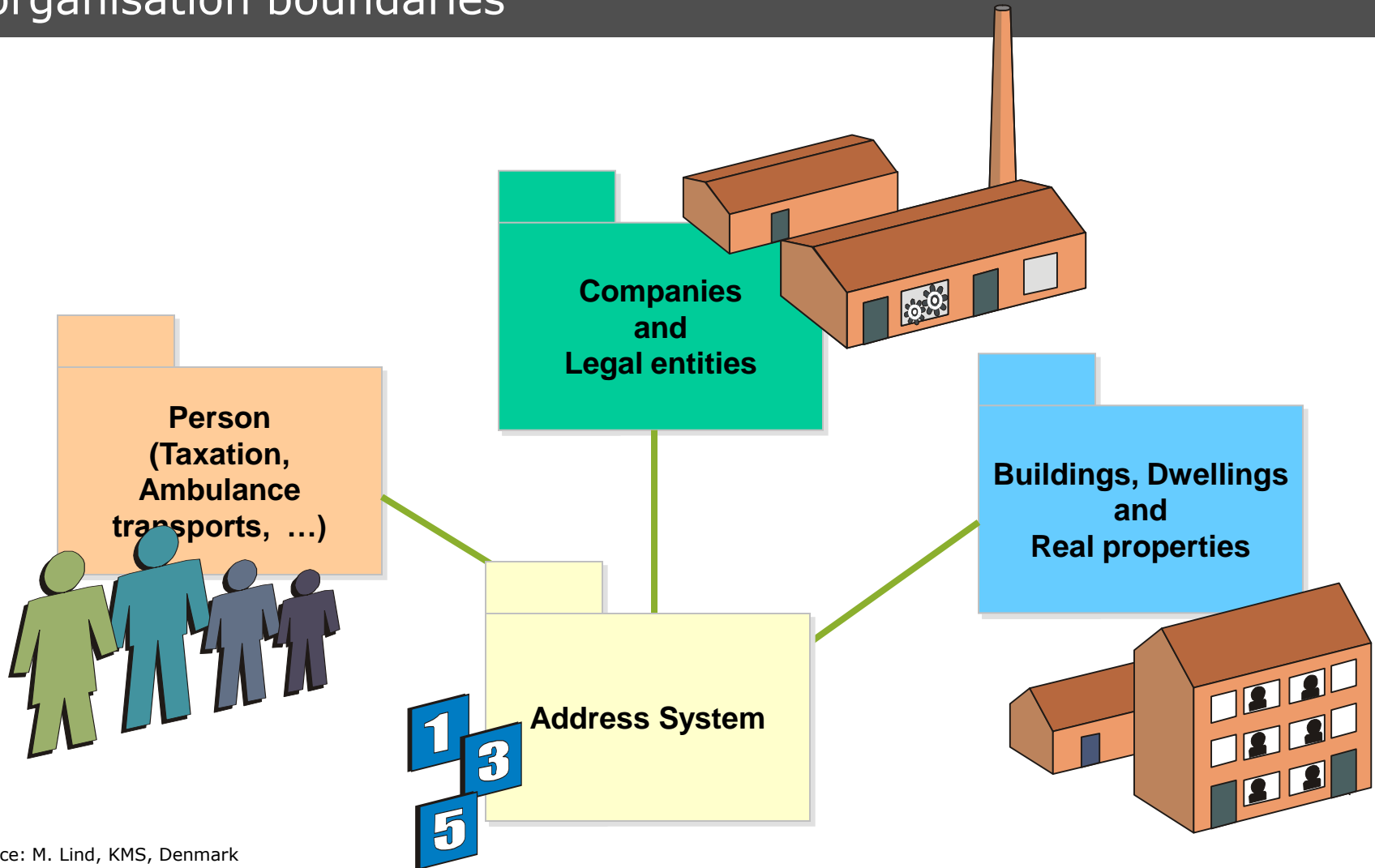


Principles of Addressing

Addresses are used across organisation boundaries

December 15, 2010
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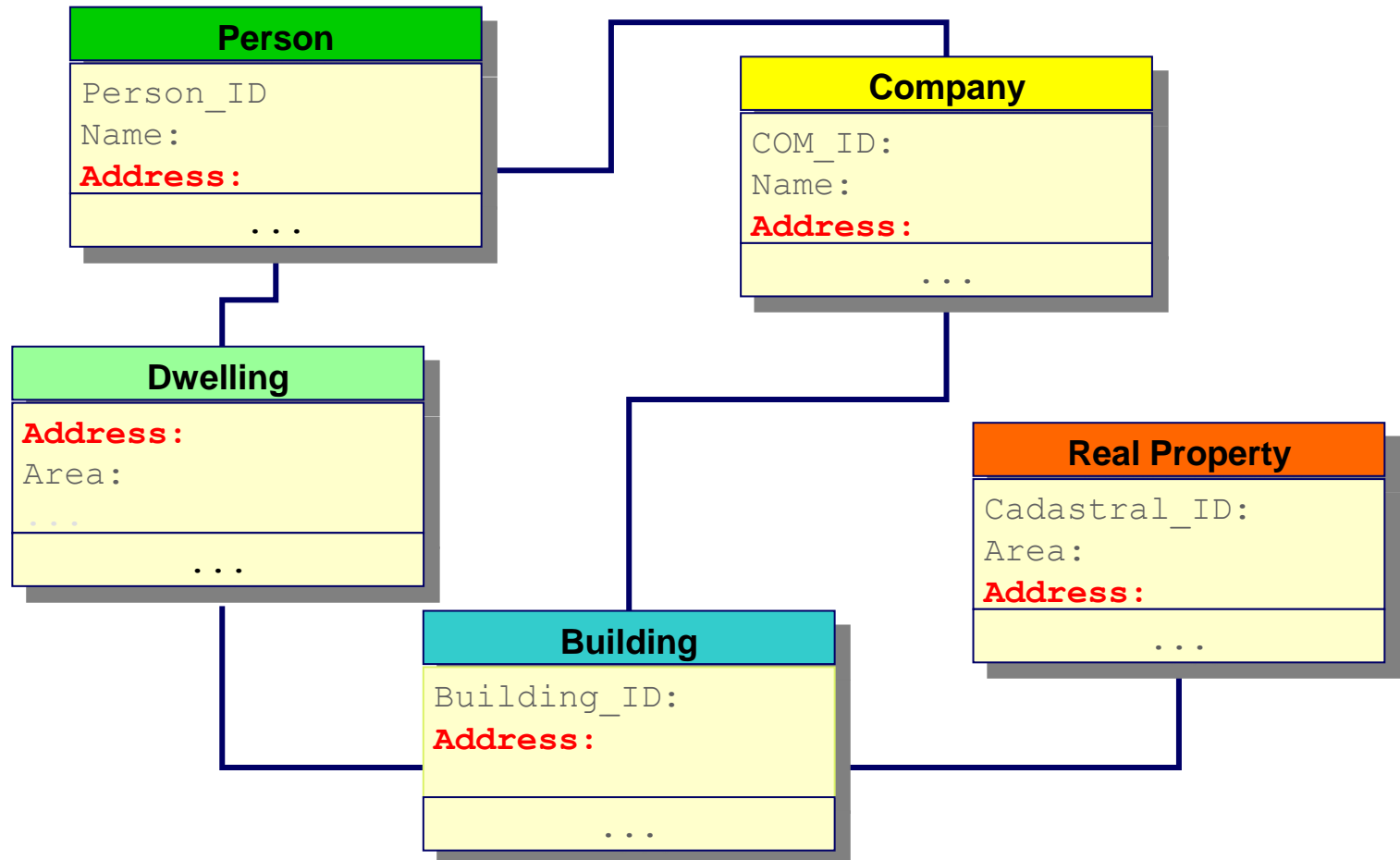


Source: M. Lind, KMS, Denmark

Are addresses considered as attributes?

December 15, 2010

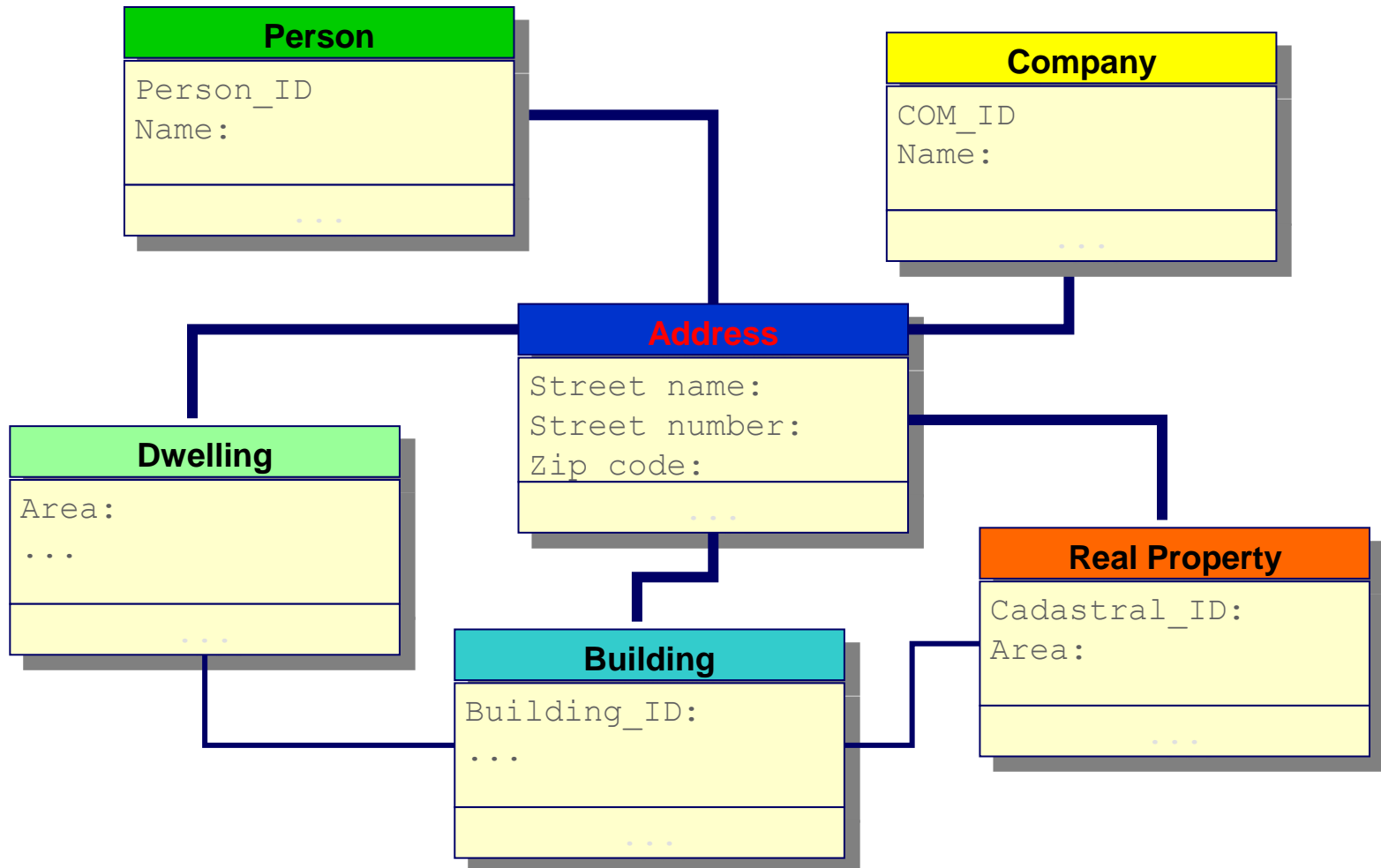
3



Or should addresses be considered as individual objects?

December 15, 2010

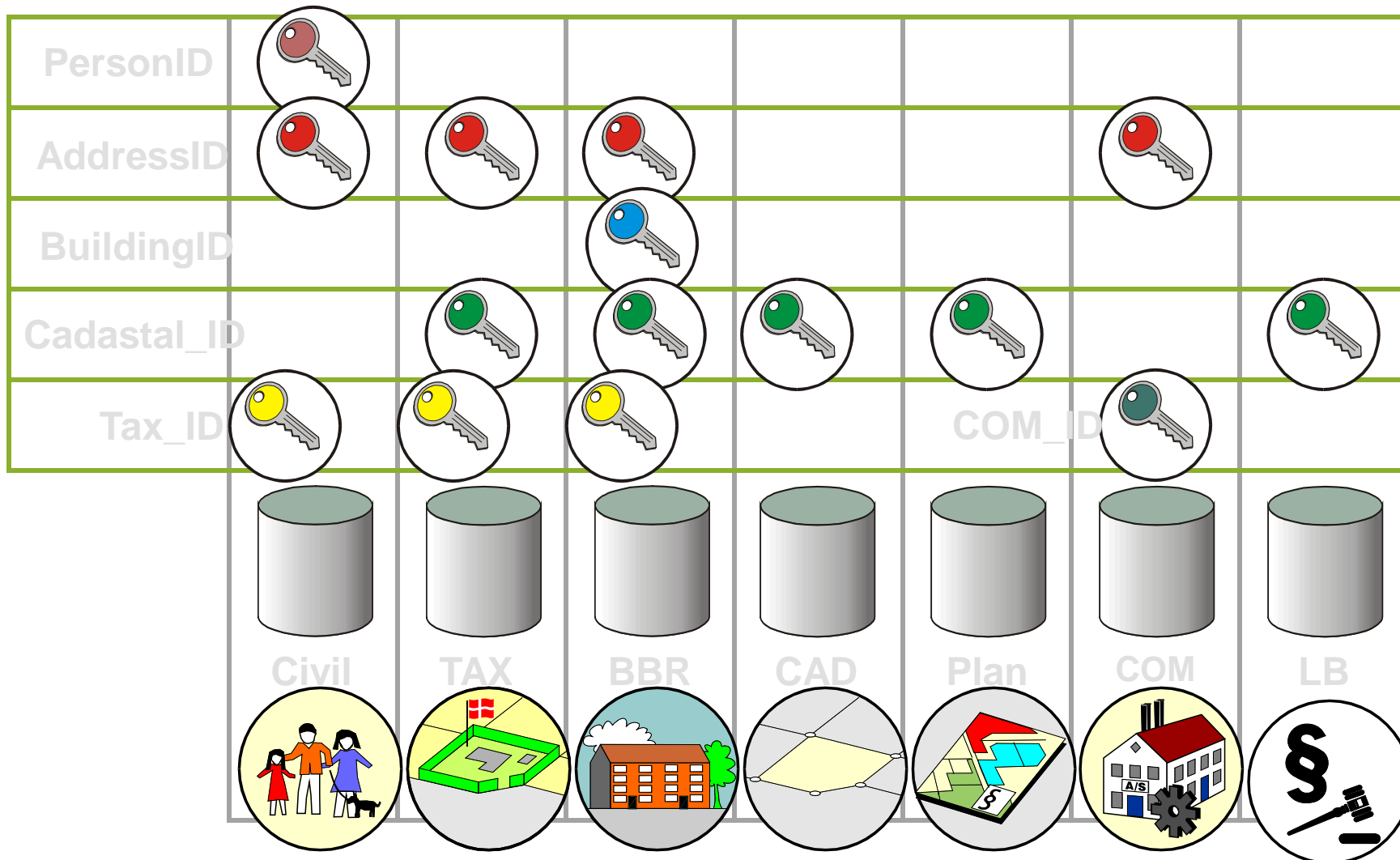
4



Keys connecting databases

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5



Postal or mailing addresses

- _ used to contact individuals or organisations.
- _ used for legal contacts, billings and notifications.

