Toward Egyptian Spatial Data infrastructure using open –Source Software

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National Authority for Remote Sensing and Space Science

Agenda

- Introduction
- System Objectives and Benefits
- Methodology and data
- SDI Design and Implementation
- Conclusion and Future Work

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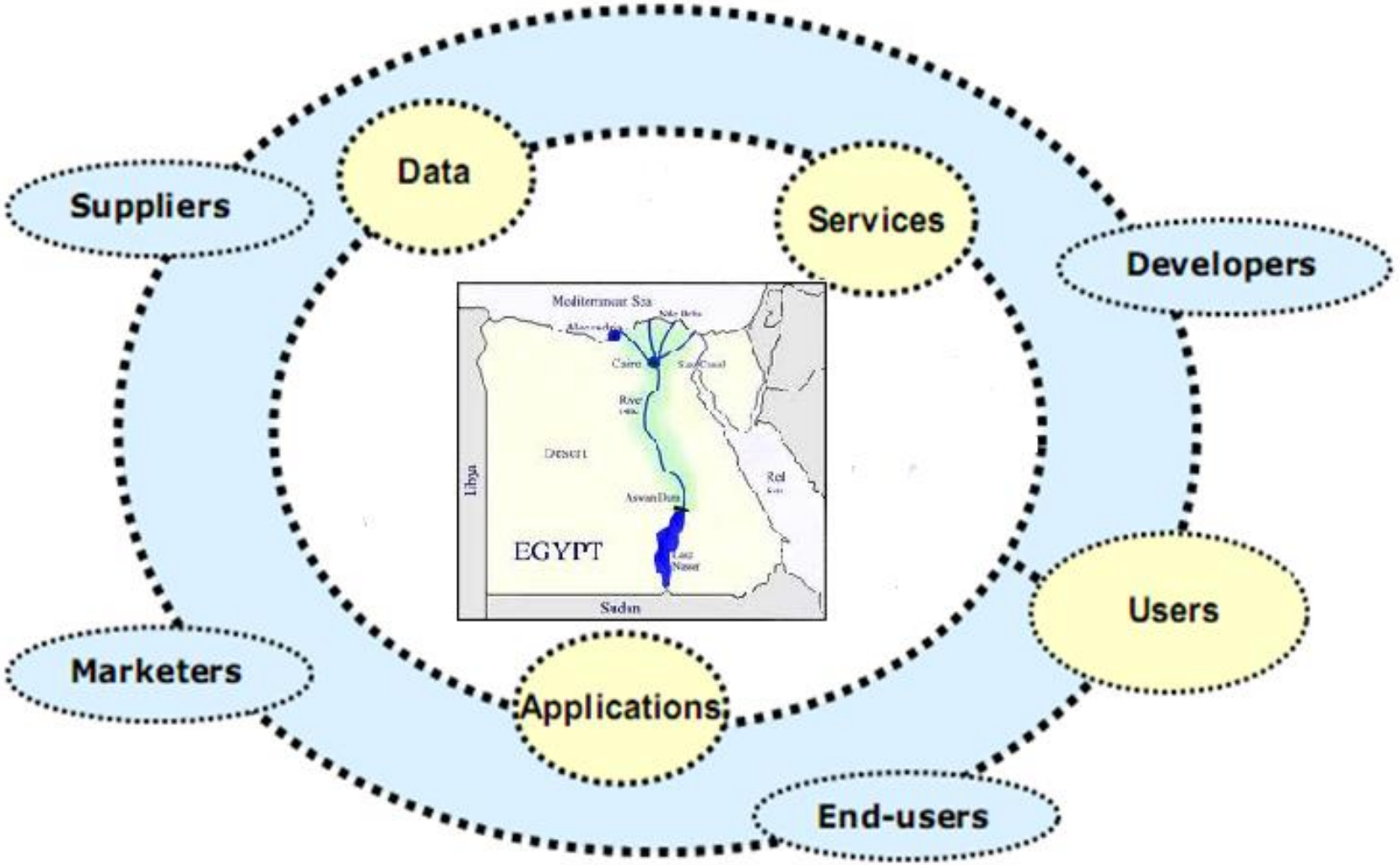
What is SDI

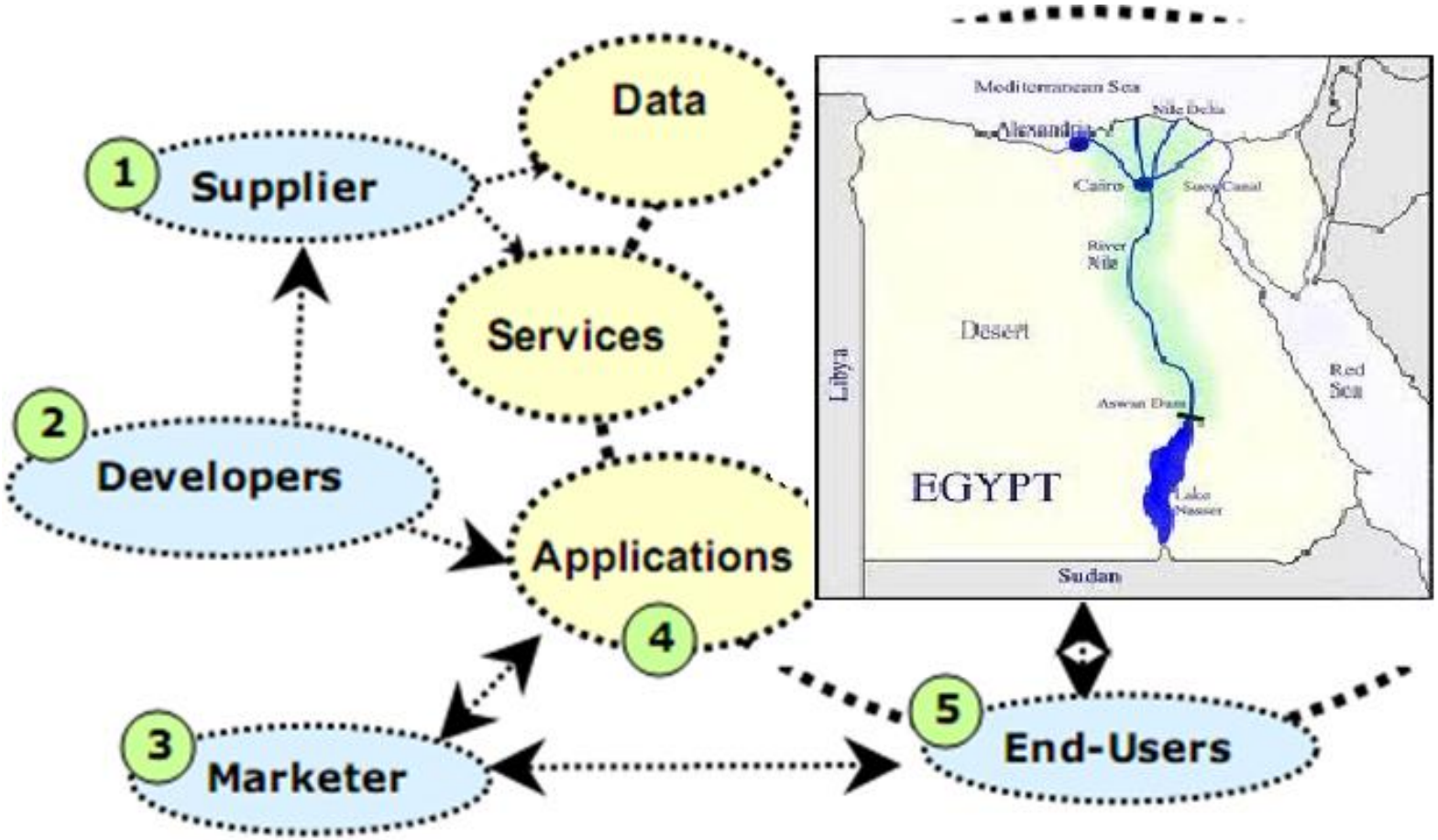
- A **spatial data infrastructure** (**SDI**) is a framework of spatial data, metadata, users and tools that are interactively connected in order to use spatial data in an efficient and flexible way.

