



INSPIRE IMPLEMENTATION ON METROPOLITAN LEVEL – CASE STUDY: MUNICIPALITY OF THESSALONIKI

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Starting Point of the Technology in MoT...

The initial project was regarded the « *Development of a GIS in the Municipality of Thessaloniki* » and the main purpose was the upgrade of the geospatial information and service to the citizens by means of web services and technologies such as Web Gis.

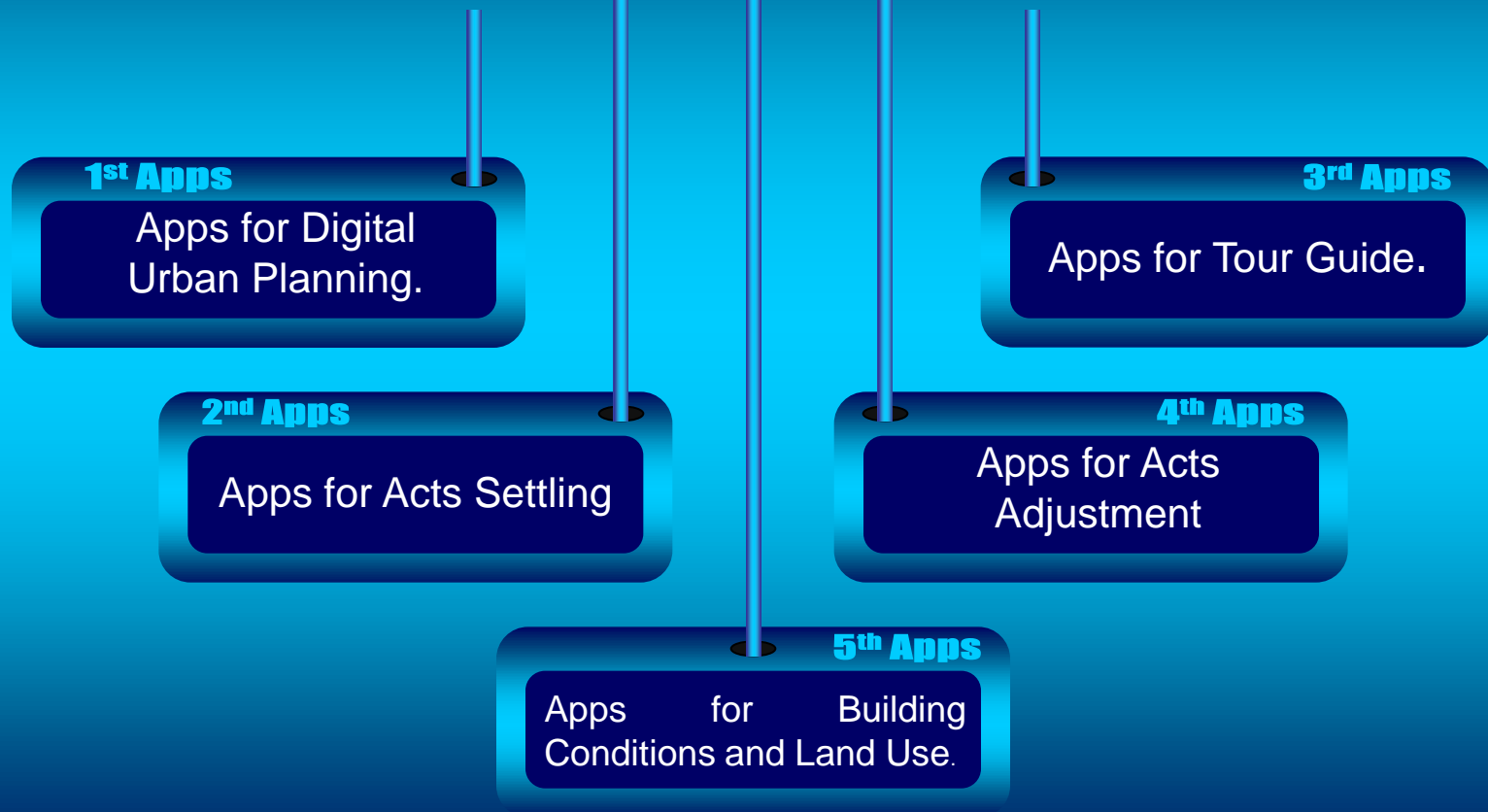
Next ...