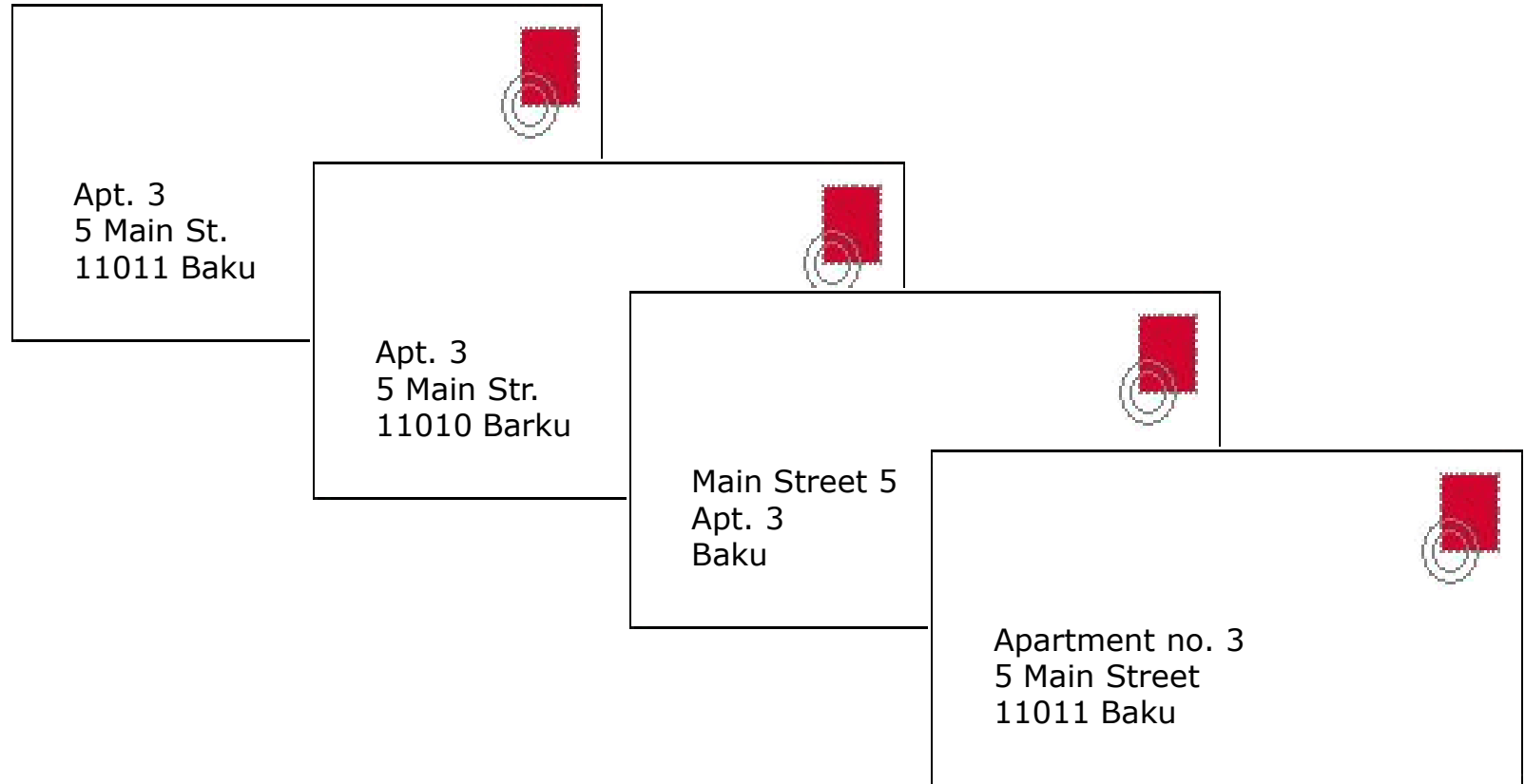
Location addresses (coordinate based)

- _ Are not used for the contact of individuals,
- _ Used for relating of features to a specific location
 - _ location/identification of infrastructure features, e.g. fire hydrants.

Mailing Addresses should allow flexibility

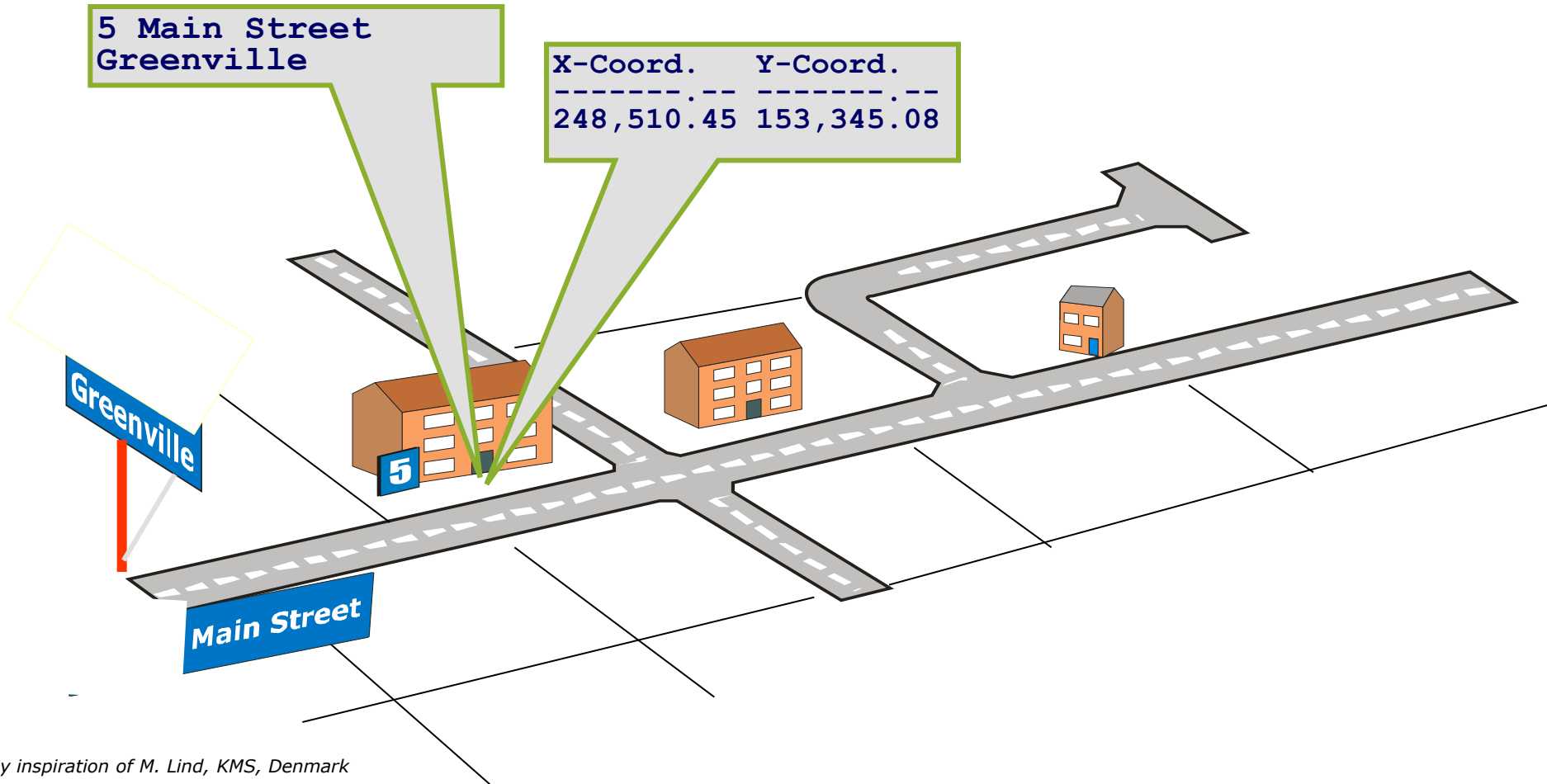
December 15, 2010

7



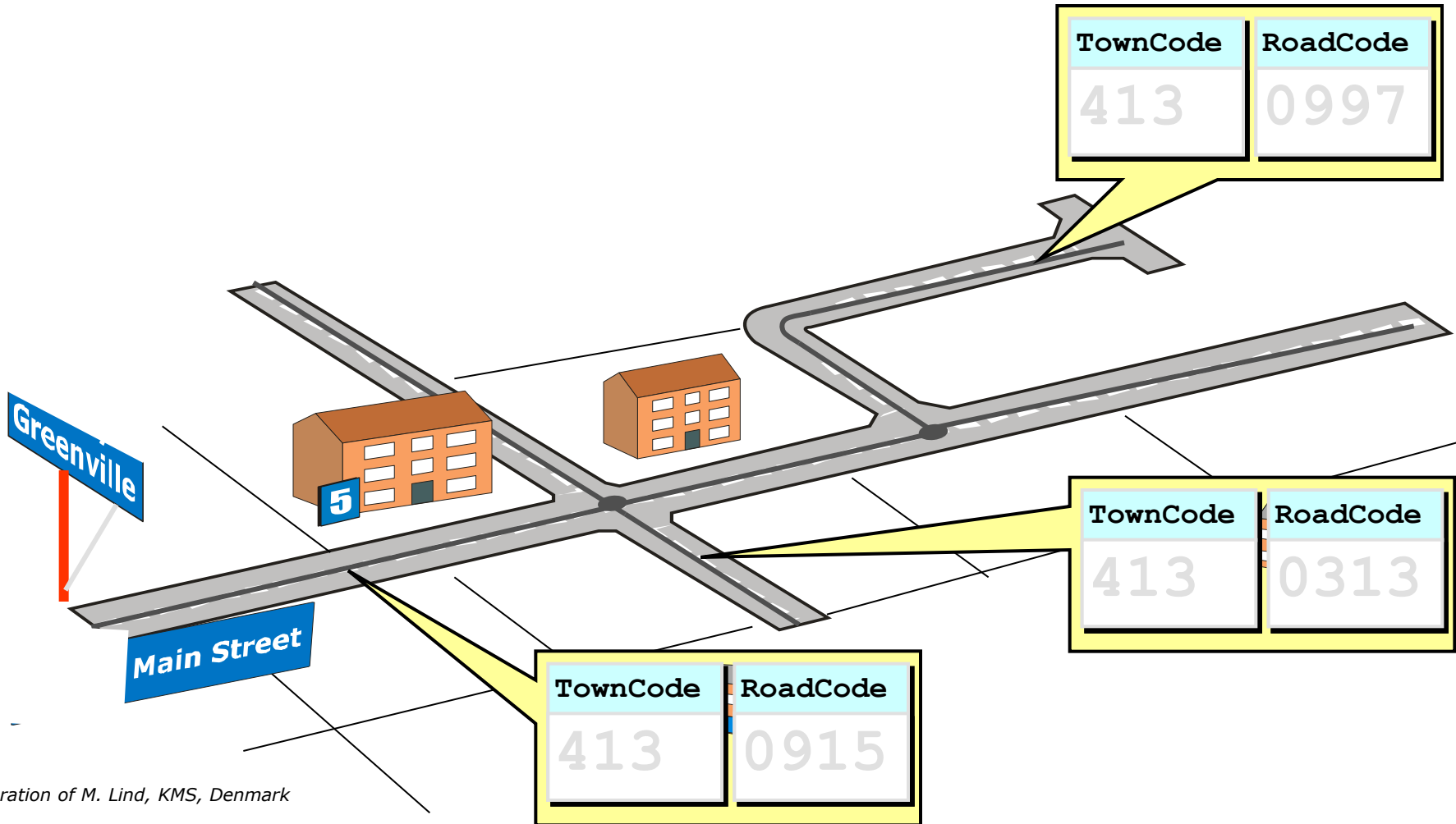
Location address: Address alias for geographical coordinates

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Introducing Road Codes

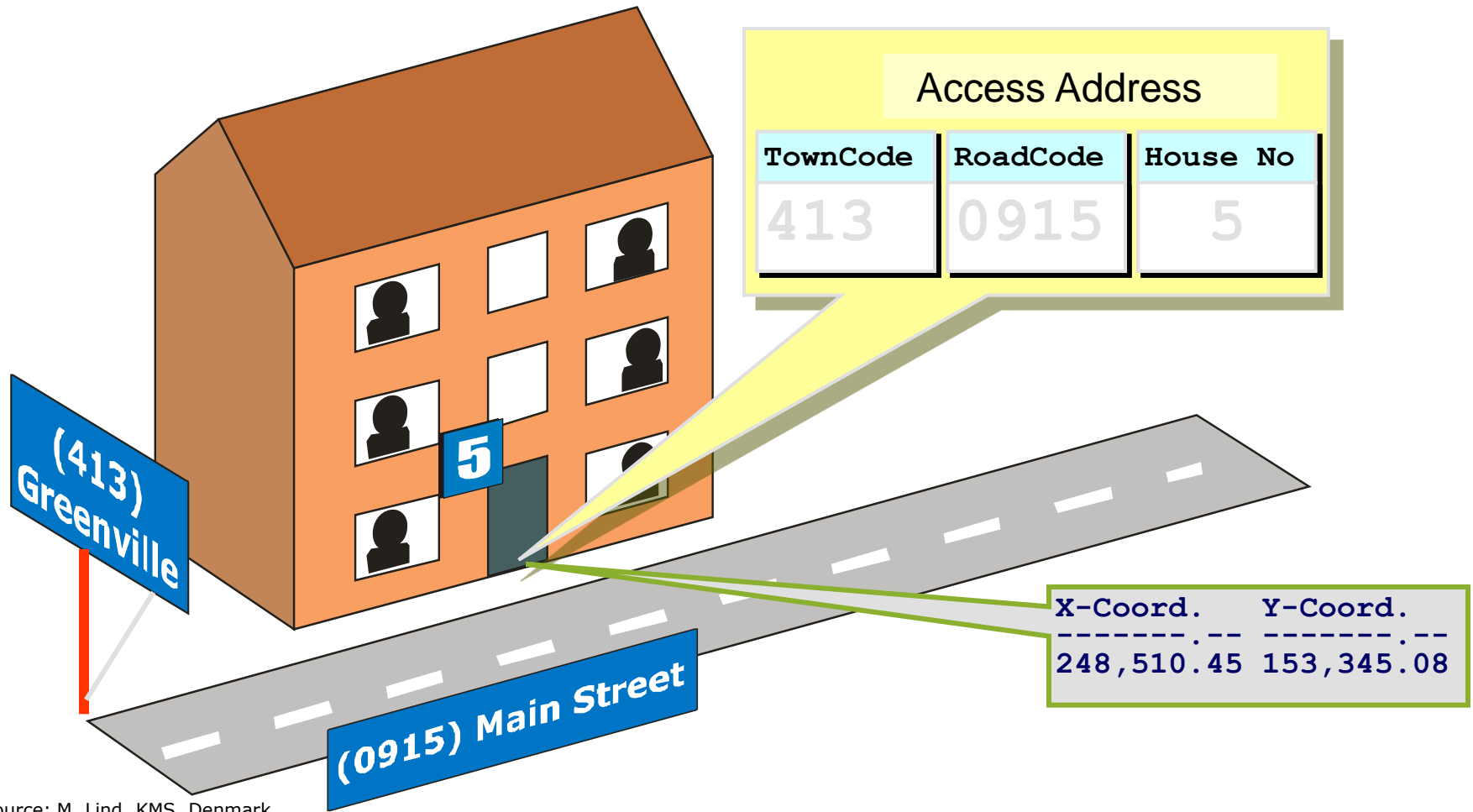
December 15, 2010
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By inspiration of M. Lind, KMS, Denmark

