

Addressing

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Introduction

- What is an address
- Key features of a good addressing system
- Addressing system standards
- Basic types of addressing systems
- An example of an addressing system
- Benefits of having a world class national addressing system
- The addressing situation in Africa
- The addressing situation in Rwanda
- Concluding comments

What is an Address

“A ‘tag’ that serves to uniquely identify a virtual or physical object”

Virtual Addressable Objects

- Mobile phone number +250 788 453 614
(= Rwanda, exchange, switch, ID)
- Email Dara@Geodirectory.ie
(= addressee at serverID)
- Web address
<https://www.geodirectory.ie/>
(= protocol, site, type)

Real Physical addressable Objects

- Person (ID) A1234567J
- Motor car 181 D 3456
- Light pole HA3256
- House 5 KN25 STREET KIGALI
- Etc.

Our focus addressing for *buildings*

Key features of a World Class Addressing System

- Sustainable financially, politically
- Full national coverage
- Widespread usage
- Seamless links to other location based systems
- 'Hook' onto which other relevant location type data can be 'hung'
- Free and open for public and business usage without constraints
- High spatial resolution
- Regularly updated
- Based on standardised data structures
- Satisfies national requirements such as census, electoral roll, delivery of goods and services, taxation, financial compliance, as well as private sector commercial requirements.

Addressing system standards

Two bodies have standards in relation to addressing and these are:

UPU – *Universal Postal Union*

ISO – *International Standards Organisation*

These standards are not strictly adhered to but address structures rely on these guidelines. They are always evolving and constantly need to change

Addressing Standards - UPU

The UPU S42 International Address Standard – Certification:

- Globally, countries certified to date: 58
- See the website:
 - upu.int
 - <http://www.upu.int/en/activities/addressing/s42-standard.html>
 - <http://www.upu.int/en/activities/addressing/assistance-to-countries.html>

Addressing Standards - UPU



Addressing Standards - ISO

ISO 19160 International Address Standard – (Developed under the ISO Technical Committee TC211)

Five parts:

Part 1: Addressing — Conceptual model

Part 2: Addressing — Good practices for address assignment schemes

Part 3: Addressing — Quality management for address data

Part 4: Addressing — International postal address components and templates

Part 5: Addressing — Address rendering for purposes other than mail

- Part 4 is a direct adaptation of UPU S42
- South Africa instrumental in the development of a considerable amount of this work and the completion of parts 1 & 4, following the SABS SANS-1883 national addressing standard
- Part 6, Address data machine interchange syntax, was later proposed and accepted
- Not all parts are completed (as at 2019 November)
- There is no compliance assessment or certification in place (yet)

Basic Types of Addressing Systems - 1

Type 1: Postal Delivery Service addresses

Structure: Not a physical locality ID, but a Delivery Point.

[Not permanently associated with the addressee.]

Examples: Rented P O BOX, BAG, counter service, military

Line Address elements

- | | |
|---|---------------------------------|
| 1 | Addressee |
| 2 | Internal delivery (optional) |
| 3 | Company/organisation (optional) |
| 4 | Delivery Point ID |
| 5 | Postcode and Post Office name |

Basic Types of Addressing Systems - 2

Type 2: Physical Urban (“street”): Formal building address

Structure: Entrance, Building, Thoroughfare, Locality/Placename.

Example: 18 KG5 AVENUE KIGALI RWANDA

<u>Line</u>	<u>Address elements</u>
1	Addressee
2	Internal delivery (optional)
3	Company/organisation (optional)
4	House ID & Street name
5	Zone (or cell)
6	Sector, District (optional)
7	Postcode and Post Office name

Basic Types of Addressing Systems - 3

Type 3: Physical: Rural address

Structure: Building/household, Section, Village, Locality, [Postal delivery area]

Example: 55 03 22 – 10 MUHABURA KIYOVU NYARUGENGE RWANDA

<u>Line</u>	<u>Address elements</u>
1	Addressee
2	Internal delivery (optional)
3	Company/organisation (optional)
4	House ID & Village name
5	Cell
6	Sector, District (optional)
7	Postcode and Post Office name

Basic Types of Addressing Systems - 4

Type 4: Physical: Informal areas address

Structure: Land parcel / Grid ref. point, Settlement, Locality, [Postal delivery area]

