Third Arab Land Conference
Troisième Conférence Arabe sur le Foncier
المؤتمرالعربي الثالث للأراضي
18-20 FEBRUARY 2025 • RABAT, MOROCCO

Egyptian National Spatial Data Infrastructure (ENSDI) for Smart Decision-Making and Sustainable Development

AI-Powered Geospatial Solutions: Integrating NSDI for Effective Land and Asset Management

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المملكة المغربية
ROYAUME DU MAROC
وزارة إعداد التراب الوطني والتعمير والإسكان وسياسة المدينة
MINISTERE DE L'AMENAGEMENT DU TERRITOIRE NATIONAL DE L'URBANISME, DE L'HABITAT ET DE LA POLITIQUE DE LA VILLE

برنامج الموئل

الاراضي العربية مبادرة
Arab Land Initiative

جمهورية مصر العربية
ARAB REPUBLIC OF EGYPT
الهيئة المصرية العامة للمساحة

وزارة التخطيط والتنمية الاقتصادية والتعاون الدولي
Ministry of Planning, Economic Development & International Cooperation

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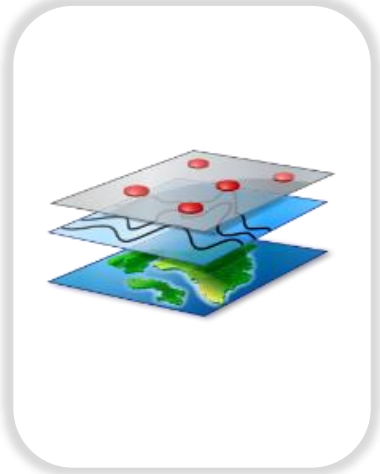
OMEO

What is the NSDI?

"...the technology, policies, standards, and human resources necessary to acquire, process, store, and distribute the utilization of geospatial data."

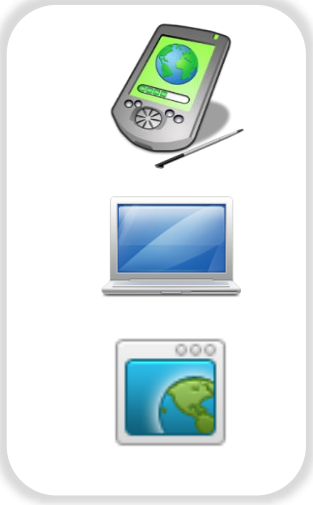
FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Capture / Acquire



Process

Share / Distribute



Deliver / Utilize

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What is the NSDI?

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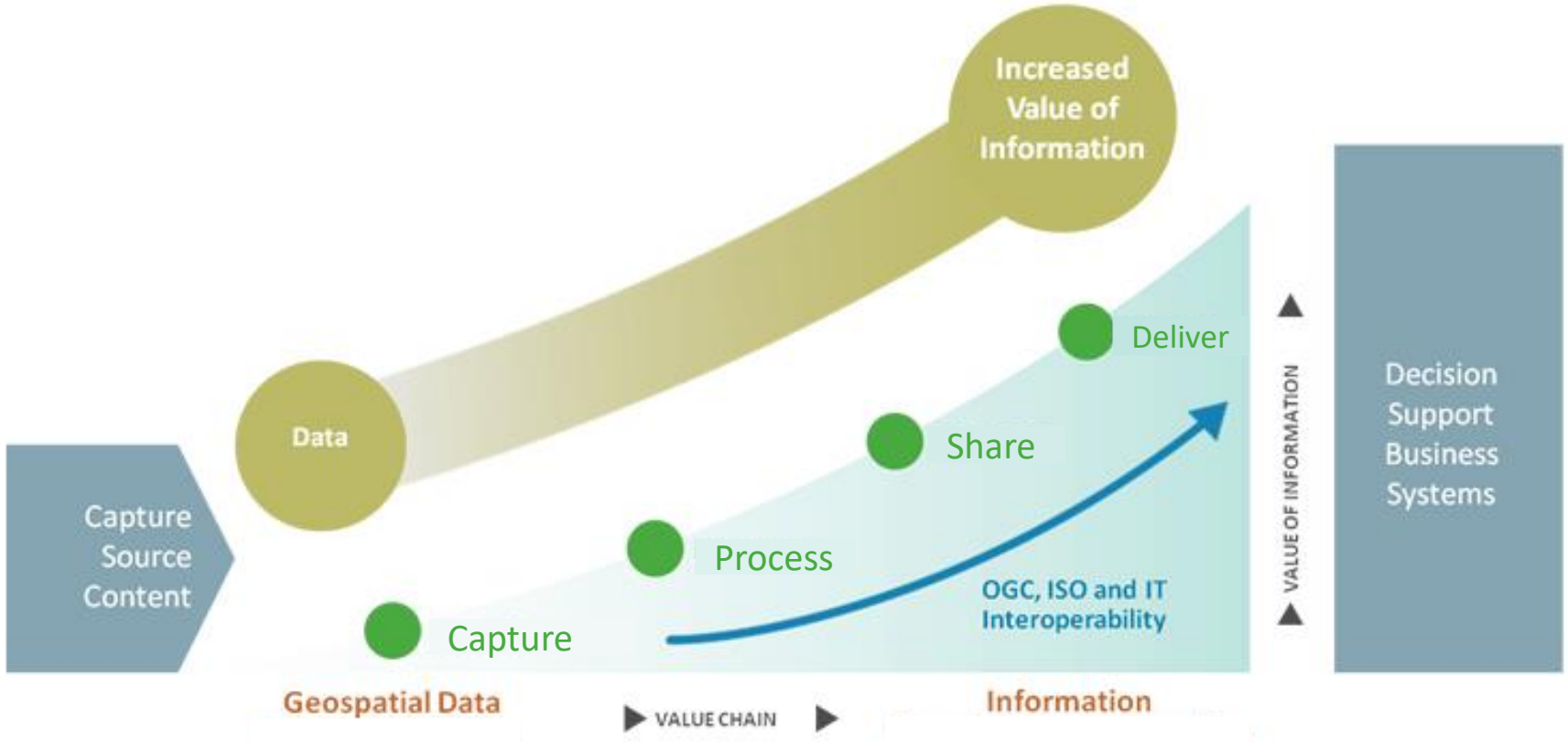

Geospatial Information Value Chain

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NSDI Objectives

- Sharing and exchanging Information and geospatial data for the purpose of making it available to government entities, in order to maximize benefits in the following areas:

Preventing application duplication.