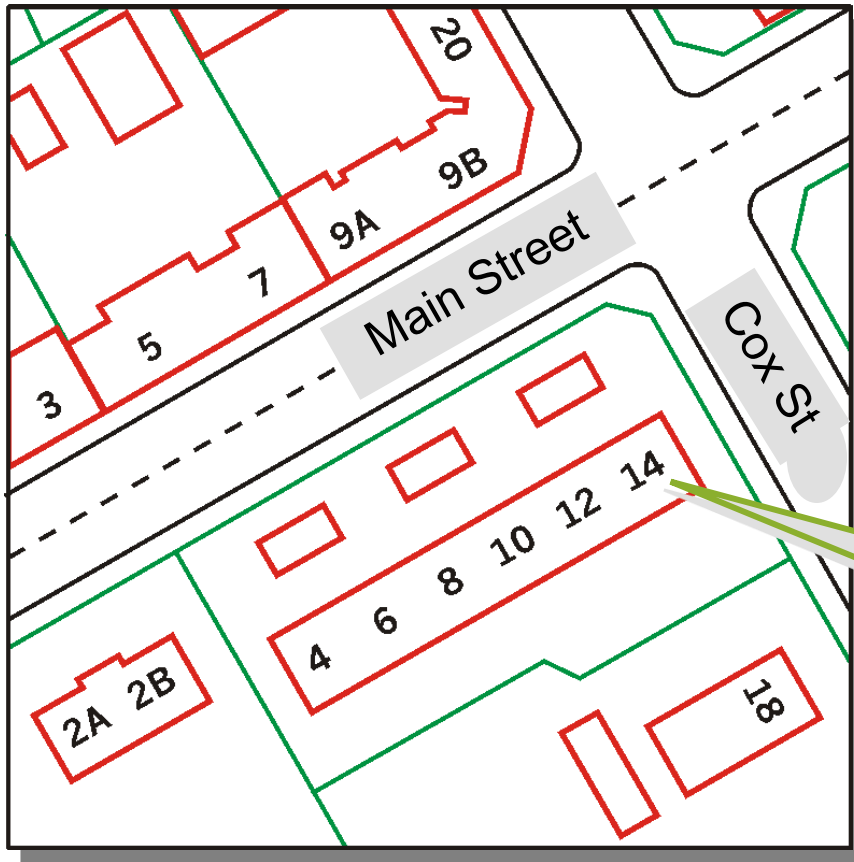
Location address type: Access Address

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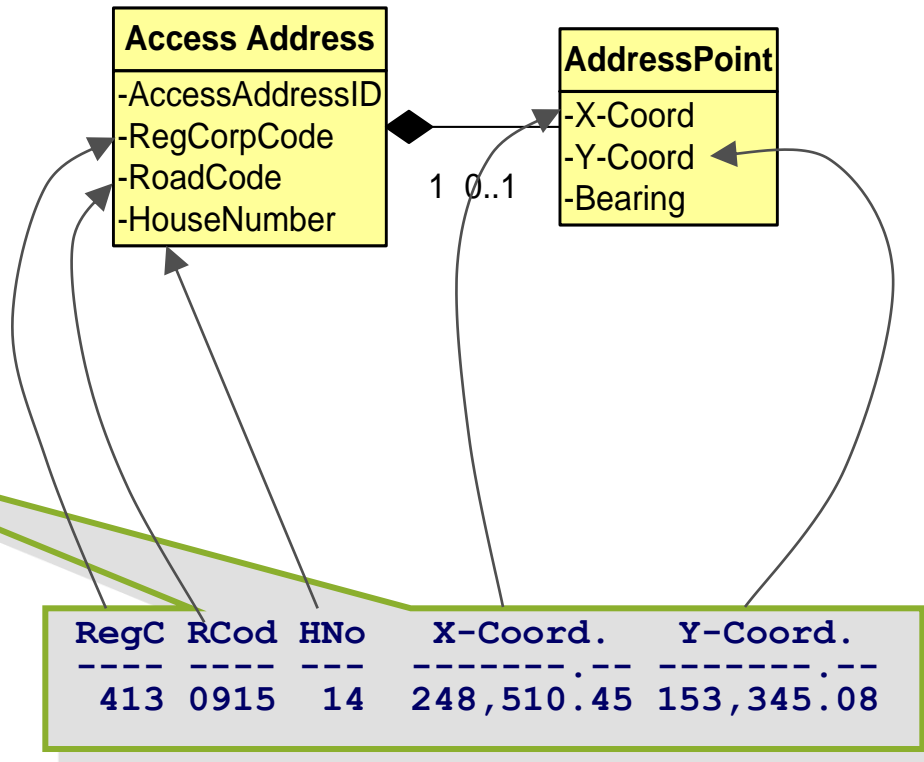


Source: M. Lind, KMS, Denmark

Cartographic presentation



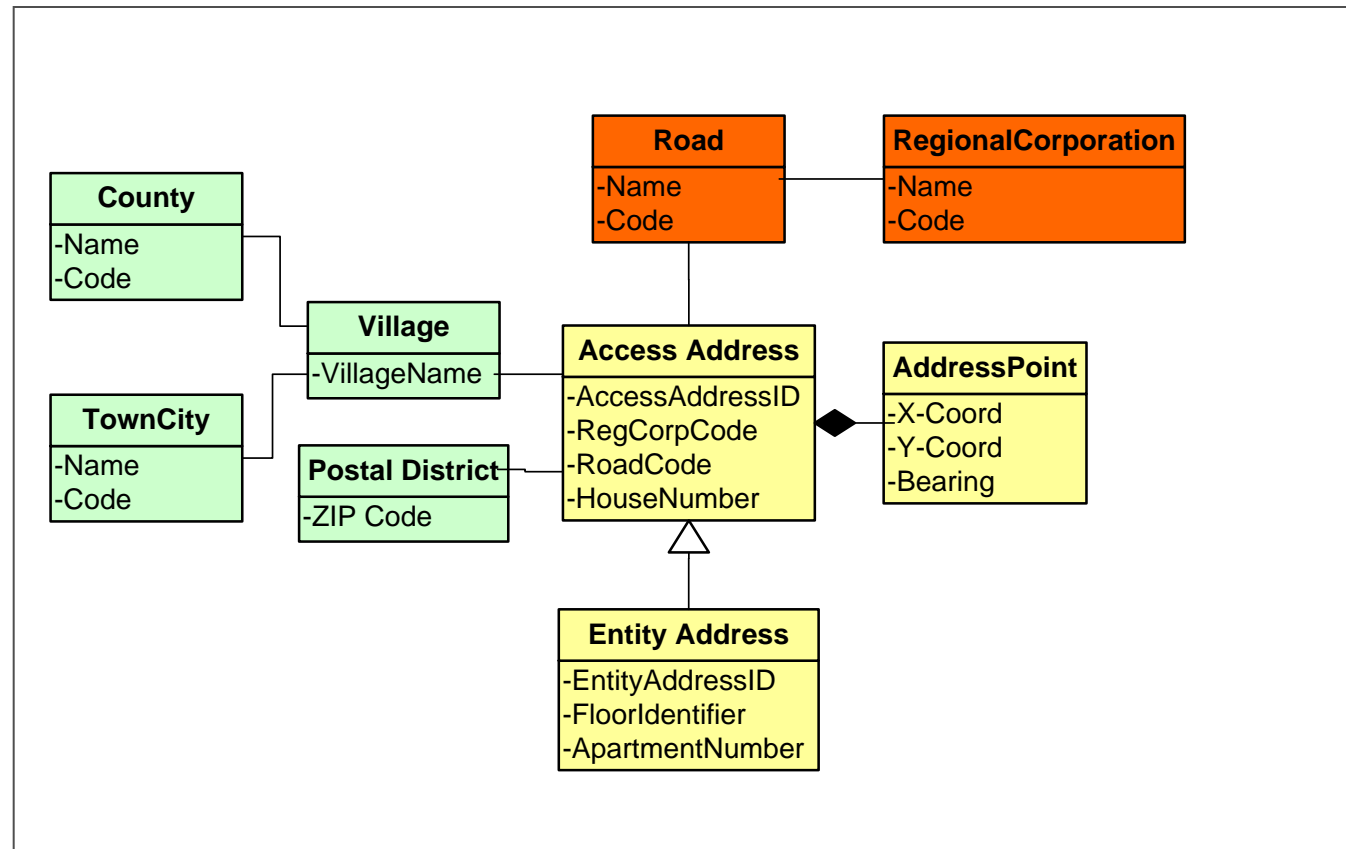
Object class presentation



Logical Address Data Model

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Location Address Model



Delegation of responsibilities

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Task	Central Government		Local Government	
	Political level	Techn. level	Political level	Techn. level
Legislation	+			
Regulations		+		
Guidelines		+		
Road Name Register		+		
Address Register		+		
Assignment of road names			+	
Registration of road names				+
Create new addresses				+
Update existing addresses				+



INSPIRE
Infrastructure for Spatial Information in Europe

D2.8.I.5 Data Specification on Addresses - Draft Guidelines

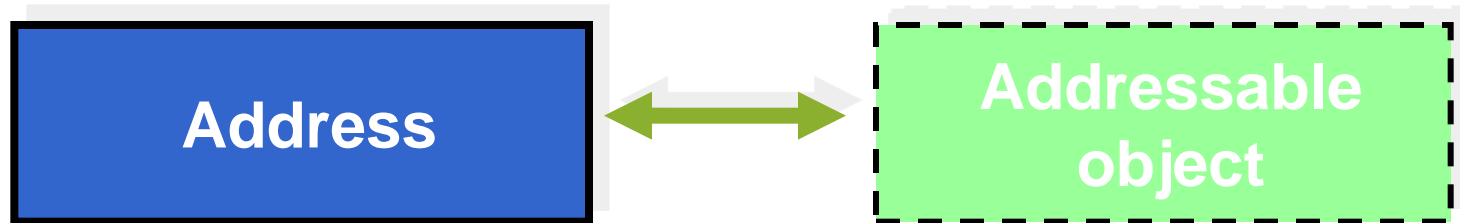
Title	D2.8.I.5 Data Specification on Addresses - Draft Guidelines
Creator	INSPIRE Thematic Working Group Addresses
Date	2008-12-18
Subject	INSPIRE data specification for the spatial data theme <i>Addresses</i>
Publisher	INSPIRE Thematic Working Group Addresses
Type	Text
Description	This document describes the INSPIRE data specification for the spatial data theme <i>Addresses</i>
Contributor	Members of the INSPIRE Thematic Working Group Addresses
Format	MS Word (doc) Adobe Portable Document Format (pdf)
Source	
Rights	Public
Identifier	INSPIRE_DataSpecification_AD_v2.0.doc INSPIRE_DataSpecification_AD_v2.0.pdf
Language	En
Relation	Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)
Coverage	Project duration

Main elements:

- *Object types;*
- *Definitions;*
- *Associations;*
- *Attributs;*
- *Data types;*
- *Requirements;*
- *Data quality*
- *Etc.*

The General Concept

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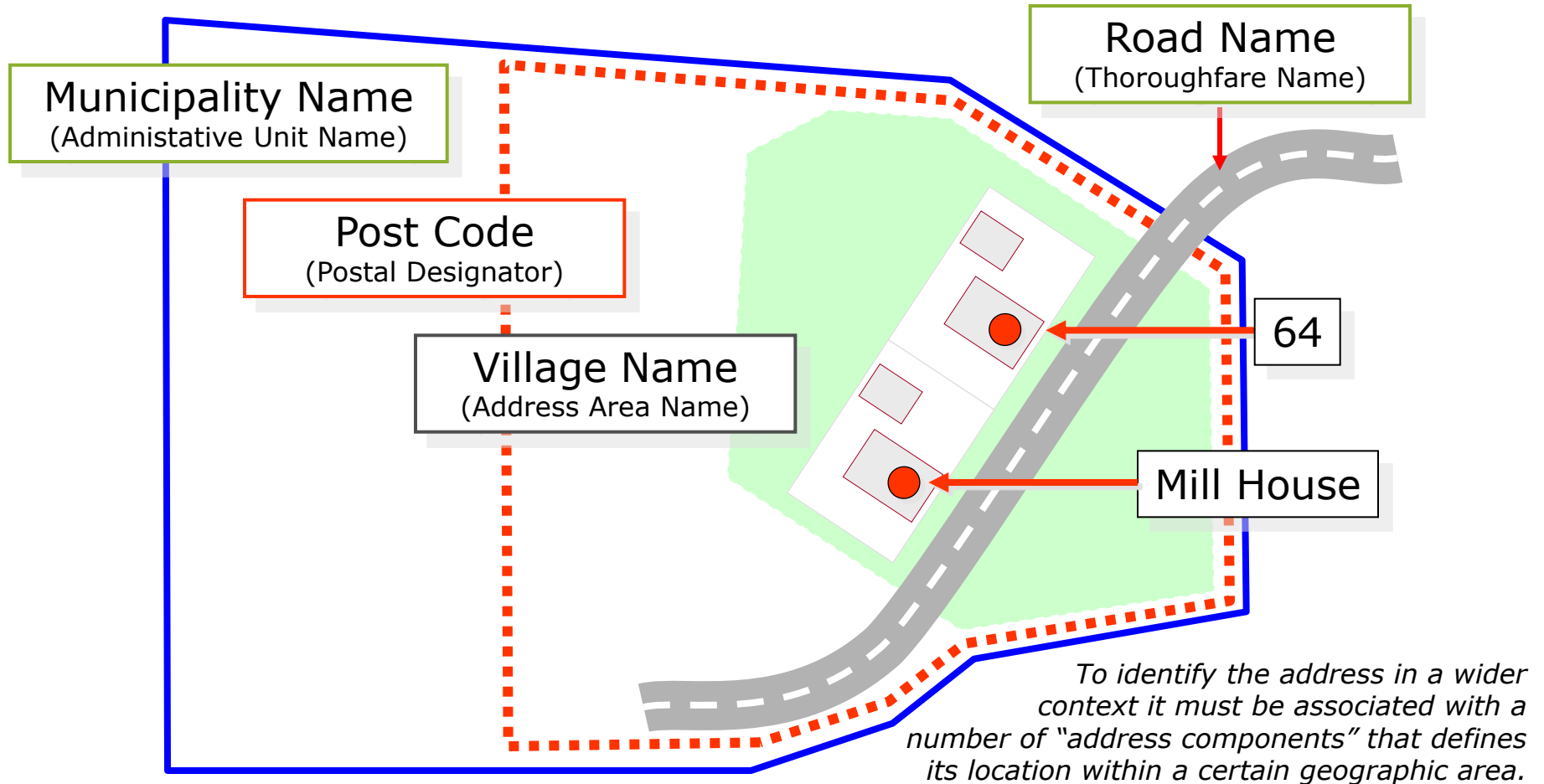
An address could be managed as a property or attribute of '*something*' – or as an individual feature or object class with relationship to '*something*'.

Based on tradition or legislation an addressable object could be a building, a real property a cadastral parcel, a dwelling (flat), a point of service delivery etc. ...

An address: "An identification of the fixed location of property, e.g. plot of land, building, part of building, way of access or other construction, by means of a structured composition of geographic names and identifiers."

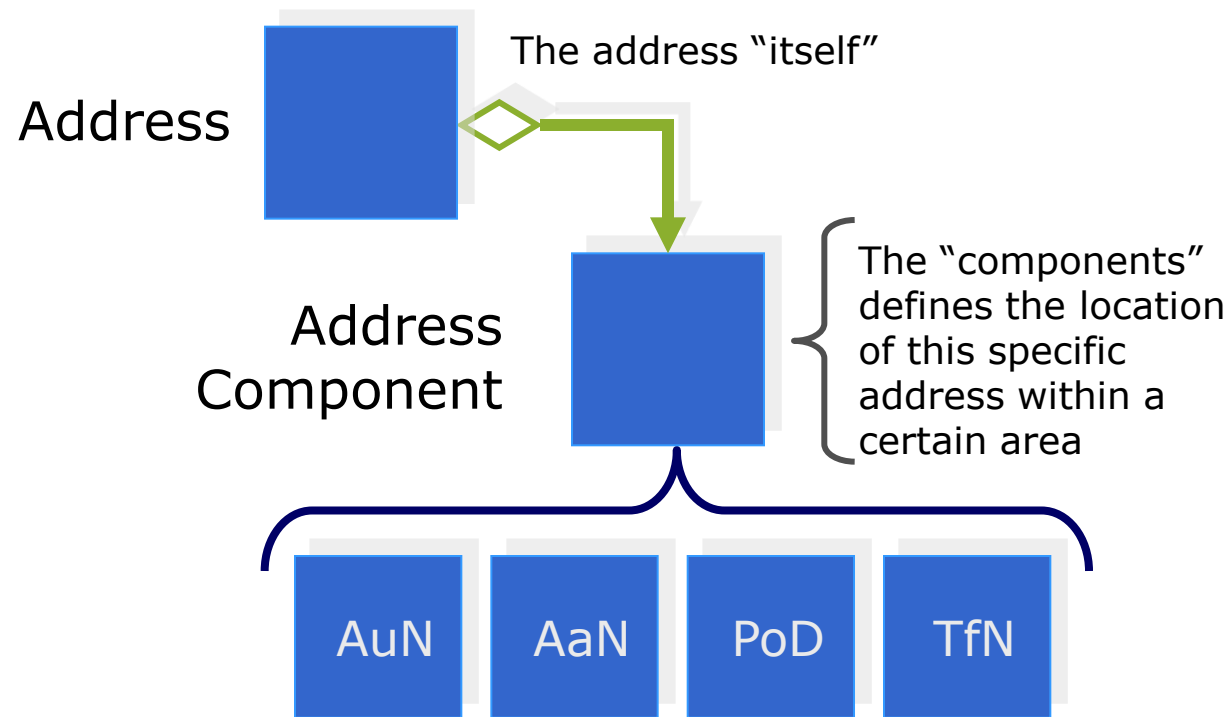
The General Concept

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The General Concept

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*To allow semantic interoperability, the Address Component is defined with a number of subtypes, reflecting comparable semantic elements in an address: **Administrative unit Name**, **Address area Name**, **Postal Descriptor**, **Thoroughfare Name** etc.*