Another definition is *the technology, policies, standards, human resources, and related activities necessary to acquire, process, distribute, use, maintain, and preserve spatial data.*

SDI Conceptual Architecture



Relationship between categories of users



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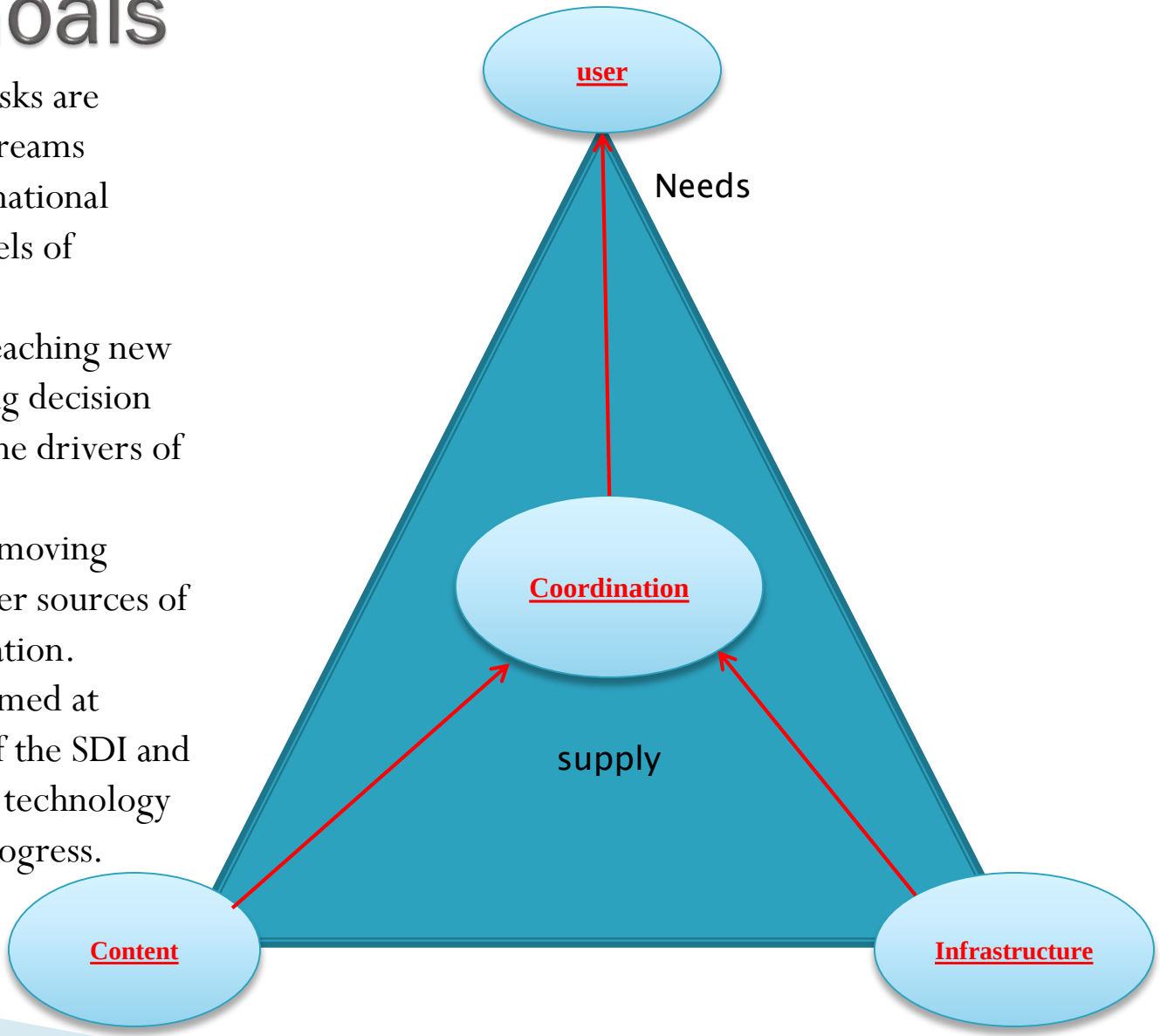
Vision of the SDI

- To enable access to the authoritative and comprehensive sources of geospatial information to support decision-making.

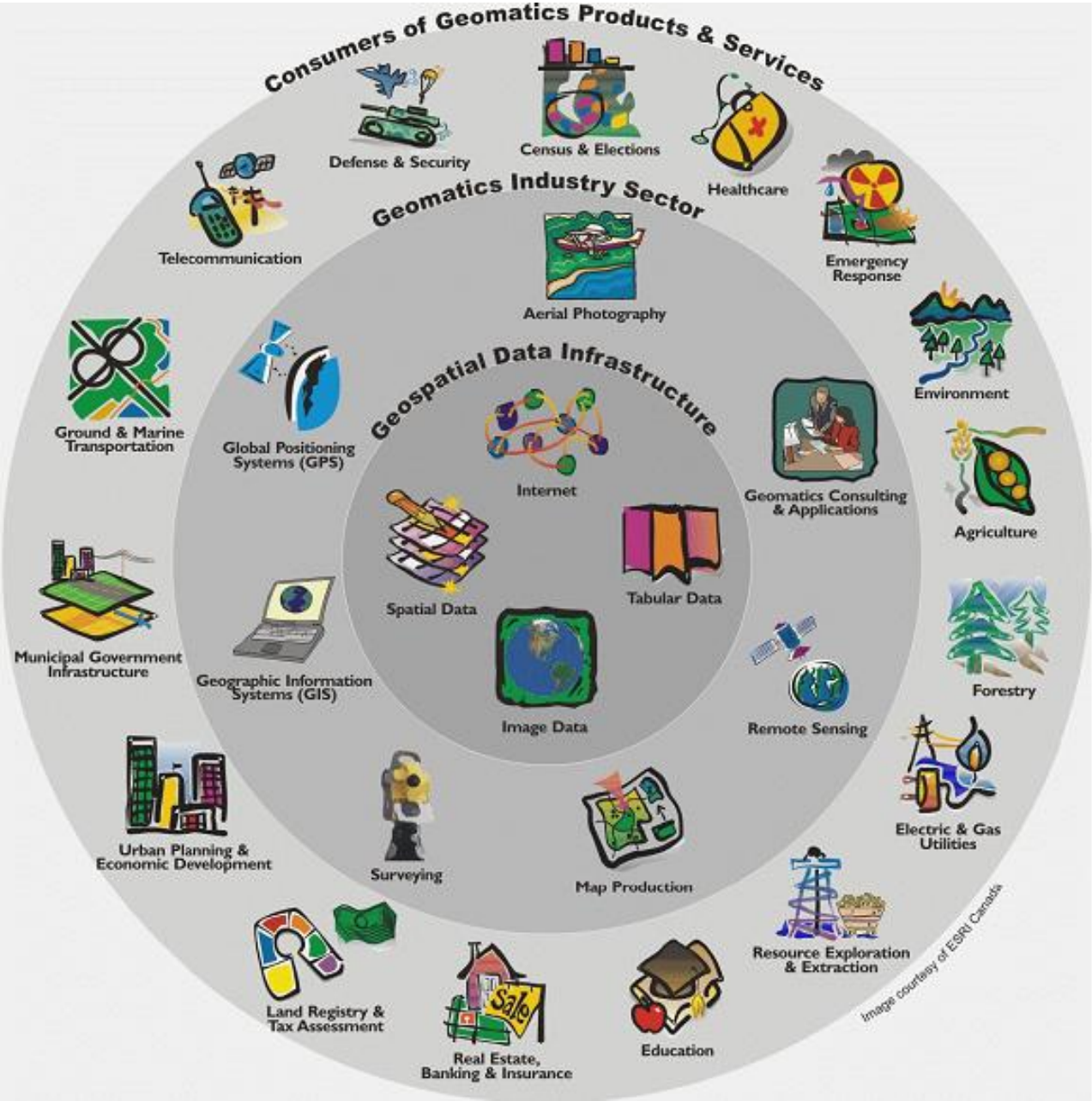
- Reducing monitoring costs
- Ability to access by everyone and everywhere over the internet,
- Reducing time and minimizing effort to reach data,
- High speed, security and high rate of error handling with new internet technologies,
- Centralized database that provides a single source of common information providing standardization, and faster retrieval and selective modification of information
- Ability to produce reports based on user specified parameters.

