EGYPT Unique Property Identifiers

Egypt goes digital

Integrated Geospatial Information Framework

Modernization of Egypt Property Registration

In context of implementing the Integrated Geospatial Information Framework with country level Action Plans, Egypt through the

National Program for Modernizing Property Management and Registration

is working on :

- Establishing a National Spatial Data Infrastructure (NSDI)
- Generating a unique numbering and geocoding system for each property in Egypt (National ID)
- Addressing system in compliance with ISO19160

National Spatial Data Infrastructure

NSDI

National Spatial Data Infrastructure NSDI

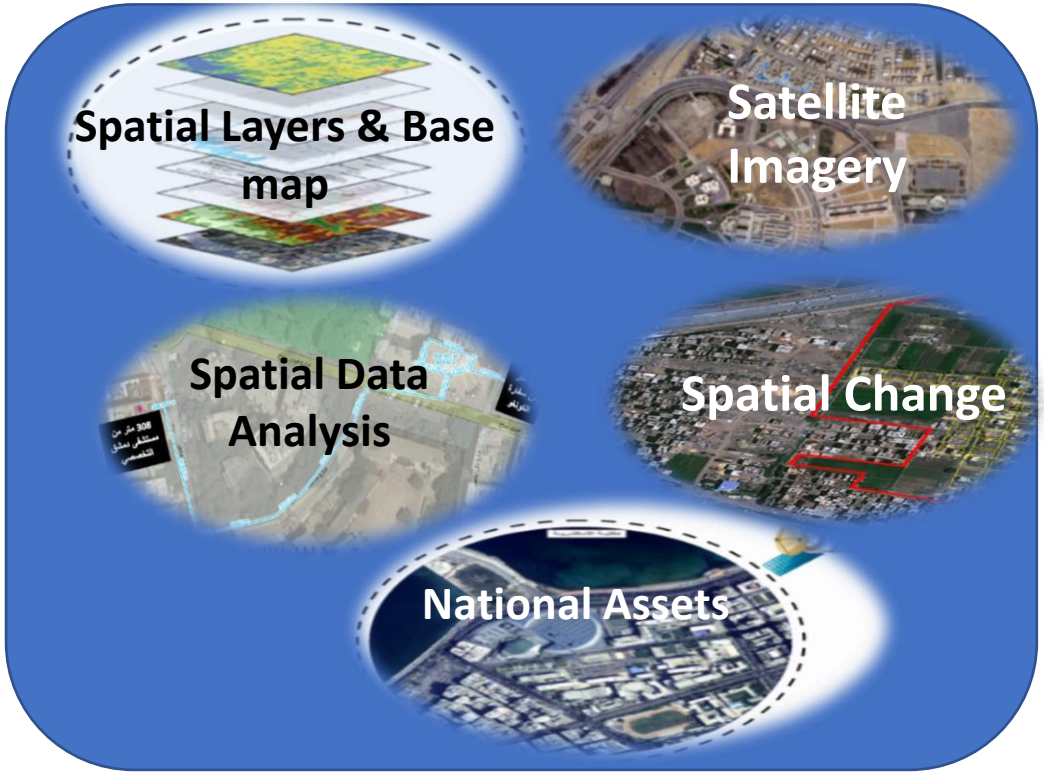
Combines technologies, policies and people to promote sharing of geospatial information through out all levels of government, the private and non profit sectors and the academic community.

- ✓ Build standard system for planning and follow up
- ✓ Reduce duplication
- ✓ Increase geospatial data availability
- ✓ Reduce costs
- ✓ Improve quality
- ✓ Legal arrangements
- ✓ Governance
- ✓ Digital transformation
- ✓ Development for governmental services

