features

- Purely web application for publishing GIS data over the web on 3D
- Cloud computing approach
- Server side rendering based technology
- Convert data/projects from 2D to 3D in few steps
- Viewing, analyzing and exploring in 3D
- Support for most common data formats and Geo-Spatial protocol
- Includes additional new features such as 3D buffer, 3D Parcel, Pipeline, Manhole,
- Available for iPad and mobile devices



3D GIS in the cloud: main purposes



City Planning



3D Cadastre



Upper and underground infrastructure



Highways and roads

Past and current 3D cadaster R&D in Israel



- 2004 Survey Of Israel (SOI) R&D
 - Proposed solution to 3D Cadastre - spatial registration by subdividing the surface space into spatial sub-parcels
- 2009 - Sivan Design (for SOI)
 - Proposed solution for integration of 3D Cadastre in GIS - Multi-Layers Model
- 3D Cadastre GIS pilot with SOI
 - Implementation of 3D Cadastre pilot based on Sivan Design “3D GIS in the Cloud”

All R&Ds enable current state land registration continuance in the future while 3D Cadastre development will be additive

Project Objectives



- Main objective:

“Design and develop 5D Cadastre GIS system that will provide full solution to 5D Cadastre management for public and private organizations”

- The product:

An Add-on to *3D GIS in the Cloud* (Prototype level) that will enable to support Lands and Properties managements at 5 dimension: *X, Y, Z, Time and Scale*

- First phase objectives:

“Define Functional Requirements to 3D Cadastre GIS, design and develop spatial database to store 3D Cadastre data”

Project challenges

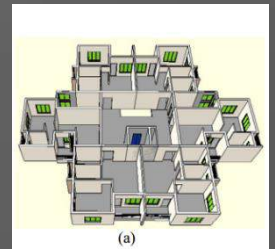
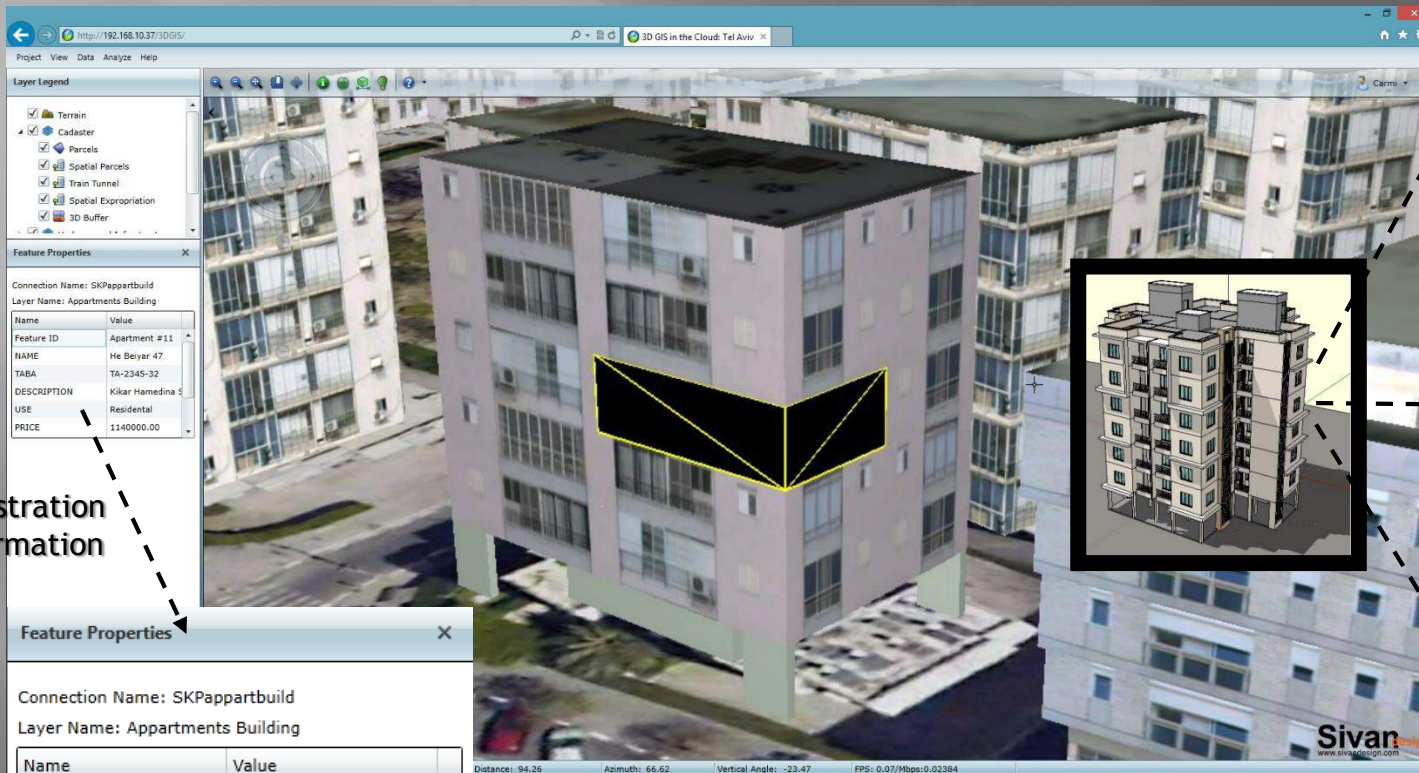