Examples

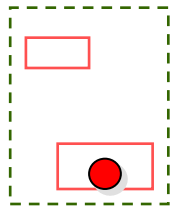
December 15, 2010
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Sweden	Denmark	United Kingdom
Mainstreet 6 1101 12345 Farsta	Mainstreet 6, 1. tv 2400 København NV	Flat 1A 6, Mainstreet Fairfield Wandsworth London SW18 1ED
The Netherlands	Belgium	Germany
Mainstreet 24 2500 AA Den Haag	Mainstreet 2 1.1 2140 Antwerpen	Mainstreet 6 67 433 Kelkheim
Spain	Czech Republic	Norway
Mainstreet 6 left 1 1 Cortijo del Marqués 41037, Écija (Sevilla)	Mainstreet 360/6 Chodov 149 00 Prague 41	Mainstreet 6 0161 Oslo

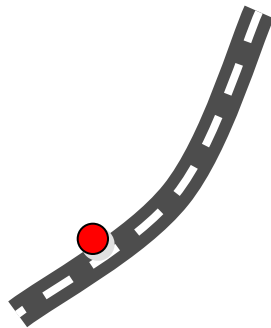
Geographic Position

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... is mandatory for all addresses

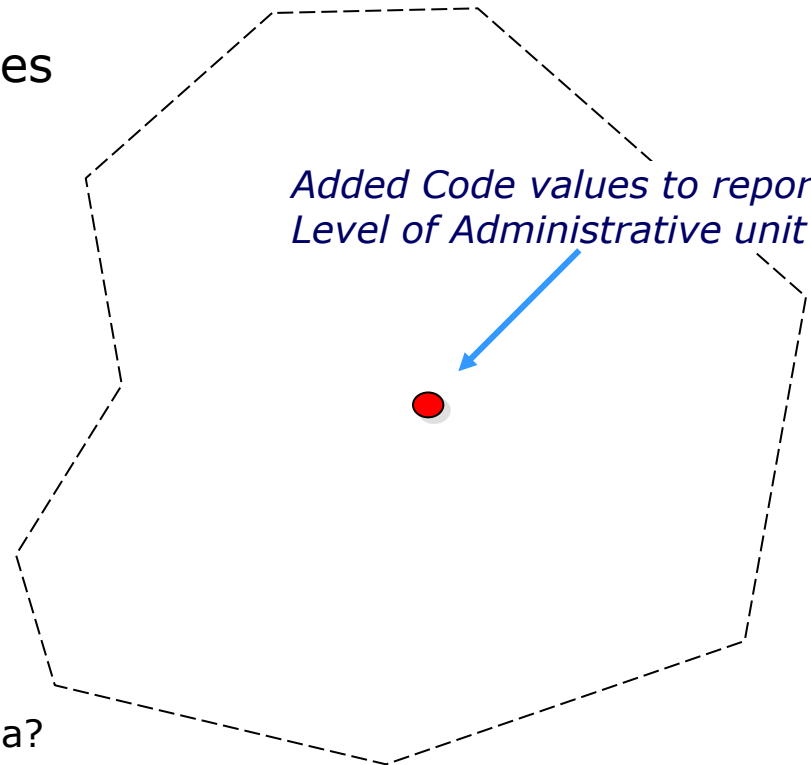


Exactly right...



Derived from
road segment...

Or .. derived from
administrative area?

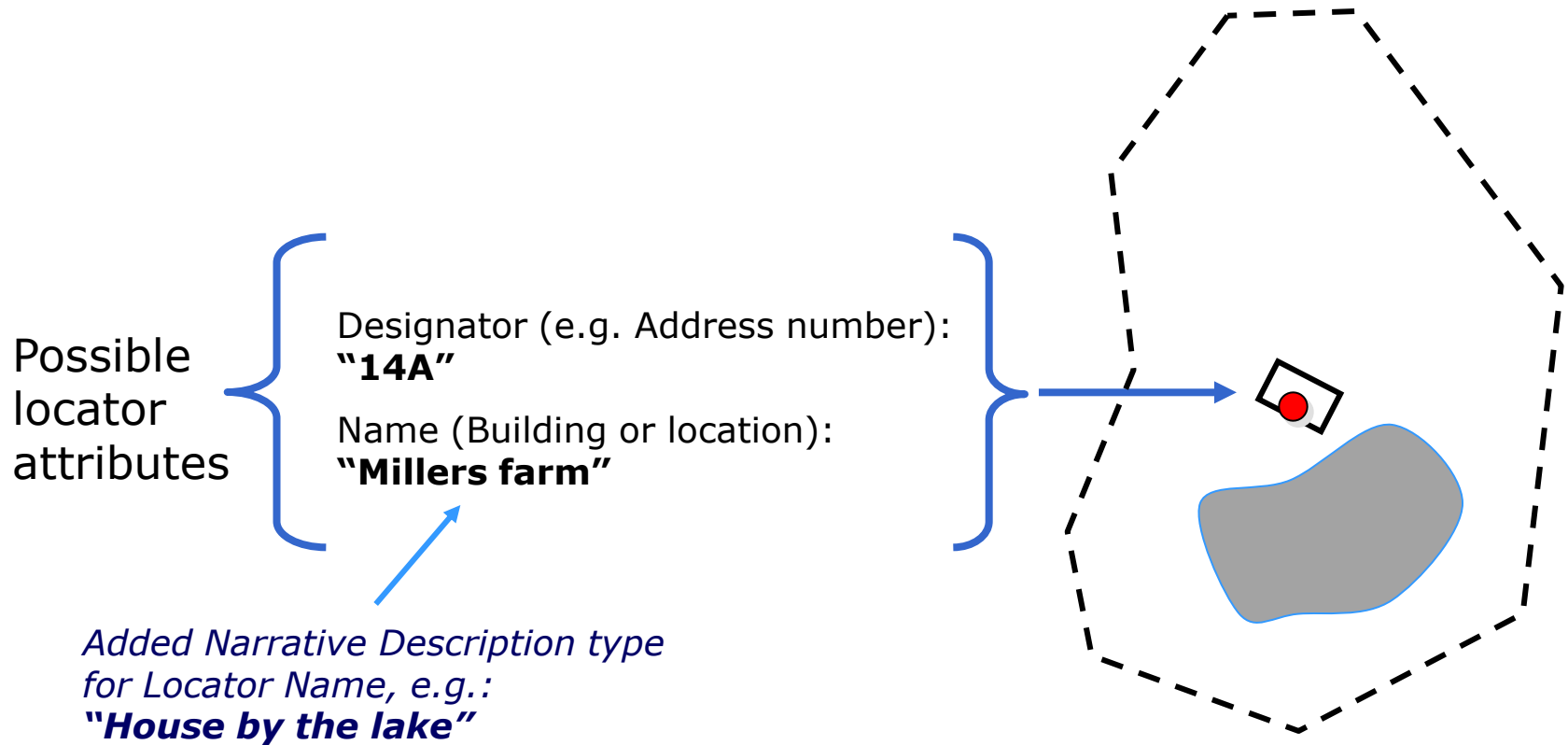


*Added Code values to report
Level of Administrative unit used*

*Geographic position is considered to be fundamental;
but origin and quality of position must be reported*

Locator

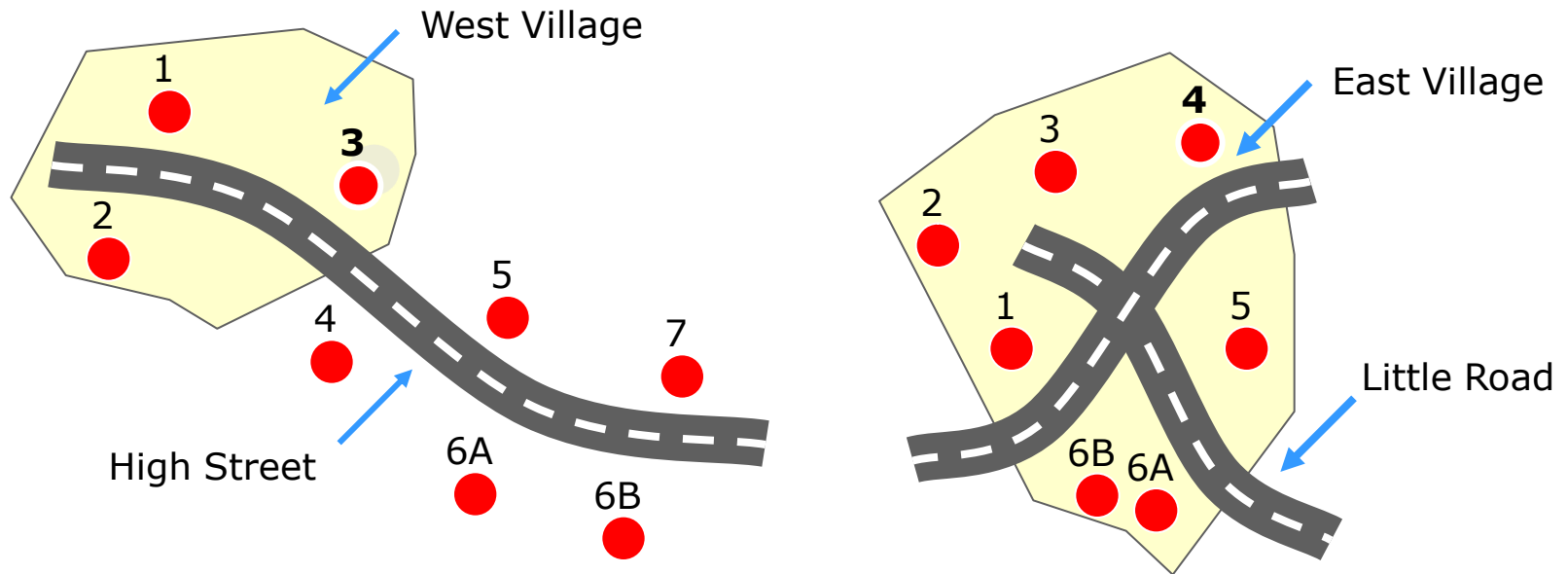
December 15, 2010
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A Locator is mandatory for all addresses

Concepts of “within Scope Of”

December 15, 2010
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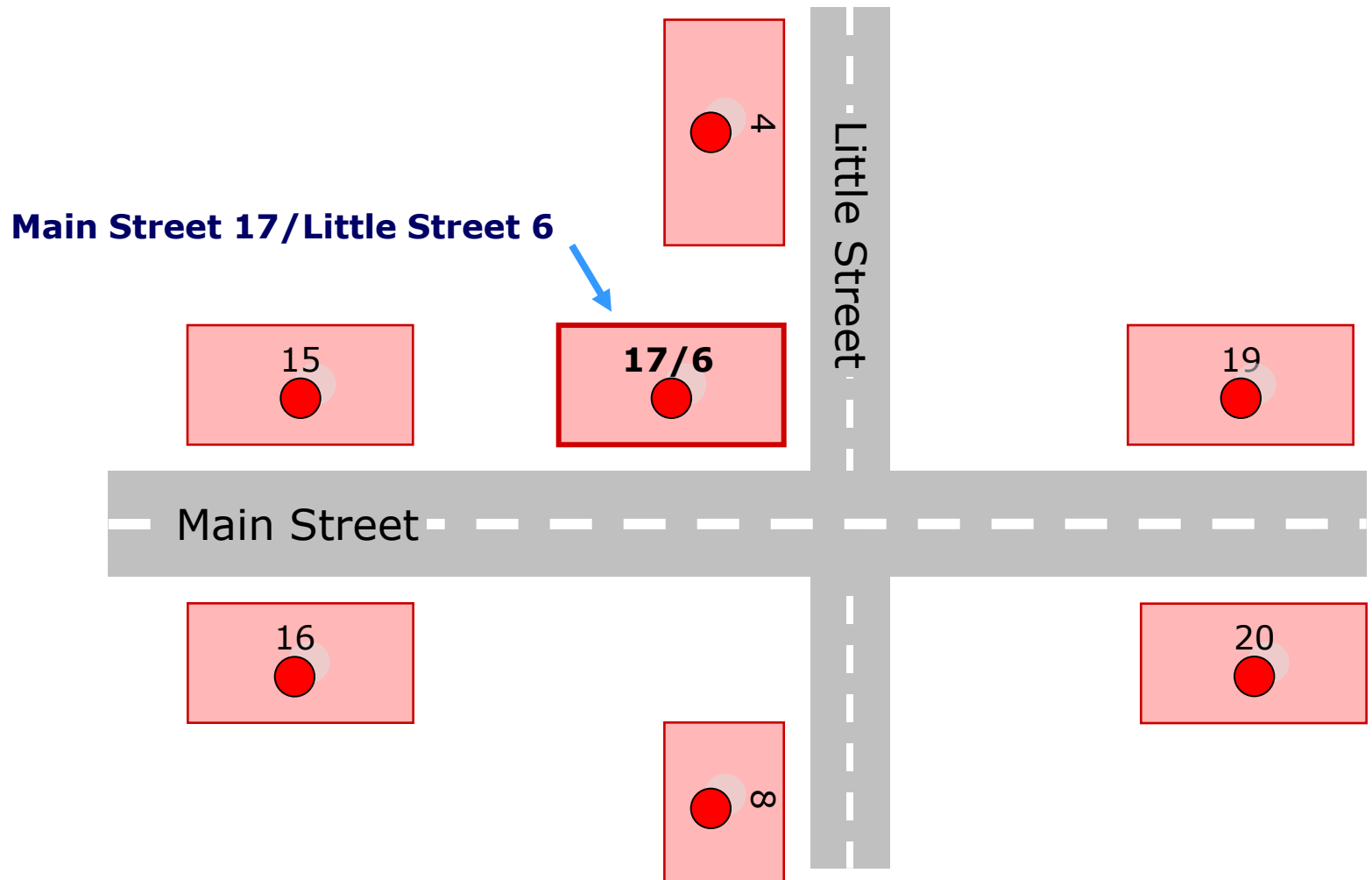
Thoroughfare Name

Address Area Name

The locators are (for the purpose of uniqueness) assigned within the “scope of” a certain Address Component - most often a Thoroughfare Name or an Address Area Name.