National Spatial Data Infrastructure NSDI

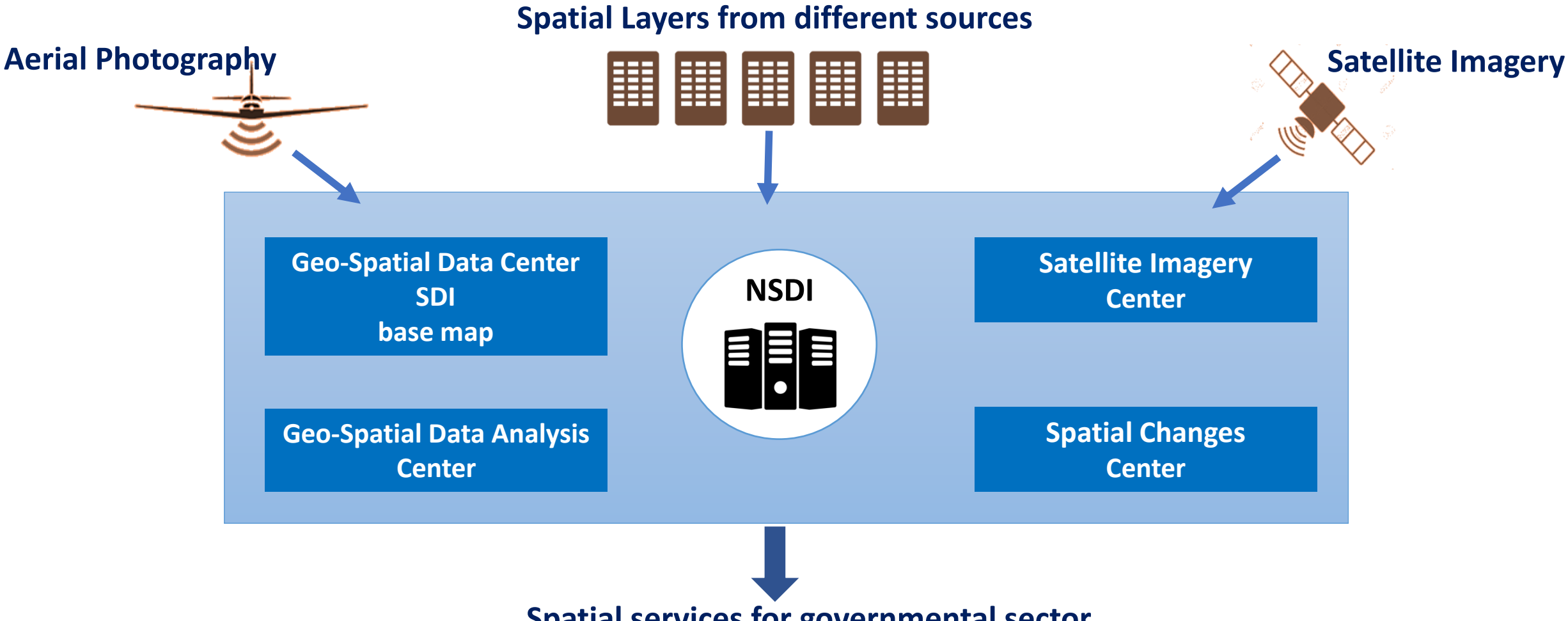
NSDI project under the auspices of the Ministry of planning and economic development

This project aiming for unified national spatial data, integration and sharing, therefor, the project relay on modern spatial technologies in satellite imagery, aerial photography, mapping and reporting.



National Spatial Data Infrastructure NSDI

NSDI project under the auspices of the **Ministry of Planning and economic development**

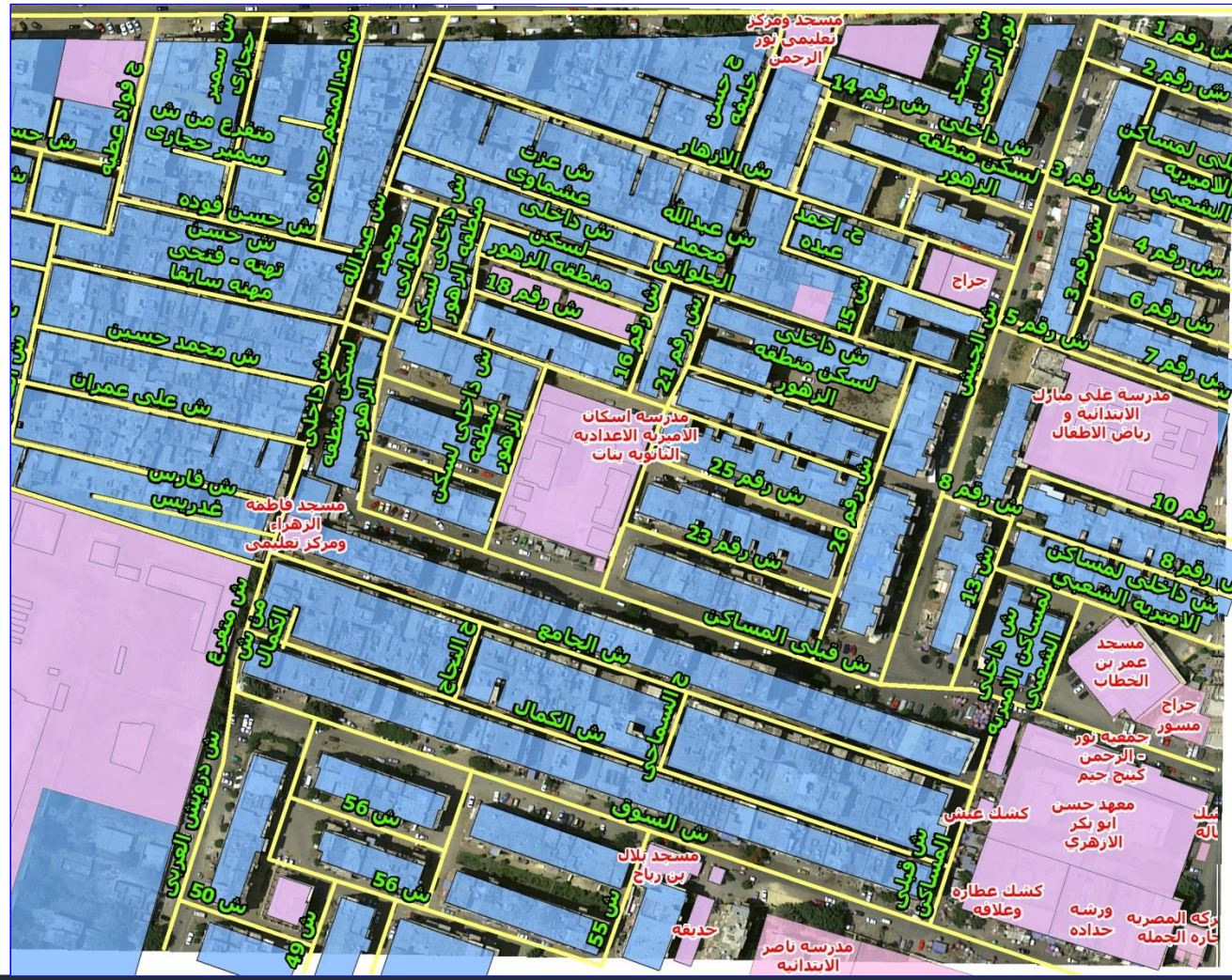


National Spatial Data Infrastructure NSDI

Geo-spatial data , integration and sharing

High resolution aerial photographs are typical data sources to generate building footprint maps.

