INSPIRE
Infrastructure for Spatial Information in Europe

D2.8.I.5 INSPIRE Data Specification on Addresses – Guidelines

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Foreword
How to read the document?

This guideline describes the INSPIRE Data Specification on *Addresses* as developed by the Thematic Working Group Addresses using both natural and a conceptual schema languages. The data specification is based on the agreed common INSPIRE data specification template.

The guideline contains detailed technical documentation of the data specification highlighting the mandatory and the recommended elements related to the implementation of INSPIRE. The technical provisions and the underlying concepts are often illustrated by examples. Smaller examples are within the text of the specification, while longer explanatory examples are attached in the annexes. The technical details are expected to be of prime interest to those organisations that are/will be responsible for implementing INSPIRE within the field of *Addresses*.

At the beginning of the document, two executive summaries are included that provide a quick overview of the INSPIRE data specification process in general, and the content of the data specification on *Addresses* in particular. We highly recommend that managers, decision makers, and all those new to the INSPIRE process and/or information modelling should read these executive summaries first.

The UML diagrams (in Chapter 5) offer a rapid way to see the main elements of the specifications and their relationships. Chapter 5 also contains the Feature Catalogue including the definition of the spatial object types, attributes, and relationships. People having thematic expertise but not familiar with UML can fully understand the content of the data model focusing on the Feature Catalogue. Users might also find the Feature Catalogue especially useful to check if it contains the data necessary for the applications that they run.

The document will be publicly available as a ‘non-paper’. It does not represent an official position of the European Commission, and as such can not be invoked in the context of legal procedures.

Interoperability of Spatial Data Sets and Services – General Executive Summary

The challenges regarding the lack of availability, quality, organisation, accessibility, and sharing of spatial information are common to a large number of policies and activities and are experienced across the various levels of public authority in Europe. In order to solve these problems it is necessary to take measures of coordination between the users and providers of spatial information. The Directive 2007/2/EC of the European Parliament and of the Council adopted on 14 March 2007 aims at establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) for environmental policies, or policies and activities that have an impact on the environment.

INSPIRE will be based on the infrastructures for spatial information that are created and maintained by the Member States. To support the establishment of a European infrastructure, Implementing Rules addressing the following components of the infrastructure are being specified: metadata, interoperability of spatial data themes (as described in Annexes I, II, III of the Directive) and spatial data services, network services and technologies, data and service sharing, and monitoring and reporting procedures.

INSPIRE does not require collection of new data. However, after the period specified in the Directive[1] Member States have to make their data available according to the Implementing Rules.

Interoperability in INSPIRE means the possibility to combine spatial data and services from different sources across the European Community in a consistent way without involving specific efforts of humans or machines. It is important to note that "interoperability" is understood as providing access to spatial data sets through network services, typically via Internet. Interoperability may be achieved by either changing (harmonising) and storing existing data sets or transforming them via services for publication in the INSPIRE infrastructure. It is expected that users will spend less time and efforts on understanding and integrating data when they build their applications based on data delivered within INSPIRE.

In order to benefit from the endeavours of international standardisation bodies and organisations established under international law their standards and technical means have been referenced, whenever possible.

To facilitate the implementation of INSPIRE, it is important that all stakeholders have the opportunity to participate its specification and development. For this reason, the Commission has put in place a consensus building process involving data users and providers together with representatives of industry, research, and government. These stakeholders, organised through Spatial Data Interest Communities (SDIC) and Legally Mandated Organisations (LMO)[2], have provided reference materials, participated in the user requirement and technical[3] surveys, proposed experts for the Data Specification Drafting Team[4] and Thematic Working Groups[5], expressed their views on the drafts of the technical documents of the data specification development framework[6]; they have reviewed and tested the draft data specifications and have been invited to comment the draft structure of the implementing rule on interoperability of spatial data sets and services.

The development framework elaborated by the Data Specification Drafting Team aims at keeping the data specifications of the different themes coherent. It summarises the methodology to be used for the

[1] For Annex I data: within two years of the adoption of the corresponding Implementing Rules for newly collected and extensively restructured data and within 7 years for other data in electronic format still in use.