The Four Goals

- Coordination goals and tasks are intended to tie the other streams together with leadership, national partnerships and new models of governance.
- User goals are aimed at reaching new and existing users, including decision makers and making them the drivers of the SDI.
- Content goals emphasize moving forward with new and richer sources of geospatial data and information.
- Infrastructure goals are aimed at building on the successes of the SDI and adapting to new standards, technology and tools to continue its progress.

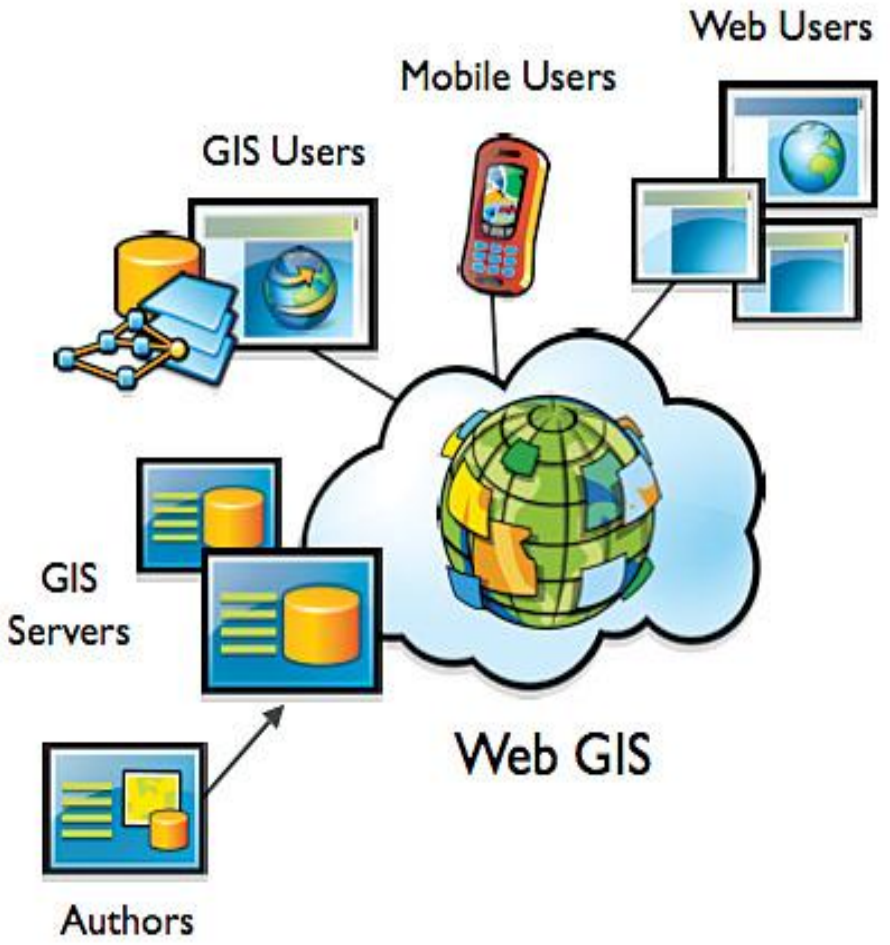


SDI and its impact on The Economy



Why Web Based SDI?

- No Desktop Installations
- Reduces License Costs
- Installation behind the scenes
- Easy access to data by any kind of user
- Data updating from anywhere