Example: SUPERFAST AIR TIME. Internet Service, RWA 6D.1S Akabahizi, Rwanda

Line Address elements

- 1 Addressee
- 2 Internal delivery (optional)
- 3 Company/organisation (optional)
- 4 Plot/Parcel ID & Settlement name
- 5 Zone (or cell)
- 6 Sector, District (optional)
- 7 Postcode and Post Office name

GeoDirectory – Example of an Addressing System

- Ireland based
- Sustainable ... been operating financially viable for 15 years
- Customers ... international companies, government all levels, private sector Irish companies (eg insurance industry)
- 2.2 million address points
- Address points located within 1m accuracy
- Whole database updated quarterly
- GIS compatibility
- Basis for linking many other types of relevant data
 - Dwelling - usage, height, type, vacant/occupied, under construction, name, etc
 - Location - thoroughfare name and type, postcode, neighbourhood, town/district
 - Business – type, name, contact details
 - Date – time stamp ... enables identification of patterns of growth
 - Census – link to census Small Areas/Enumeration Districts

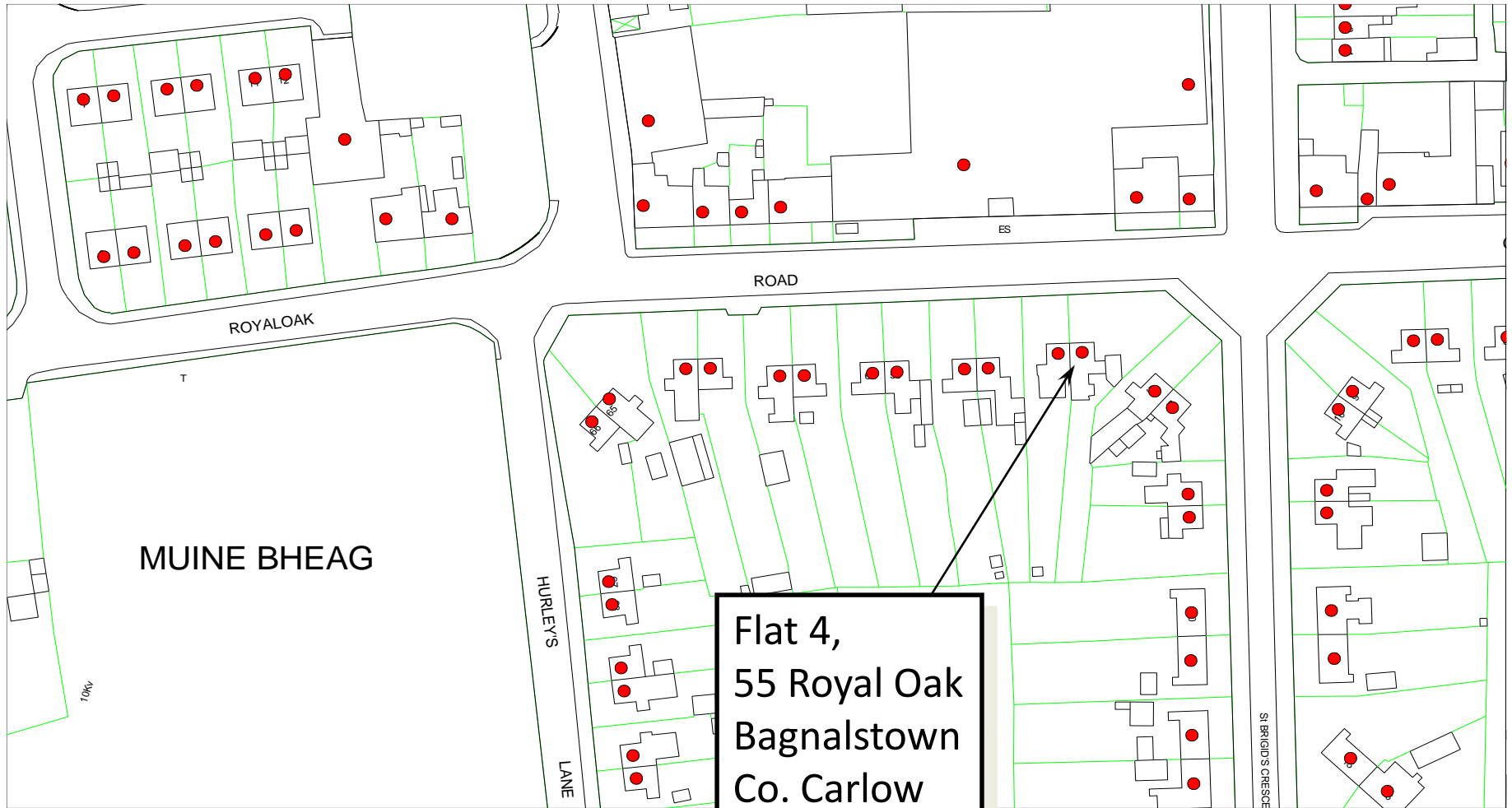
Uses of GeoDirectory Address Data

Links the definitive address to its location in the National Grid

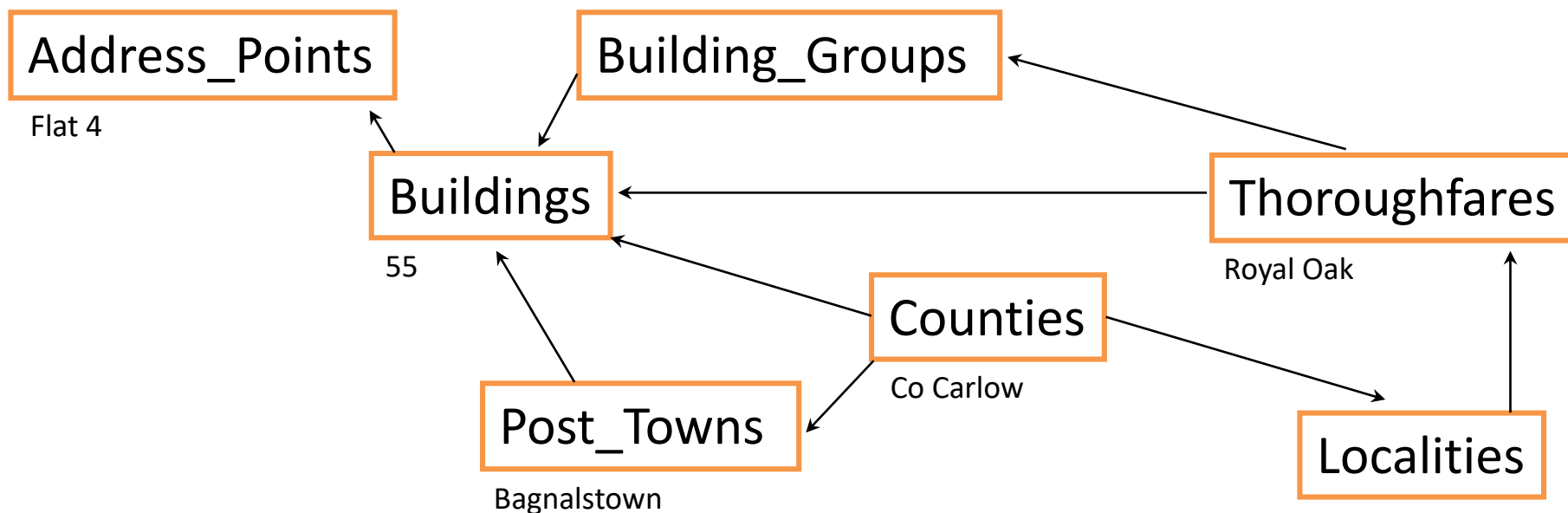


Example of how GeoDirectory use their Address Database

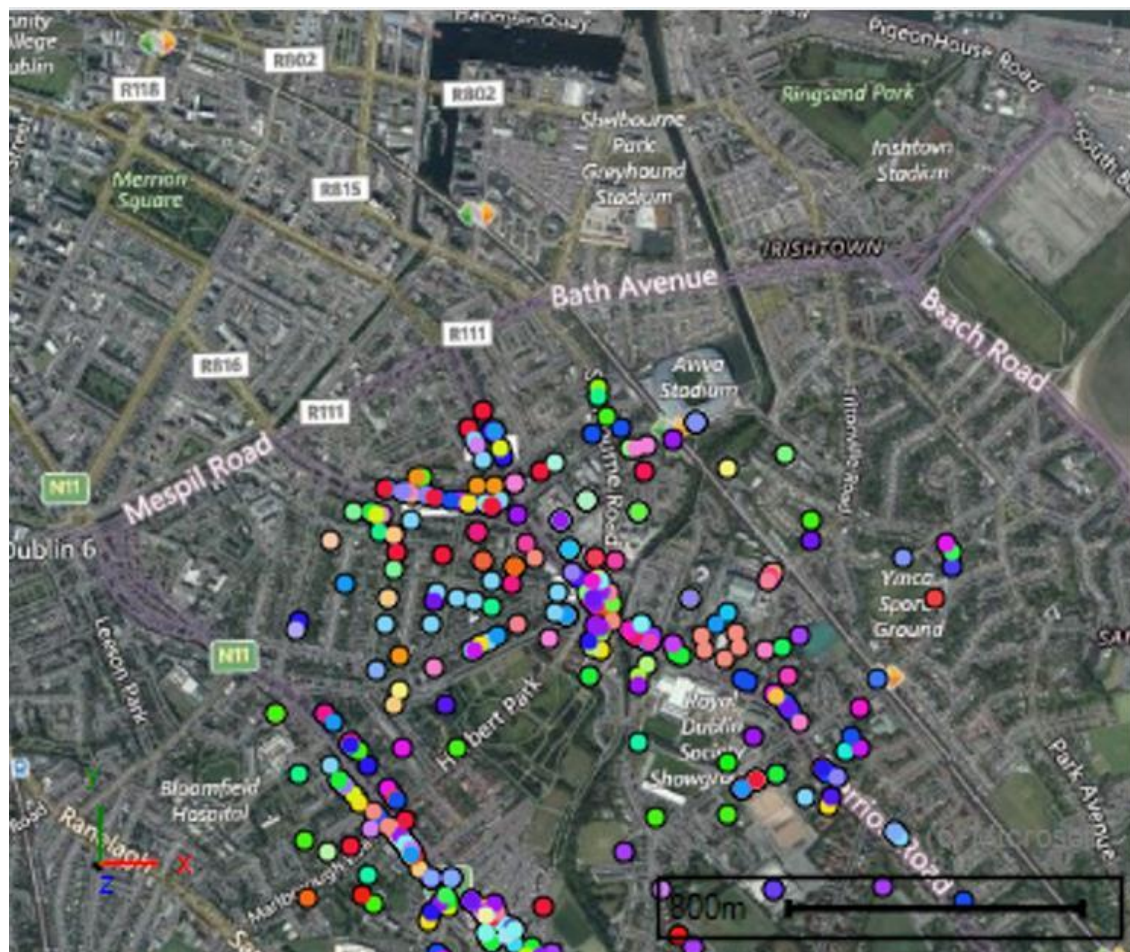
Example – Flat 4, 55 Royal Oak Bagnalstown



Example – Flat 4, 55Royal Oak Bagnalstown



Sub-Building Name: Flat 4
Building Number: 55
Primary Thoroughfare: Royal Oak
Post-Town: Bagnalstown



Description	
<input checked="" type="checkbox"/>	Excel layer - RDS Results File 11...
Business Descriptions	
<input checked="" type="checkbox"/>	GENERAL MEDICAL PRACTIC...
<input checked="" type="checkbox"/>	BEVERAGE SERVING ACTIVIT...
<input checked="" type="checkbox"/>	LEGAL ACTIVITIES
<input checked="" type="checkbox"/>	ARTISTIC CREATION
<input checked="" type="checkbox"/>	PHYSICAL WELL-BEING ACTI...
<input checked="" type="checkbox"/>	ACTIVITIES OF OTHER MEM...
<input checked="" type="checkbox"/>	OFFICE ADMINISTRATION A...
<input checked="" type="checkbox"/>	MOTION PICTURE, VIDEO A...
<input checked="" type="checkbox"/>	ACCOUNTING, BOOK-KEEPI...
<input checked="" type="checkbox"/>	ACTIVITIES OF RELIGIOUS ...
<input checked="" type="checkbox"/>	SPECIALIST MEDICAL PRACT...
<input checked="" type="checkbox"/>	...

