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Troisième Conférence Arabe sur le Foncier  
المؤتمر العربي الثالث للأراضي  
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## Subsidiaries projects of ENSDI EGYPT Unique Property Identifiers

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

ROYAUME DU MAROC  
A 23042 V A 1 00 41 1 CA 1 1

MINISTÈRE DE L'AMÉNAGEMENT DU TERRITOIRE NATIONAL  
DE L'URBANISME, DE L'HABITAT ET DE LA POLITIQUE DE LA VILLE



الاراضي العربية  
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

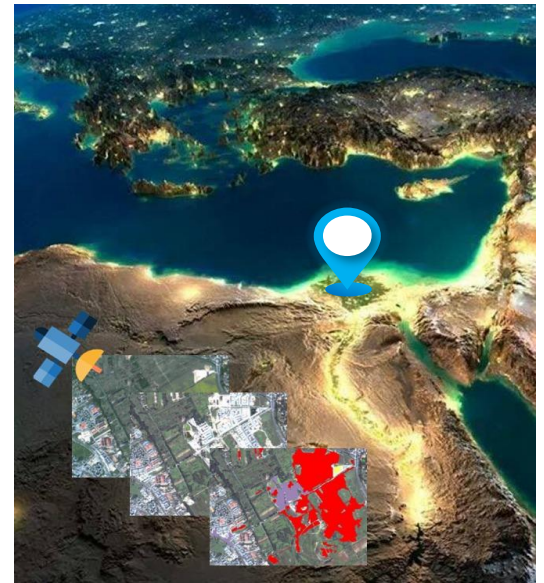


# Egypt unique property identifiers

In context of implementing Egyptian National Spatial Data Infrastructure (ENSDI)  
Egypt through the,

**National Program for Modernizing Property Management and Registration**  
is working on :

- Generating a unique numbering and geocoding system for each property in Egypt (**National ID**)
- Addressing system in compliance with ISO19160



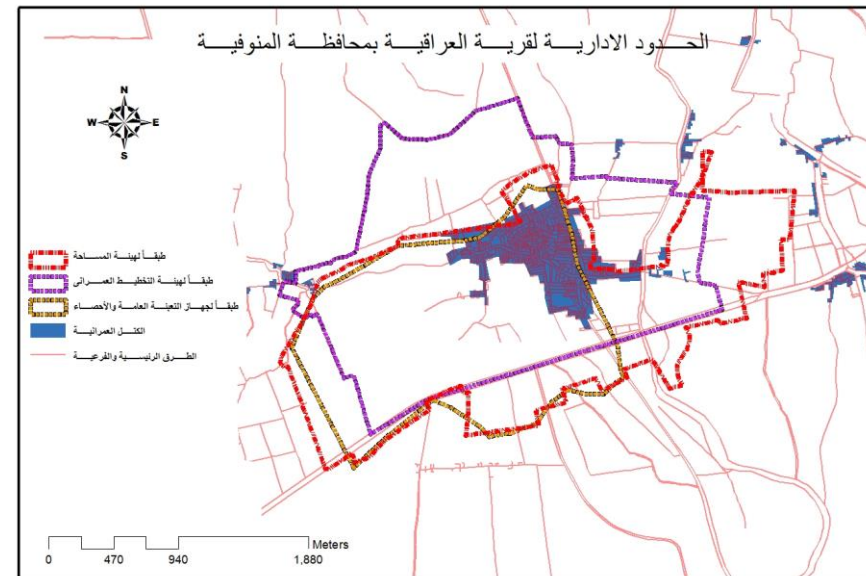
# Egypt unique property identifiers

## Why the National ID for properties in Egypt?

The importance of using addresses as fundamental infrastructure is evident, as they serve as the backbone for government and e-commerce services, benefiting all citizens inside and outside the country.