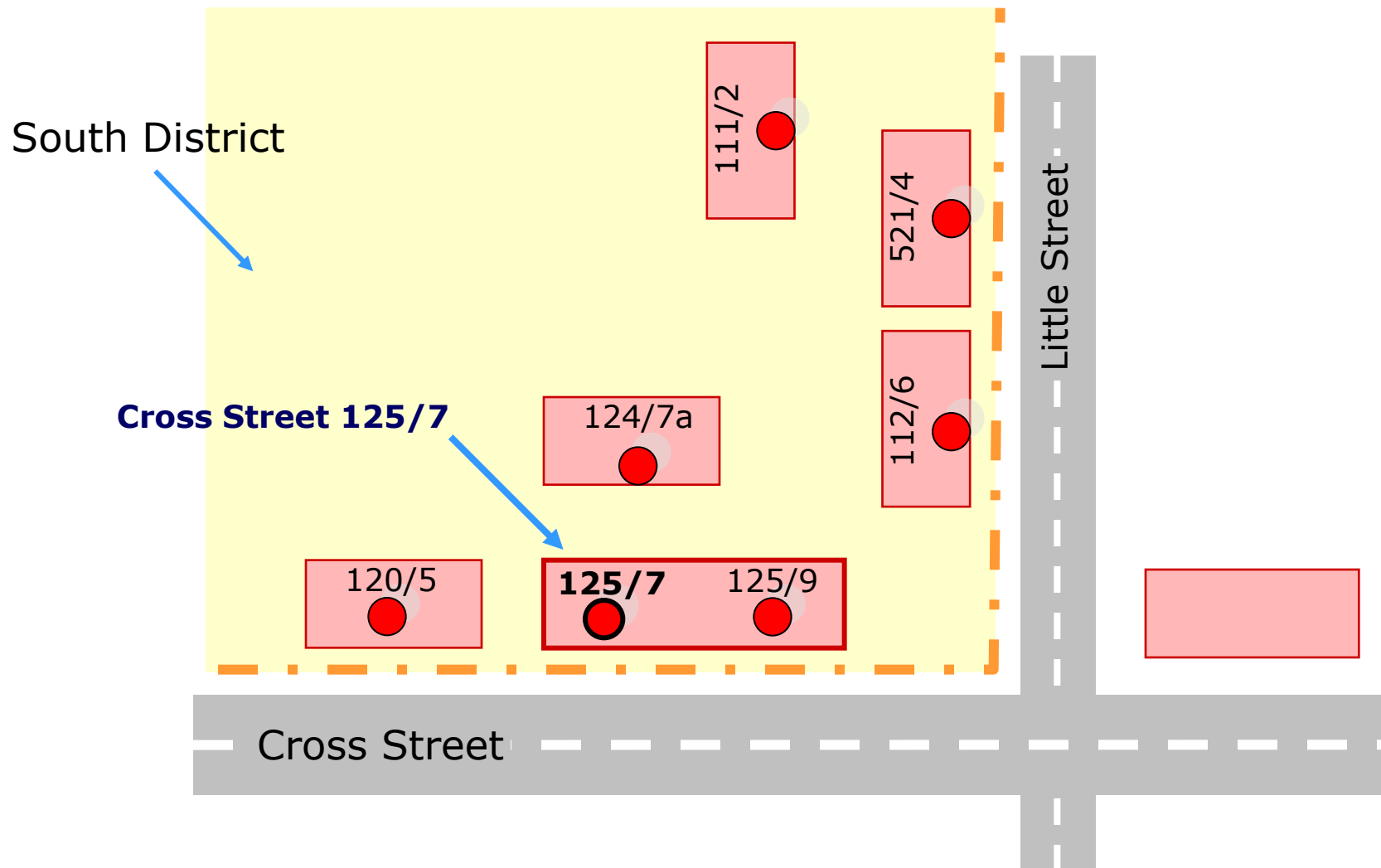
Concept of Corner Addresses

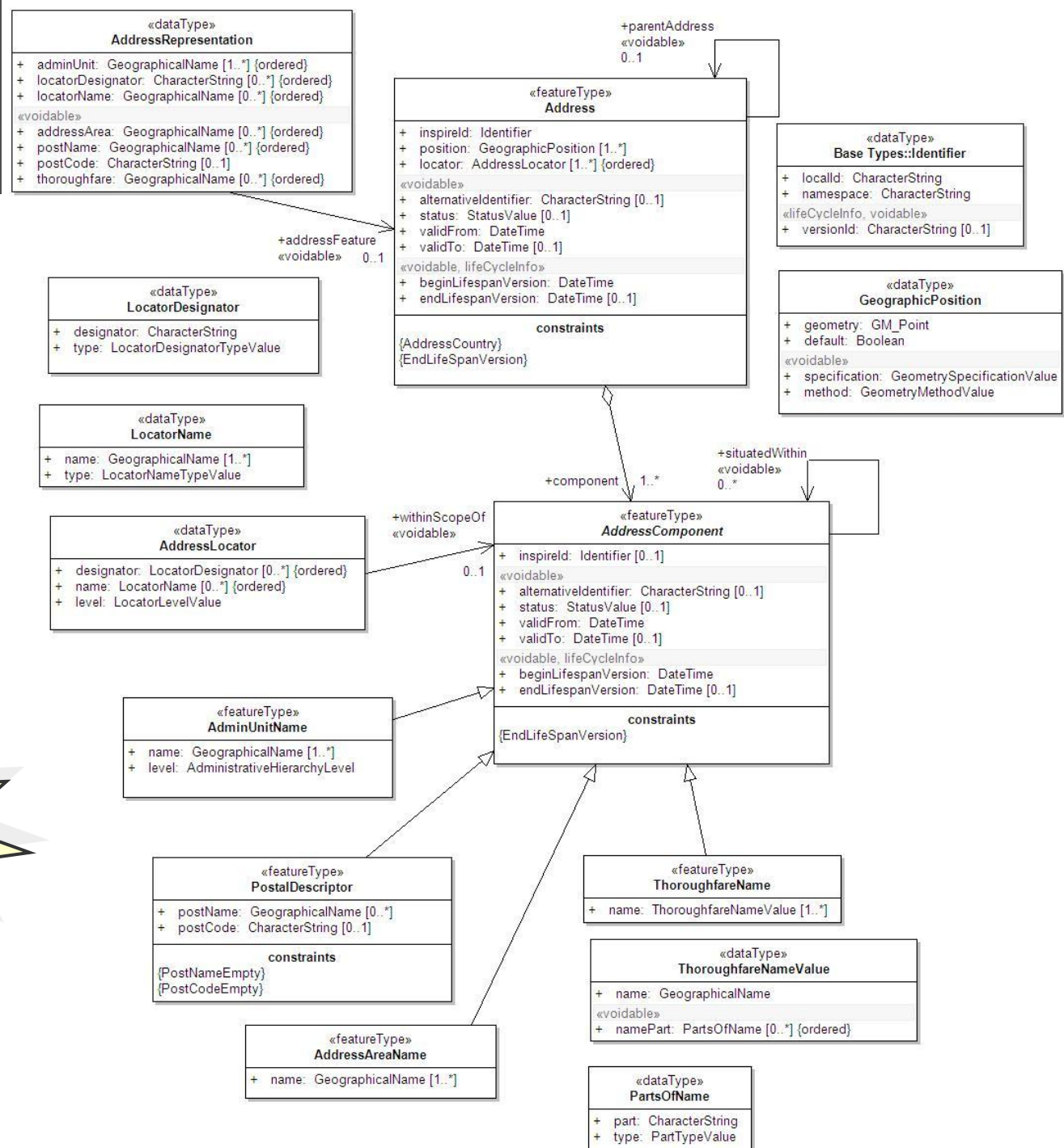
December 15, 2010
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Czech two-component locator

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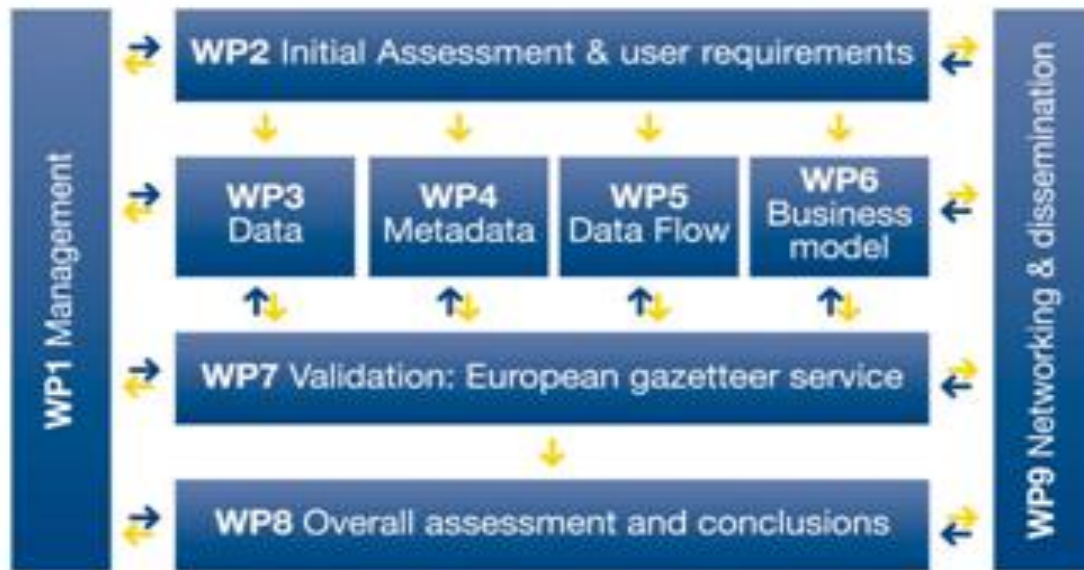




Present
status of
3rd Draft

EUropean ADdress INfrastructure project EURADIN investigating Best Practice

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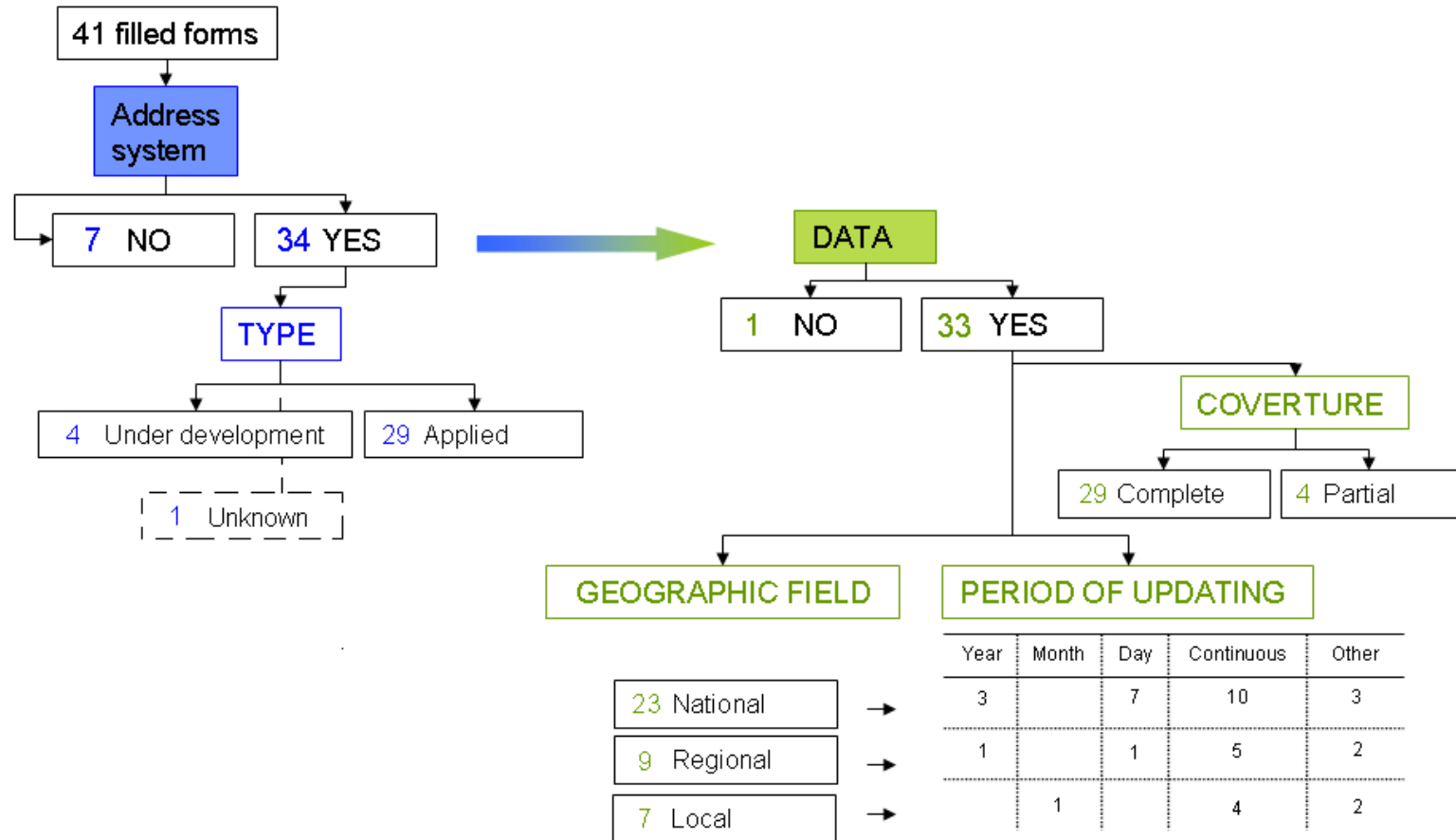
- _ Best Practices within:
 - _ Data/dataflow
 - _ Organization/roles
 - _ Utilization/business models
 - _ Other

EURADIN:

- Data completeness and updating period

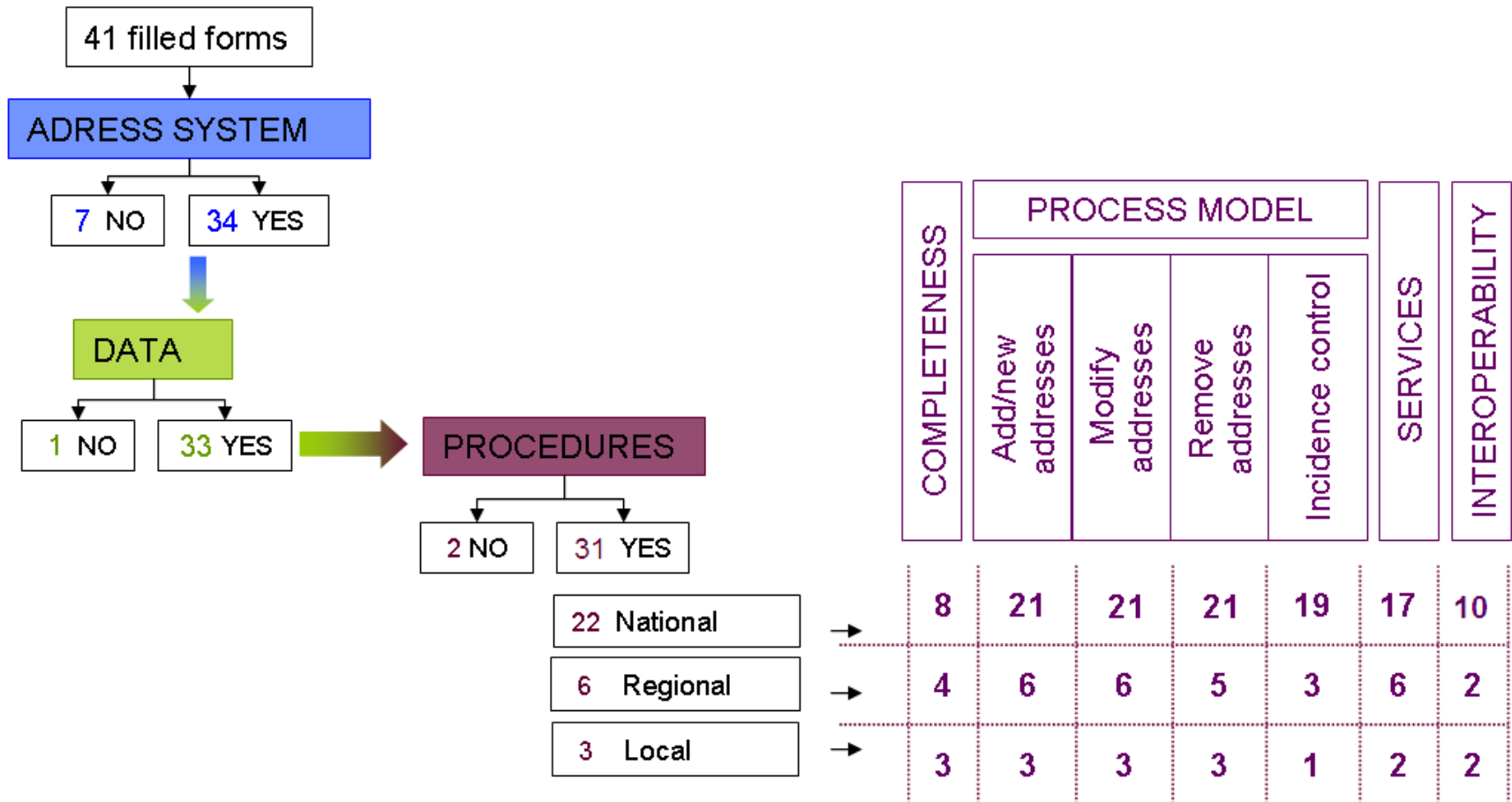
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EURADIN: - Data Flow