- Production of footprint National Maps
- Collecting data from different sources (CAPMAS, local Gov. , etc)
- Applying Standard measures for the creation of database
- Refine and update the national base map



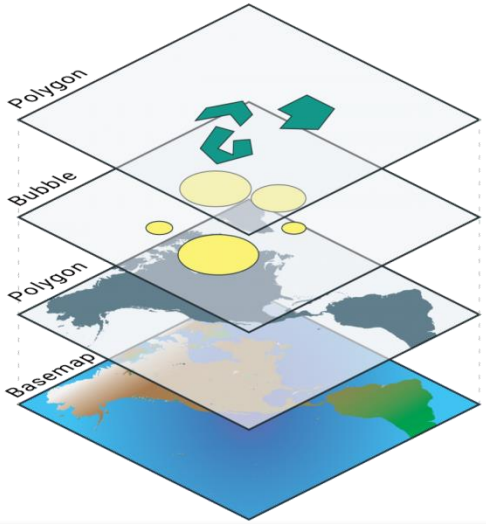
National Spatial Data Infrastructure NSDI

Geo-spatial data , integration and sharing

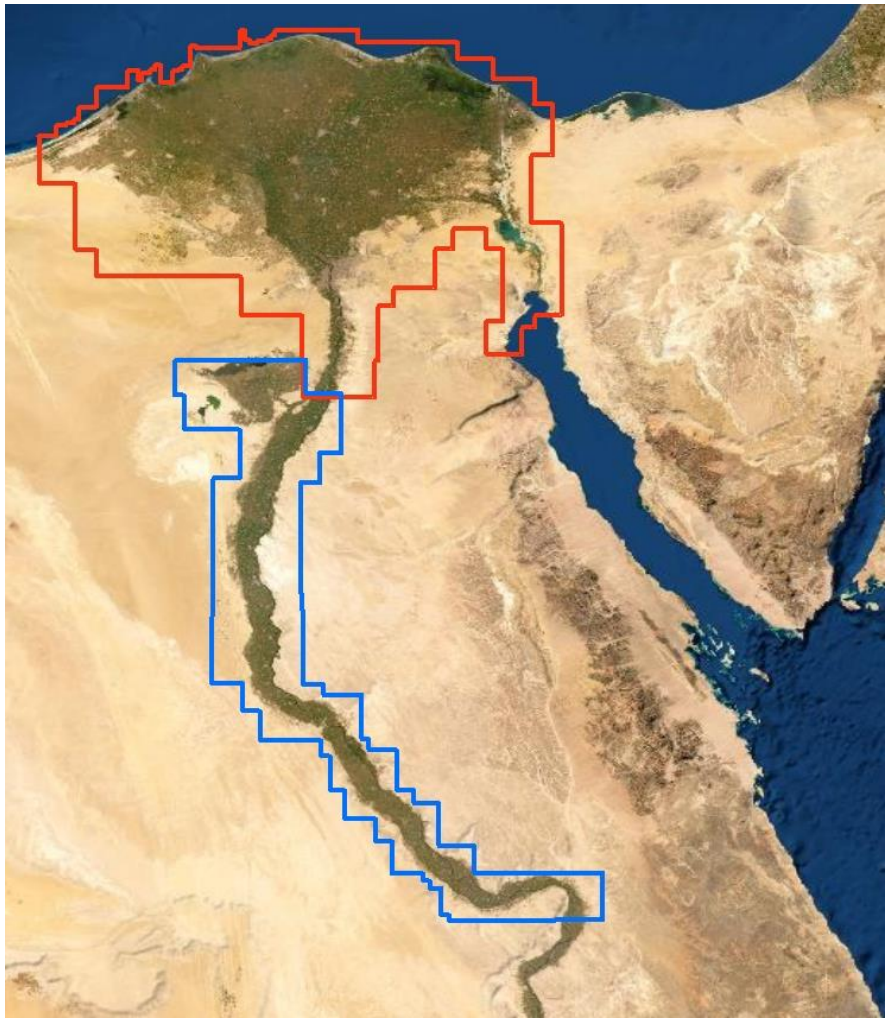
High resolution aerial photographs are typical data sources to generate building footprint maps.

The project provides updated national base map

to cover more than 100,000 km2.