Therefore, a unified identification and clear address for all buildings, establishments, and roads is necessary to be used by all entities and individuals. Achieving this goal comes with several **challenges and difficulties**, including:

- Differences in administrative boundaries between various entities
- Multiple sources of administrative divisions (e.g., police divisions, local divisions)



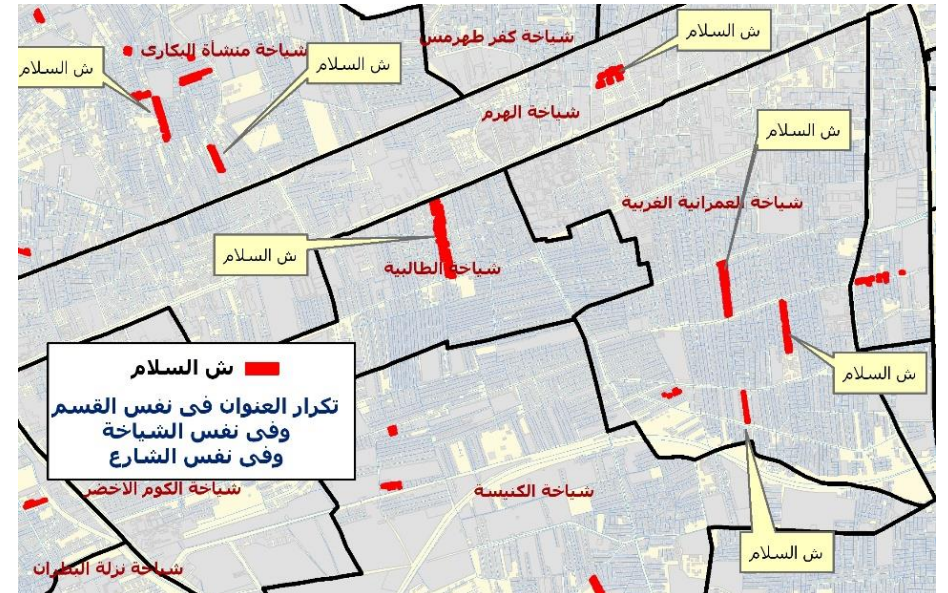
# Egypt unique property identifiers

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The importance of using addresses as fundamental infrastructure is evident, as they serve as the backbone for government and e-commerce services, benefiting all citizens inside and outside the country.

Therefore, a unified identification and clear address for all buildings, establishments, and roads is necessary to be used by all entities and individuals. Achieving this goal comes with several **challenges and difficulties**, including:

- Repetition of street names within the same area
- Streets being known by multiple names (current name, previous name, common name)
- Absence of street names in some areas (Village, new urban areas ....)





## Why the National ID for properties in Egypt?

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-

# 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, unnamed streets ....
- Provide a framework for government and services providers to coordinate and optimize service delivery to citizens.
- Vital information for E-Commerce

### أهداف الإطار:

#### 1. إدارة وتسجيل الأراضي والعقارات

1. إنشاء نظام موحد لتسجيل العقارات وربط البيانات المختلفة.
2. معالجة مشكلات تكرار العناوين والإدخالات غير الصحيحة.
3. تحديد العقارات في المناطق التي تعاني من نقص التسمية الرسمية للشوارع.

#### 2. تحسين كفاءة الحكومة ومقدمي الخدمات

1. تمكين التنسيق بين الجهات الحكومية ومزودي الخدمات.
2. تحسين عمليات تقديم الخدمات للمواطنين، مثل المرافق العامة والاتصالات.

#### 3. تعزيز التجارة الإلكترونية

1. توفير بيانات دقيقة عن المواقع والعناوين لدعم عمليات التوصيل والخدمات اللوجستية.
2. تحسين البنية التحتية الرقمية لتسهيل المعاملات التجارية عبر الإنترنت.



# Egypt unique property identifiers

In accordance with the decision of the Prime Minister **No. 2466 of the year 2020**, regarding the formation of committees to manage the project for inventory and management of real estate wealth and the establishment of a unified national identification number for properties, units, lands, and streets at the national level a committee was formed from various government institutions and academic community.