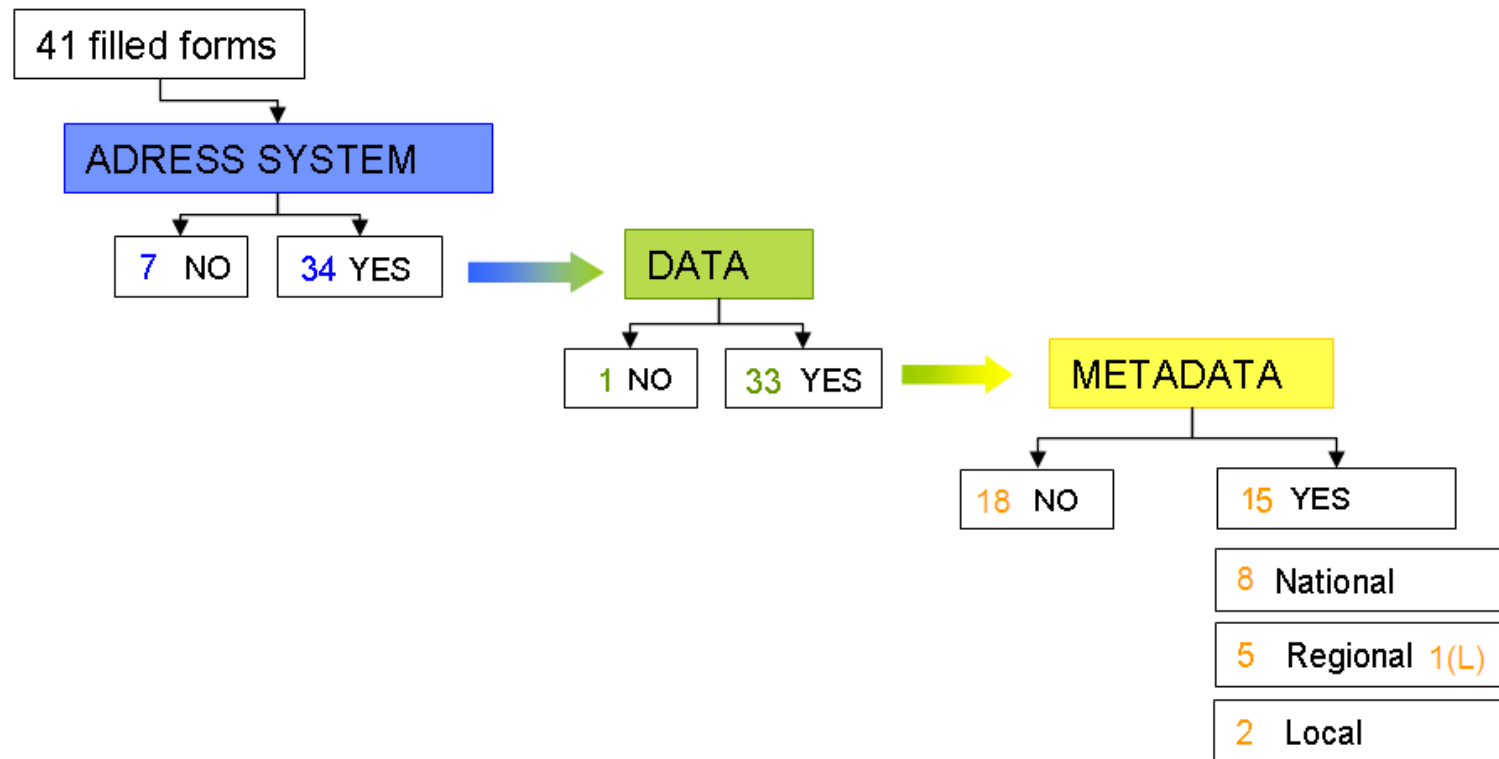
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EURADIN:

- *Metadata availability*

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EURADIN:

- Best Practices

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BP#	EURADIN partner	Country	Best Practice
1	<i>Gobierno de Navarra/TRACASA</i>	ES	Georeferencing Navarre's road network. Procedure and results.
2	<i>Gobierno de Navarra/TRACASA</i>	ES	Postal Addresses Manager
3	<i>Danish Enterprise and Construction Agency</i>	DK	Enhancing address infrastructure by legislation, common guidelines and citizens' participation
4	<i>Danish Enterprise and Construction Agency</i>	DK	Optimized utilization of addresses by making data and services accessible at marginal cost
5	<i>Population Register Centre Finland</i>	FIN	Utilization of Address System in Population Registration
6	<i>Kadaster Netherlands</i>	NL	European Addresses Infrastructure as a client of the Netherlands key register on addresses and buildings (BAG).
7	<i>Intelligent Addressing (IA)</i>	UK	Using the National Land & Property Gazetteer (NLPG) to help government achieve "Best Value" targets.
8	<i>National Geographic Institute France (IGNF)</i>	F	Identification of Responsibilities of Address Stakeholders
9	<i>National Geographic Institute France (IGNF)</i>	F	Harmonisation of Vocabulary
10	<i>State Land Service Latvia (SLS)</i>	LV	Address objects are uniquely coded. Address objects are classified in Address classifier. Address objects are registered on-line in central database.
11+12	<i>TELEFONICA</i>	ES	Various user BPs
13	<i>Institute of Geodesy, Cartography and Remote Sensing (FÖMI)</i>	HU	Addresses are spatial information with geographical coordinates.
14	<i>Region TOSCANA</i>	I	The model for data collection, updating, distribution - Roles subdivision between Region and Municipalities
15	<i>Region TOSCANA</i>	I	Awareness and investigation on users' requirements: the Feast of Geography

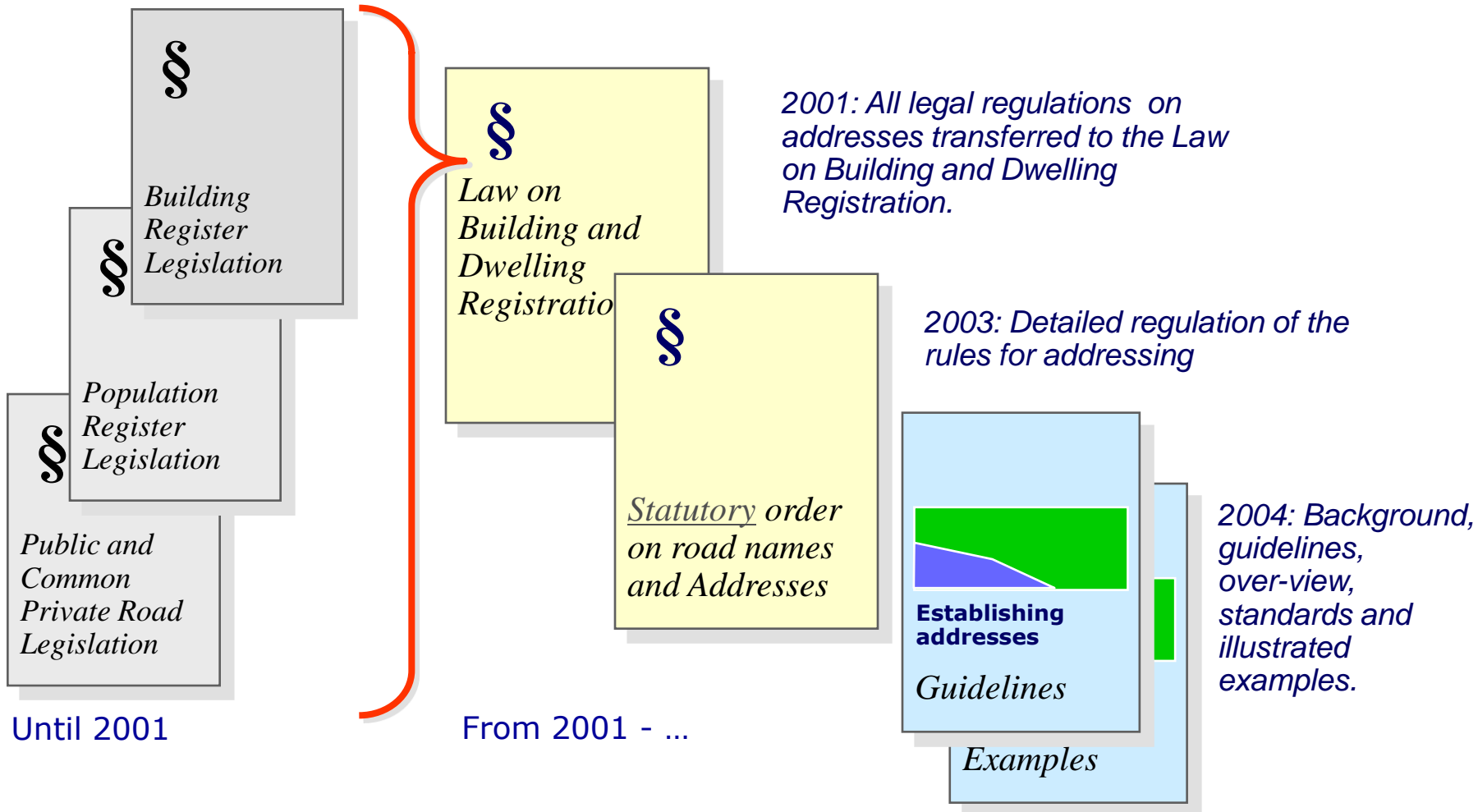
Danish Model

- Address Authority: Local Government (Municipality)!

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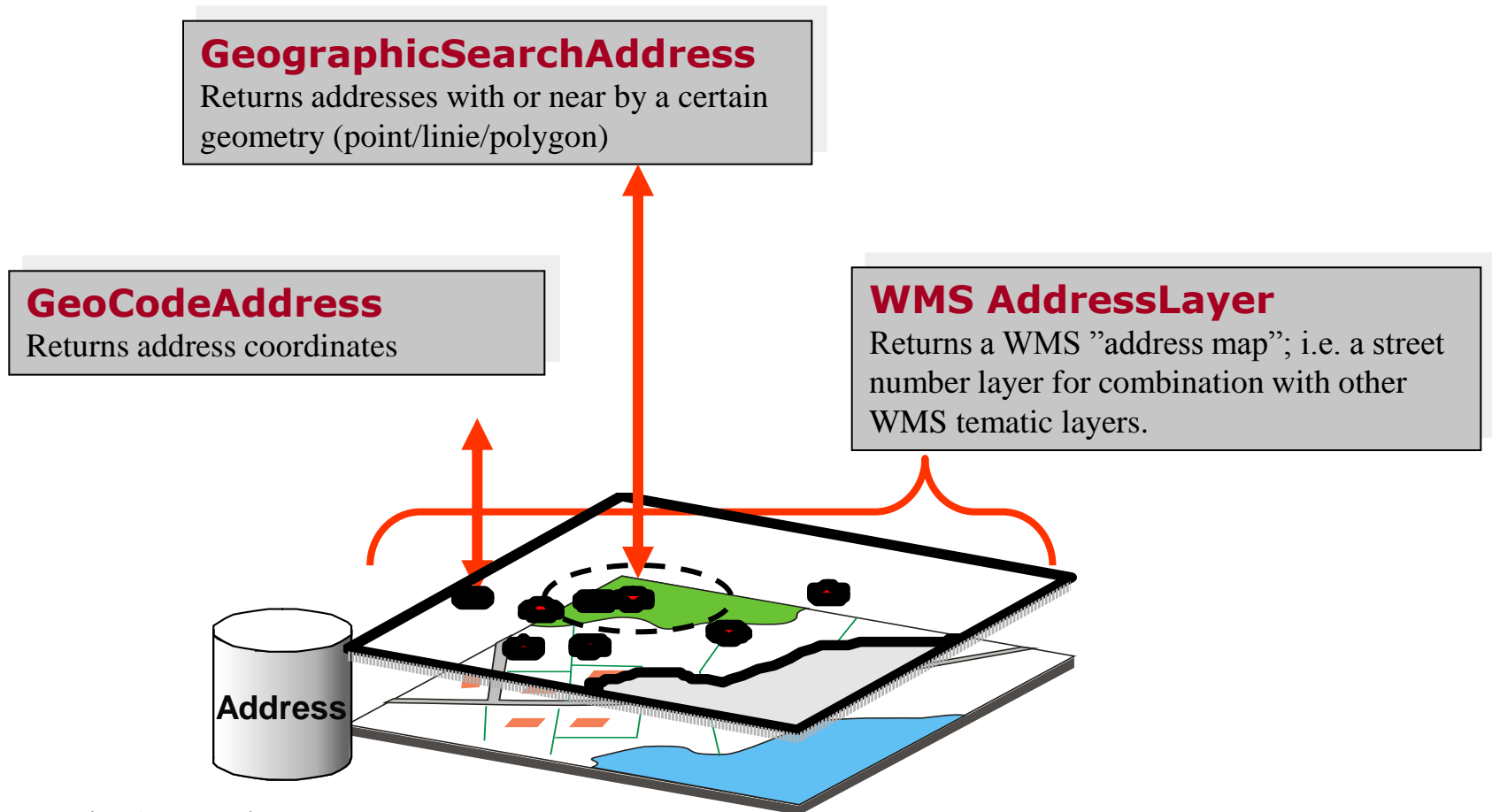
- _ Local Government is responsible for assignment of all addresses
 - _ Including naming and coding of streets
- _ Local Government assigns floor and apartment numbers to buildings.
 - _ For multi storey buildings (Previously: owner's responsibility)
- _ Local Government registers addresses
 - _ Access Addresses:
 - _ Name of City/Town,
 - _ Postal code
 - _ Street name
 - _ Street number
 - _ Apartment Addresses:
 - _ Floor
 - _ apartment number.
 - _ Address Points (x-,y-coordinates)

The Danish Legal Framework



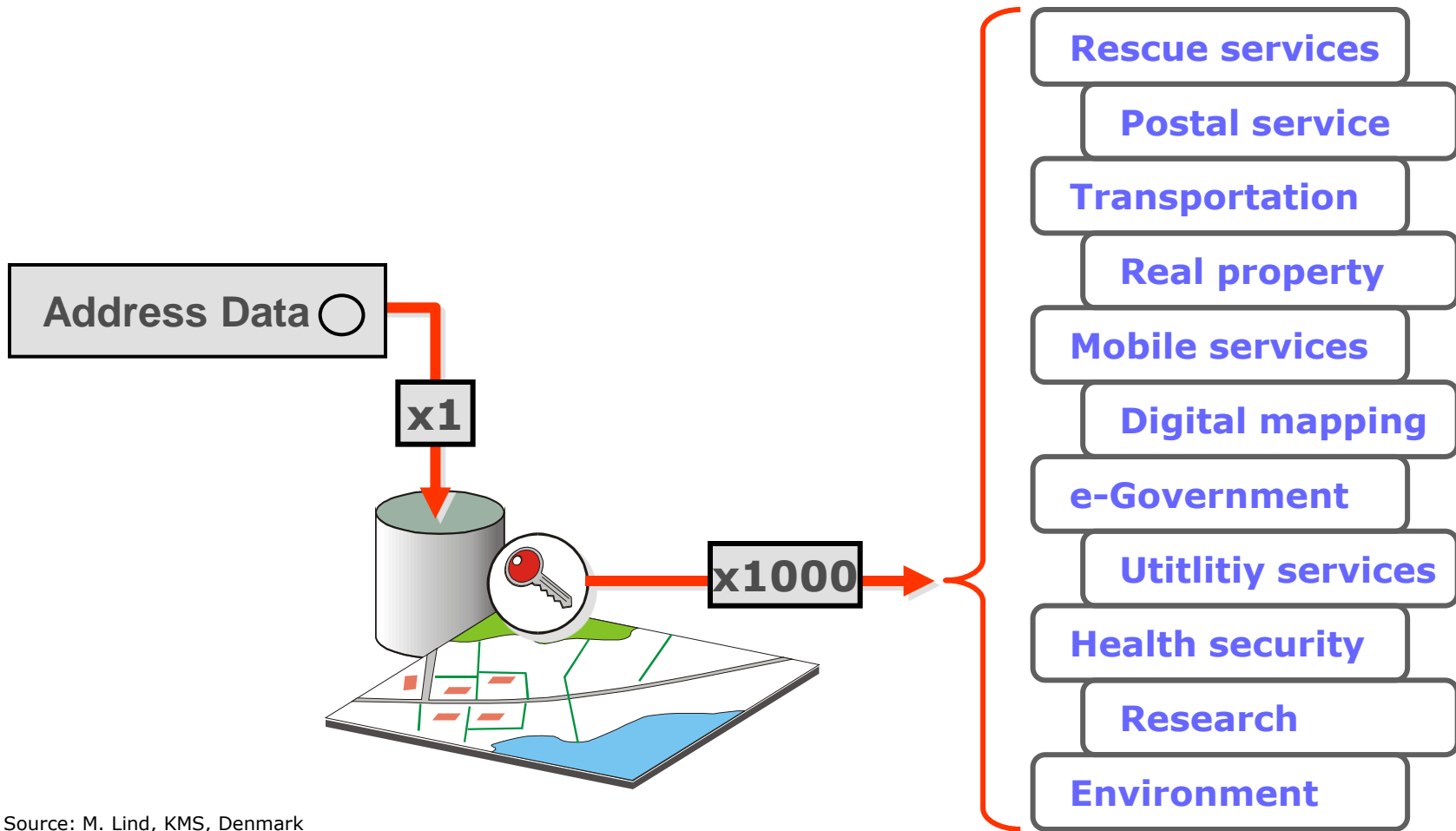
Address Web-Services (Best Practice #4)

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Take advantage of the multiplier effect (Best Practice #4)

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Source: M. Lind, KMS, Denmark

Recommendations (1)

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_ Legislation:

_ Responsibility of naming of streets and assignment of addresses should **not** be shared between two authorities

_ Rules that secure uniqueness of street names

_ Specification of the addressable object (Addresses shall not be restricted to real estate objects).