Where is Municipality of Thessaloniki ...

- 790,824 citizens – 2011
- 2nd Municipality of Greece - after Athens
- 541,957 users of GIS, from 1/1/2009 – 12/6/2014
- 42,06 % new users
- A big interest for geodata – think of new approach by means of GIS/SDI platform.



G.I.S. Municipality of Thessaloniki (2009)



Among other applications that was created since 2009

Mobile GIS (smart phones)

Internal GIS for several purposes

(2009)

.

(present day)

Thus, the MoT has become creator, owner and user of a large amount of geospatial datasets.

Data Sets such as ...

- Coordinate Systems
- Municipal Boundaries
- Cadastre Parcels
- Street names
- Transportation Net
- Orthophotos
- Buildings
- Land Uses

etc

Mobile GIS for smart phones

Link for iOS

<http://phobos.apple.com/WebObjects/MZStore.woa/wa/viewSoftware?id=547388095>

Link for Android

<https://play.google.com/store/apps/details?id=gr.thessaloniki.mobilegis>

INSPIRE first thoughts ...

In order to address

- administrative,
- urban planning and
- environmental issues,
- increase government transparency and accountability,

the MoT has been an early adaptor of open data initiative.

INSPIRE thoughts ...

The adoption of the INSPIRE's provisions has become more than a necessity, in order to serve,

- public (citizens, public authorities, private sector) demand.

Additionally, the Greek regulatory framework for the generation, management, and dissemination of geospatial information (Law No.3882/2010) mandates the Directive's implementation.

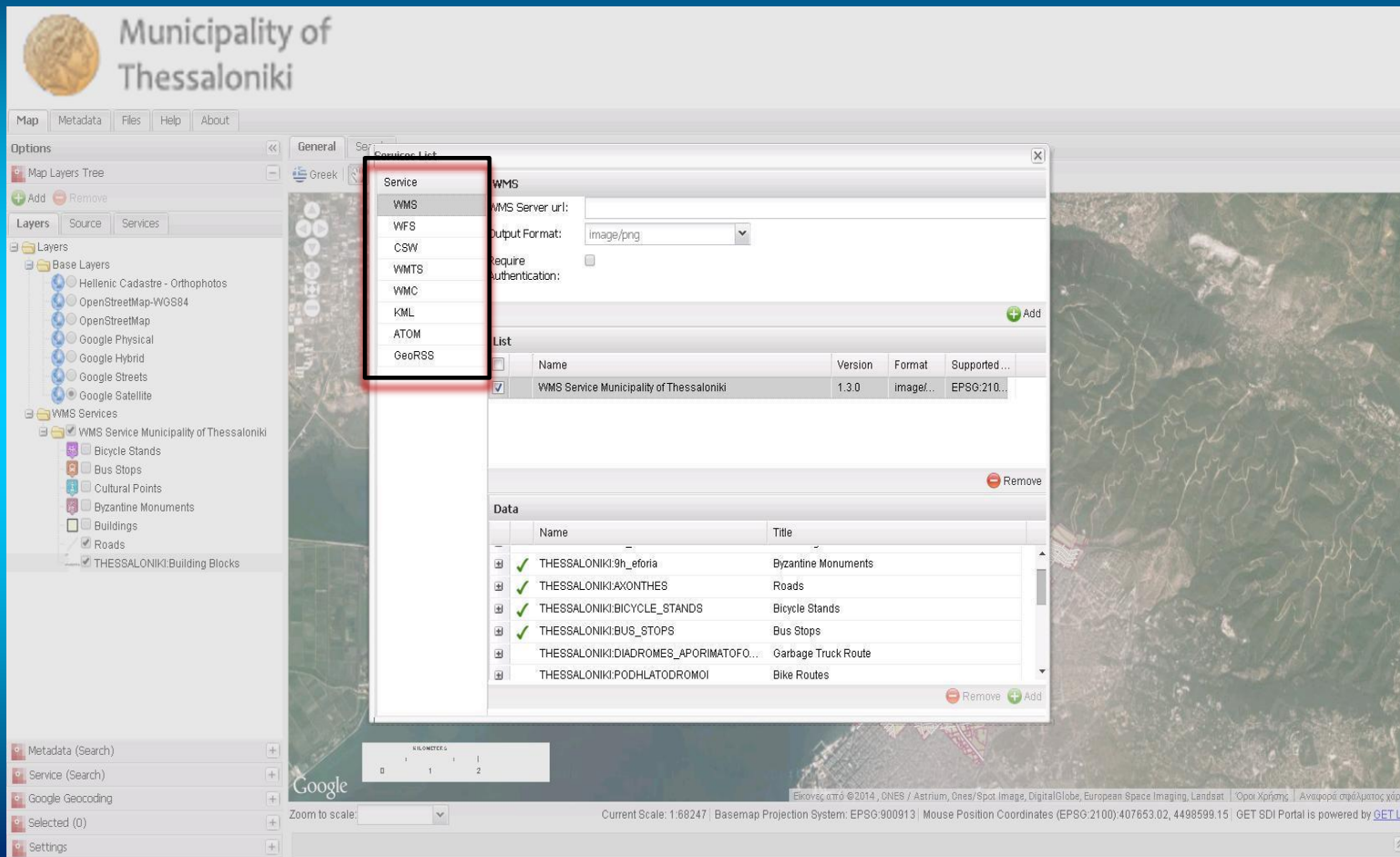
- Use:
 - Open standards,
 - Incorporating all the components of a typical SDI (data, services, metadata, data & service sharing, monitoring & reporting),
 - Municipality users' needs
- Development is entirely based on Free and Open Source Software (FOSS) and an open (multi-tiered) architecture approach.
- Sixty (60) datasets.