The committees including:

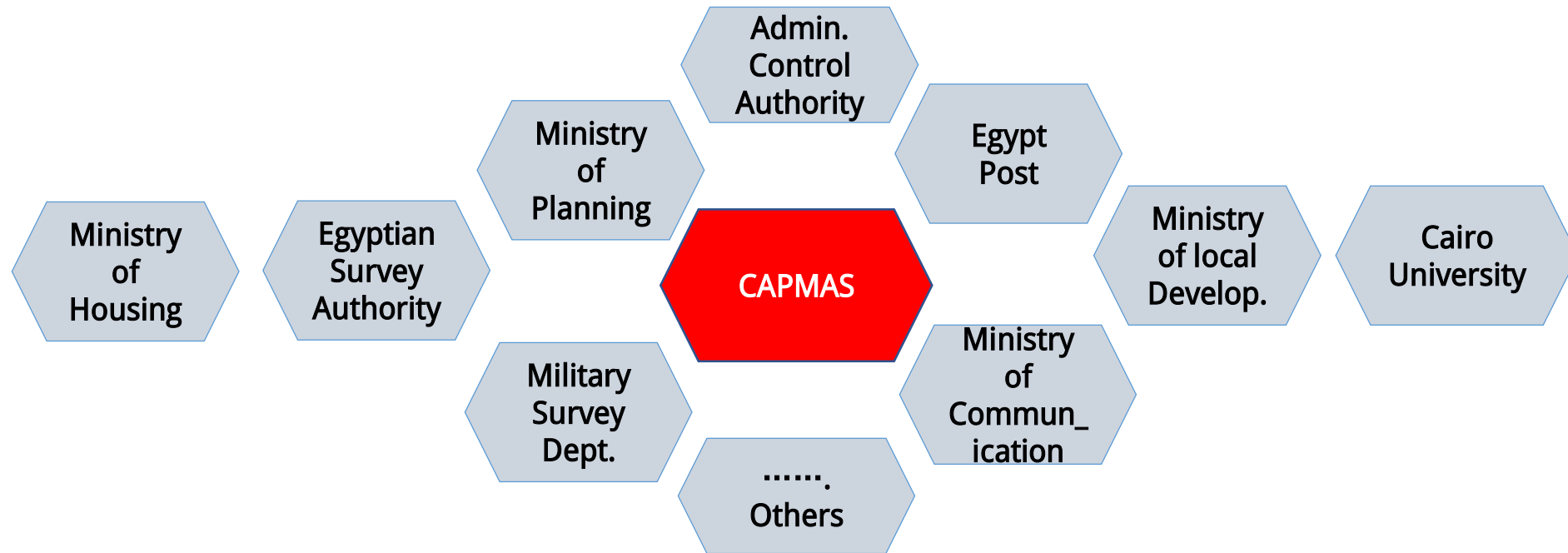
- Addressing, Numbering, and Property Coding Committee headed by **CAPMAS**
- Legislative Committee headed by **Ministry of Justice**
- Technical Committee headed by **Ministry Communications & Information Technology**



# Egypt unique property identifiers

## Addressing, Numbering, and Property Coding Committee:

was formed from various government institutions and academic community (count 20)  
headed by **CAPMAS**





# Egypt unique property identifiers

## Studying International Best Practice



### 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)



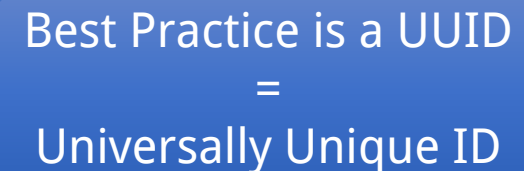
# Egypt unique property identifiers

## Studying International Best Practice

World Bank Participation

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

- Hierarchical (region/district) based schemes, which are the legacy approach.
- Schemes based on some form of Geographic location
- Schemes which use an arbitrary, unique and persistent number (random or allocated)
- 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  $5.3 \times 10^{36}$  possibilities!

