

Address data exchange in South Africa

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Overview

1. South African addresses
2. SANS 1883 – South African address standard
 - **Scope**
 - **Definition of an address**
 - **Address types**
3. Address data exchange
4. How would an international address standard benefit South Africa?

South African addresses

No official address register

Many sources of address-related data

Surveyor General

One integrated digital cadastre for the whole country

Registrar of Deeds

Property ownership

Chief Directorate Surveys and Mapping

Topographical maps

Municipalities

Address allocation, property taxes

South African Post Office (SAPO)

Postal delivery

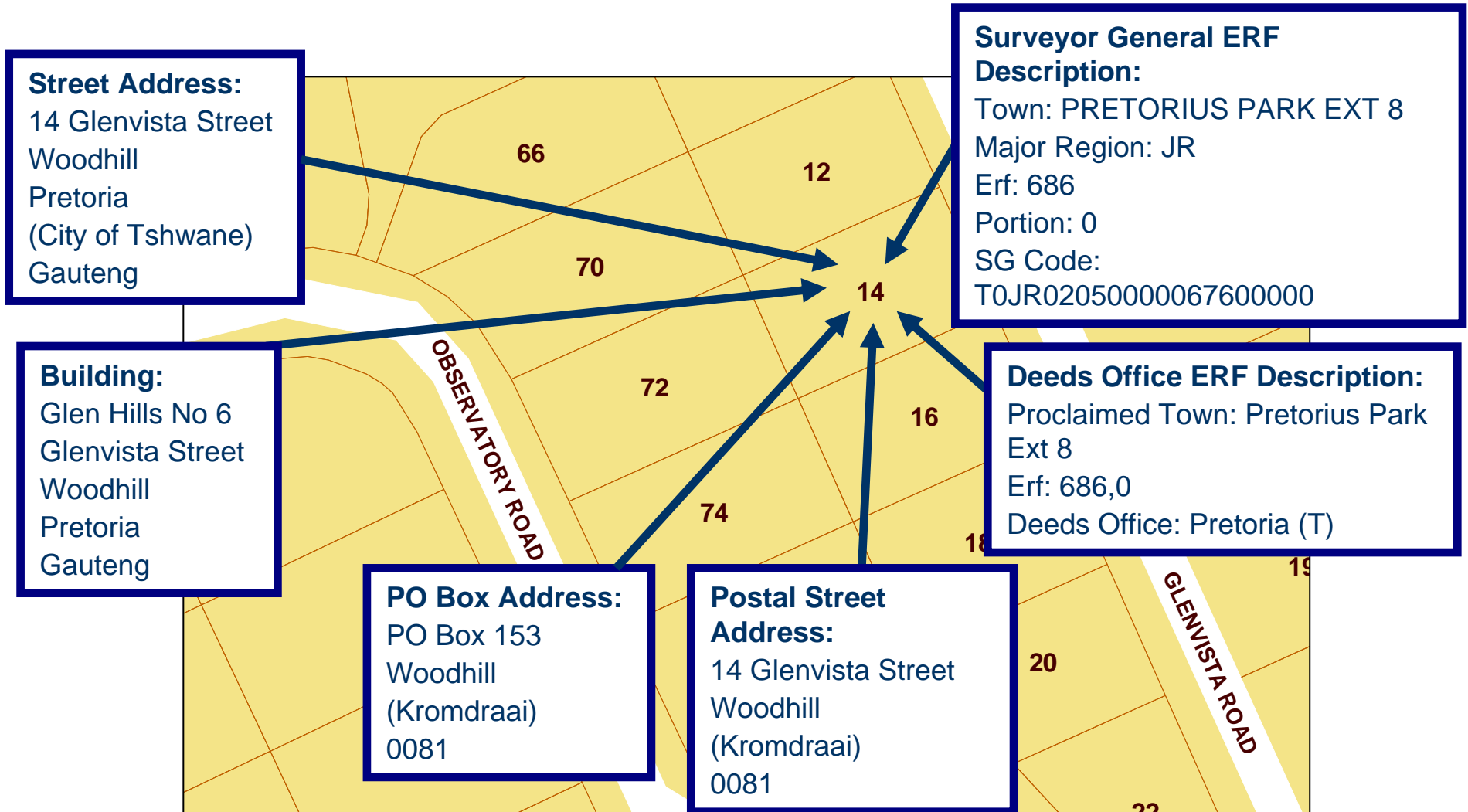
South African Geographical Names Council