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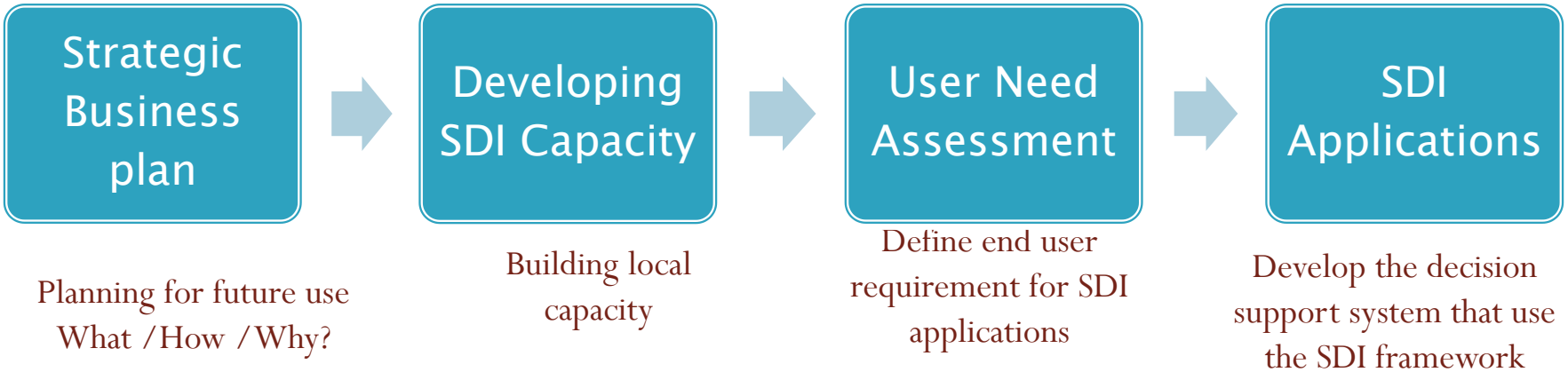
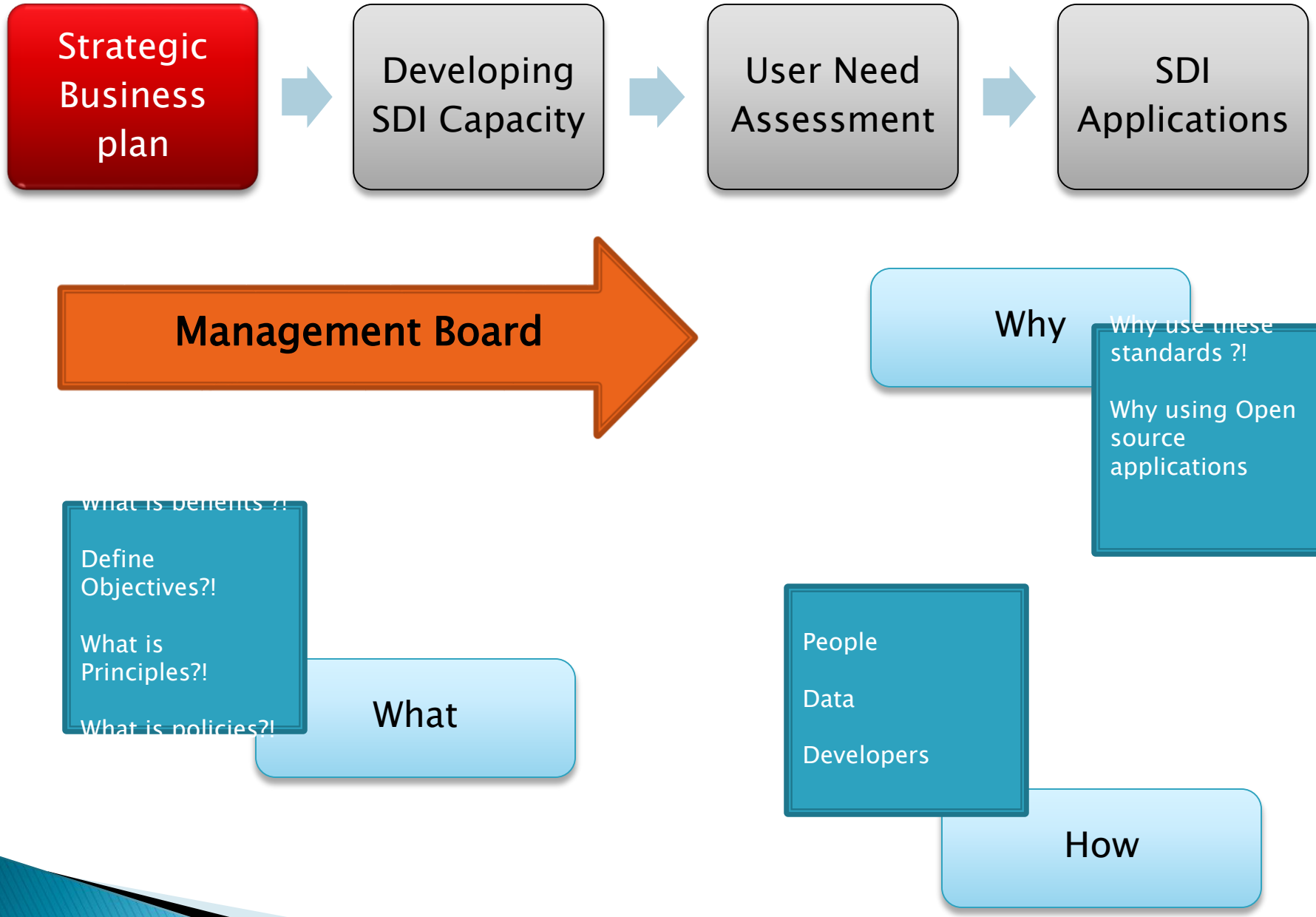
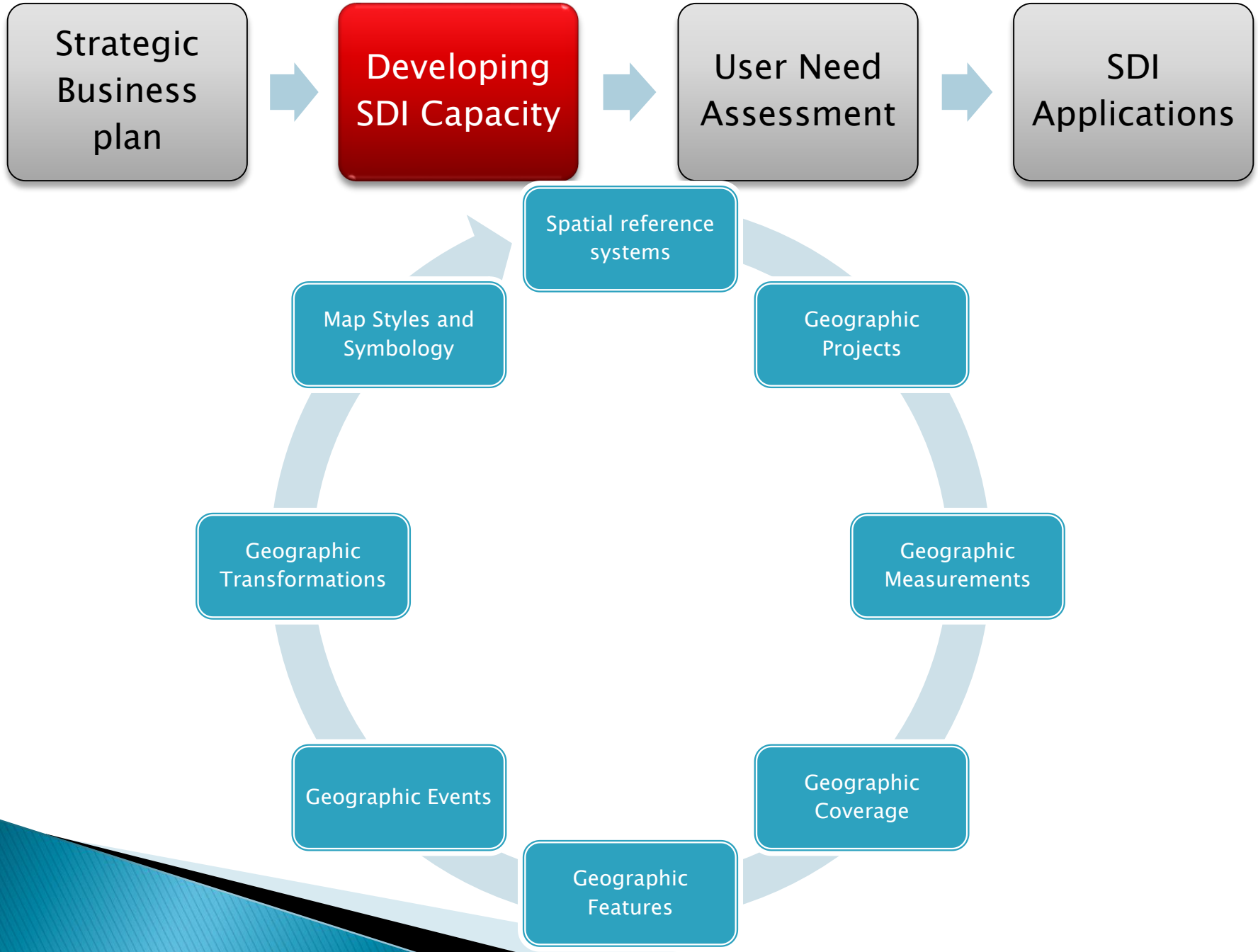
SDI Building Steps