Rationalizing government spending on the creation and digitization of maps.

Supporting more efficient government operations and services.

Standardizing the specifications used for creating and publishing digital maps at the national level.

NSDI Objectives

- Sharing and exchanging Information and geospatial data for the purpose of making it available to government entities, in order to maximize benefits in the following areas:

Providing updated geographic data to various entities within the state.

Providing updated base maps and satellite images.

Facilitating the exchange of spatial information between government entities and other relevant organizations.

Supporting the Egyptian planning system in carrying out its tasks related to government policy planning by providing it with the necessary information and data that are georeferenced, verified, and corrected.

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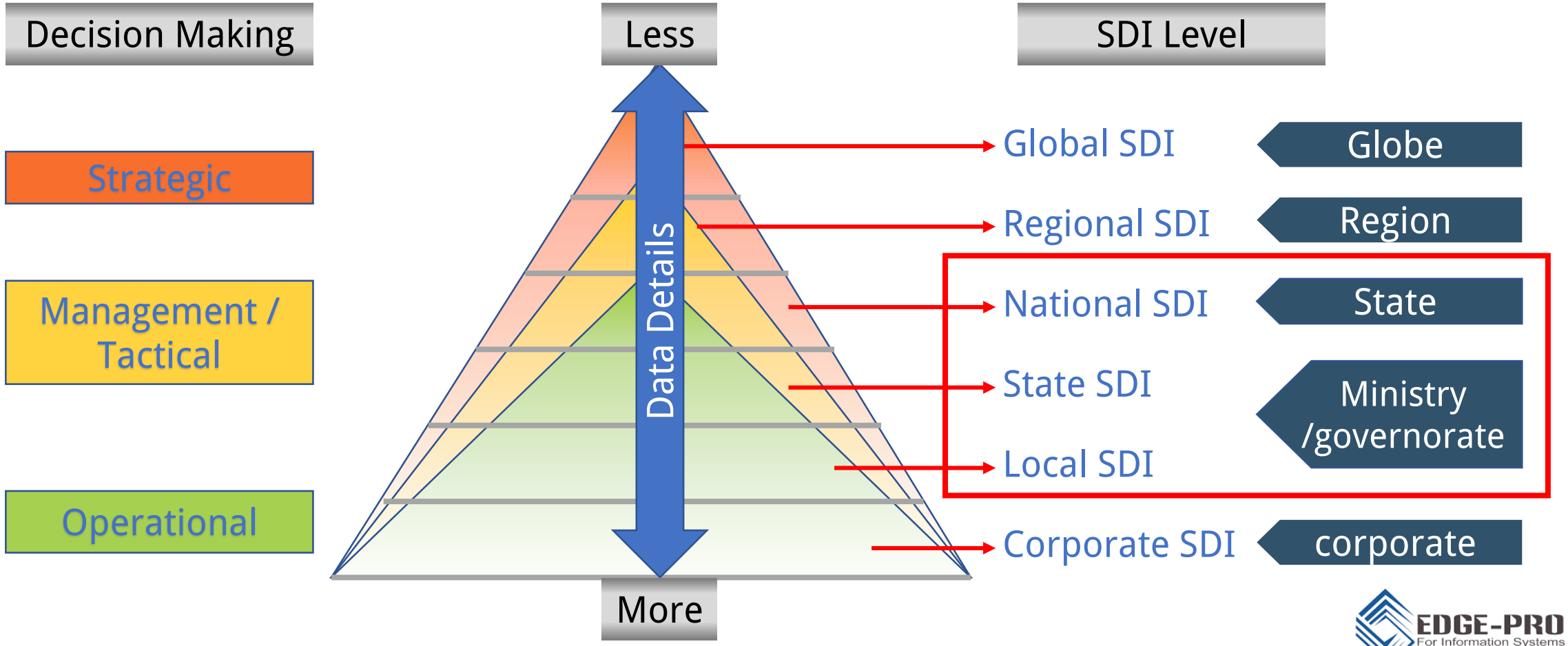
NSDI Levels

- SDI need to support different types of decision-making To support the objectives of & between different political and administrative levels in the SDI hierarchy