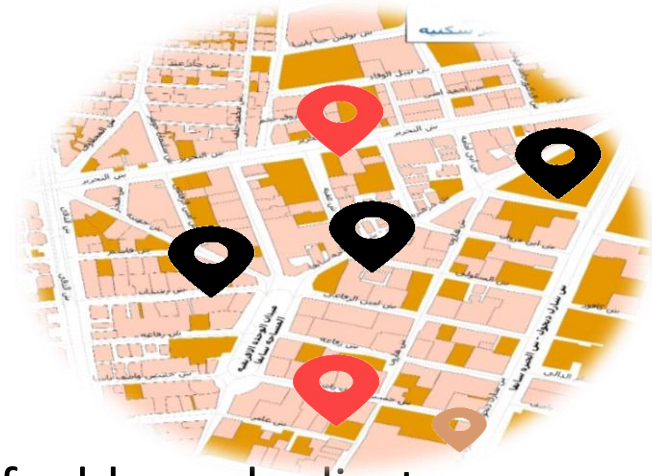
Layers & spatial data integration between different organization



Egypt Unique Property Identifiers

Egypt unique property identifiers

Why the National ID for properties in Egypt?

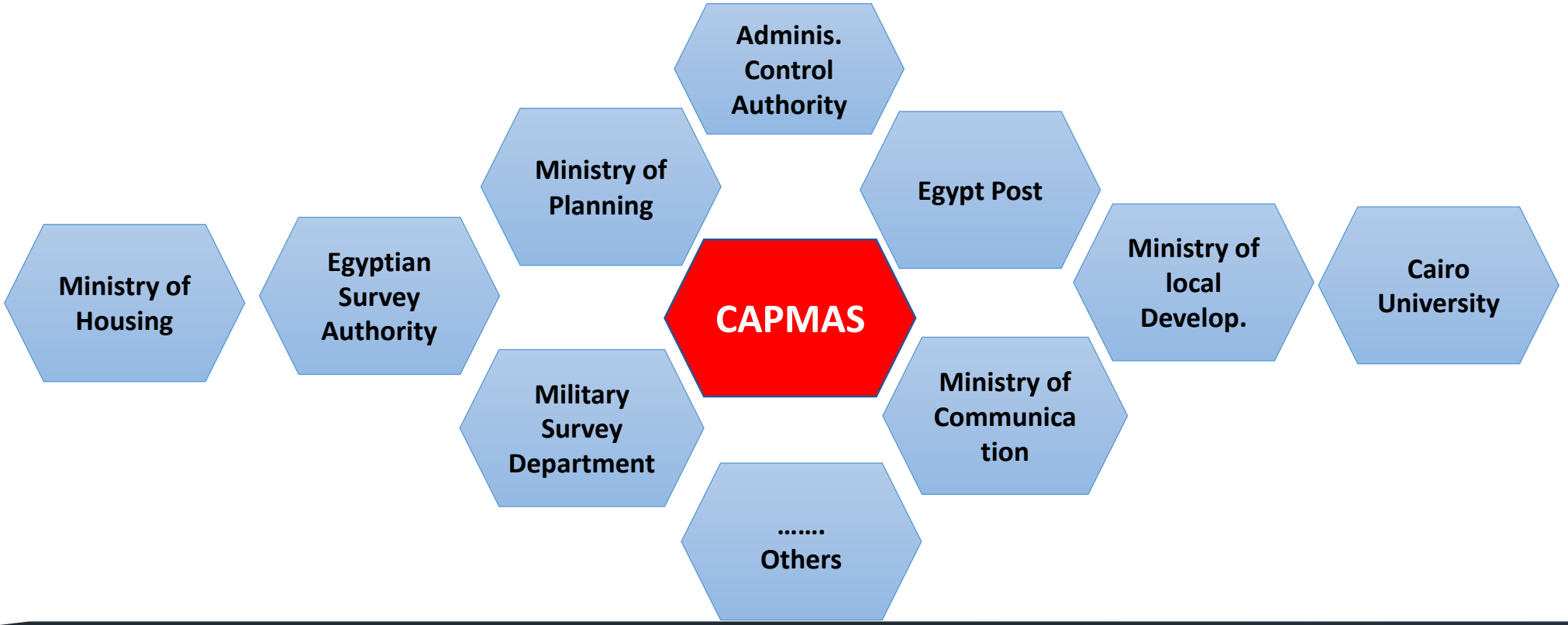


- Provide a framework for uniquely identifying all properties in Egypt.
- Land/Property Management and Registration
- Linking and integrating data from disparate sources due to problems of address duplicates, incorrect entries, un named streets …..
- Provide a framework for government and services providers to coordinate and optimize service delivery to citizens.
- Vital information for E-Commerce

…….

Egypt unique property identifiers

In accordance with the decision of the Prime Minister, a committee was formed from various government institutions and academic community (count 20) headed by **CAPMAS**



Egypt unique property identifiers

Approaches used for allocating properties National ID

The main objective of the committee is to discuss with the key national stakeholders :

- The best method for creating a National ID for Property which will provide a framework for uniquely identifying all properties in Egypt (Geo-coding).