_ Specification of the main address components, including the address position

_ Enable the integration of address data with 3rd party systems

_Addressable objects

_real properties, cadastral parcels

_buildings, entrances to buildings (multiple addresses to buildings)

_apartments, condominiums etc., inside a building.

_points of interest, sports fields, parks, traffic terminals,

_technical constructions, points of service delivery e.g. utilities, post

Norwegian Assistance Programme for
Azerbaijan


Specification of
Address Register and Information
System for Azerbaijan

Lessons learned – so far

- _The register system shall facilitate:
 - _systematic massive registration of existing addresses (central level)
 - _sporadic registration of addresses.

- _The Address Register Information System shall facilitate distribution of:
 - _address information to users
 - _electronic exchange of address information with other electronic registers in Azerbaijan

- _Addressing Principles
 - _European standards: INSPIRE
 - _European Best Practices: EURADIN



Initiatives needed for the consolidation of the project framework

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1. Improvement of the existing addressing concept to support entrance addresses/locations.
2. Establishing a central street/road name register. This includes the consideration of legal, organisational as well as technical issues.
3. Adoption of European Best Practices on the address administration and methodologies
4. Ensure that real estate objects are independent of addresses.
5. Considerations of integrations to other IT-systems, including the cadastre and real estate registers.
6. Capacity Building (training of staff)

Different Address Methodologies

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Entrance address approach

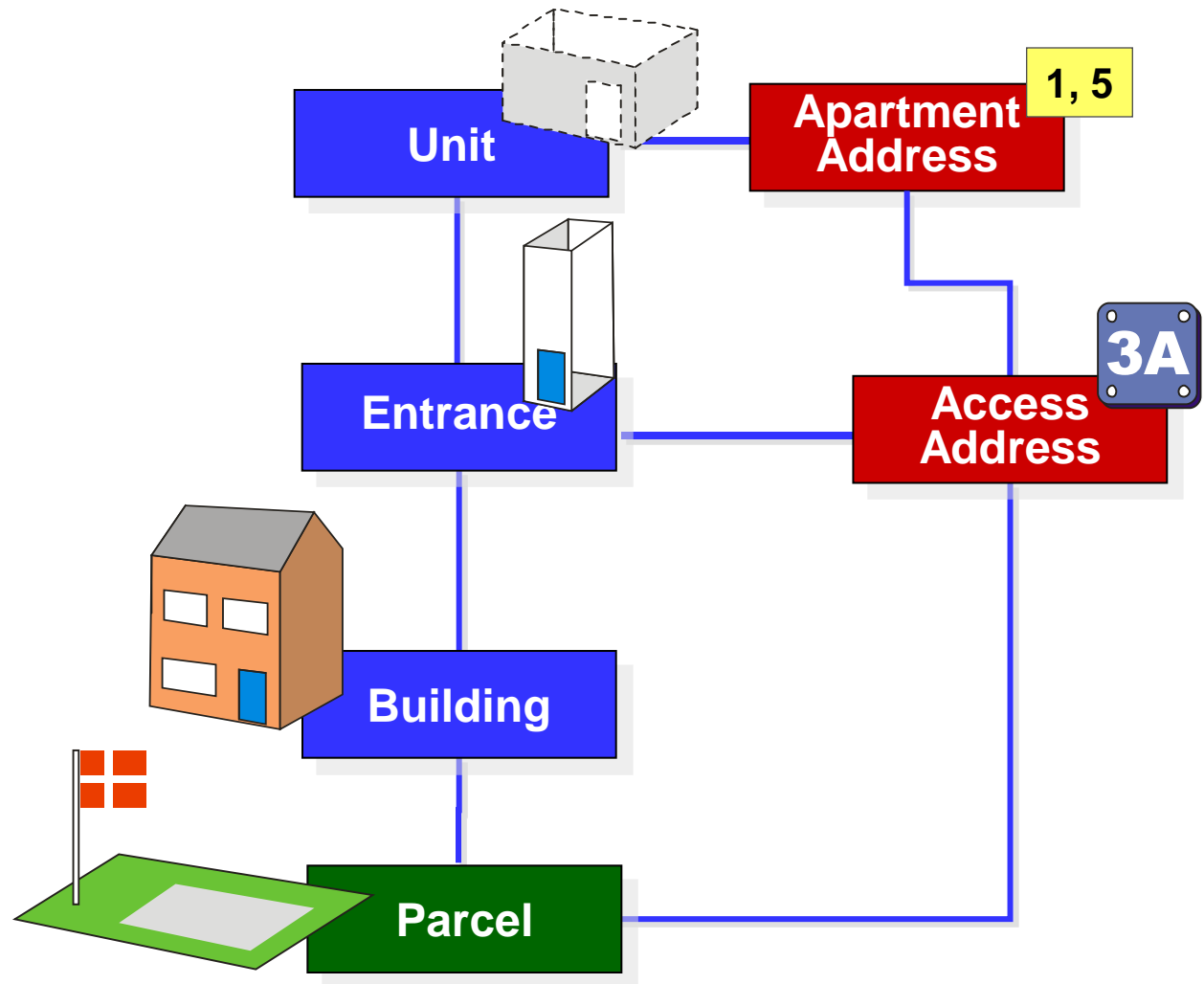


Building address approach



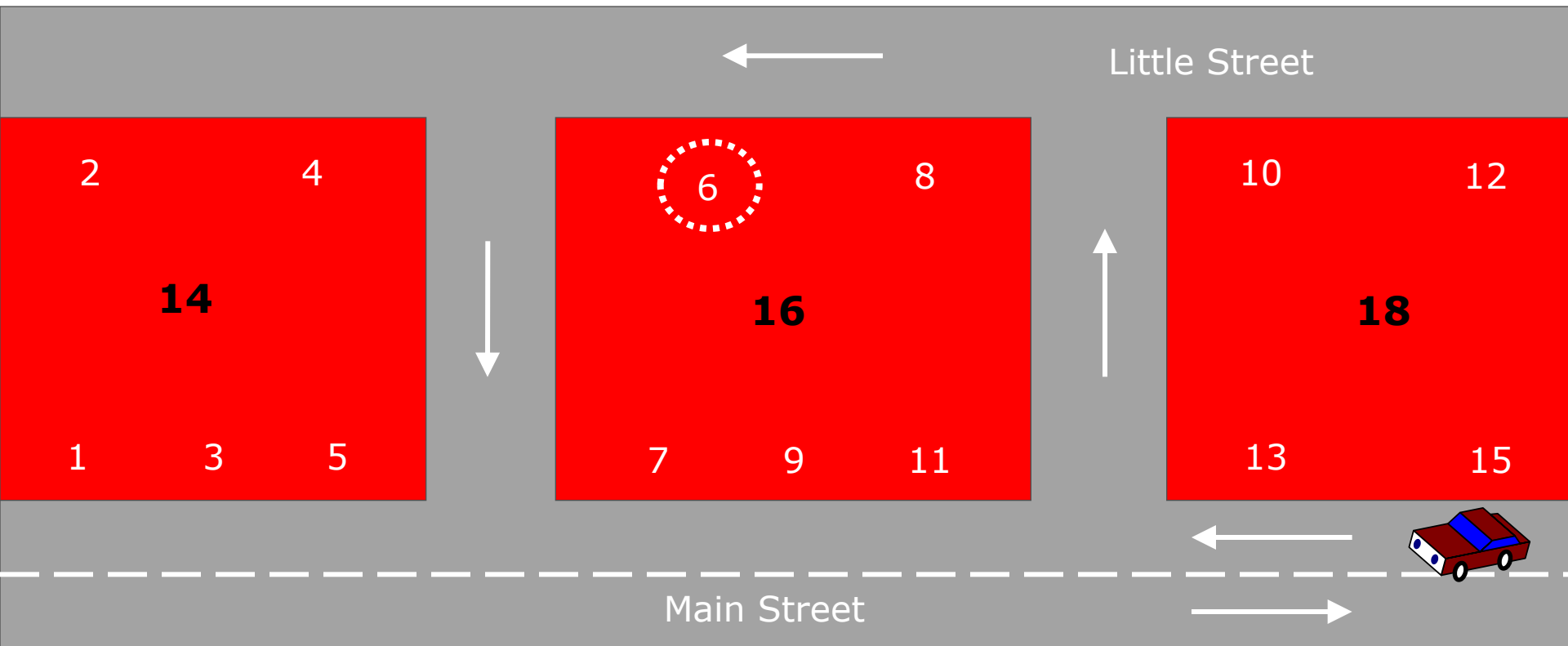
Addresses to entrances instead of buildings.

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Precise navigation requires address information on the building entrance level

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Cadastre Centre
31, H. Javid Av.
Baku

Firudin Aghayev

31

Huseyn Javid avenue, Baku, Aserbajdsja

Huseyn Javid Avenue

Image © 2010 DigitalGlobe

© 2010 Google

to for billede: 7. Apr 2009

40°22'29.51"N 49°48'55.10"Ø niveau 87 m

© 2010 Google

Øjehøjde 374 m

What address is on your business card?

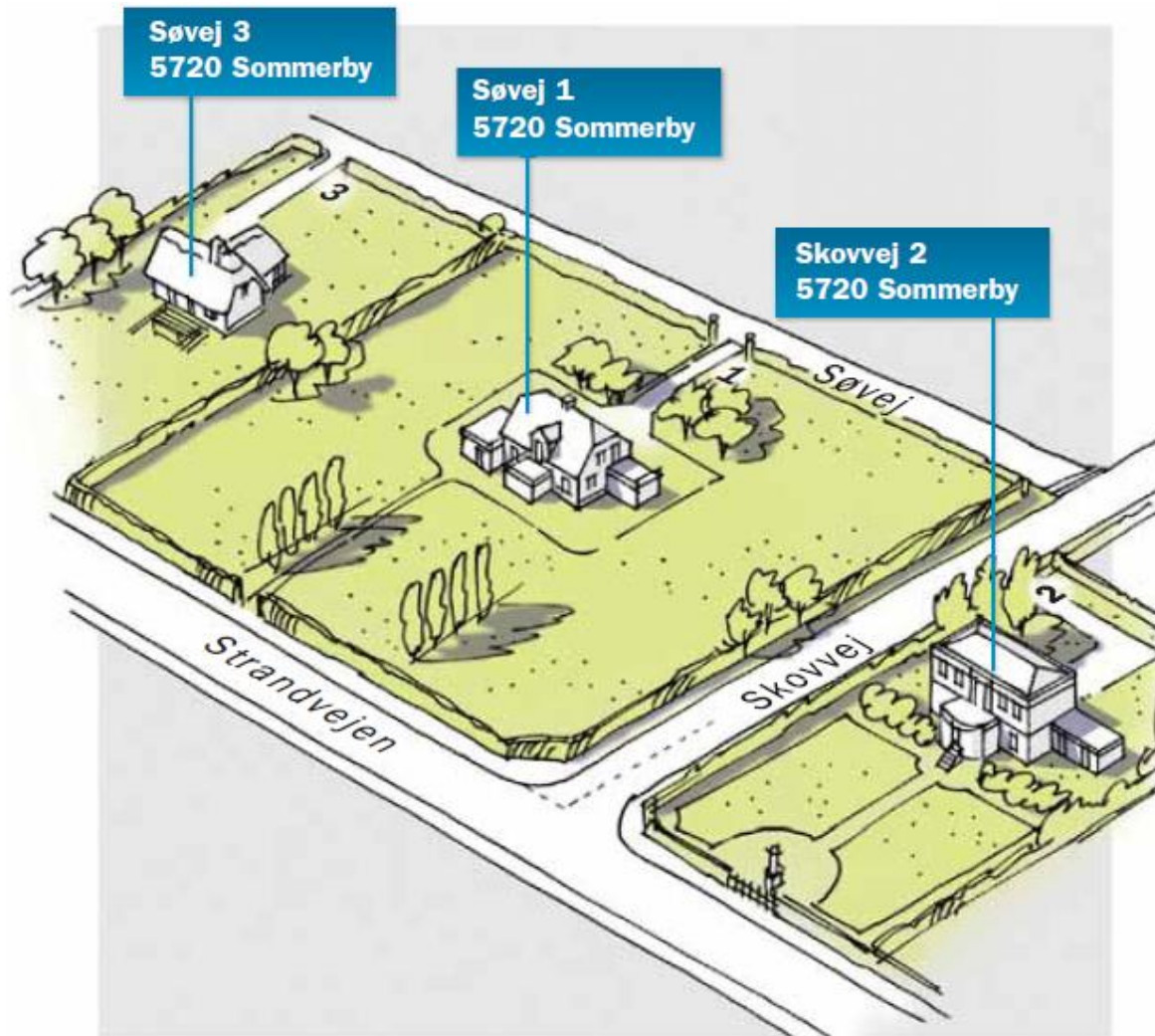
_Huseyn Javid avenue

_H. Javid av.

_H. Javid ave.

Entrance address principle (1): Real estates are address to the street providing the main access

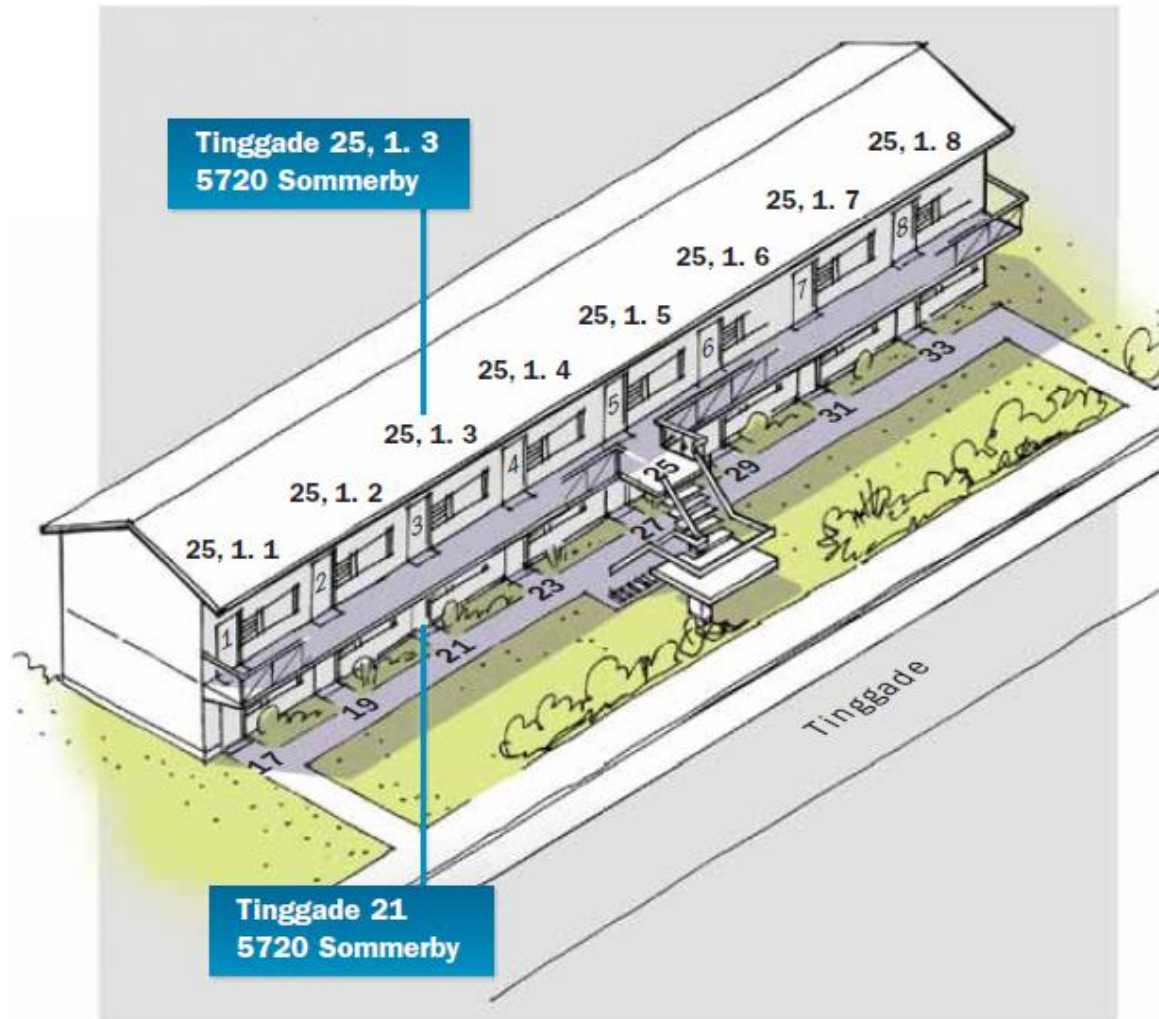
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Entrance address principle (2):

The position of address indicates the location of entrance

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1 Enhancement of the addresses concept to support entrance locations

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Recommendations:

1. Abandon the current building address concept and move to the concept of entrance addresses, including unit (apartment) addresses.
2. Take advantage of European Standards (INSPIRE) and Best Practices during the implementation.
3. Ensure that the recommended entrance address concept is consistent with the existing address legislation.