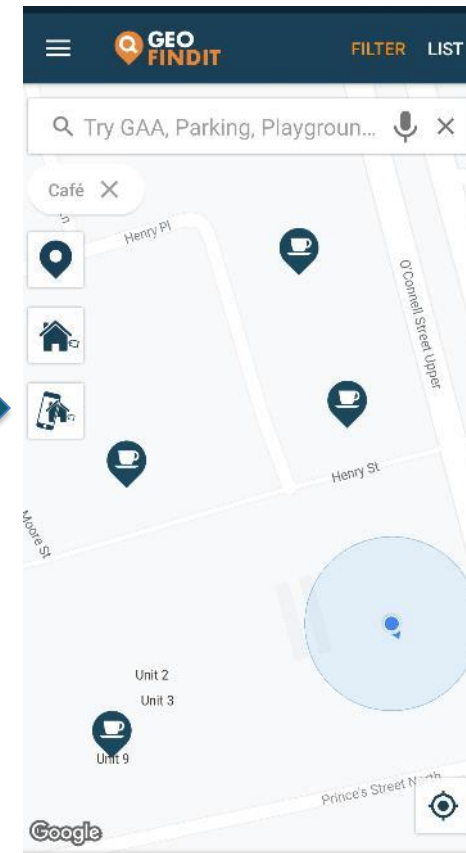
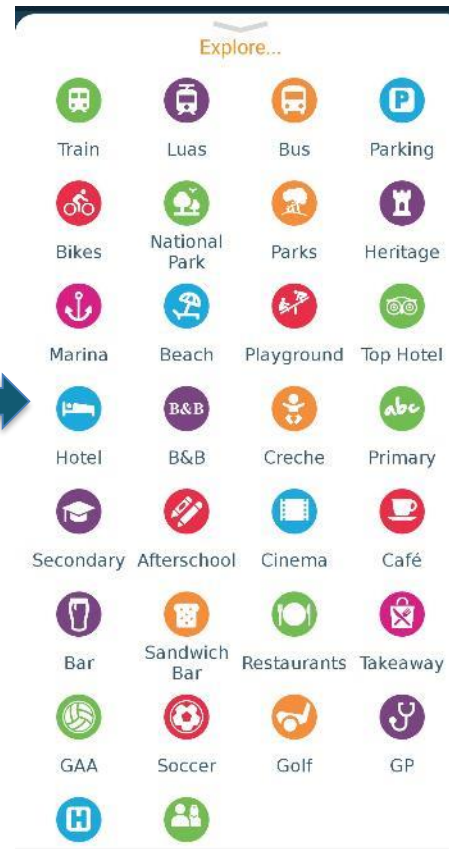
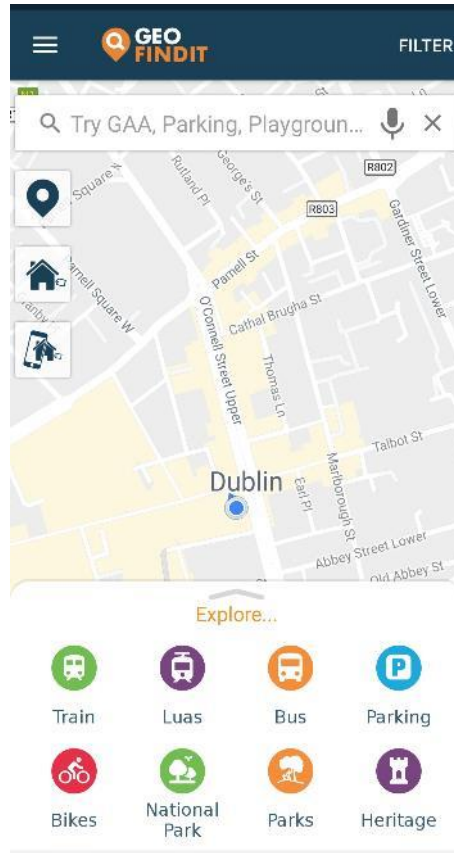
GeoDirectory App – GeoFindIT