[2] The number of SDICs and LMOs on 21/08/2009 was 301 and 176 respectively

[3] Surveys on unique identifiers and usage of the elements of the spatial and temporal schema,

[4] The Data Specification Drafting Team has been composed of experts from Austria, Belgium, Czech Republic, France, Germany, Greece, Italy, Netherlands, Norway, Poland, Switzerland, UK, and the European Environmental Agency

[5] The Thematic Working Groups of Annex I themes have been composed of experts from Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Italy Netherland, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, UK, the European Commission, and the European Environmental Agency

[6] Four documents describing common principles for data specifications across all spatial data themes. See further details in the text.

data specifications and provides a coherent set of requirements and recommendations to achieve interoperability. The pillars of the framework are four technical documents:

- The Definition of Annex Themes and Scope[7] describes in greater detail the spatial data themes defined in the Directive, and thus provides a sound starting point for the thematic aspects of the data specification development.

- The Generic Conceptual Model[8] defines the elements necessary for interoperability and data harmonisation including cross-theme issues. It specifies requirements and recommendations with regard to data specification elements of common use, like the spatial and temporal schema, unique identifier management, object referencing, a generic network model, some common code lists, etc. Those requirements of the Generic Conceptual Model that are directly implementable will be included in the Implementing Rule on Interoperability of Spatial Data Sets and Services.

- The Methodology for the Development of Data Specifications[9] defines a repeatable methodology enabling to arrive from user requirements to a data specification through a number of steps including use-case development, initial specification development and analysis of analogies and gaps for further specification refinement.

- The "Guidelines for the Encoding of Spatial Data"[10] defines how geographic information can be encoded to enable transfer processes between the systems of the data providers in the Member States. Even though it does not specify a mandatory encoding rule it sets GML (ISO 19136) as the default encoding for INSPIRE.

Based on the data specification development framework, the Thematic Working Groups have created the INSPIRE data specification for each Annex I theme. The data specifications follow the structure of "ISO 19131 Geographic information - Data product specifications" standard. They include the technical documentation of the application schema, the spatial object types with their properties, and other specifics of the spatial data themes using natural language as well as a formal conceptual schema language[11].

A consolidated model repository, feature concept dictionary, and glossary are being maintained to support the consistent specification development process and potential further reuse of specification elements. The consolidated model consists of the harmonised models of the relevant standards from the ISO 19100 series, the INSPIRE Generic Conceptual Model, and the application schemas[12] developed for each spatial data theme. The multilingual INSPIRE Feature Concept Dictionary contains the definition and description of the INSPIRE themes together with the definition of the spatial object types present in the specification. The INSPIRE Glossary defines all the terms (beyond the spatial object types) necessary for understanding the INSPIRE documentation including the terminology of other components (metadata, network services, data sharing, and monitoring).

By listing a number of requirements and making the necessary recommendations, the data specifications enable full system interoperability across the Member States, within the scope of the application areas targeted by the Directive. They are published as technical guidelines and provide the basis for the content of the Implementing Rule on Interoperability of Spatial Data Sets and Services for data themes included in Annex I of the Directive. The Implementing Rule will be extracted from the data specifications keeping in mind the technical feasibility as well as cost-benefit considerations. The Implementing Rule will be legally binding for the Member States.

In addition to providing a basis for the interoperability of spatial data in INSPIRE, the data specification development framework and the thematic data specifications can be reused in other environments at

[7] http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.3_Definition_of_Annex_Themes_and_scope_v3.0.pdf
[8] http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.5_v3.1.pdf
[9] http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.6_v3.0.pdf
[10] http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.7_v3.0.pdf
[11] UML – Unified Modelling Language
[12] Conceptual models related to specific areas (e.g. INSPIRE themes)

local, regional, national and global level contributing to improvements in the coherence and interoperability of data in spatial data infrastructures.