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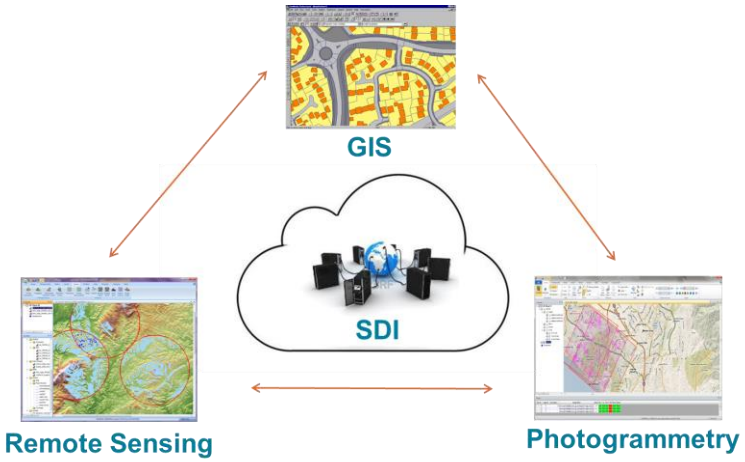
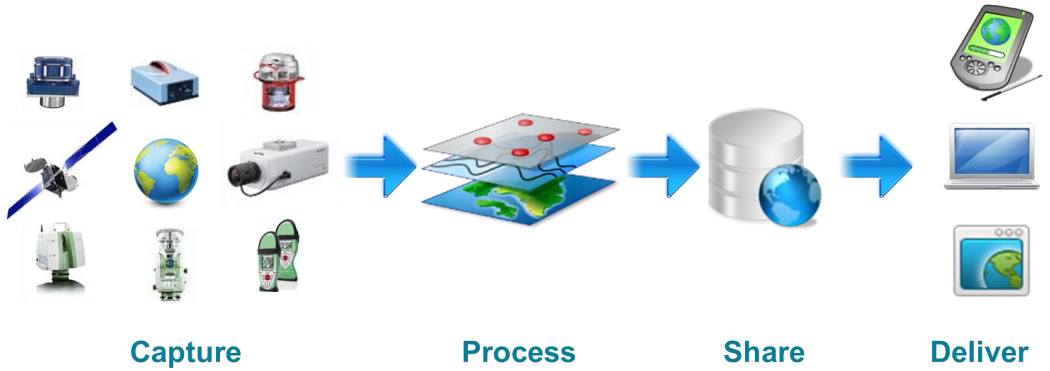
Challenges



Covers all aspects of geospatial arena



Covers all cycle steps

Implement Analytic, Workflow, and Dashboard in one platform by organizations users

Manage your own data

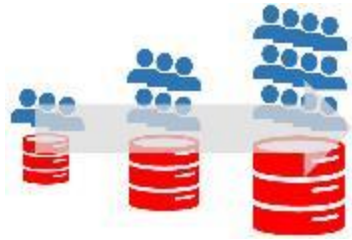
BIG DATA

Challenges

VMware Support

Fast Application building

No need for programming background



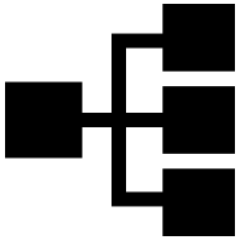
Scalable Solution

<u>Unlimited license</u>

- Users
- Applications
- Installation

<u>OGS & ISO Standards</u>

Simple to use



Work in parallel and concurrent

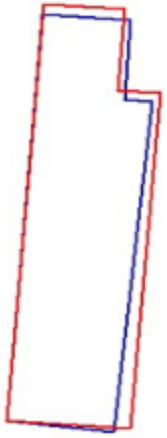
Every organization is responsible for building its own application

Challenges

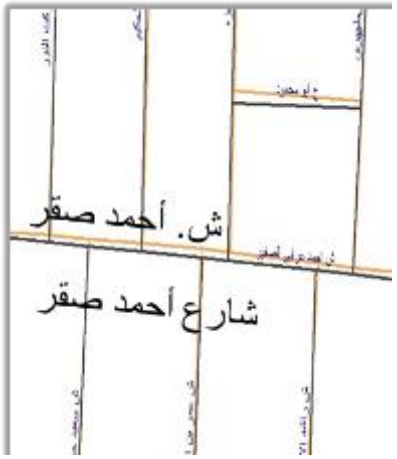
- Data Migration & Integration – Conflation

Coordinates mismatching

mismatching shape and area.



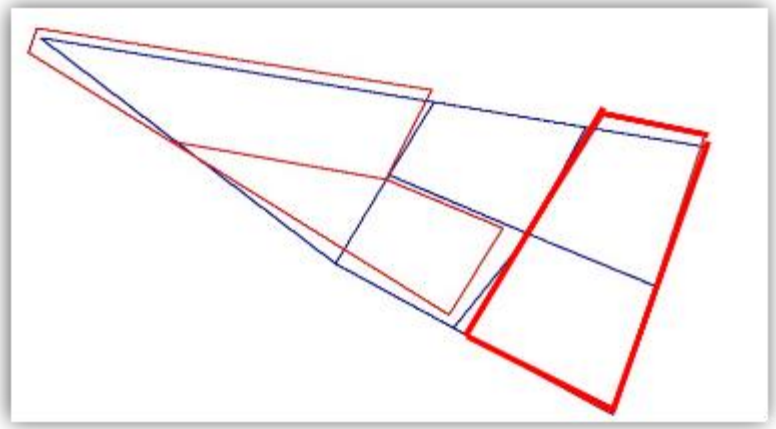
Schema & Attributes value mismatching



Source Attribute	Destination Attributes
Ar_Name	Arabic_Name
EName	ENG_Name
lanes	Lane_No

Nonlinear shift

Red color is for building blocks while blue is for individual buildings



NSDI Organizations

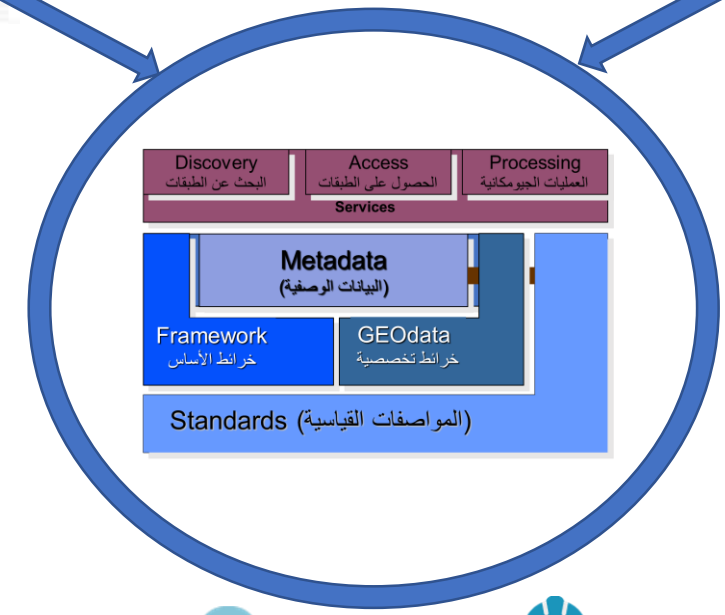
1- Data provider

Has GIS Tools
Share his Geospatial Data
View SDI data
Update SDI data
Create/User Applications
- Workflow
- Geoprocessing
- Dashboard