Strategic Business plan
Developing SDI Capacity
User Need Assessment
SDI Applications
Management Board
Why
Why use these standards ?!
Why using Open source applications
What is benefits ?!
Define Objectives?!
What is Principles?!
What is policies?!
What
People
Data
Developers
How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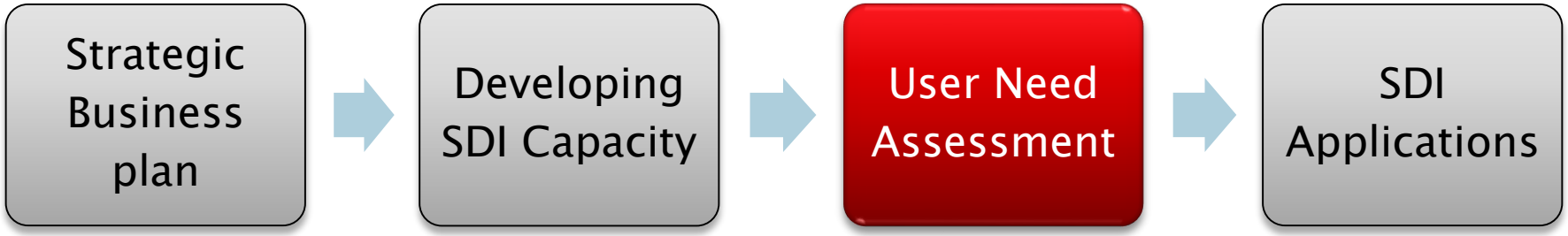
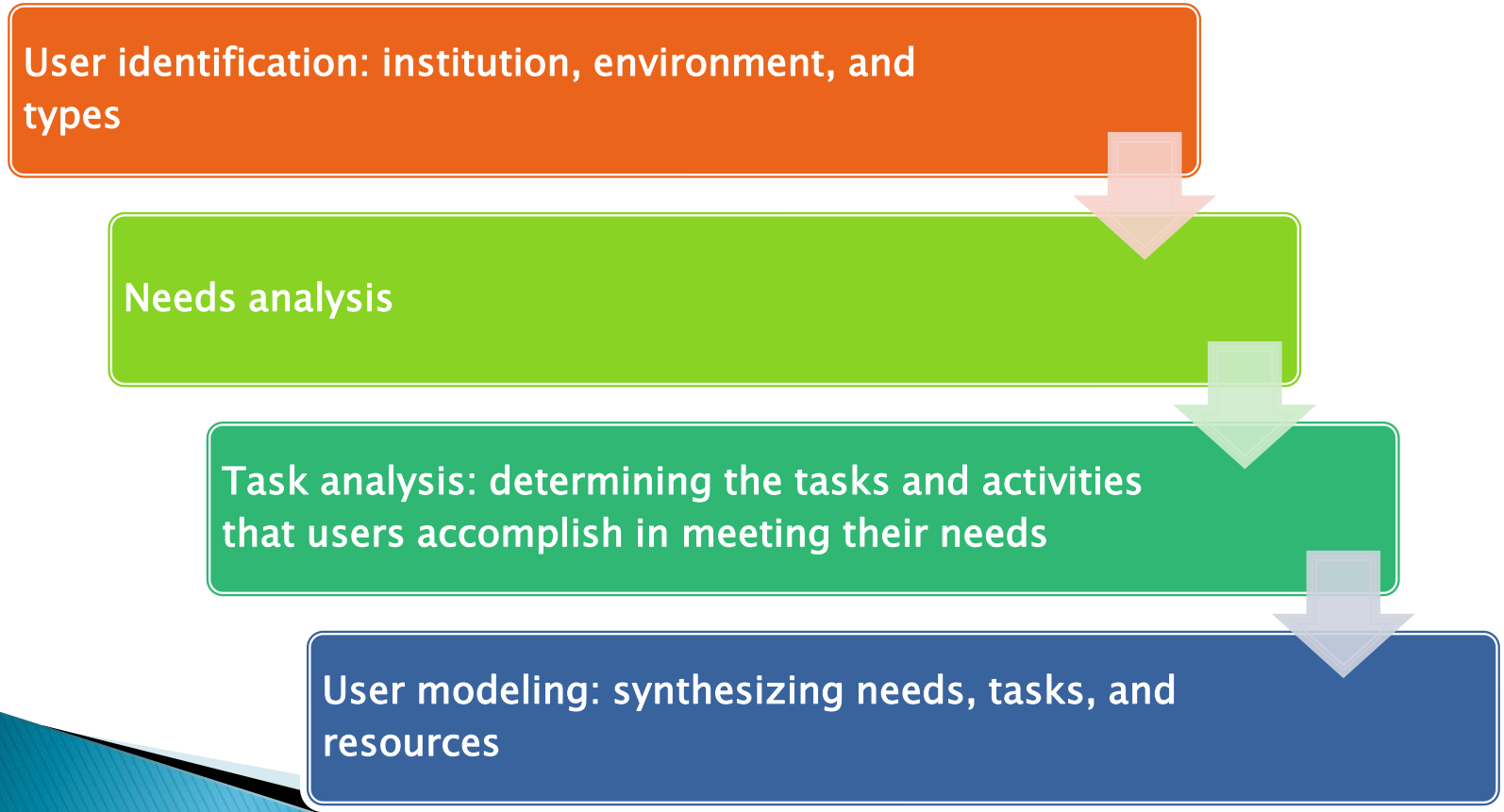
Spatial reference systems
Geographic Projects
Geographic Measurements
Geographic Coverage
Geographic Features
Geographic Events
Geographic Transformations
Map Styles and Symbology



To learn about users, their tasks and context in order to use this information in design.



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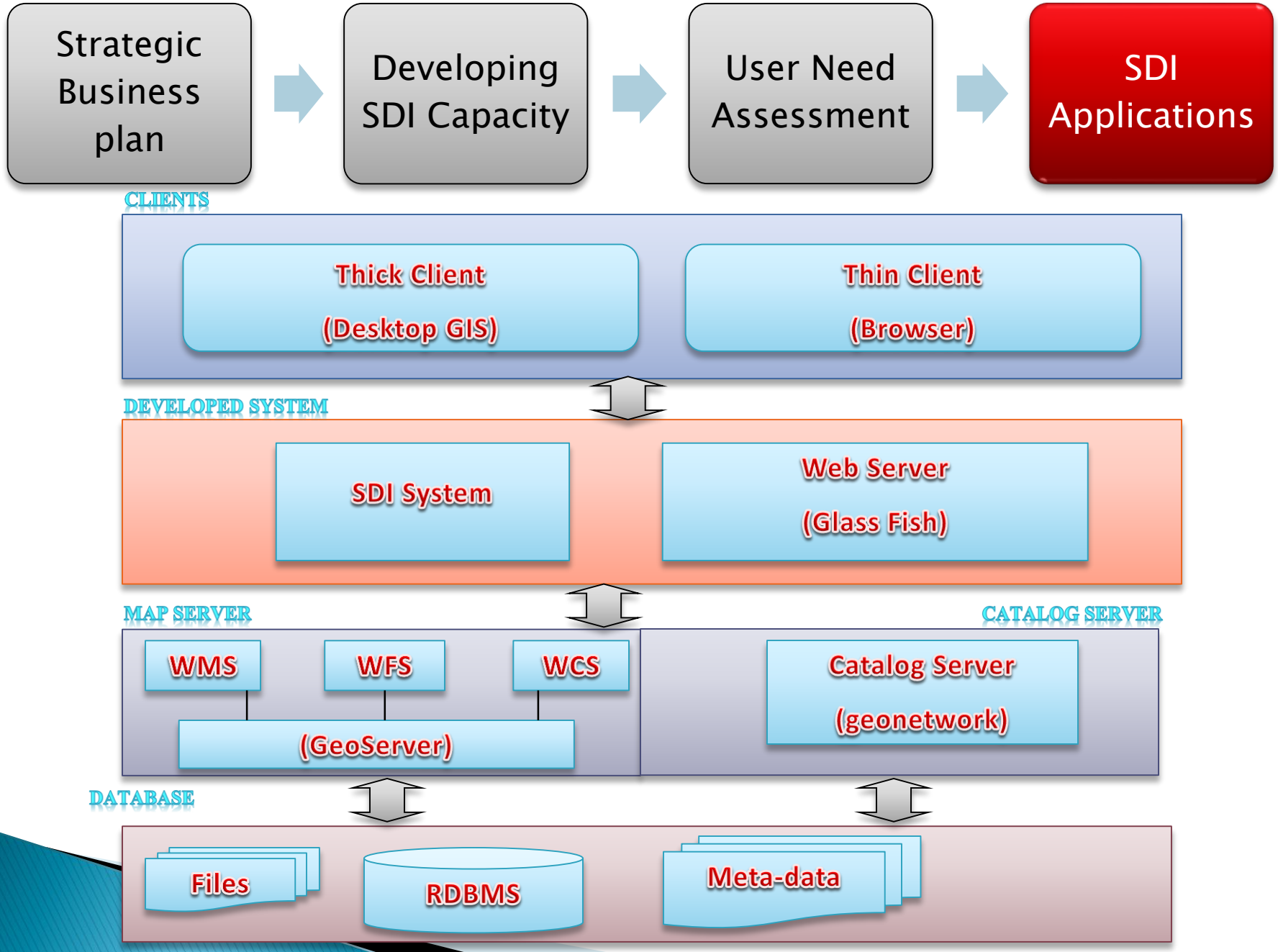
NARSS Geo-Portal

- Establishing **NARSS Geo-Portal** infrastructure architecture
- Implementing the Metadata Strategy and apply ISO TC211 geographic information – Meta data standardization
- Provide possibilities for authorized users to upload download and edit maps
- Step forward to be data providers
- Share knowledge with other Egyptian authorities.