Addresses – Executive Summary

Purpose
The INSPIRE Directive (2007/2/EC, 14.03.2007) defines the spatial data theme *Addresses* as the: "Location of properties based on address identifiers, usually by road name, house number, postal code."

This data specification on *Addresses* provides the basis for the development of the part of the Implementing Rules related to the spatial data theme *Addresses*. The entire data specification will be published as implementation guidelines accompanying the Implementing Rule on the Interoperability of Spatial Data Sets and Services according to Article 7(1) of the INSPIRE Directive.

The data specification has been prepared by the Thematic Working Group on Addresses (TWG-AD), a multinational team of experts in the field drawn from different parts of the European Union.[13] Their brief has been to create a data specification which requires no additional data capture by the European Union member states (Member States) and in this way it is designed to minimise the effort required to supply conformant spatial data.

Addresses serve several generic purposes, including: location, identification, jurisdiction, sorting and ordering, and emergency response.

The data specification on *Addresses* is required to facilitate the interoperability of address information between the Member States. Although all national or local address systems share similar concepts and general properties, differences exist in formal and informal standards, rules, schemas and data models within Europe.

Scope and description
The data specification defines an address as: "An identification of the fixed location of a 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."

A number of different object types can be related to property. The most commonly recognised types that have addresses are land parcels and buildings (including flats or apartments). In some countries additional objects have an address, such as street furniture, water pumping stations, mooring places, car parks and agricultural barns. Collectively, objects which can have addresses are referred to as addressable objects.

The spatial data theme *Addresses* is not isolated from other spatial data themes and it has a useful property where it can be used to link and join information from other data sets. The data specification is concerned with the structure of an address and does not attempt to define the structure of the addressable object to which it relates. The data specification does though include associations from the address to the two INSPIRE themes *Cadastral Parcels* and *Buildings.*

Input into data specification development
The development of the data specification is based on a variety of sources. One of them is reference material, provided by the organisations from the Member States and other countries. This includes the national standards related to addresses and geographic information; the practice from existing address registers or address reference systems and international organisations[14]; the International Standardisation Organisation's ISO 19100 series of standards for geographic information; the reference material from international associations and consortia[15] and the Generic Conceptual Model[16].

Since its recent inception, there has also been close collaboration, through common members and joint workshops, with the EURADIN (EURopean ADdress INfrastructure) project.

[13] The Thematic Working Group on Addresses (TWG-AD) is composed of the experts from Belgium, Czech Republic, Denmark, Germany, Netherlands, Spain, Sweden and United Kingdom.
[14] Universal Postal Union (UPU)
[15] Like: Global Spatial Data Infrastructure Association (GSDI) and Organization for the Advancement of Structured Information Standards (OASIS)
[16] Generic Conceptual Model is part of the data specification development framework.

The evaluation of the existing address systems was extended with a survey and analysis of some of the Member States[17], describing the address referencing of real world address assignments. These are provided as examples of current best practice and so facilitate implementation by other Member States.

The present lack of well-defined user requirements, especially related to those policies and activities that may have a direct or indirect impact on the environment, acted as a constraint on the TWG-AD. This was to some extent bridged with use cases, built on the domain knowledge of the group. The use cases are related to the several generic purposes of addresses, including the business and system usage of addresses and how they are specified for areas such as environmental policies (tree preservation), cross-border cooperation (cross-border emergency service), disaster management, fire protection management, support of disaster management and flood prevention, hazardous materials management, fireside permission, postal collection or delivery, search for addresses and address changes.

It is acknowledged by the TWG that the data specification therefore may need to be developed, according to further user requirements identified in the future.

The core of the spatial data theme Addresses and the relationships

The overall concept of this data specification is that an address has a "locator", e.g. an address number that enables a user to distinguish it from the neighbour addresses; and a geographic position, which enables an application to locate the address spatially.

To identify the address unambiguously in a wider context an address must be associated with a number of "address components" that define its location within a certain geographic area. Each of the address components represents a spatial identifier as for example the name of a road, district, postcode, municipality, region or country.