- Open standards.
- Municipality of Thessaloniki's internal procedures on the management of geospatial information are restructured
- The System is enriched with sophisticated tools.
- The implementation of the SDI, as a Service Oriented Architecture (SOA), followed the Waterfall model, involving:
 - User requirement capture and analysis
 - Development of the metadata system
 - Data preparation
 - Development of network services
 - Implementation of the GeoPortal
 - Data uploading and deployment of services.
 - Development of reporting and monitoring mechanisms.

- The development of the Geospatial Map is based on the GET SDI Portal ® (FOSS), which was developed and is distributed by GET Ltd under the General Public License v3.
- Main features of the application are:
 - Visualisation of Municipality of Thessaloniki's and third-party organisations' geospatial data
 - Search for specific Municipality of Thessaloniki geospatial information, based on either spatial criteria or their business logic.
 - Discovery of data and services using Municipality of Thessaloniki's and third-party organisations' metadata catalogues.

[illegible]

“Web services” developed include: a) Discovery Service, b) View Service, c) Download Service, d) Transformation (CRS)



Municipality of Thessaloniki

Map Metadata Files Help About

Options

Map Layers Tree

Layers Source Services

Layers

- Base Layers
 - Hellenic Cadastre - Orthophotos
 - OpenStreetMap-WGS84
 - OpenStreetMap
 - Google Physical
 - Google Hybrid
 - Google Streets
 - Google Satellite
- WMS Services
 - WMS Service Municipality of Thessaloniki
 - Bicycle Stands
 - Bus Stops
 - Cultural Points
 - Byzantine Monuments
 - Buildings
 - Roads
 - THESSALONIKI:Building Blocks

Metadata (Search) Service (Search) Google Geocoding Selected (0) Settings

Services List

Service

- WMS
- WFS
- CSW
- WMTS
- WMC
- KML
- ATOM
- GeoRSS

WMS

WMS Server url:

Output Format: image/png

Require authentication:

List

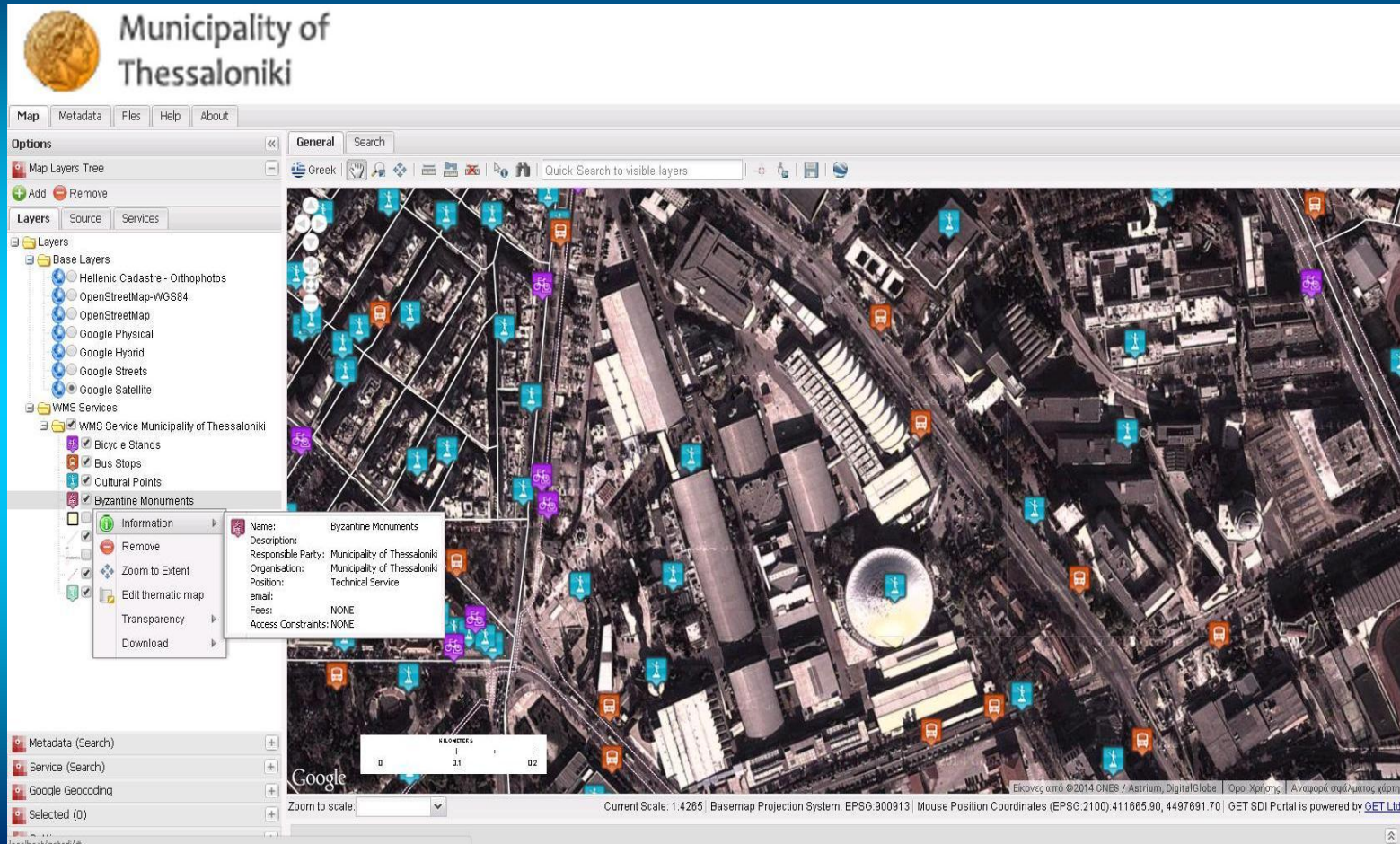
Name	Version	Format	Supported...
WMS Service Municipality of Thessaloniki	1.3.0	image/...	EPSG:210...