2- Data Viewer

Doesn’t has GIS Tools

View SDI data
Create/Use Applications:
- Workflow
- Geoprocessing
- Dashboard



Simple ← Complex

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Geospatial Data Types

Framework
خرائط الأساس

NSDI – Base maps

+

Engaged Entity – Base maps

Conflation

Publishing

NSDI + Engaged Entity – Base maps

GeoData
خرائط تخصصية

NSDI - None

+

Engaged Entity – Soil Map

Referencing

Publishing
/ Crawling

Engaged Entity – Soil Map

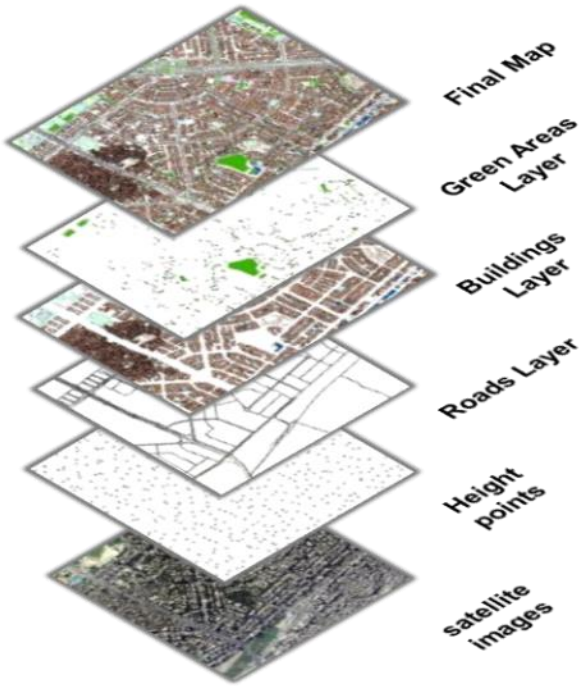
NSDI Elements

Infrastructure as a Service (Iaas)

IaaS

NSDI Elements

Data as a Service (DaaS)



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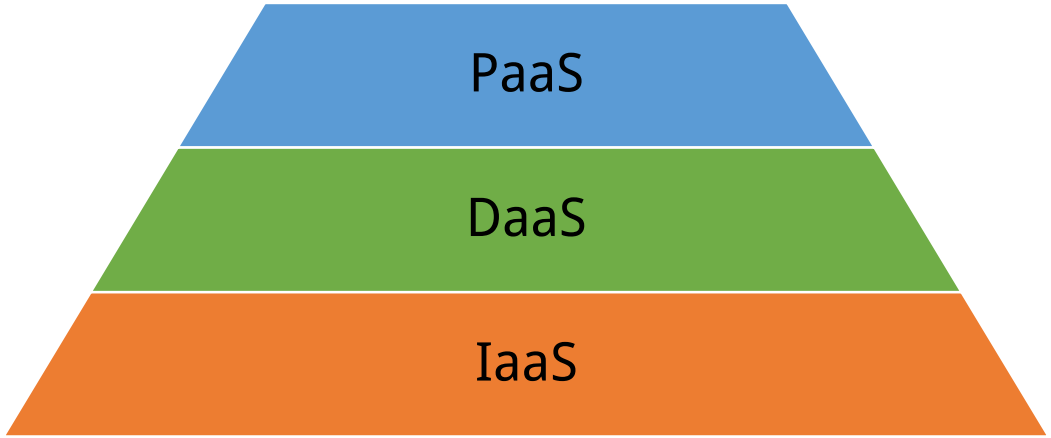
NSDI Elements

Platform as a Service (PaaS)