Strategic Business plan
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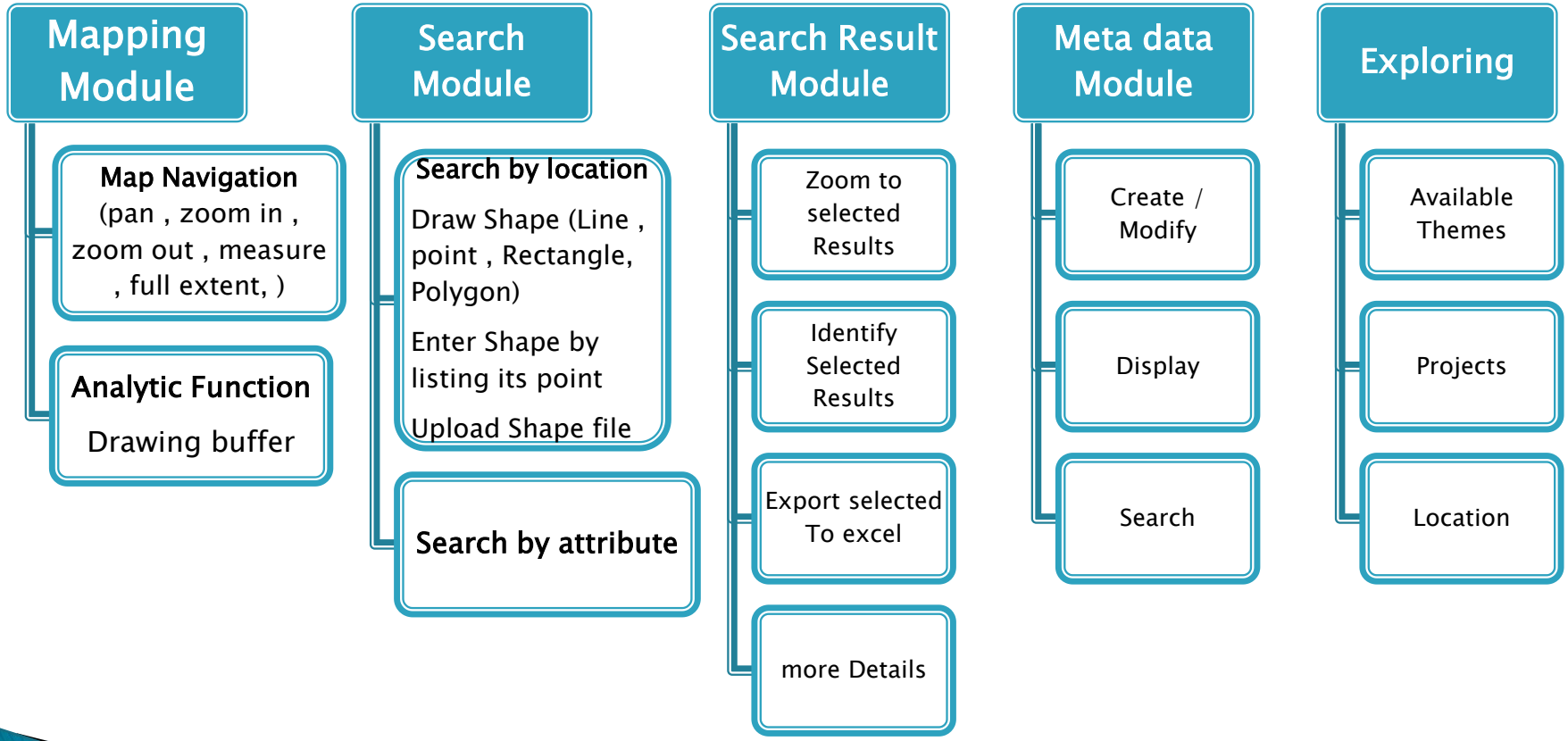
SDI Applications
CLIENTS
Thick Client (Desktop GIS)
Thin Client (Browser)
DEVELOPED SYSTEM
SDI System
Web Server (Glass Fish)
MAP SERVER
CATALOG SERVER
WMS
WFS
WCS
(GeoServer)
Catalog Server (geonetwork)
DATABASE
Files
RDBMS
Meta-data