Four subclasses of address components are defined: administrative unit name, address area name[18], thoroughfare name[19] and postal descriptor[20].

This generic approach of addresses and address components supports the variety of the existing addresses systems (simple or complex) in the Member States.

In an address, the "locator" could be a systematic designator (like a number), it could be a name (like a building name) or it could be both. It is possible also for an address to have several locators, for instance as a hierarchy of building name, entrance number and flat number.

The geographic position of an address is represented by a spatial point including information on its origins. The point-based spatial representation was adopted for the simplicity of the implementation of the data specification and to reflect the situation in the Member States.

In addition to this, an address has a number of other attributes including a unique identifier (to easily distinguish between instances), possibly an alternative identifier, a status attribute and a number of life cycle attributes.

Two types of temporal life-cycle information are included: 1) the content specific life–cycle information describing the real world address (when this version of the real world address is valid); and 2) the temporal information on the changes in the database or spatial data set (when the item was inserted, superseded or retired).

[17] The survey included those Member States that are covered by the experts of the TWG-AD.
[18] It can be the name of a non administrative area within a municipality, like the name of a village or community or the name of a natural features (like a lake, island, cape, bay, etc.) to make a complete address more meaningful.
[19] For example: a street name, the name of waterway or the name of a network of smaller roads or paths
[20] A post code or post name is created and maintained for postal purposes to identify a subdivision of addresses and postal delivery points.

The address components have a number of general properties (attributes) which are exchanged for all components and some attributes that are specific for each sub-type, like e.g. the post code attribute which is specific for postal descriptors.

The common properties to all components include an identifier, an alternative identifier, the status of the component and the temporal life-cycle information (using the same concept as for the address).

The data specification on *Addresses* encounters relationships with four spatial data themes defined in Annex I of the INSPIRE Directive, namely: *Cadastral parcels,* which may be associated to the address itself, as well as *Administrative units*, *Geographic names and Transport networks* which could be associated to the address components.

Additionally, the specification includes also the relationship between the address and the spatial data theme *Buildings*, that is part of the Annex III of the INSPIRE Directive. At the present time, this relationship is modelled as a temporary “placeholder” until the data specification on *Buildings* is initiated.

The data specification for *Addresses* is designed with the intention of encompassing the requirements of all Member States.

As addresses are administered and managed differently in the Member States, often by different organisations and under different laws, there is likely to be an impact on the complexity of the resulting data specification and application schema. It has, however, remained the focus of the TWG-AD to make it as easily understood and as flexible as possible.

Acknowledgements

Many individuals and organisations have contributed to the development of these Guidelines.

The Thematic Working Group Addresses (TWG-AD) included:
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The Consolidated UML repository has been set up by Michael Lutz, Anders Friis-Christensen, and Clemens Portele. The INSPIRE Registry has been developed by Angelo Quaglia and Michael Lutz. The INSPIRE Feature Concept Dictionary and Glossary has been consolidated by Darja Lihteneger. The data specification testing has been coordinated by Martin Tuchyna. The Testing Wiki has been set up by Loizos Bailas, Karen Fullerton and Nicole Ostländer. Web communication and tools for the consultations have been developed by Karen Fullerton and Hildegard Gerlach.

The stakeholders participated, as Spatial Data Interested Communities (SDIC) or Legally Mandated Organisations (LMO), in different steps of the development of the data specification development framework documents and the technical guidelines, providing information on questionnaires and user surveys, participating in the consultation process and workshops, testing the draft data specifications and supporting the work of their members in the Thematic Working Groups and Drafting Team Data Specifications.

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Table of contents

1 Scope

This document specifies a harmonised data specification for the spatial data theme *Addresses* as defined in Annex I of the INSPIRE Directive.

This data specification provides the basis for the drafting of Implementing Rules according to Article 7 (1) of the INSPIRE Directive [Directive 2007/2/EC]. The entire data specification will be published as implementation guidelines accompanying these Implementing Rules.