- The best practices about property's unique identifiers, Street Addressing and the design of a standers for addressing in compliance with ISO19160

Egypt unique property identifiers

Studying International Best Practice

World Bank Participation

- International Best Practice and Examples
  - *European Union*

  *(*The spatial Data Infrastructure (SDI) for the European –INSPIRE)
    - *Finland*
    - *Poland*
    - *Germany*
  - *Canada*
  - *USA*
  - *Boston Consultant Group (BCG)*

Geographic Bounding Box

fileIdentifier

02799338-da67-4e2f-8606-4f24ffb20402

Geographic Bounding Box

fileIdentifier

47500aa2-b511-4167-8da6-da80e32dfbc9

Egypt unique property identifiers

Studying International Best Practice

World Bank Participation

A range of approaches are used for allocating identifiers in different countries including:

1. Hierarchical (region/district) based schemes, which are the legacy approach.
2. Schemes based on some form of Geographic location
3. Schemes which use an arbitrary, unique and persistent number (random or allocated)
4. Identifiers that combine an arbitrary number with a some structured information (such as a data theme or the organisation maintaining the data)

Best Practice is a UUID = Universally Unique ID

Egypt unique property identifiers

Studying International Best Practice

World Bank Participation

The UUID Structure consists of 32 hexadecimal digits, for example:

123e4567-e89b-12d3-a456-426614174000

Completely random digits about 5.3 x 10^{36} possibilities!

Generating thousands of UUIDs per millisecond will not generate a duplicate for thousands of years

Approaches used for allocating properties National ID

No.	Guiding principles
1	Independent; NID can remain unchanged if administrative divisions are changing
2	Coordinate-based system
3	Convergence of numbers in adjacent geographical areas
4	Doesn't include Arabic or English letters
5	Unique, so each NID refers absolutely to a single property
6	Doesn’t exceed 21 digits
7	Dynamic; to allow for property divisions and mergers while retaining the original basis of the NID
8	Constant unchanging and sustainable
9	Flexible; to be able to identify property’ changes
10	Doesn’t depend on property's type

Red : must be

Approaches used for allocating properties National ID

Any of the Scenarios presented could be used for the local identifier

Scenario one Military Survey Authority

- The SERAG-CODE number that was produced in the Military Survey Department and consists of (32 characters) and represents the geographical features on the map with high accuracy
- It covers all the details on the map
- It depends on the geographical location and the global coordinates
- It was produced to deal with NSDI

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1

Scenario Two: CAPMAS proposal

- The spatial number of buildings, units, streets, and space lands, which was produced by the device using the grid division nationwide
- Constant unchanging (depends on geographic location)
- Its length is (12) slots for buildings - (19) slots for units
- Corresponds to the World Coordinate System WGS'84

Building **LG 72 46 21 37 38** 2

unit **LG 72 46 21 37 38 – A001 01**

Scenario Three: Ministry of Telecommunication

- The unified identification number for buildings, units and streets, which was produced through a project to link electricity subscribers data in Port Said Governorate.
- Constant that does not change (linked to the coordinate and the location number produced by the device).
- It does not depend on the administrative division.
- It has no fixed length.

23887625 3

Scenario Four proposal of Eng. Mostafa Gally

- A standard number created from coordinates consisting of (16) digits
- Fixed, unchanging and dependent on the administrative division
- Figures converge in adjacent geographical areas
- Includes a code for the class (buildings - units ...) and a code for issuing the number

2133 1019 5642 0385 4

Approaches used for allocating properties National ID

Scenario one:

Military survey authority prop. NSDI

SERAG Code (UUID)

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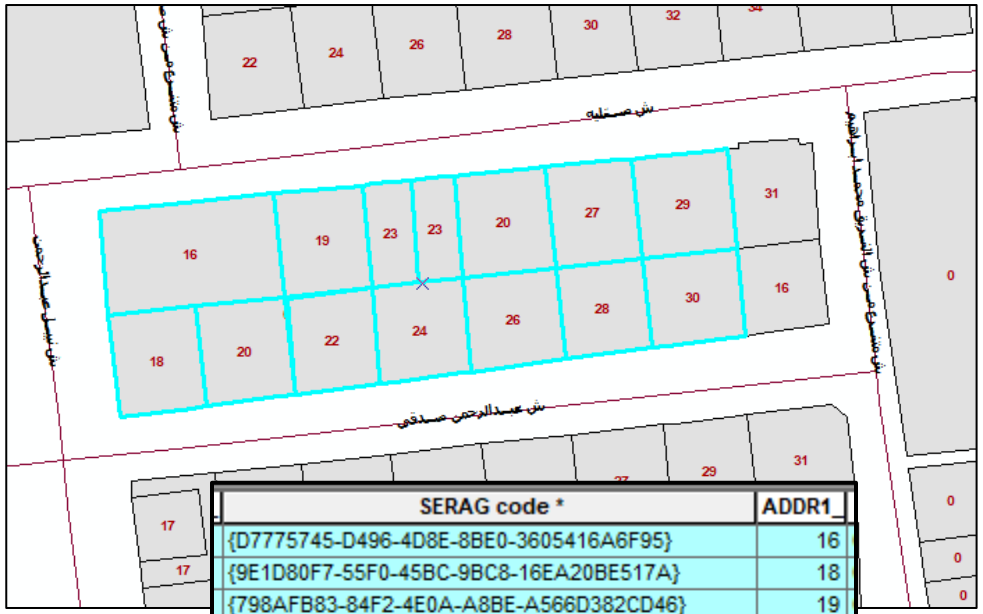
- Completely random digits about 5.3 x 10^{36} possibilities!
- Generating thousands of UUIDs per millisecond
- Will not generate a duplicate for thousands of years
- Created for each feature in the base map
- Doesn't depend on buildings locations