Standardized geographical names; Redress, correct and transform geographical naming system

Utilities for service delivery such as electricity and telecomms

Service delivery points

South African addresses



South African addresses



Rapid urbanization

Informal settlements

Initially no individual cadastral properties

Initially no addressing system in place

Dynamic dwelling demarcation

e.g. after fires

South African addresses

Apartheid legacy

Transformation of naming system

Controversial, e.g. Pretoria vs Tshwane

Historically black townships

Wide variety of addressing systems

Many areas with house numbers only, no street names

Assigning street names is a long process

Tribal areas

Communal lands

Single cadastral land parcel per tribe

No addressing system in place



South African addresses

47.9 million people (mid-2007 estimate by
Statistics SA)

± 11 million households (Census 2001)

7.5 million properties

7 million land parcels

500,000 sectional title properties

7.5-11 million addresses in South Africa

3-5 million addresses in existing databases

Backlog: \geq 50% (4 – 7 million addresses)

South African addresses

“A world in one country”



SANS 1883 - SA address standard

SANS 1883-1, *Geographic Information – Address Standard*

Part 1: Data format of addresses

SANS 1883-2, *Geographic Information – Address Standard*

Part 2: Guidelines for addresses in databases, data transfer, exchange and interoperability

SANS 1883-3, *Geographic Information – Address Standard*

Part 3: Guidelines for address allocation and updates

SANS 1883 - SA address standard

Address types

How data elements are combined to form address

Not narrowly prescriptive

- As assigned officially by municipalities
- As commonly in use
- In formal/urban areas, as well as informal/rural areas

4 groups of address types

- traditional formalized; composite; SAPO; descriptive

Terms & definitions related to addresses

How address data shall be *exchanged*

SANS 1883 - SA address standard

Address

unambiguously specifies a point of service delivery

Point of service delivery

actual location where a service could be provided

Examples of services

Postal mail

Utilities: electricity, water, telecommunication, sewerage

Emergency services

Proof of residence for financial transactions

Elections

Household surveys

SANS 1883 - SA address standard

Address types - traditional formalized:

Street Address

Dr Lategan Road, Groenkloof
1736 Pretorius Street, Arcadia, 0083



Intersection Address

Corner of Kings and Richmond Roads, Mowbray

Site Address

25436 Soshanguve CC
Portion 938 Mooikloof



SANS 1883 - SA address standard

Address types – composite:

Landmark Address

Parliament, Cape Town

Voortrekker Monument, Pretoria



Building Address

Election House, 260 Walker Street, Sunnyside

2nd Floor, Celtis Plaza, Schoeman Street, Hatfield



SANS 1883 - SA address standard

Address types - SA Post Office:

SA Post Office-Type Rural Village Address

012151 Ngxingxolo, Mooiplaas, 5228

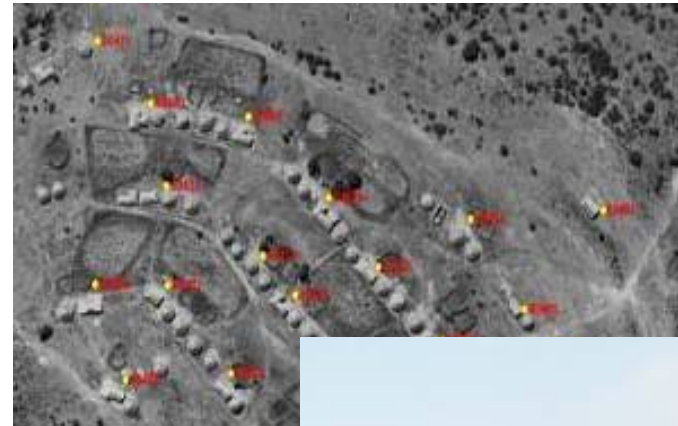
110101 Corana, Umtata, 5100



SA Post Office Box Address

PO Box 2947, Hatfield, 0028, ZA

Private Bag X2438, Glenstantia, 0010



SA Post Office Street Address

477 Chopin Street, Glenstantia, 0181

SAPO Poste Restante Address

Poste Restante, Hazyview, 3928



SANS 1883 - SA address standard

Address types - descriptive:



Farm Address

Tabakskuur, Grootgelukplaas, Kimberley Road, Bloemfontein



Informal Address

Opposite the butcher shop, Tsamaya Street, Mamelodi

Address data exchange

EBNF for the street address type

StreetAddress = StreetIdentifier, Locality

StreetIdentifier =

[CompleteAddressNumber | StreetNumberRange], CompleteStreetName

CompleteStreetName

= StreetName

| [[StreetNameModifier], StreetNameDirectional], StreetName,
StreetNameType

| [StreetNameModifier], StreetName, StreetNameType,
[StreetNameDirectional]

etc.

Locality = PlaceName, [Town], [Municipality], [Province],
[SAPOPostcode], [Country] | [CountryCode]

PlaceName = RegisteredName | UsedName

Address data exchange

XML encoding for a street address

1736 Pretorius Street, Arcadia, 0083

```
<StreetAddress>  
  <StreetIdentifier>  
    <CompleteAddressNumber>1736</CompleteAddressNumber>  
    <StreetName>Pretorius</StreetName>  
    <StreetType>Street</StreetType>  
  </StreetIdentifier>  
  <Locality>  
    <RegisteredName>Arcadia</RegisteredName>  
    <SAPOPostcode>0083</SAPOPostcode>  
  </Locality>  
</StreetAddress>
```

Address data exchange

Informal address

Opposite the spaza shop at the entrance of the squatter camp, Olievenhoutbosch

EBNF

```
InformalAddress = InformalReference,  
                 [LandmarkIdentifier],  
                 [StreetIdentifier | IntersectionIdentifier],  
                 Locality
```

XML

```
<InformalAddress>  
  <InformalReference>Opposite the spaza shop at the  
  entrance of the squatter camp</InformalReference>  
  <Locality>  
    <RegisteredName>Olievenhoutbosch</RegisteredName>  
  </Locality>  
</InformalAddress>
```

Address data exchange

Exchanging an address dataset:

<InformalAddress>

```
<InformalReference>Opposite the spaza shop at the  
entrance of the squatter camp</InformalReference>
```

```
<Locality>
```

```
<RegisteredName>Olievenhoutbosch</RegisteredName>
```

```
</Locality>
```

</InformalAddress>

<StreetAddress>

```
<StreetIdentifier>
```

```
<CompleteAddressNumber>1736</CompleteAddressNumber>
```

```
<StreetName>Pretorius</StreetName>
```

```
<StreetType>Street</StreetType>
```

```
</StreetIdentifier>
```

```
<Locality>
```

```
<RegisteredName>Arcadia</RegisteredName>
```

```
<SAPOPostcode>0083</SAPOPostcode>
```

```
</Locality>
```

</StreetAddress>

<IntersectionAddress> ... </IntersectionAddress>

<FarmAddress> ... </FarmAddress>

Address data exchange

Metadata

Address ID

The unique identification number assigned to an address by the address data provider.

Address Data Provider (resource provider)

Organization that creates and maintains the address dataset.

Address Source (originator)

Reference to the original source from where the data provider obtained the data, and where the address was created.

Point of Observation

Relative position to the physical structures and/or other electronic data according to which the address point location was captured.