The remainder of the document is structured to provide an overview, information on specification scope and data product identification in sections 2-4 before presentation of the application schema itself and associated narrative in section 5. Sections 6-7 provide information concerning reference systems, data quality, metadata, delivery and portrayal. The appendices provide a bibliography, abstract test suite, discussion of address component life cycles, and provide guidance for member states on how to assign components of the address to classes in the schema.

The primary audience for this document is technical staff who will be responsible for implementation of the delivery application that will be used to provide data to the specification. The executive summary provides an introduction for managers responsible for the delivery process.

2 Overview

2.1 Name and acronyms

INSPIRE data specification for the theme *Addresses*

2.2 Informal description

Definition:

Location of properties based on address identifiers, usually by road name, house number, postal code [Directive 2007/2/EC].

Description:

An address is an identification of the fixed location of a property. The full address is a hierarchy consisting of components such as geographic names, with an increasing level of detail, e.g. town, then street name, then house number or name. It may also include a post code or other postal descriptors. The address may include a path of access but this depends on the function of the address.

Addresses serve several generic purposes, these include:

(i) location (e.g. for visits or the delivery of mail);
(ii) identification (e.g. in context of a building registration);
(iii) jurisdiction (e.g. authority responsible for the property identified by the address);
(iv) sorting and ordering;
(v) emergency response.

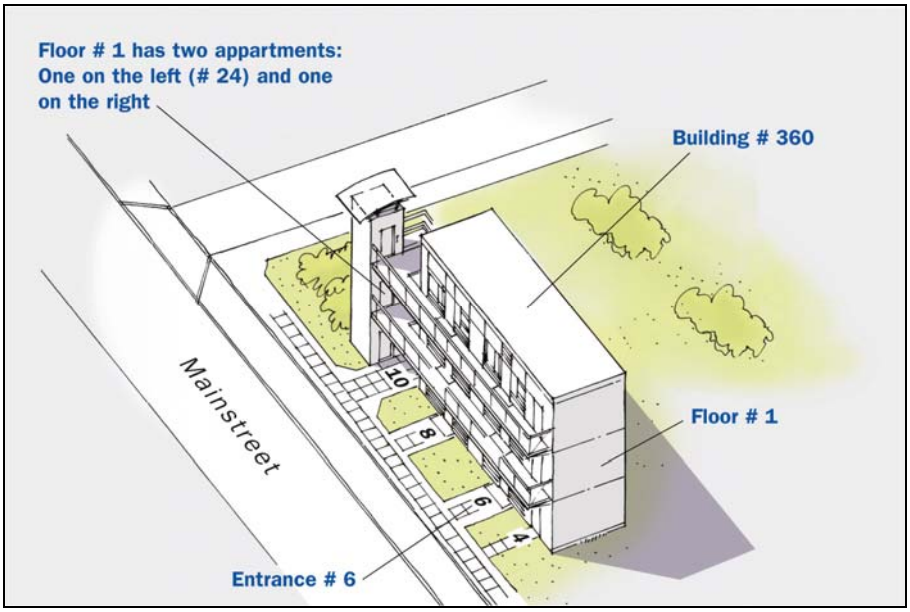
A number of different object types can be related to property. The most commonly recognised types that have addresses are land parcels and buildings (including flats or apartments). In some countries additional objects have an address, such as street furniture, water pumping stations, mooring places, parking lots and agricultural barns. Although they do not receive post they may need to have an address for other functions. This is true in both rural and urban areas.

Collectively, objects which can have addresses are referred to as addressable objects.

The location of an address is most often defined in a way that it identifies the location of the related addressable object.

Although all national or local address systems share similar concepts and general properties, differences exist in formal and informal standards, rules, schemas and data models within Europe.

To illustrate the differences let us take an example, the left apartment on the first floor of entrance 6 of building 360 on the Mainstreet:



Even within member states there are several possibilities how the address of the apartment would look like, as an example in the following table some examples are given:

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 (Flanders)	Germany
Mainstreet 24 2500 AA Den Haag	Mainstreet 6 bus 3 2140 Antwerpen	Mainstreet 6 67 433 Kelkheim
Spain	Czech Republic	
Mainstreet 6 left 1 1 Cortijo del Marqués 41037, Écija (Sevilla)	Mainstreet 360/6 Chodov 149 00 Prague 41	

More detailed discussion of this topic can be found in Annex D and Annex E.