NARSS Metadata Catalog Module



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Sign In

NARSS GeoPortal

Home | Catalog | About | Help

Metadata Search

WHAT

Sinai

CATEGORY

- Any -

SORTBY

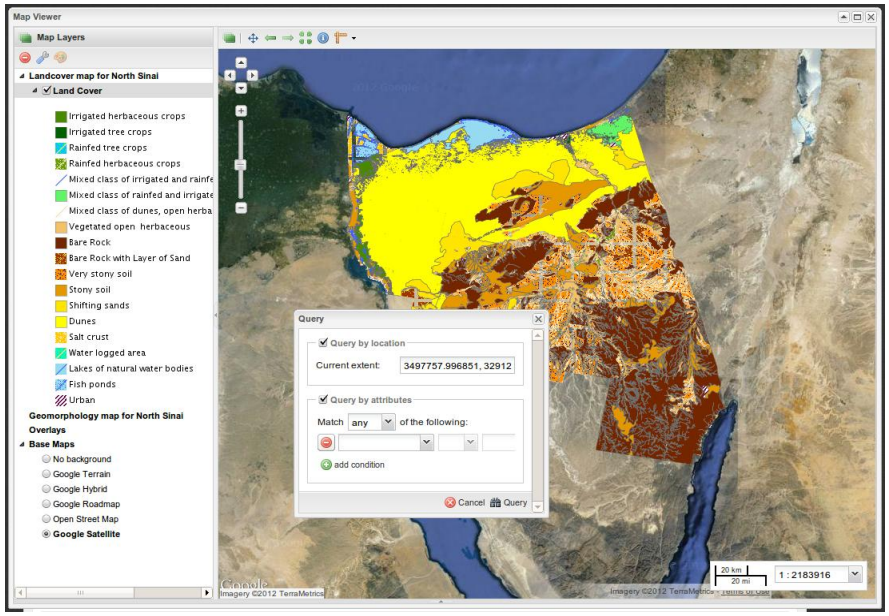
Title

RESULT PER PAGE

5

search

Map Viewer | Search Results


Map Viewer
Map Layers
Landcover map for North Sinai
Land Cover
Irrigated herbaceous crops
Irrigated tree crops
Rainfed tree crops
Rainfed herbaceous crops
Mixed class of irrigated and rainfe
Mixed class of rainfed and irrigate
Mixed class of dunes, open herba
Vegetated open herbaceous
Bare Rock
Bare Rock with Layer of Sand
Very stony soil
Stony soil
Shifting sands
Dunes
Salt crust
Water logged area
Lakes of natural water bodies
Fish ponds
Urban
Geomorphology map for North Sinai
Overlays
Base Maps
No background
Google Terrain
Google Hybrid
Google Roadmap
Open Street Map
Google Satellite
Query
Query by location
Current extent:
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Query by attributes
Match any of the following:
add condition
Cancel
Query
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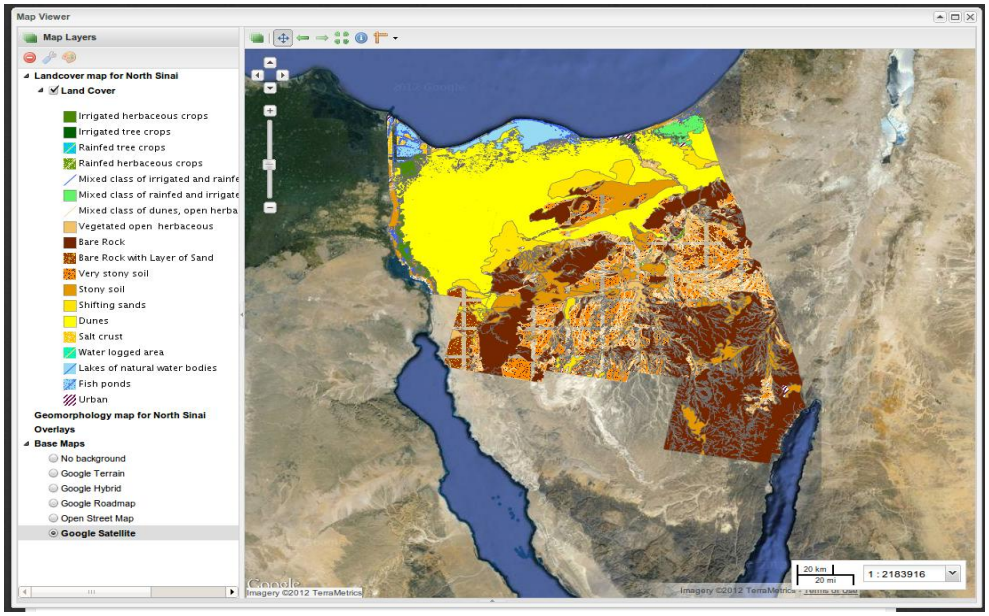
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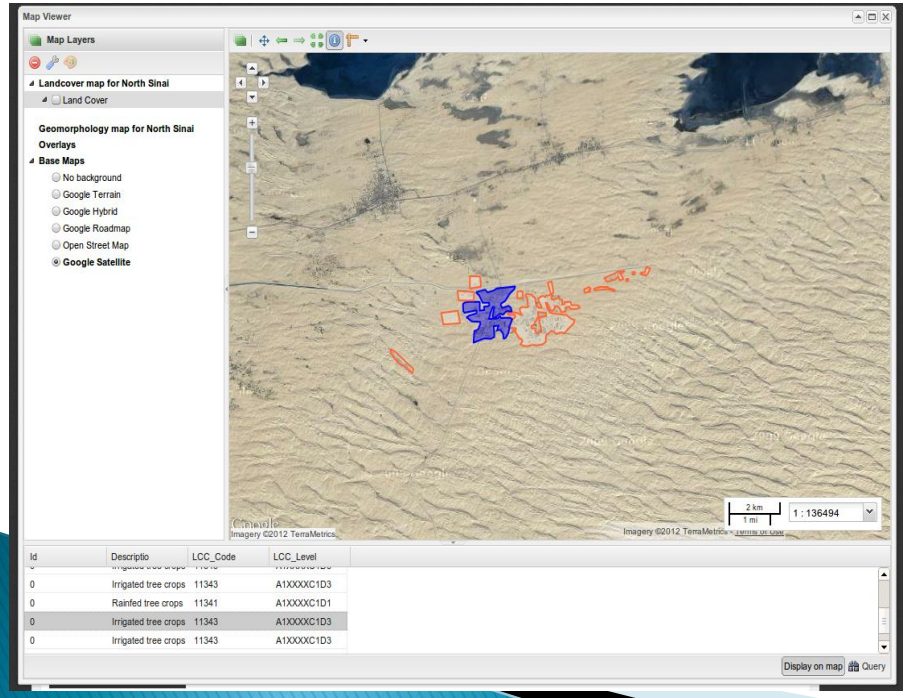
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Rainfed tree crops
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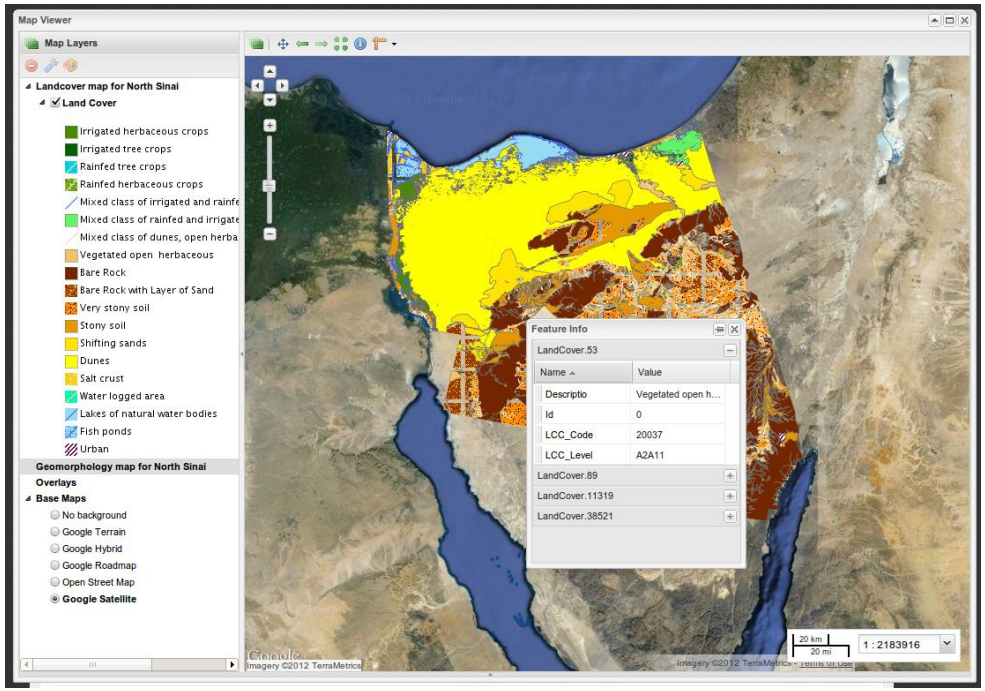
Display on map
Query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LandCover.53
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LandCover.11319
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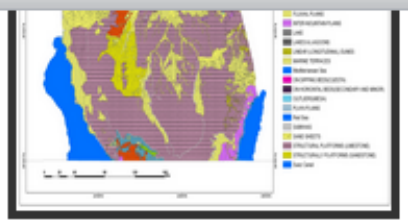
Pop up with the metadata

Metadata Info



Identification Info

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Edition :1.0
Status :onGoing
Purpose :Structural geology is a major constituent and a complementary layer to the geological map. This layer gives information on the attitude of rocks and deformation affecting them
Presentation form :mapDigital