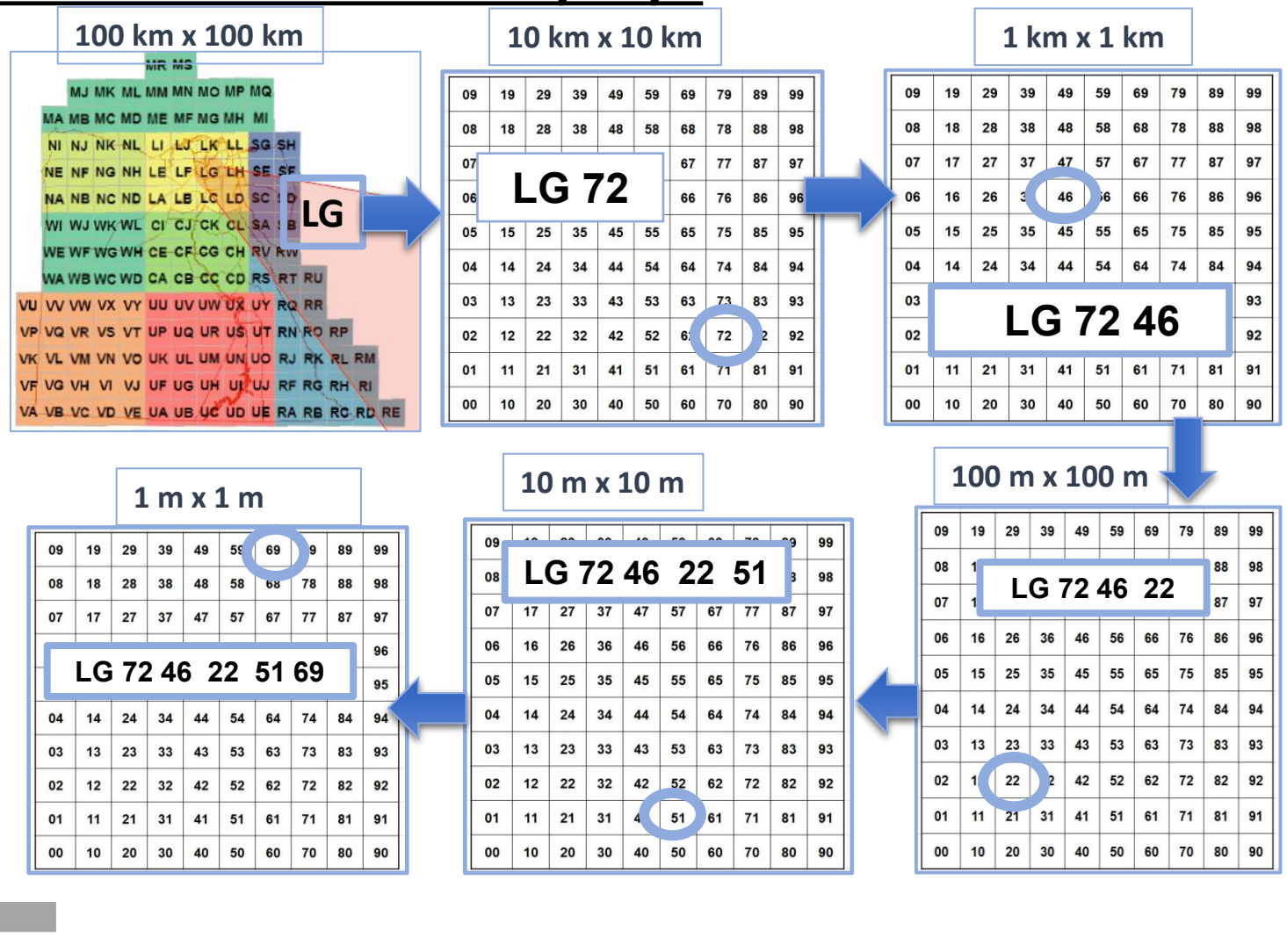


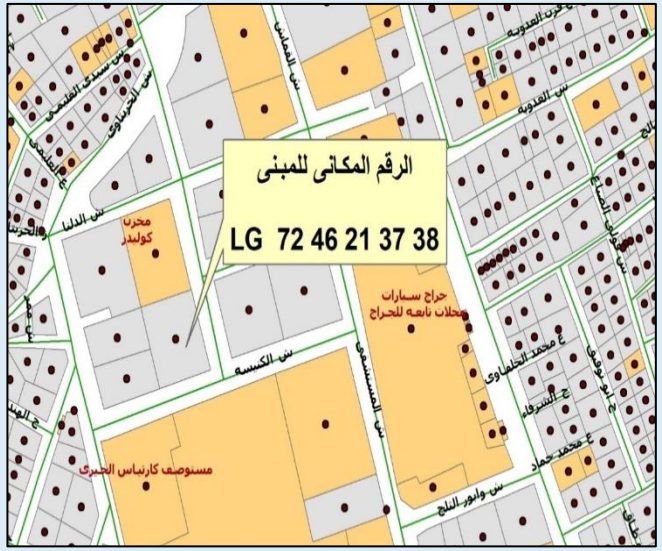
SERAG code *	ADDR1_
{D7775745-D496-4D8E-8BE0-3605416A6F95}	16
{9E1D80F7-55F0-45BC-9BC8-16EA20BE517A}	18
{798AFB83-84F2-4E0A-A8BE-A566D382CD46}	19
{E4CBFE82-4A7D-4E07-BFF1-00D33EA31AC3}	20
{D21935F7-90B2-499F-8BE8-E5FFDE5EF7B6}	20
{50E569CD-FE04-4A35-9BBA-005105BE1364}	22
{06780200-BA21-4BFC-BF1F-21D88AD7EDE8}	23
{D07B2DC5-8660-4BC1-84B0-0EE547D7F224}	23
{ED52D561-B867-4BA0-8E8C-25DA85632953}	24
{C470A7D1-E295-45A2-8408-A3BA521E23EA}	26
{2C35C2CB-C1A1-4812-8B9C-525AB173CB2C}	27
{0F9433F1-DE65-4D73-B402-2B64AC78B1C5}	28
{EC8B35A9-C797-498C-9A48-7DBDB191CDB6}	29
{85B63751-3183-405F-AE07-836B8B17FEA7}	30

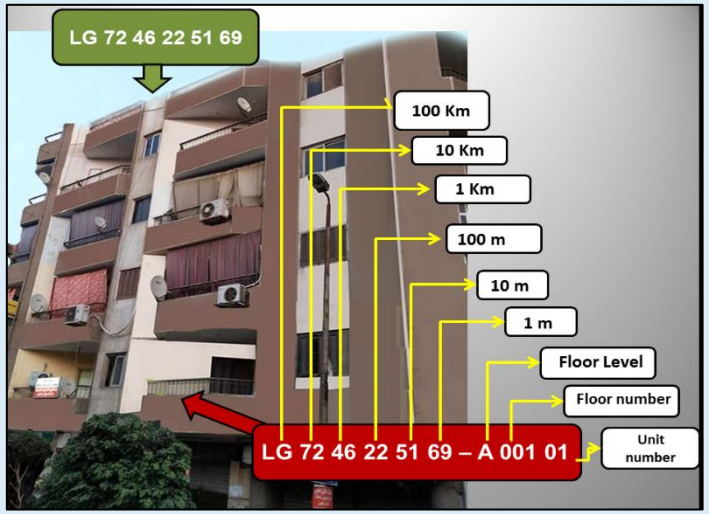
Standard of **E**gyptian **R**egional **A**nd **G**eospatial Infrastructure

Approaches used for allocating properties National ID

Scenario two: CAPMAS prop.