NOTE The address system in many member states have less well developed regulations for rural areas.

An INSPIRE data specification needs to provide a general structure, so it becomes possible to exchange these addresses. The overall concept of addresses, a hierarchical description of a path from

the country name, through the municipality and the streets to the buildings and dwellings is represented in the different address components.

In designing the application schema for exchanging addresses within Europe the general structure which can be found in each member state is used. This consists of the following elements:

- Administrative Unit Name (for example the name of the municipality)
- Address Area Name (for example the name of the town)
- Thoroughfare Name (for example the street name)
- Address locator (for example the house number)

Originally for postal delivery purposes, but now often for wider application, an additional component is recognised:

- Postal Descriptor (for example the postcode)

The combination of (some of) these components make an address.

2.3 Normative References

[Directive 2007/2/EC] 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)

[ISO 19107] EN ISO 19107:2005, Geographic Information – Spatial Schema

[ISO 19108] EN ISO 19108:2005, Geographic Information – Temporal Schema

[ISO 19108-c] ISO 19108:2002/Cor 1:2006, Geographic Information – Temporal Schema, Technical Corrigendum 1

[ISO 19111] EN ISO 19111:2007 Geographic information - Spatial referencing by coordinates (ISO 19111:2007)

[ISO 19113] EN ISO 19113:2005, Geographic Information – Quality principles

[ISO 19115] EN ISO 19115:2005, Geographic information – Metadata (ISO 19115:2003)

[ISO 19118] EN ISO 19118:2006, Geographic information – Encoding (ISO 19118:2005)

[ISO 19123] EN ISO 19123:2007, Geographic Information – Schema for coverage geometry and functions

[ISO 19135] EN ISO 19135:2007 Geographic information – Procedures for item registration (ISO 19135:2005)

[ISO 19138] ISO/TS 19138:2006, Geographic Information – Data quality measures

[ISO 19139] ISO/TS 19139:2007, Geographic information – Metadata – XML schema implementation

[OGC 06-103r3] Implementation Specification for Geographic Information - Simple feature access – Part 1: Common Architecture v1.2.0

NOTE This is an updated version of "EN ISO 19125-1:2006, Geographic information – Simple feature access – Part 1: Common architecture". A revision of the EN ISO standard has been proposed.

[Regulation 1205/2008/EC] Regulation 1205/2008/EC implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata

2.4 Information about the creation of the specification

Document title: INSPIRE Data Specification *Addresses*
Reference date: 2010-04-26
Responsible party: INSPIRE TWG *Addresses*
Language: English

2.5 Terms and definitions

Terms and definitions necessary for understanding this document are defined in the INSPIRE Glossary[21].

In addition the following terms and definitions are used:

(1) Addressable object
Spatial object type which can have instances to which it is meaningful to associate addresses in the context of the INSPIRE scope.

Note: Most common addressable objects are real properties, cadastral parcels, buildings, entrances to buildings, dwellings, flats, condominiums/common holds etc., inside a building. Addressable objects can also be other types of sites or constructions like mooring places, points of interest, sports fields, parks, traffic terminals, technical constructions, points of service delivery e.g. utilities, post etc.

(2) Property
Plot of land and/or fixed objects attached to it.

NOTE 1 May include, but is not restricted to, real property.

NOTE 2 May not be restricted to only a one to one relationship with cadastral parcel."

(3) Postal address
Set of information which, for a postal item, allows the unambiguous determination of an actual or potential delivery point, usually combined with the specification of an addressee and/or mailee. (Universal Postal Union 2006)

NOTE The description of postal delivery points most often uses the common address components like e.g. thoroughfare name and locator (address number etc.), in addition they can also include specific postal designations like post codes and P.O. box identifiers.