I don’t know your software requirements



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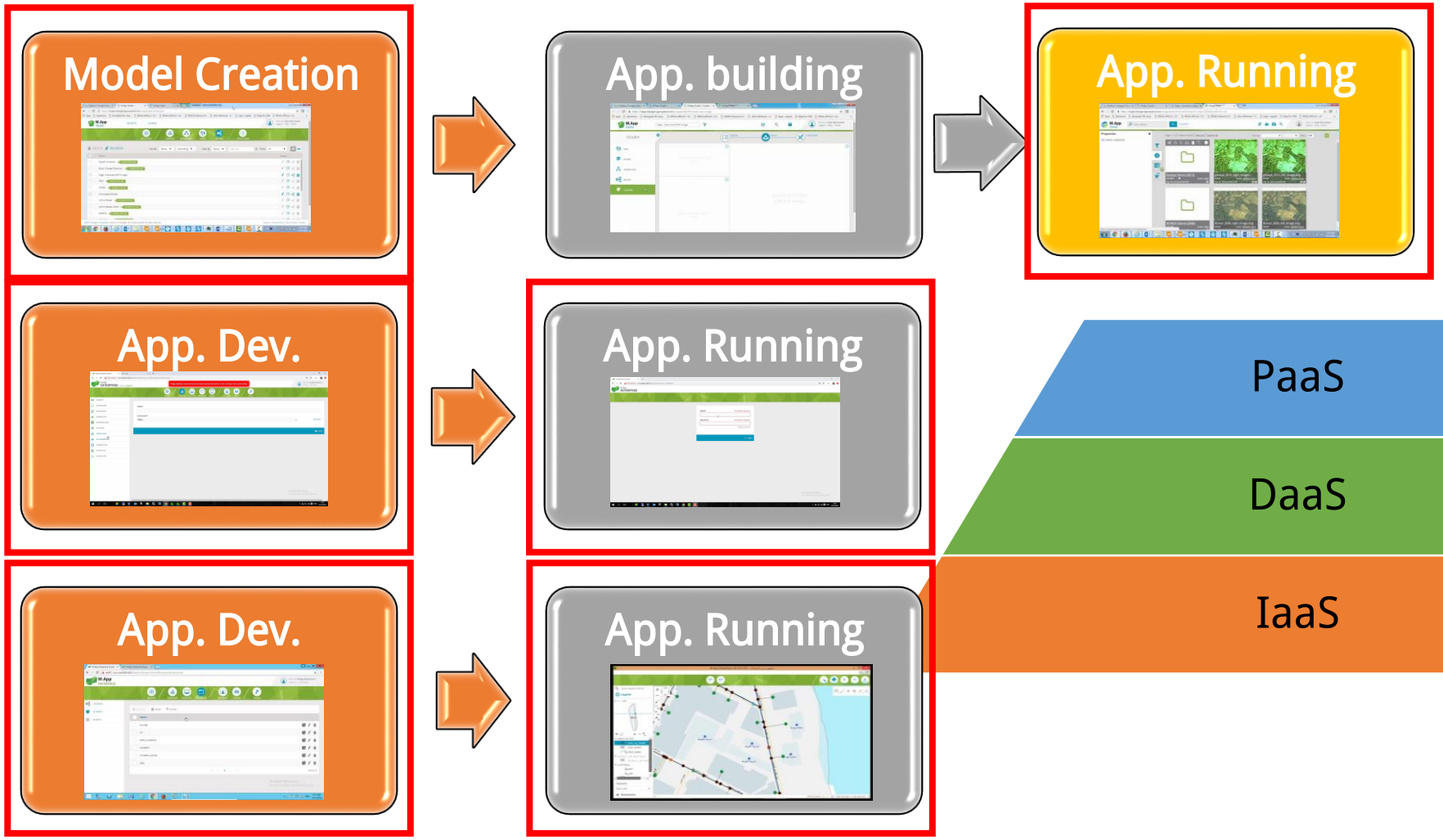
NSDI Elements

Platform as a Service (PaaS)

Analytics

Workflow

Presentation



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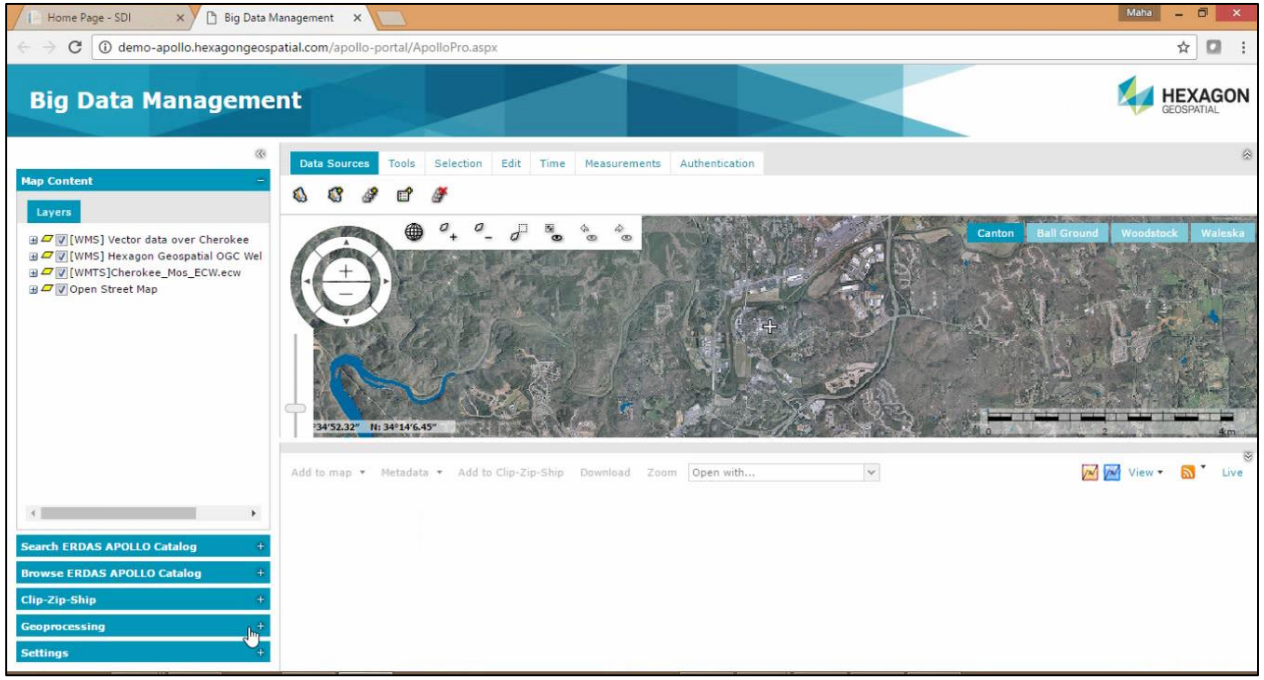
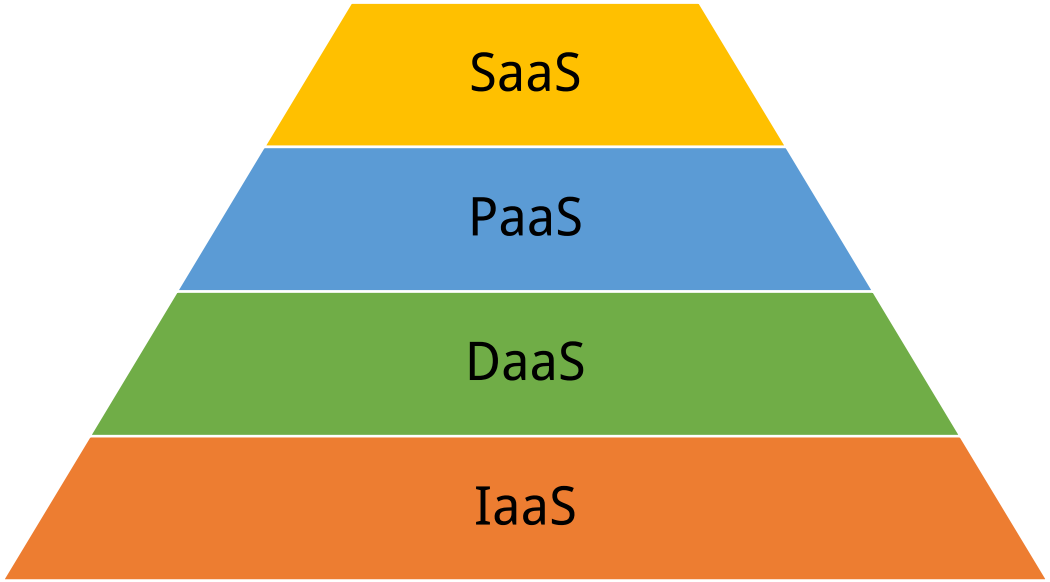
NSDI Elements