Address Life Cycle Stage (Future, Active, Retired)

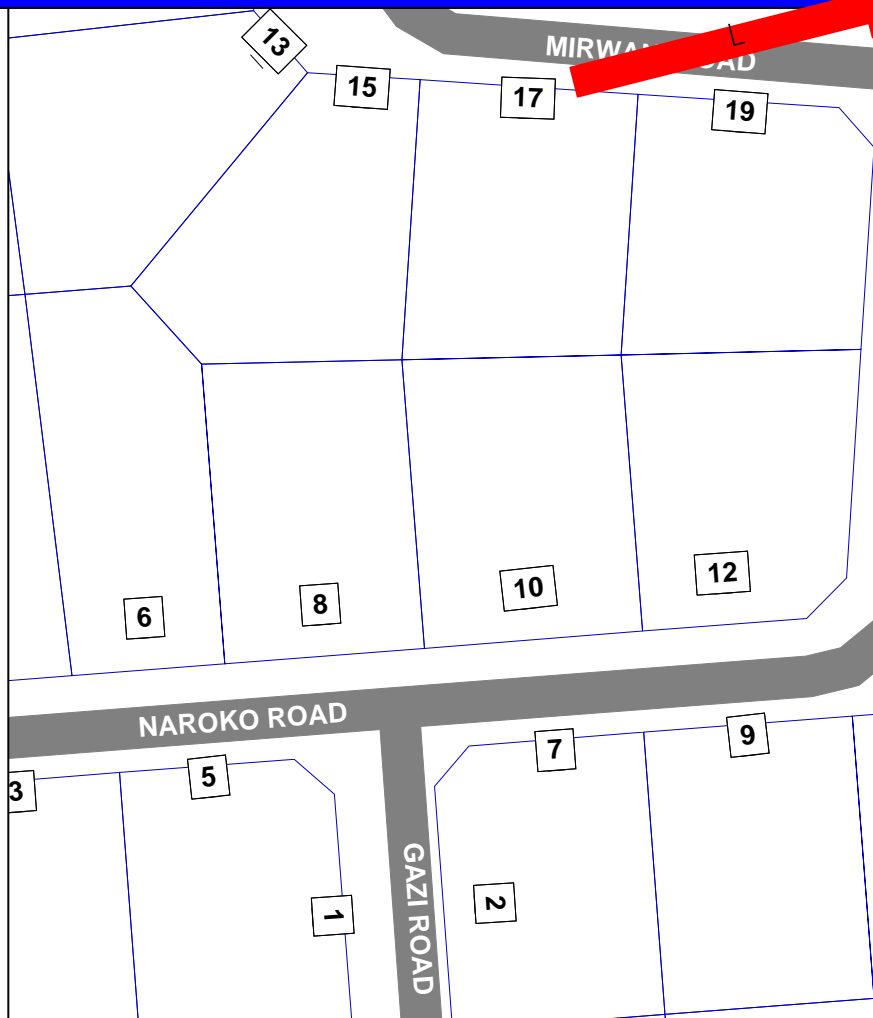
Address Official Status

Compliant with SANS 1878 – Geographic information - Metadata

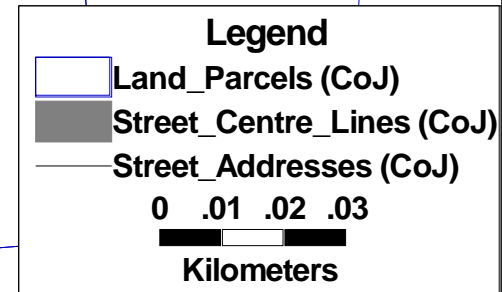
ISO 19115-Geographic Information Metadata)