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

# 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 Street Addressing and the design of a standards for addressing in compliance with ISO19160





# Egypt unique property identifiers

## 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

# Egypt unique property identifiers

## Approaches used for allocating properties National ID

### 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

ffc815fe-227f-11eb-bd16-8f10ddcb3e32



### 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



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



### 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



# Egypt unique property identifiers

## Approaches used for allocating properties National ID

### Scenario one:

### Military survey authority prop. NSDI

#### SERAG Code (UUID)

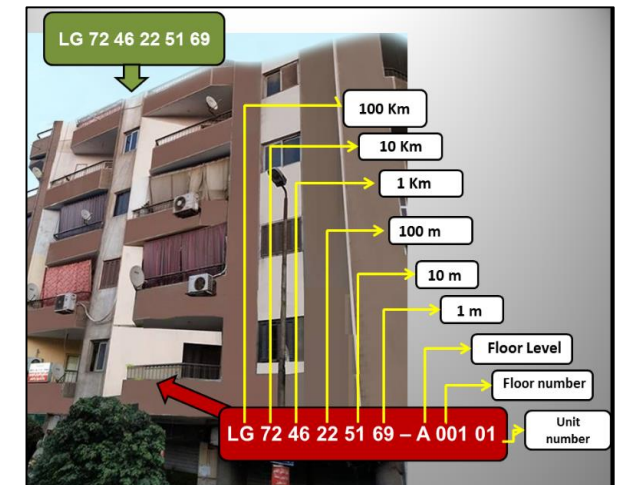
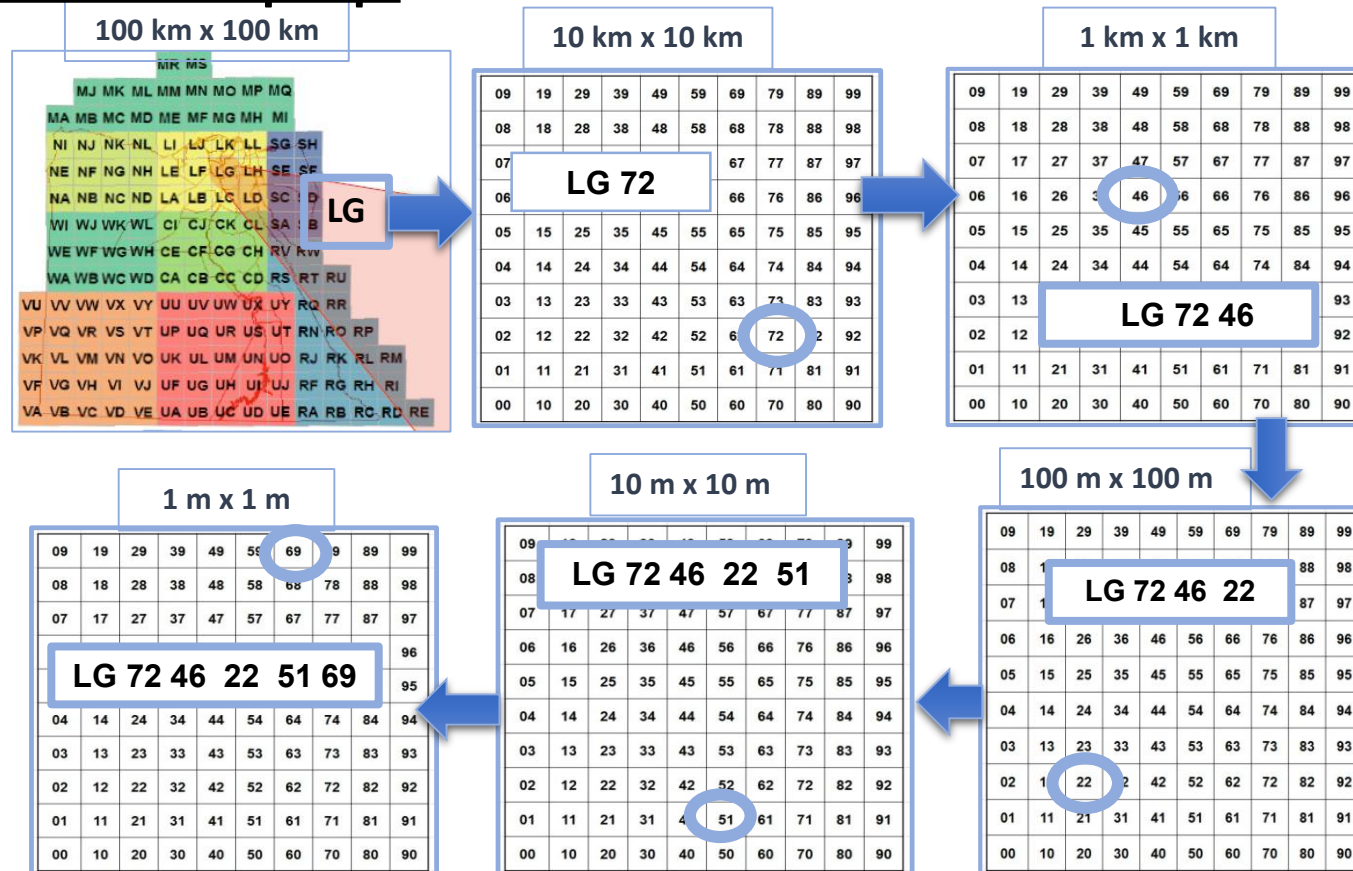
ffc815fe-227f-11eb-bd16-8f10ddcb3e32