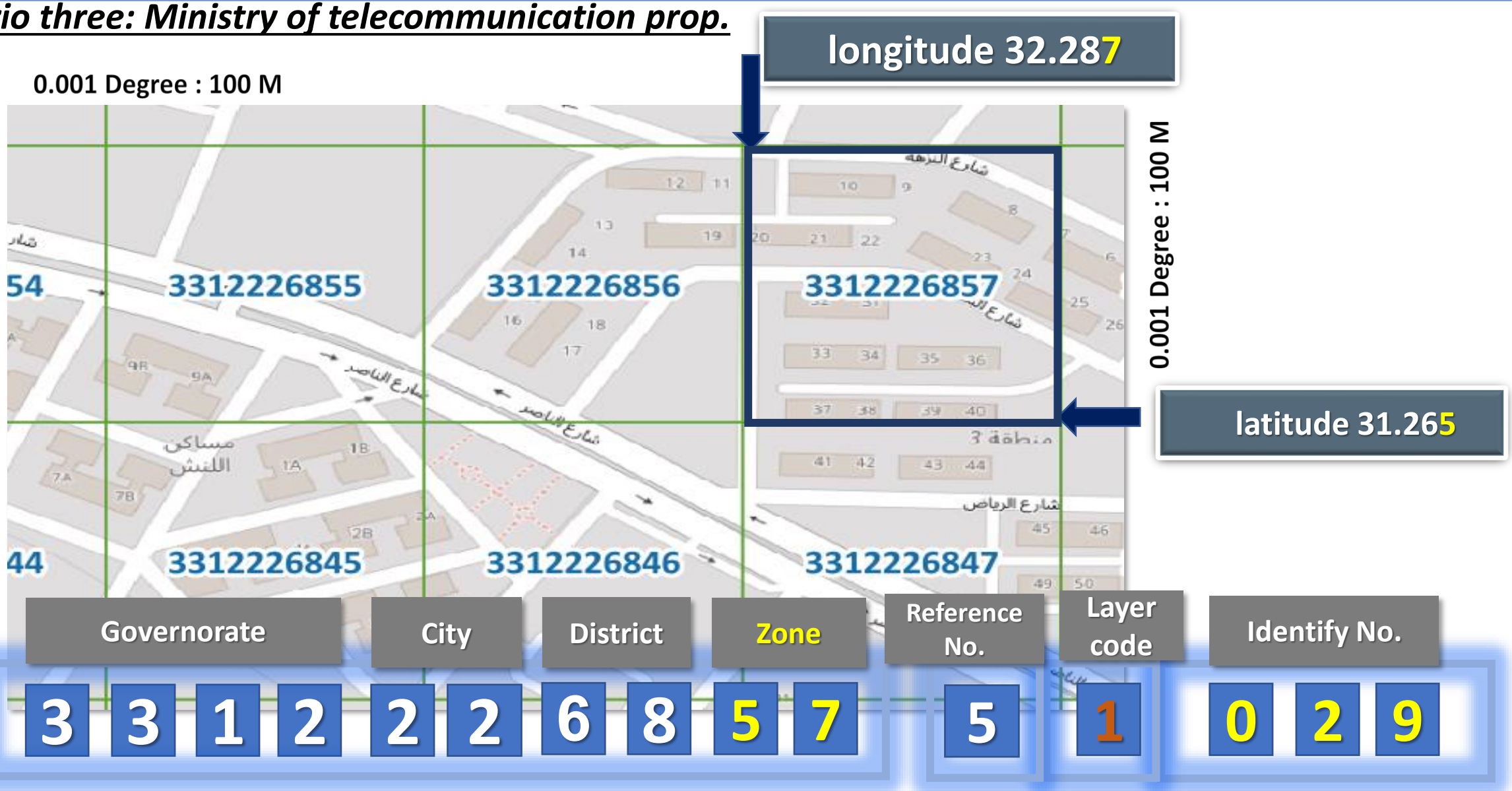






Approaches used for allocating properties National ID

Scenario three: Ministry of telecommunication prop.



Approaches used for allocating properties National ID

Scenario Four: Expert' prop.

Location Coordinates

X	Y	ID14
31.24517	30.03851	3310204358157 1
31.23951	30.07556	3310203795551 6
31.23623	30.07473	3310203764273 3
31.23765	30.07420	3310203774625 0
31.23924	30.07536	3310203795234 6
31.23470	30.07621	3310203746720 1

Type

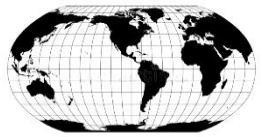
1 Parcel
2 Building
3 Street

Coordinates

Unit Serial

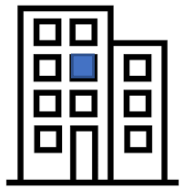
Final Suggested National ID

- Integration of the two (coordinates / serial number) based on the use of the global coordinate system (geographic WG84)



- Using grid square system at the level of 100m*100m (lat & long 0.001 degree)

- Create a serial number (Identify No.) for lands and buildings (Total length 15 digits)



- Add layer code
- Chick digits
- 3 digits for units serial in the buildings
- (Final total length 18 digits)

Layer code	Layer Type
1	Building
2	Parcel

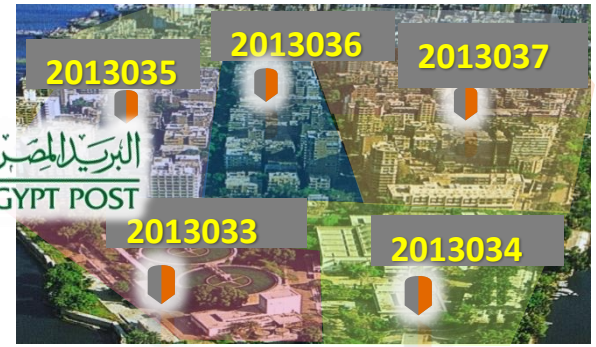
3 3 1 2 2 2 6 8 5 7 | 5 | 1 | 0 3 3 | 0 0 7