Address data exchange

City of Joburg: sample data, as is

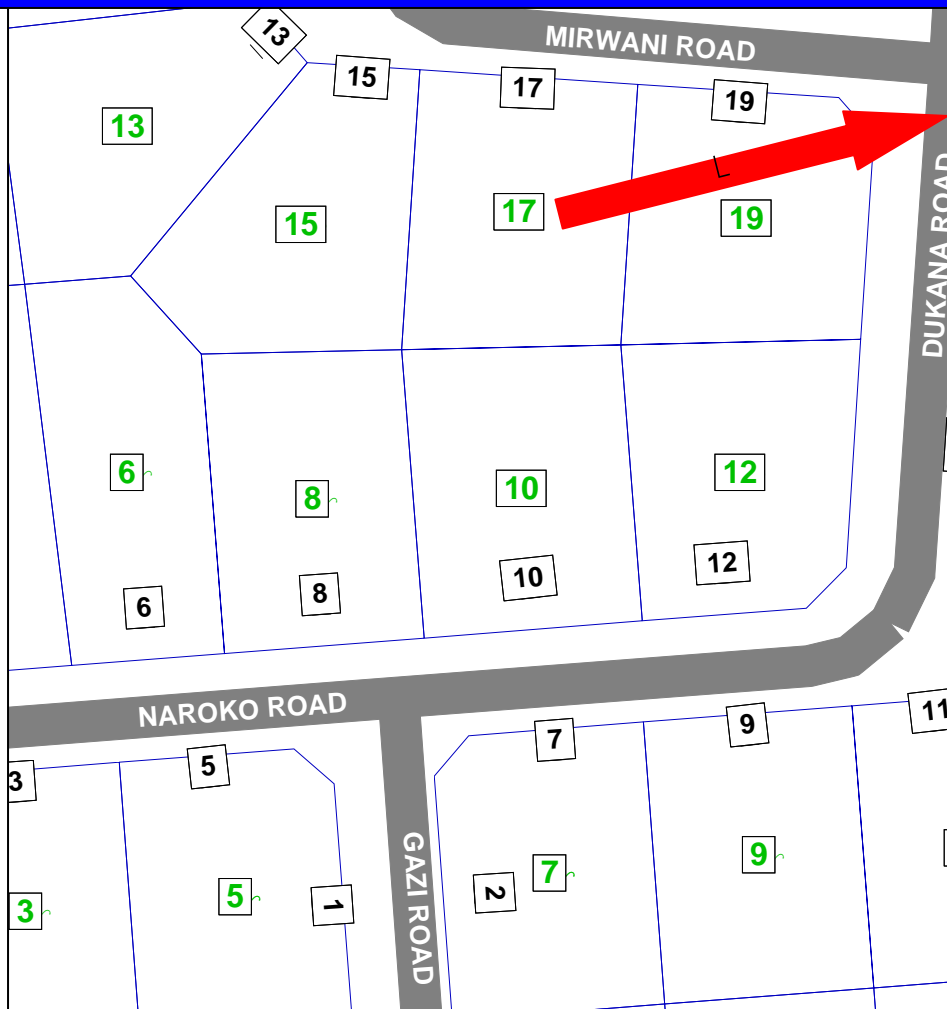


ID	190
OBJECTID	188844
STR_CODE	07303
STR_NUMBER	17
STATUS	P
LENGTH	3.000
SG_ID	TOIR064200200000438000000
STR_NAME	MIRWANI
STR_TYPE	ROAD
STR_CD	030941
ERR1	0
ADDED BY	
ADDED ON	
SHAPE_len	3.00003378355



Address data exchange

City of Joburg: sample data, SANS 1883 exchangeable



Info	
AddressID	188844
Longitude	28073662
Latitude	26028239
StreetNumber	17
StreetName	MIRWANI
StreetType	ROAD
UsedName	
RegisteredName	SUNNINGHILL EXT.2
XCoordinate	28.073662
YCoordinate	26.028239
PointOfObservation	Centre of land parcel
AddressType	Street Address
LifeCycleStage	Active
OfficialStatus	Official
DataProvider	City of Joburg
DataSource	City of Joburg
STR_CODE	07303
STATUS	P
LENGTH	3.000
SG_ID	T0IR0642002000004380000000
STR_CD	030941
ERR1	0
ADDED BY	
ADDED ON	
SHAPE_LEN	3.00003378355

How would an international address standard benefit South Africa?

- **Establish a common vocabulary**
 - Eliminates ambiguities and misunderstandings
- **Promote development of addressing tools**
 - Vendors
 - Open source community
- **Alleviate addressing backlog**
 - Economic enablement of people (credit etc.)
 - Integrate non-addressed people into modern society
- **Improve address maintenance**
 - Infrastructure planning and maintenance
 - Governance: voting, etc.
 - Household surveys

Acknowledgements

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Thank you

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