Software as a Service (SaaS)





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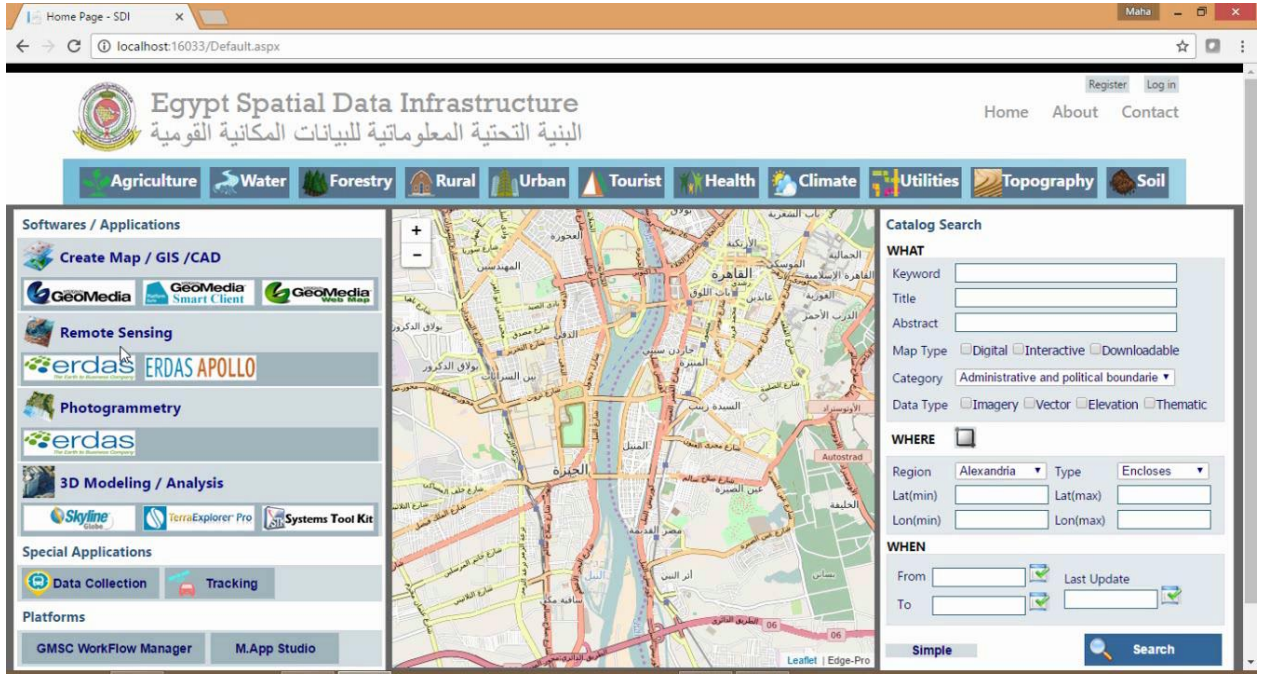
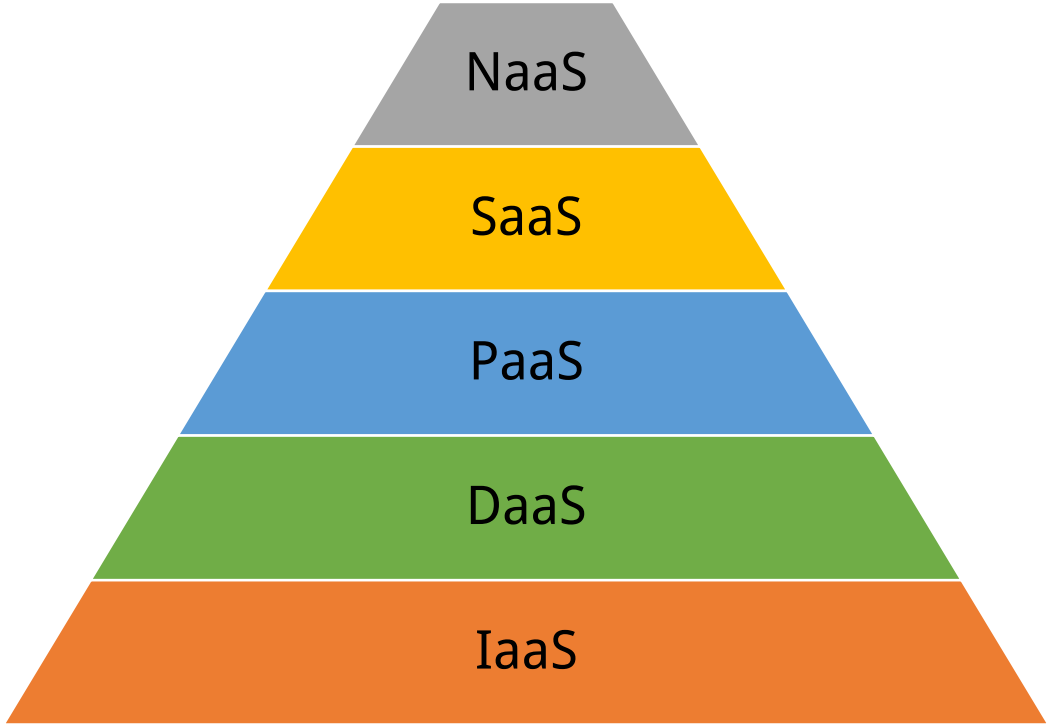
NSDI Elements