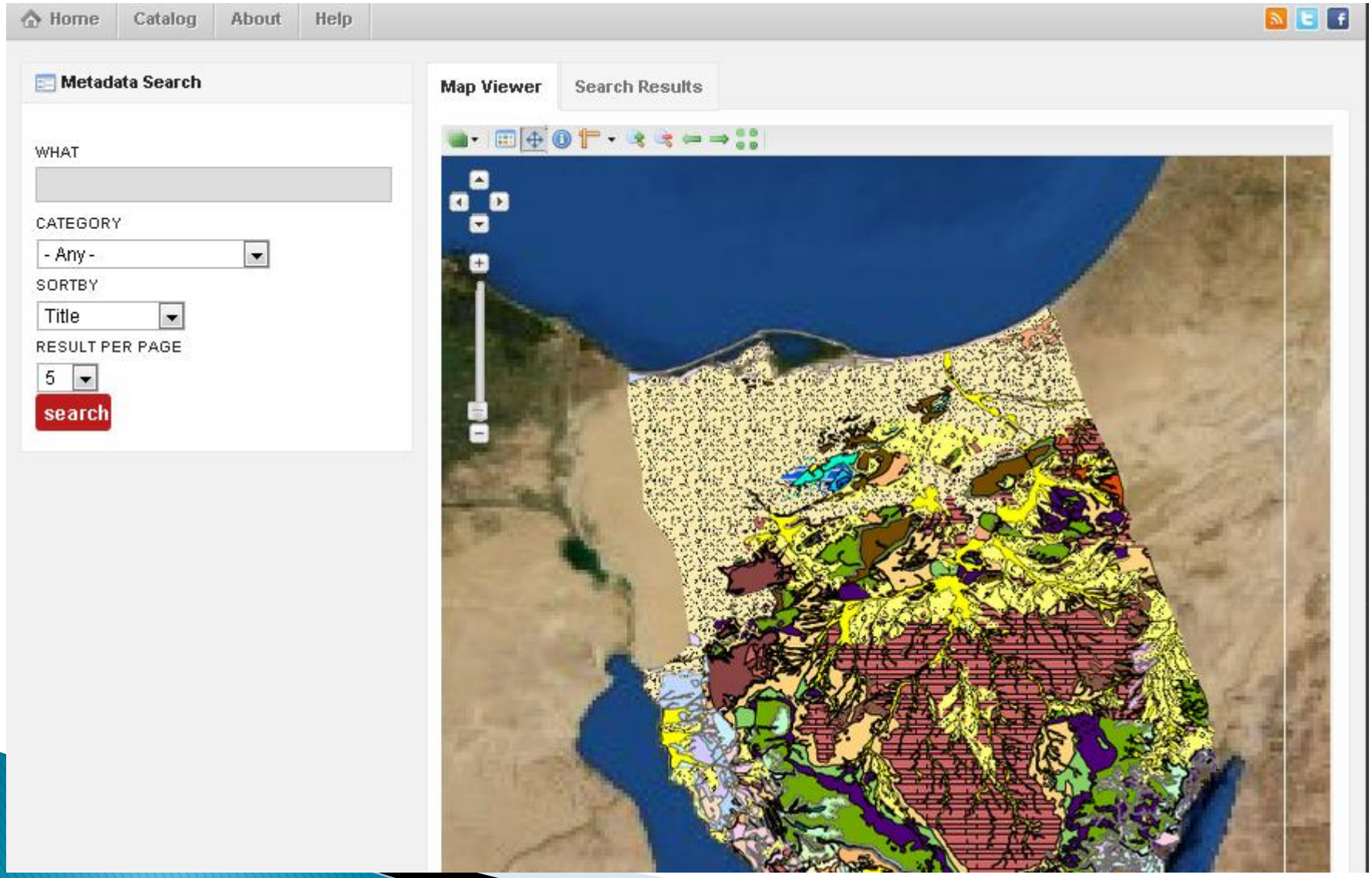
Abstract :

Structural geology is a major constituent and a complementary layer to the geological map. This layer gives information on the attitude of rocks and deformation affecting them

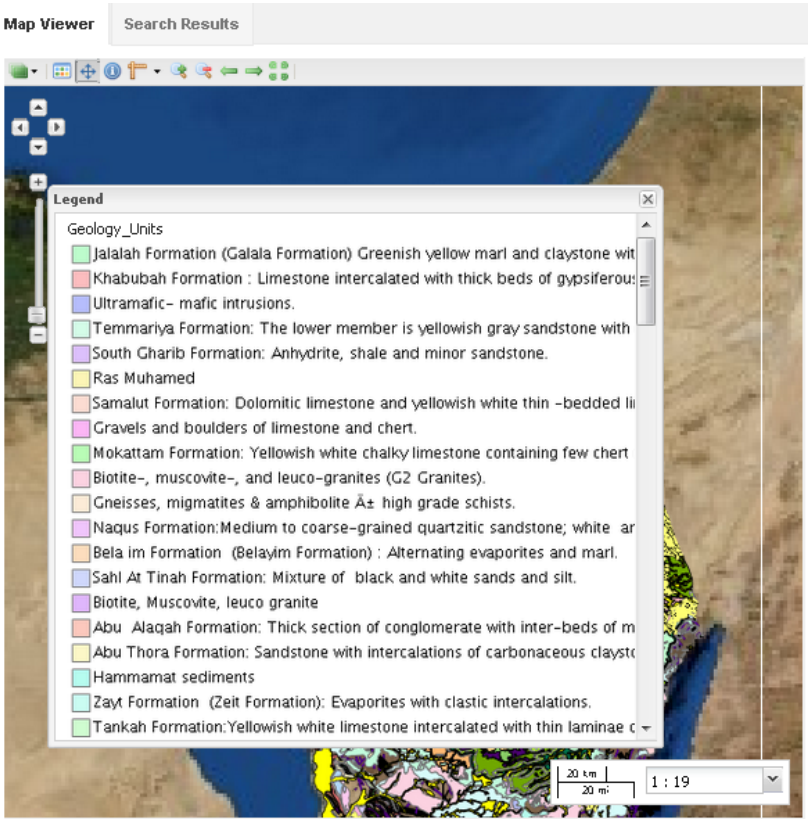
Point of contact

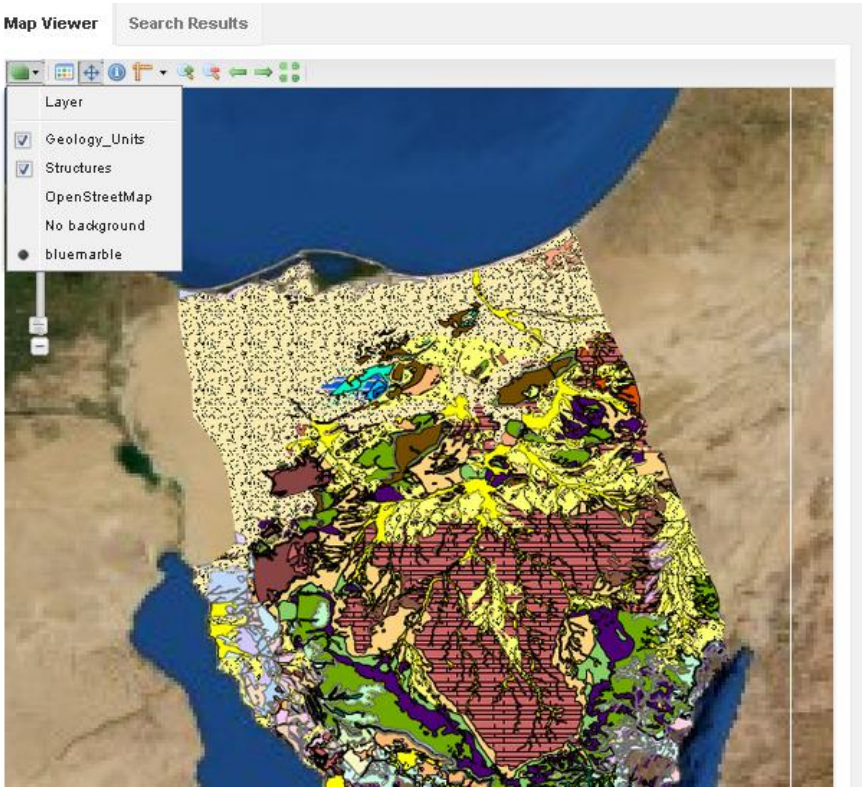
Individual name : Geomorphology
Organisation Name :
Position name :
Delivery point :
City :

Display the results on the map



Legend and TOC





Future Work

- The Future step of this project is building the decision support system (DSS) which can be defined as a computer-based information system that supports business or organizational decision-making activities. DSSs serve the management, operations, and planning levels of an organization and help to make decisions, which may be rapidly changing and not easily specified in advance