Data

Name	Title
THESSALONIKI:9h_eforia	Byzantine Monuments
THESSALONIKI:AXONTHES	Roads
THESSALONIKI:BICYCLE_STANDS	Bicycle Stands
THESSALONIKI:BUS_STOPS	Bus Stops
THESSALONIKI:DIADROMES_AFORIMATOFO...	Garbage Truck Route
THESSALONIKI:PODLATODROMOI	Bike Routes

Current Scale: 1:68247 / Basemap Projection System: EPSG:900913 / Mouse Position Coordinates (EPSG:2100):407653.02, 4498599.15 / GET SDI Portal is powered by [GET Ltd](#)

“Information” from WMS Service



The screenshot displays the web interface of the Municipality of Thessaloniki's WMS Service. The interface includes a header with the municipality's logo and name, a navigation menu (Map, Metadata, Files, Help, About), and a main map area. On the left, a 'Layers' panel shows a tree structure with 'Base Layers' (Hellenic Cadastre - Orthophotos, OpenStreetMap-WGS84, OpenStreetMap, Google Physical, Google Hybrid, Google Streets, Google Satellite) and 'WMS Services' (WMS Service Municipality of Thessaloniki). Under the WMS Service, several layers are listed: Bicycle Stands, Bus Stops, Cultural Points, and Byzantine Monuments. A metadata popup is visible for the 'Byzantine Monuments' layer, providing details such as Name, Description, Responsible Party, Organisation, Position, email, Fees, and Access Constraints. The map area shows an aerial view of Thessaloniki with various icons representing the layers. A scale bar and zoom controls are at the bottom left, and a status bar at the bottom right shows the current scale, projection system, and mouse position coordinates.

Municipality of Thessaloniki

Map Metadata Files Help About

Options General Search

Map Layers Tree

Add Remove

Layers Source Services

Layers

- Base Layers
 - Hellenic Cadastre - Orthophotos
 - OpenStreetMap-WGS84
 - OpenStreetMap
 - Google Physical
 - Google Hybrid
 - Google Streets
 - Google Satellite
- WMS Services
 - WMS Service Municipality of Thessaloniki
 - Bicycle Stands
 - Bus Stops
 - Cultural Points
 - Byzantine Monuments

Information Remove Zoom to Extent Edit thematic map Transparency Download

Name: Byzantine Monuments
Description:
Responsible Party: Municipality of Thessaloniki
Organisation: Municipality of Thessaloniki
Position: Technical Service
email:
Fees: NONE
Access Constraints: NONE

Metadata (Search) Service (Search) Google Geocoding Selected (0)

Zoom to scale:

Current Scale: 1:4265 | Basemap Projection System: EPSG:900913 | Mouse Position Coordinates (EPSG:2100):411665.90, 4497691.70 | GET SDI Portal is powered by [GET Ltd](#)

Snap shot from “Geospatial Info”

The screenshot displays the web application interface for the Municipality of Thessaloniki. The top navigation bar includes links for Map, Metadata, Files, Help, and About. The main content area is divided into several sections:

- Options:** Includes a Map Layers Tree, Add/Remove buttons, and a Search bar.
- Layers:** A list of layers including Base Layers (Hellenic Cadastre - Orthophotos, OpenStreetMap-WGS84, OpenStreetMap, Google Physical, Google Hybrid, Google Streets, Google Satellite) and VMS Services (WMS Service Municipality of Thessaloniki, Points of Interest, Cultural Points, Bicycle Stands, Archeological Monuments, Byzantine Monuments, Roads, Bus Stops, Garbage Tank, Bike Routes, THESSALONIKI Building Blocks).
- Map:** A satellite map view showing a city area with various markers and a scale bar.
- Geospatial Information:** A detailed view of a specific location, showing a table with the following data:

CODE	040203
Describe	KENTPO YTEIAS

The bottom status bar provides technical details: Current Scale: 1:1066 | Basemap Projection System: EPSG:900913 | Mouse Position Coordinates (EPSG:2100): 409640.06, 4498922.27 | GET SDI Portal is powered by GET Ltd.