Multiple searches through filters

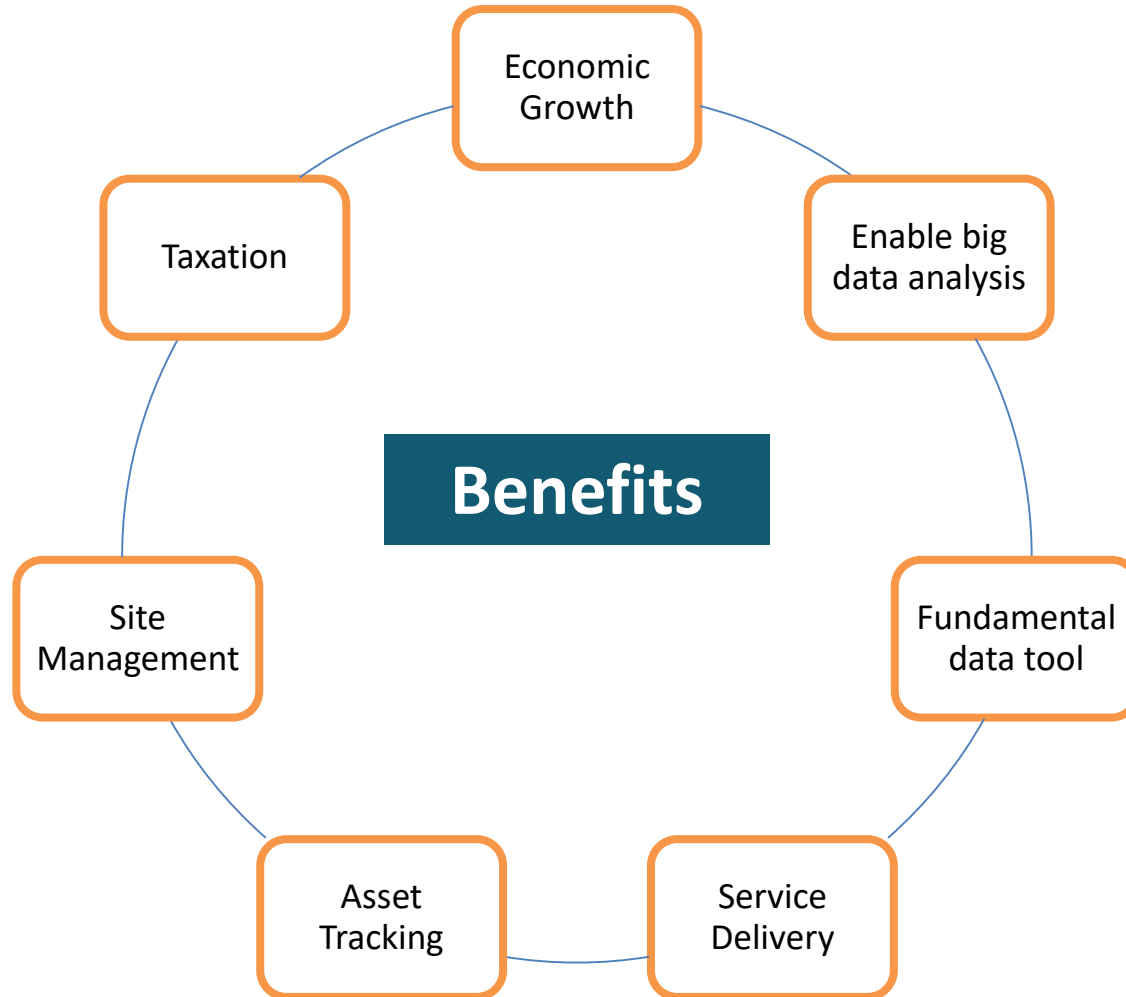
Non-business amenities

Icons on location points

Voice Control



Benefits of having a World Class National Addressing System



The Addressing Situation in Africa

- The successful development (or otherwise) of addressing systems in African countries follows the quality of management of development particularly at local authority level
- **In urban areas population expansion, hence number of households, expands rapidly and overtakes formal urban infrastructure provision, then informal or unauthorised settlement grows A common feature in Africa**
- However, the local authorities often do not have resources or finance to catch up.
- But, Local street committees can develop and informally assume authority Which can be condoned and encouraged by the local authority
- These street committees can be delegated the task of addressing, such as signage, unique naming, and avoiding duplication of addressing

Addressing Mission for Rwanda

In mid-2014, the UPU undertook a mission for a study for the implementation of an addressing and postcode systems in Rwanda. This was in cooperation with Iposita, Rwanda Housing Authority, Ministry of Youth & ICT and other national and regional authorities

One of this presentation authors, Pierre Rossouw, was appointed to lead the mission

The output also covered **address data structures, interchange and interoperability**, with users nationally, and internationally, also included the association of address with addressee

Addressing Mission for Rwanda

Scope of the mission was:

- (1) Design of a **postcode system** and a **national addressing standard** for the country;
- (1) Preparation of a postcode **implementation roadmap**, compatible with the physical addressing project of the Rwanda Housing Authority (RHA);
- (3) Drafting of a concept paper to **develop to-door delivery**, including the needs assessment for the reorganisation of current mail processes in order to achieve the desired to-door delivery; and
- (3) Design a **pilot project** for the implementation of the postcode and home delivery.

Concluding Comments

- UN GGIM lists addressing as one of the global fundamental data themes
- Addressing is a critical element in a nation's digital infrastructure

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