- Completely random digits about  $5.3 \times 10^{36}$  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

# Egypt unique property identifiers

## Approaches used for allocating properties National ID

### Scenario two: CAPMAS prop.

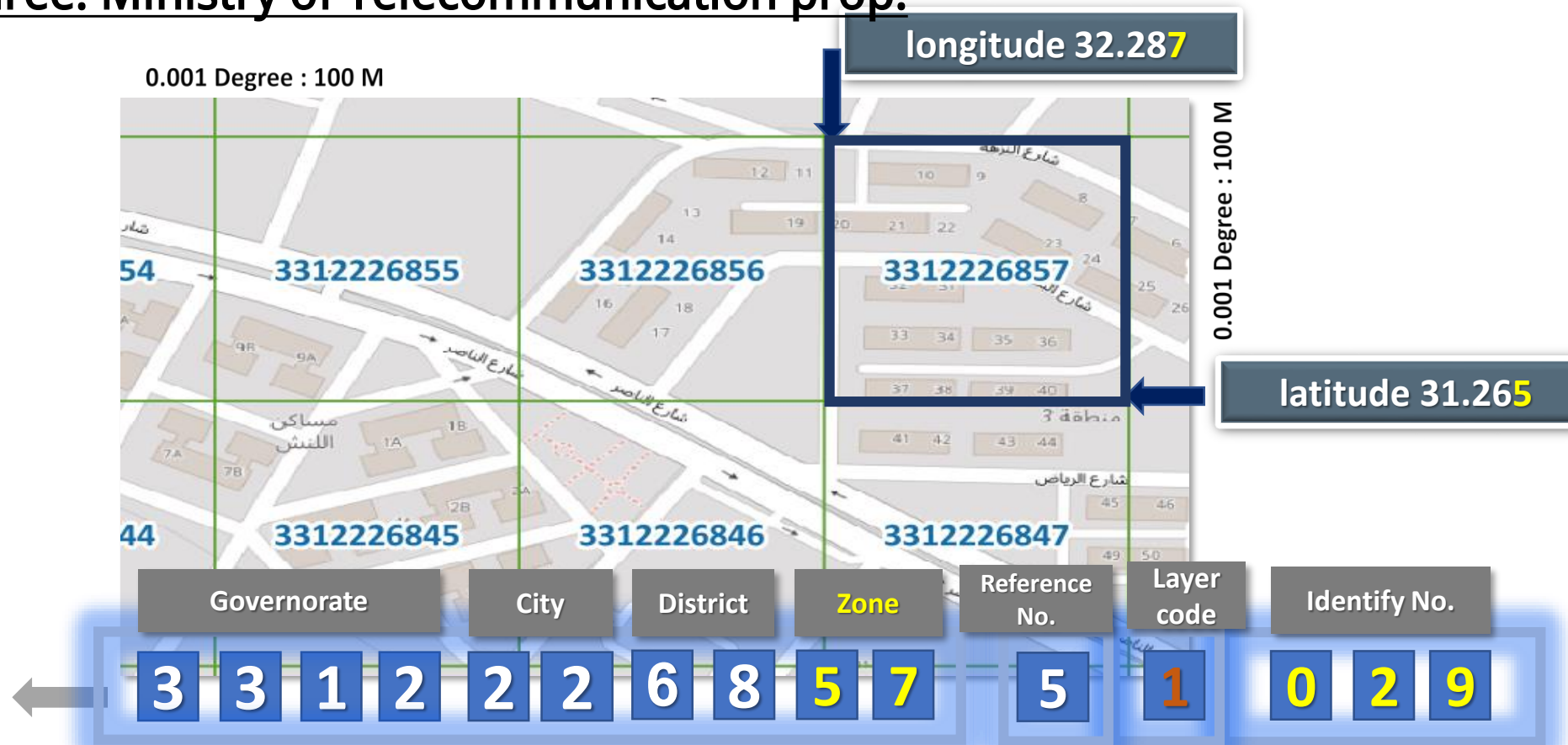




# Egypt unique property identifiers

Approaches used for allocating properties National ID

Scenario three: Ministry of Telecommunication prop.



Subsidiaries projects of ENSDI

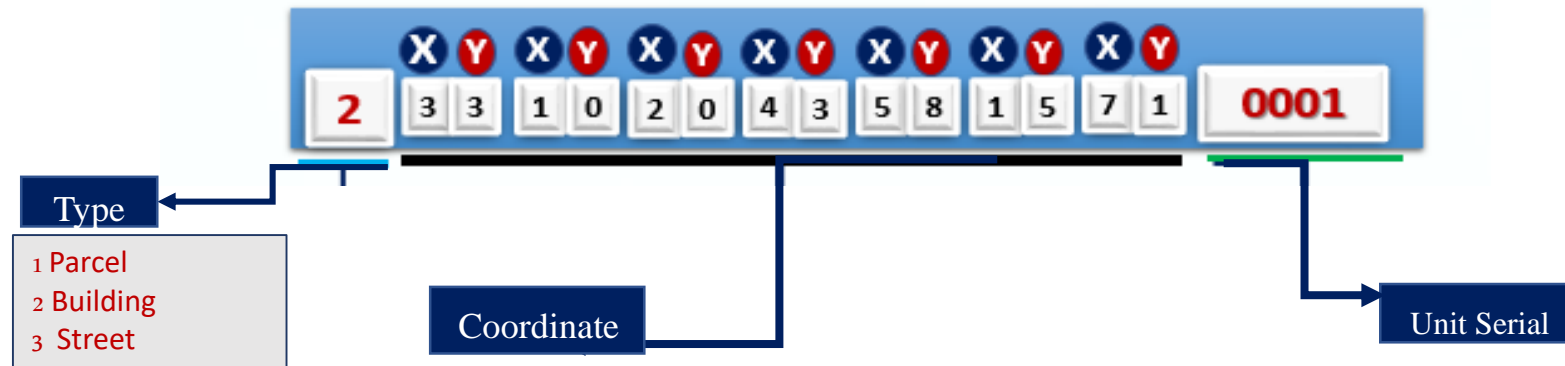
# Egypt unique property identifiers

## Approaches used for allocating properties National ID

Scenario four: Expert' prop..

Location' Coordinates

X	Y	ID14
31.24517	30.03851	33102043581571
31.23951	30.07556	33102037955516
31.23623	30.07473	33102037642733
31.23765	30.07420	33102037746250
31.23924	30.07536	33102037952346
31.23470	30.07621	33102037467201

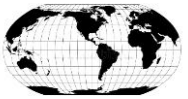


# Egypt unique property identifiers

## Final Suggested National ID



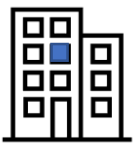
- Integration of the two method (coordinates & serial number) based on the use of the global coordinate system (geographic WG84)