2. The need of a central register of street and road names

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- _ Existing addresses and street names are reported to be inconsistent registered.
 - _ Building are incorrectly addressed to distant street names
 - _ Street names are spelled inconsistently
 - _ Imprecise identification of start and end point of streets

- _ An investigation on the quality of addresses in the territory of Baku has documented:
 - _ Correctness of addresses in the city centre: 50%
 - _ Correctness of addresses in the suburbs: 30%
 - _ Street name signs are placed incorrectly

Delegation of responsibilities

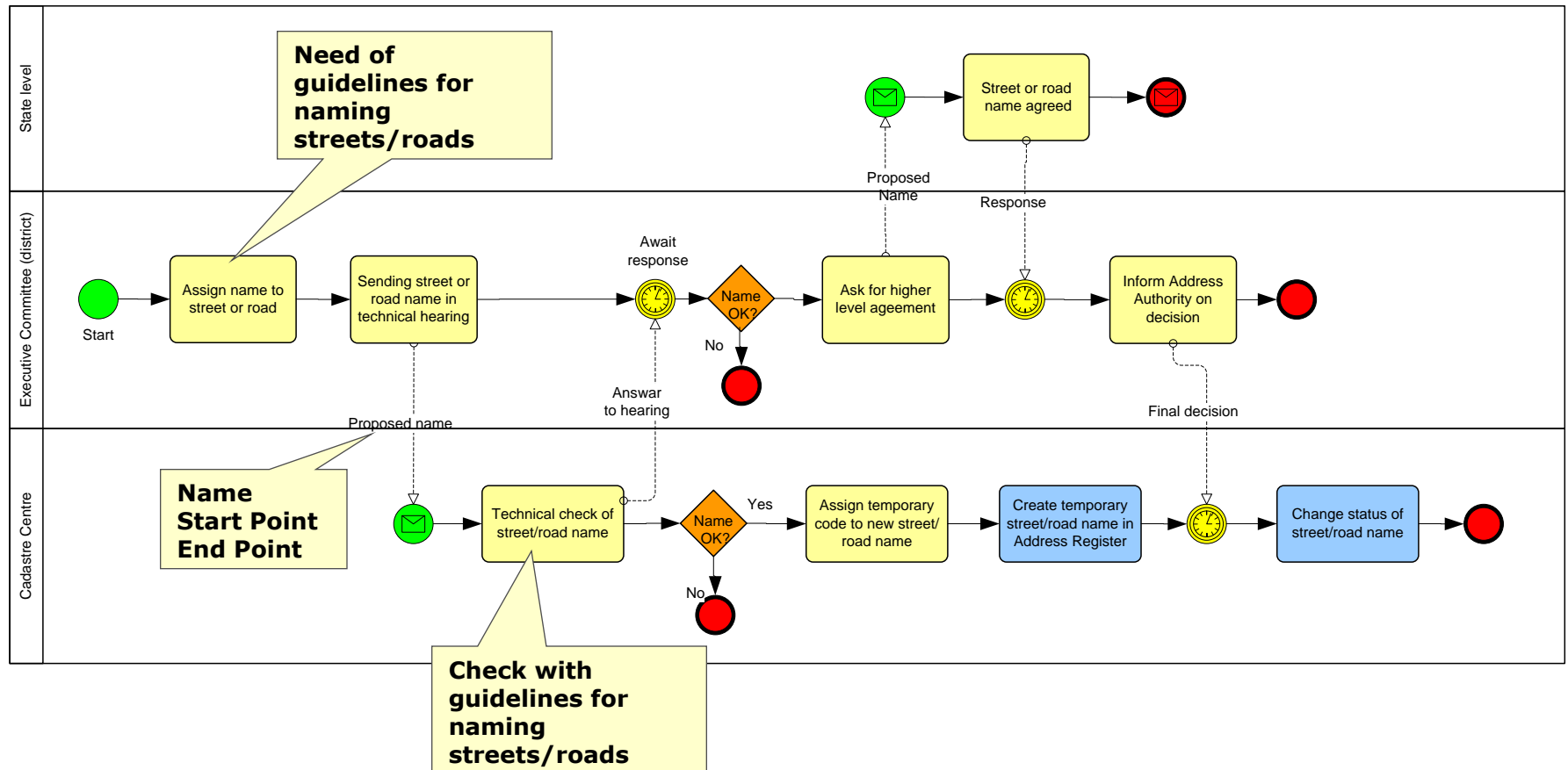
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Task	Central Government		Local Government	
	Political level	Techn. level	Political level	Techn. level
Legislation	+			
Regulations		+		
Guidelines		+		
Road Name Register		+		
Address Register		+		
Assignment of road names			+	
Registration of road names				+
Create new addresses				+
Update existing addresses				+

Procedure to ensure uniquely assigned and defined street/road names

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2. The need of a central register of street and road names

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Recommendations:

1. Establish a central registration of street/road names under the responsibility of SCPI (Cadastre Centre)
2. Street/road name register should be integrated with the Address Register and Information System
3. Development of legislation to ensure coordinated assignment, approval and registration of street/road names
4. Development of guidelines to ensure that street/road names are assigned consistently

3 Adoption of European Best Practices on address administration and methodologies

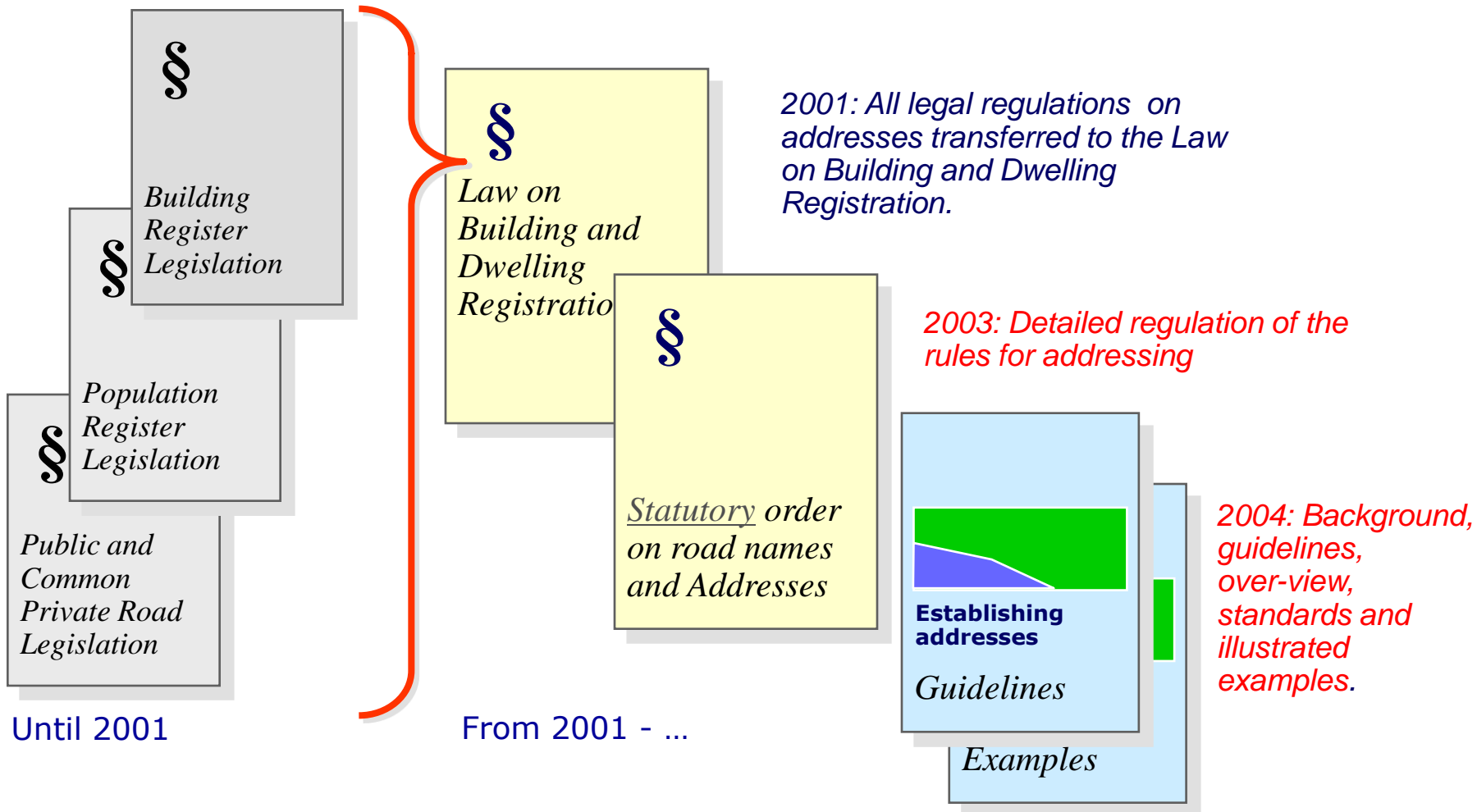
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The introduction of the entrance address approach means:

- Development and implementation of new procedures and methodologies on:
 1. Assignment and registration of new street/road names
 2. Measures to ensure the uniqueness of addresses
 3. Entrance address assignments and administration
 4. Unit address assignments and administration'
 5. Others

BP#	EURADIN partner	Country	Best Practice
1	<i>Gobierno de Navarra/TRACASA</i>	ES	Georeferencing Navarre's road network. Procedure and results.
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15	<i>Region TOSCANA</i>	I	Awareness and investigation on users' requirements: the Feast of Geography

The Danish Legal Framework



3 Adoption of European Best Practices on address administration and methodologies

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Recommendation:

1. Use the principles of relevant EURADIN Best Practices (BPs no. 3, 4, 9, 10 and 13)
2. The existing guidelines (meant for building addresses) need to be revised. Get inspired by the Danish *Statutory Order on Road Names and Addresses* (available in English)
3. The Danish/Norwegian *Guideline on Establishing Addresses* (only in the Norwegian/Danish language) is recommendable for the development of practical procedures



4 Ensure that real estate objects are identified independent of addresses.

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- _ Avoid confusion on the identification of real estate objects
- _ The proposed national wide unique keys are impractical for manual/analogue operations

Real estate bodies should be identified independent of addresses.

Current situation

- Addresses are used as unique identifiers of a real estate object:
 - _ Building
 - _ Apartment
 - _ Others?

However;

- INSPIRE states:
 - _ Addresses may not be restricted to only a **one to one** relationship with cadastral parcel.

AZƏRBAYCAN RESPUBLİKASI
ƏMLAK MƏSƏLƏLƏRİ DÖVLƏT KOMİTƏSİNİN YANINDA
DAŞINMAZ ƏMLAKIN DÖVLƏT REYESTRİ XİDMƏTİ

Hüquqların Dövlət qeydiyyatı haqqında daşınmaz əmlakın Dövlət reyestrindən

ÇIXARIŞ

Seriya MA №0014578

Hüququ rəsmiləşdirilən şəxs	Nuriyeva Kifayat Əhəd qızı
Daşınmaz əmlakın adı (növu)	Mənzil
Ünvanı	Bakı şəhəri, Nizami rayonu, Ordubadi küçəsi, ev 12, mənzil 50
Mənzilin mülkiyyətin növü	xüsusi
Mənzil üzərində hüququn növü	Mülkiyyət
Reyestr nömrəsi	009011003264-05101-093010

Mənzilin məs göstəriciləri

Martabəsi	Ümumi sahə (m ²)	Yaşayış sahəsi (m ²)	Yardımcı sahə (m ²)	Yaşayış otaqlarının sayı
5	68.85	46.05	22.8	3

Hüquq sahibləri:

Sıra №	Hüquq sahibinin adı	Payı	Qeydiyyat nömrəsi	Qeydiyyat tarixi
1	Nuriyeva Kifayat Əhəd qızı	Tam	1109942103	14.11.2008

Daşınmaz əmlak üzərində hüquq daşınmaz əmlakın dövlət reyestrindən nömrəli reyestr kitabının 5891 nömrəli varəqində qeydiyyata alınmışdır.

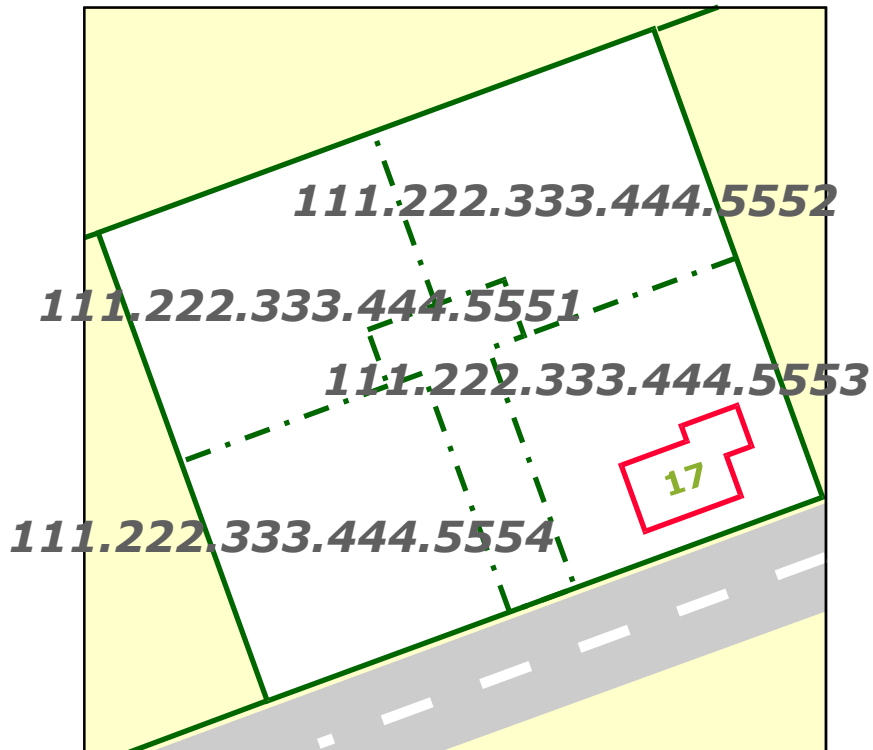
Bakı Şəhər Ərazi İdarəsinin rəisi
Qeydiyyat icraçısı

F. Mirzəyev
N. Quliyeva

Risk that addresses are used for the identification of real estates which limits the flexibility of addresses

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Primary Parcel Identifier
Unique national wide (20 char)



Addresses to cadastral parcels