It is a challenge to design and create GIS platforms that can fully support a 3D cadastre

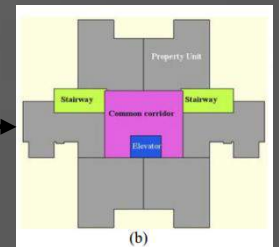
- How to view and manage a 3D Parcels in GIS?
 - Issues in its geometry, topology, database, reparation...
 - Integration with existing 2D layers and data structure
- Requires hi level accuracy
- Dealing with large scale data and area
- Discrepancy between surfaces and topography to man-made objects (bridges, tunnels)
- Visibility / Invisibility issues
- Requires knowledge in geodesy, geometry, databases, CAD, information systems, process analysis...and of course GIS

What to include in a 3D Cadastre GIS?

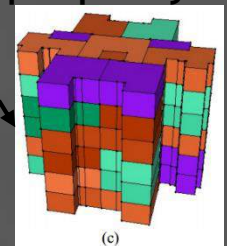
Registration of common properties / households



Physical shape of property



Legal boundary of property unit



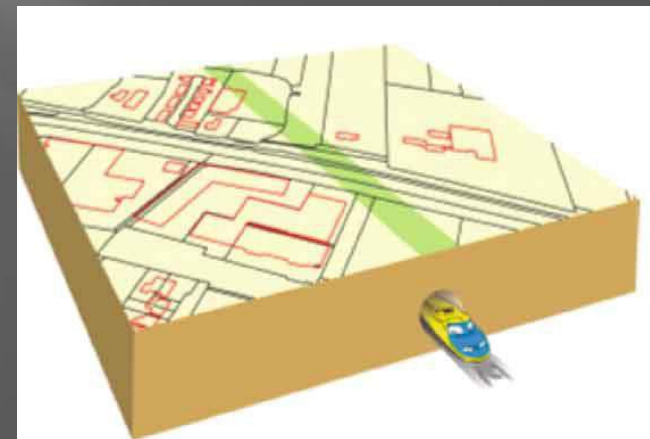
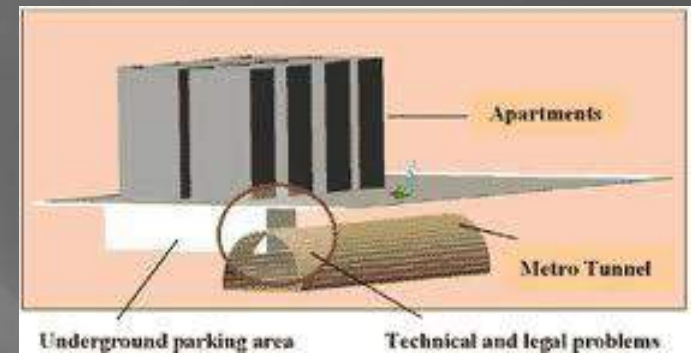
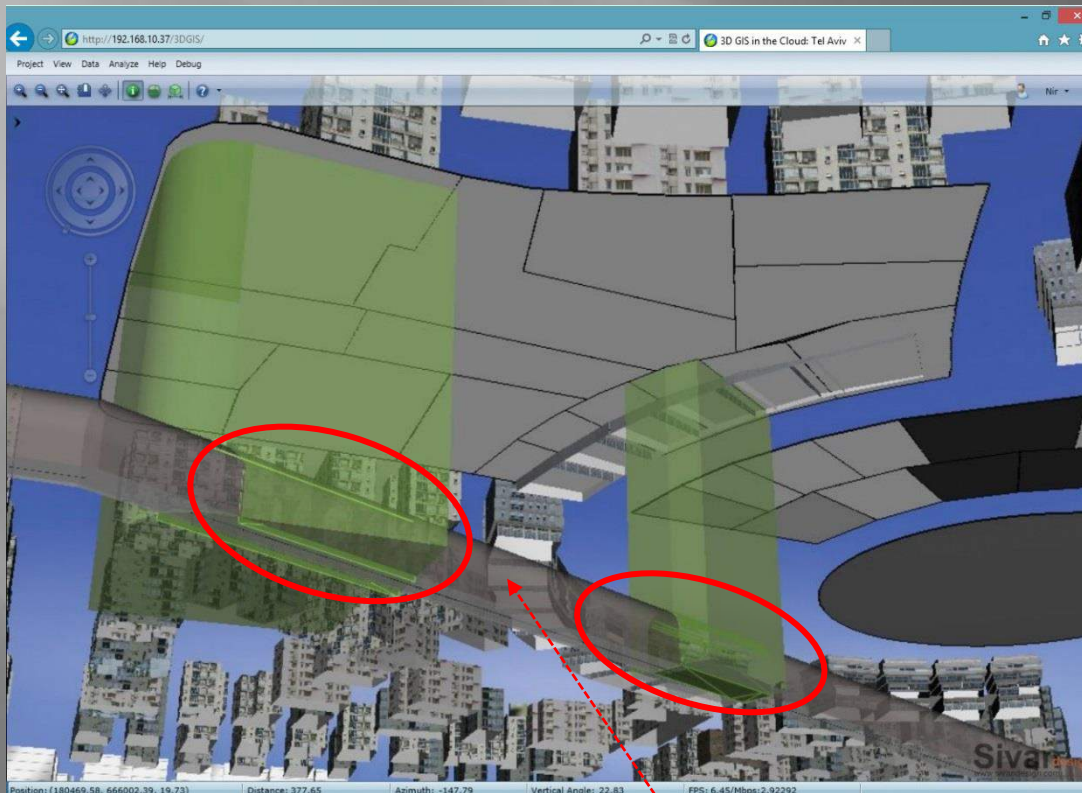
Collection of the 3D property units

5 Dimensional Multi-Purpose Land Information System-5DMuPLIS

What to include in a 3D Cadastre GIS?



- Spatial sub-parcel and sub-surface expropriation
 - Spatial calculation and display of sub surface expropriation



Tunnel

5 Dimensional Multi-Purpose Land
Information System-5DMuPLIS

3D GIS In the Cloud and 3D Cadastre



- Regulation Administration
 - 3D capabilities and visualizations
 - Store and manage 3D Cadastre data
 - Compare between existing or planned design to a specific area regulation
 - Easily understand complex urban planning regulations as 3D visualization
 - Web application
 - Support local governments in achieving planning consents with relevant communities
 - Inform residents about new regulations to facilitate an early feedback

3D Cadastre GIS



Thank you!
Live Demo...

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