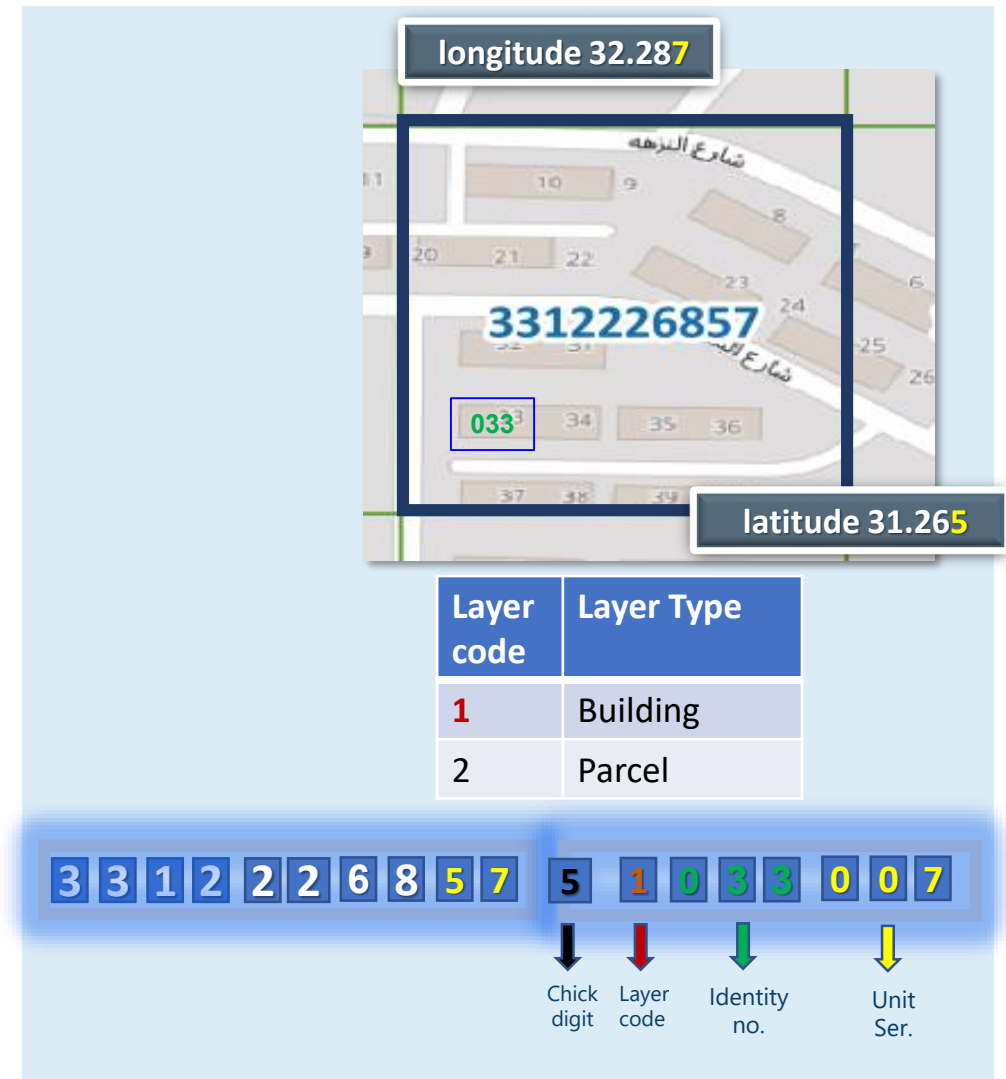
- Using grid square system at the level of 100m\*100m (lat & long 0.001 degree)