Native as a Service





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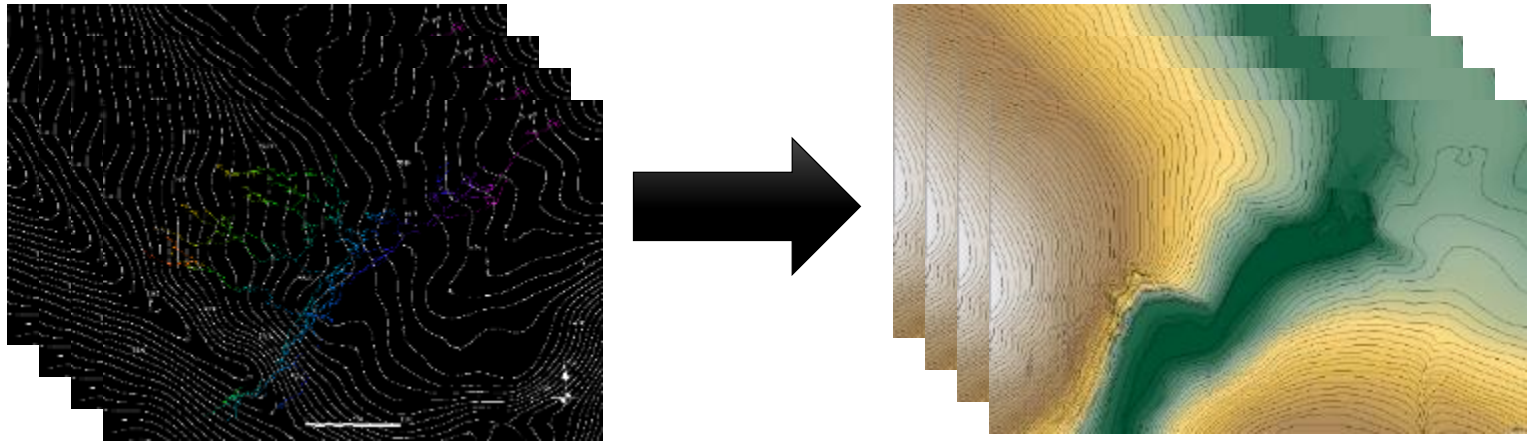
NSDI Elements

Human as a Service (HuaaS)