Although these postal designators originally were intended solely for the use of the postal service, especially the post code has frequently been adopted and used for other purposes – as a generic place identifier.

2.6 Symbols and abbreviations

NUTS Nomenclature of Territorial Units for Statistics – the Statistical Regions of the EU

PO Post Office

[21] The INSPIRE Glossary is available from http://inspire-registry.jrc.ec.europa.eu/registers/GLOSSARY

UPU	Universal Postal Union
URL	Unique Resource Locator
UML	Unified Modelling Language

2.7 Notation of requirements and recommendations

To make it easier to identify the mandatory requirements and the recommendations for spatial data sets in the text, they are highlighted and numbered.

Requirement X Requirements are shown using this style.

Recommendation X Recommendations are shown using this style.

2.8 Conformance

Requirement 1 Any dataset claiming conformance with this INSPIRE data specification shall pass the requirements described in the abstract test suite presented in Annex A.

3 Specification scopes

This data specification has only one scope, the general scope.

4 Identification information

Table 1 – Information identifying the INSPIRE data specification *Addresses*

Title	INSPIRE data specification *Addresses*
Abstract	Please refer to section 2.2.
Topic categories	Location
Geographic description	This INSPIRE data specification covers spatial data sets which relate to an area where a Member State has and/or exercises jurisdictional rights.
Purpose	The purpose of this document is to specify a harmonised data specification for the spatial data theme *Addresses* as defined in Annex I of the INSPIRE Directive. The data specification for *Addresses* is required to facilitate the interoperability of address information from across member states. This is necessary to improve policy formulation through better reporting and aid management of pan European initiatives, such as in emergency planning, where the address fulfils either a mail delivery or searching function. Member States will be required to deliver the address data in conformance with the specification when requested by the EU. However, it is not intended by the INSPIRE Directive to harmonize the maintenance of address information in central registers. This has to be solved by the MS individually. Address reference data not only provide data and information in its own right, but also has the useful property that it can be used to link and join information from other data sets and as such has a number of other significant roles beyond the

	original societal reasons for compiling an address reference data set.
Spatial representation type	Vector In the application schema the spatial representation of an address is a point (GM_Point). No other spatial representation is supported by the schema.
Spatial resolution	Levels of resolution: Local level
Supplemental information	(Not populated)

5 Data content and structure

Requirement 2	Spatial data sets related to the theme *Addresses* shall be provided using the spatial object types and data types specified in the application schema in this section.

Requirement 3	Each spatial object shall comply with all constraints specified for its spatial object type or data types used in values of its properties, respectively.

Recommendation 1	The reason for a void value should be provided where possible using a listed value from the VoidValueReason code list to indicate the reason for the missing value.

NOTE The application schema specifies requirements on the properties of each spatial object including its multiplicity, domain of valid values, constraints, etc. All properties have to be reported, if the relevant information is part of the data set. Most properties may be reported as “void”, if the data set does not include relevant information. See the Generic Conceptual Model [INSPIRE DS-D2.5] for more details.

5.1 Basic notions

This section explains some of the basic notions used in the INSPIRE application schemas. These explanations are based on the GCM [DS-D2.5].

5.1.1 Placeholder and candidate types

This data specification may include types (typically spatial object types) that will be fully specified as part of an Annex II or III spatial data theme, but is already used as a value type of an attribute or association role of a type included in this data specification. Two kinds of such types are distinguished:

- A *placeholder type* acts as a placeholder for a spatial object type for which only a definition is specified (based on the requirements of the Annex I theme). It receives the stereotype «placeholder».

- A *candidate type* already has a preliminary specification comprising the definition as well as attributes and associations to other types. It does not receive a specific stereotype.

Both placeholder and candidate types are placed in the application schema package of the thematically related Annex II or III spatial data theme Their specifications will be revisited during the specification work of the Annex II or III theme.

If the existing preliminary specification elements of such types fulfil the requirements of the spatial data themes of Annex II or II they are kept and, if necessary, are complemented with further attributes or association roles.