“Search” form

Municipality of Thessaloniki

Map Metadata Files Help About

Options General Search

Map Layers Tree

Map Layers Tree

Layers

- Base Layers
 - Hellenic Cadastre - Orthophotos
 - OpenStreetMap-WGS84
 - OpenStreetMap
 - Google Physical
 - Google Hybrid
 - Google Streets
 - Google Satellite
- WMS Services
 - WMS Service Municipality of Thessaloniki
 - Points of Interest
 - Cultural Points
 - Bicycle Stands
 - Archeological Monuments
 - Byzantine Monuments
 - Roads
 - Bus Stops
 - Garbage Tank
 - Bike Routes
 - THESSALONIKI: Building Blocks

Search Form

Search History

Choose layer: Roads

Where

Criteria

Criteria: LENGTH condition: > value: 10

SQL statement

Show results in new tab Search

Zoom to scale: Current Scale: 1:1066 Basemap Projection System: EPSG:900913 Mouse Position Coordinates (EPSG:2100): 409640.13, 4498816.52 GET SDI Portal is powered by GET LID

Search title (1)

Number of records found: 4871

	LENGTH	NAME	MUN_NAME	MUN_CODE	NAME_EN	Shape_len
	66.48572	26ης ΟΚΤΩΒΡΙΟΥ	ΘΕΣΣΑΛΟΝΙΚΗ	54010101	26IS OKTOVRIOU	66.4857583367
	35.20853	26ης ΟΚΤΩΒΡΙΟΥ	ΘΕΣΣΑΛΟΝΙΚΗ	54010101	26IS OKTOVRIOU	35.2085305714
	134.05405	26ης ΟΚΤΩΒΡΙΟΥ	ΘΕΣΣΑΛΟΝΙΚΗ	54010101	26IS OKTOVRIOU	134.05405335
	111.70189	26ης ΟΚΤΩΒΡΙΟΥ	ΘΕΣΣΑΛΟΝΙΚΗ	54010101	26IS OKTOVRIOU	111.70189121

“Metadata” of spots for bicycles parking

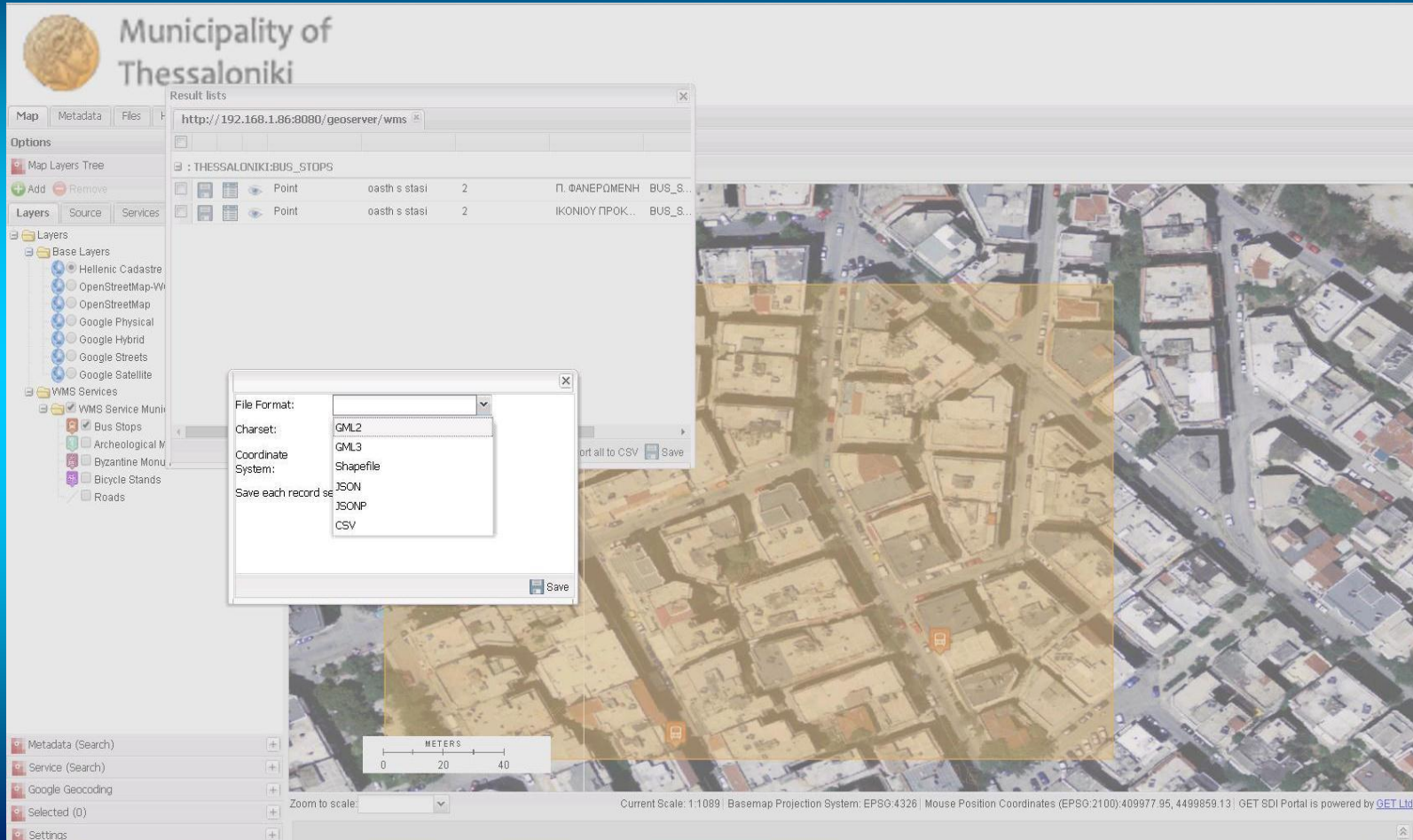
The screenshot displays the INSPIRE web application interface for the Municipality of Thessaloniki. The main window is titled "Municipality of Thessaloniki" and features a navigation bar with "Map", "Metadata", "Files", "Help", and "About". The "Metadata" tab is active, showing a search interface with fields for Title, Abstract, Identifier, Keyword, and Category. A map of Thessaloniki is visible in the background, with a red rectangle highlighting a specific area. To the right, a "Metadata Information" window is open, displaying the following details:

- dataset** Θέσεις αποκλειστικής στάθμευσης ποδηλάτων Δήμου Θεσσαλονίκης.
- General**
 - File Identifier**
 - ma11ck03-e25b-11e3-8b68-0800200c9a66
 - Language**
 - gre
 - Character Set Code**
 - MD_CharacterSetCode_utf8
 - Scope Code**
 - dataset
- Metadata about metadata**

At the bottom, a "Results" table shows the search results:

Service...	Title
dataset	Ποδηλατόδρομοι Δήμου Θεσσαλονίκης
dataset	Θέσεις αποκλειστικής στάθμευσης ποδηλάτων Δήμου Θεσσαλονίκης.
dataset	Σημεία ενδιαφέροντος του Δήμου Θεσσαλονίκης

“Search and Save” results in order to serve innovative Administrative Operations.....



Municipality of Thessaloniki

Result lists

http://192.168.1.86:8080/geoserver/wms

THESSALONIKI:BUS_STOPS				
Point	oasth s stasi	2	Π. ΦΑΝΕΡΟΜΕΝΗ	BUS_S...
Point	oasth s stasi	2	ΙΚΟΝΙΟΥ ΠΡΟΚ...	BUS_S...

File Format: [dropdown]
Charset: GML2, GML3
Coordinate System: Shapefile
Save each record se: JSON, JSONP, CSV

Save

Metadata (Search) +
Service (Search) +
Google Geocoding +
Selected (0) +
Settings +

Current Scale: 1:1089 | Basemap Projection System: EPSG:4326 | Mouse Position Coordinates (EPSG:2100):409977.95, 4499859.13 | GET SDI Portal is powered by GET.Ltd

Some more effort need to be spent:

- Data conformance (scheduled for Q1 2015)
- IT infrastructure reformation and upgrade to serve increasing needs
 - Server consolidation,
 - Transposition to virtual environments for resource saving
 - Cloud services under investigation

but the crucial part has been decided: the willing of the Authority to fulfil that goal.

At the end of the whole project, the geoportal will be appended on the existing Web Gis portal <http://gis.thessaloniki.gr>, providing a single end point for all geospatial resources

Expectations :

- Less transactions with physical presence in Municipality
- Decrease time of acquiring geospatial data
- Increase the possibilities to cooperate with the adjacent Municipalities

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Thank you for your attention