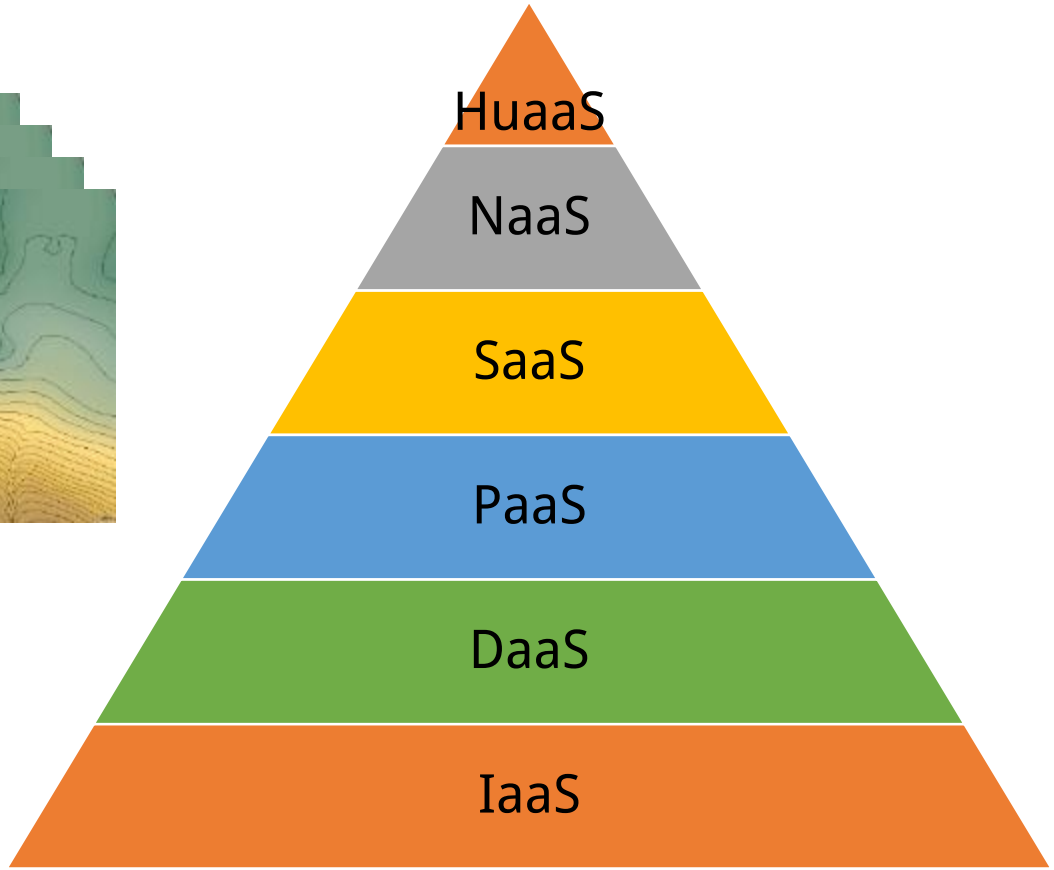


Contours

DEM

40+
Expert

Ca… …or me



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NSDI Implementation Stages

1st Stage

Establishment

- NSDI Center Establishment
- Geospatial Database Implementation
- Geo-Portal Establishment
- Connecting Ready Entities (12).

Duration: 1 year

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NSDI Implementation Stages

1st Stage

Establishment

2nd Stage

Expansion & Increasing Participating parties

- Continuing Connecting Entities (37)
- State & Local SDI Establishment
- SDI Applications Development
- Decision Makers Dashboard

Duration : 2 – 3 years

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NSDI Implementation Stages

1st Stage

Establishment

2nd Stage

Expansion & Increasing Participating parties

3rd Stage

Services Providing

- Connecting Universities, Research Institutes, Public, & Private Sector
- Developing government applications and services for citizens (Web, mobile)
- Establishing an electronic government payment system for spatial services

Duration : 4 – 5 years

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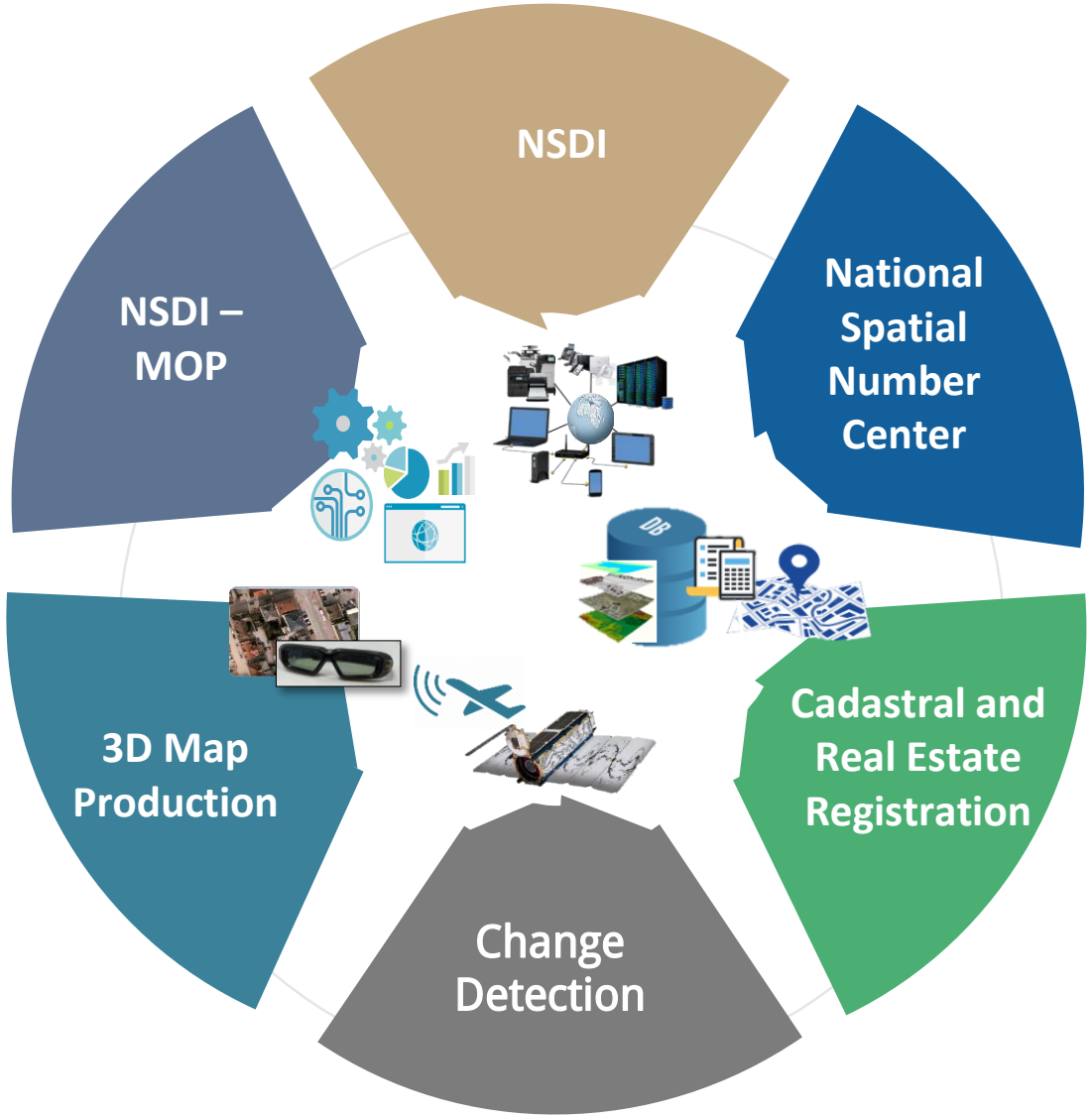
Main NSDI Center



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