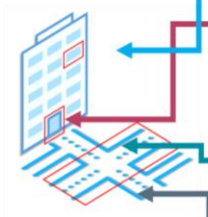
Chick digit | Layer code | Identity no. | Unit Ser.

Final Suggested National ID

Integration of properties National ID with the other identification numbers

3 3 1 2 2 2 6 8 5 7 — 5 1 0 3 3 0 0 7

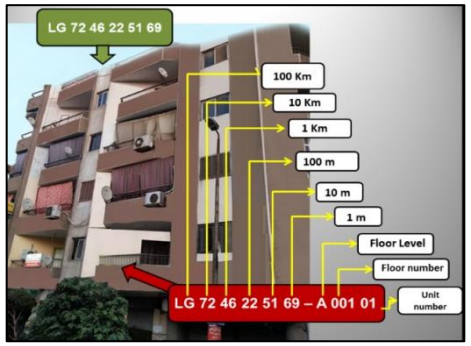




- Unit Identification No.
- Building Identification No.
- Street Identification No.
- Parcel Identification No.

Geo-spatial database
Base map
NSDI

CAPMAS Spatial ID



SERAG Code (UUID)

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Final Suggested National ID

CURRENT SITUATION

- ✓ Legislation procedures for the properties National ID

- ✓ Applying the properties National ID in Port Said governorate (as a pilot project)

- ✓ Studding the shape of the properties National ID sings

Suggested shape for the unique property identifier


الرقم القومى للمبنى
Building ID
233010231304837
رقم المنطقة البريدية
Postal Zone Code
4262113
Ministry Of Health and Population

THANK YOU

Prepared By:
Amal Mohamed El Sharnoby

General Manager of GIS Dept.
Centerl agency for pubilc mobilization and statistics,
CAPMAS, Egypt

amal_mh@gmail.com
linkedin.com/in/amal-mohamed-62524a72