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



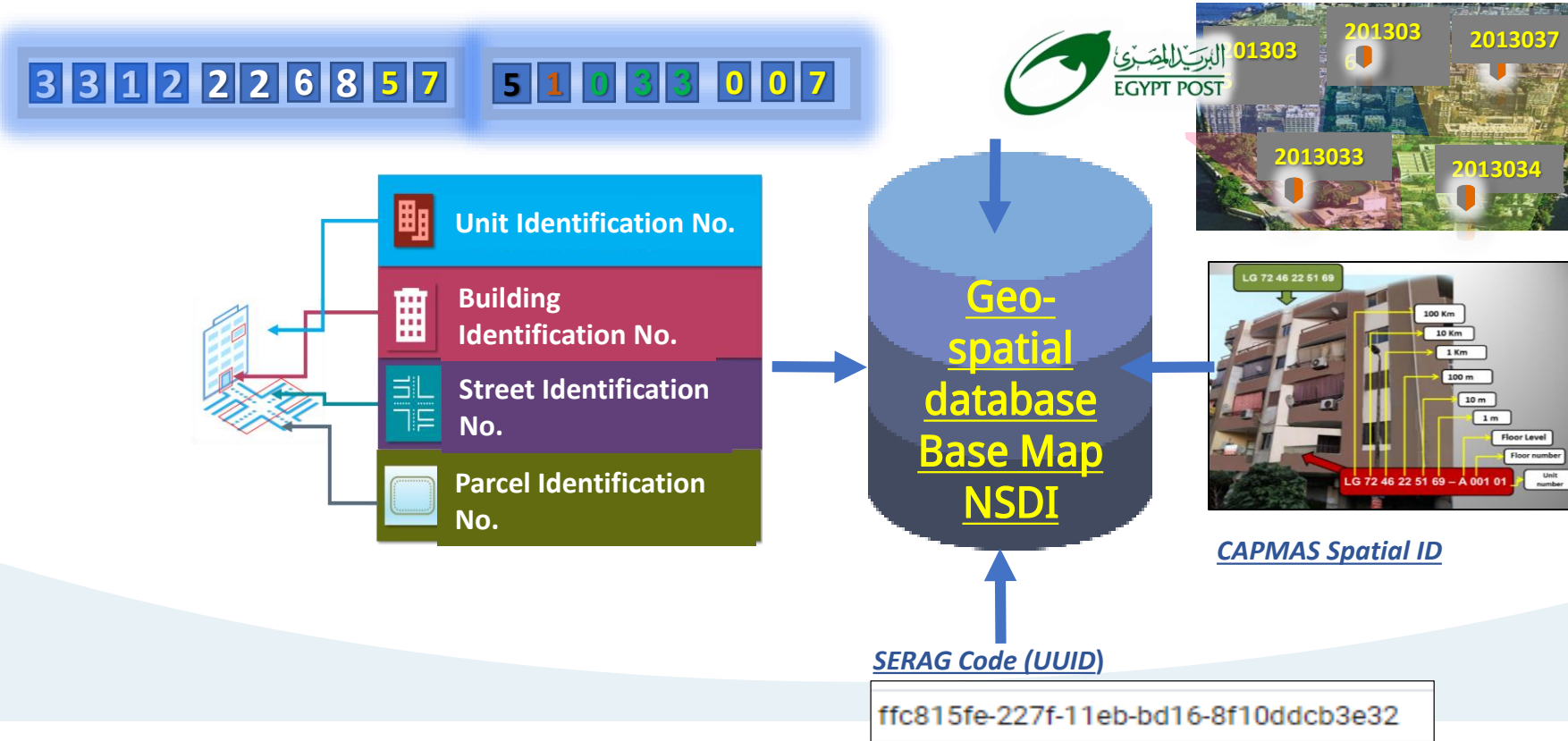
- Add layer code
- Chick digits
- 3 digits for units' serial in the buildings
- (Final total length 18 digits)



# Egypt unique property identifiers

## Final Suggested National ID

Integration of properties National ID with the other identification numbers throw NSDI

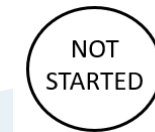




# Egypt unique property identifiers

## Current Situation

- ✓ Creating the properties National ID  
**CAPMAS**
- ✓ Legislation procedures for the properties National ID  
**Ministry of justice**
- ✓ Applying the properties National ID for all governorates  
**Ministry of Communications & Information Technology**
- ✓ Studding the shape of the properties National ID sings  
**CAPMAS - Secure and Smart Documents Complex**



# Egypt unique property identifiers



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