If the existing preliminary specifications of a placeholder or candidate type do not fulfil the requirements of the spatial data theme of Annex II or III the placeholder or the candidate type will be moved into the application schema of the Annex I theme, and, if necessary, their specification will be completed. For the Annex II or III spatial data theme a new spatial object will be created.

Placeholders and candidate types are listed in a separate subsection of the Feature Catalogue.

5.1.2 Voidable characteristics

If a characteristic of a spatial object is not present in the spatial data set, but may be present or applicable in the real world, the property shall receive this stereotype.

If and only if a property receives this stereotype, the value of *void* may be used as a value of the property. A *void* value shall imply that no corresponding value is contained in the spatial data set maintained by the data provider or no corresponding value can be derived from existing values at reasonable costs, even though the characteristic may be present or applicable in the real world.

It is possible to qualify a value of void in the data with a reason using the VoidValueReason type. The VoidValueReason type is a code list, which includes the following pre-defined values:

- *Unpopulated*: The characteristic is not part of the dataset maintained by the data provider. However, the characteristic may exist in the real world. For example when the “elevation of the water body above the sea level” has not been included in a dataset containing lake spatial objects, then the reason for a void value of this property would be ‘Unpopulated’. The characteristic receives this value for all objects in the spatial data set.
- *Unknown*: The correct value for the specific spatial object is not known to, and not computable by the data provider. However, a correct value may exist. For example when the “elevation of the water body above the sea level” *of a certain lake* has not been measured, then the reason for a void value of this property would be ‘Unknown’. This value is applied on an object-by-object basis in a spatial data set.

NOTE It is expected that additional reasons will be identified in the future, in particular to support reasons / special values in coverage ranges.

The «voidable» stereotype does not give any information on whether or not a characteristic exists in the real world. This is expressed using the multiplicity:

- If a characteristic may or may not exist in the real world, its minimum cardinality shall be defined as 0. For example, an if an Address may or may not have a house number, the multiplicity of the corresponding property shall be 0..1.
- If at least one value for a certain characteristic exists in the real world, the minimum cardinality shall be defined as 1. For example, if an Administrative Unit always has at least one name, the multiplicity of the corresponding property shall be 1..*.

In both cases, the «voidable» stereotype can be applied. A value (the real value or void) only needs to be made available for properties that have a minimum cardinality of 1.

5.1.3 Code lists and Enumerations

5.1.3.1 Style

All code lists and enumerations shall use the following modelling style:

- No initial value, but only the attribute name part, shall be used.
- The attribute name shall conform to the rules for attributes names, i.e. is a lowerCamelCase name. Exceptions are words that consist of all uppercase letters (acronyms).

5.1.3.2 Governance

Two types of code lists can be distinguished:
- code lists that shall be managed centrally in the INSPIRE code list register and only values from that register may be used, and
- code lists that may be extended by data providers.

All code lists that are centrally managed shall receive the tagged value "codeList" with the preliminary value "urn:x-inspire:def:codeList:INSPIRE:<name of the class>".

5.1.4 Stereotypes

In the application schemas in this sections several stereotypes are used that have been defined as part of a UML profile for use in INSPIRE [INSPIRE DS-D2.5]. These are explained in Table 2 below.

Table 2 – Stereotypes (adapted from [INSPIRE DS-D2.5])

Stereotype	Model element	Description
applicationSchema	Package	An INSPIRE application schema according to ISO 19109 and the Generic Conceptual Model.
featureType	Class	A spatial object type.
type	Class	A conceptual, abstract type that is not a spatial object type.
dataType	Class	A structured data type without identity.
union	Class	A structured data type without identity where exactly one of the properties of the type is present in any instance.
enumeration	Class	A fixed list of valid identifiers of named literal values. Attributes of an enumerated type may only take values from this list.
codeList	Class	A flexible enumeration that uses string values for expressing a list of potential values.
placeholder	Class	A placeholder class (see definition in section 5.1.1).
voidable	Attribute, association role	A voidable attribute or association role (see definition in section 5.1.2).
lifeCycleInfo	Attribute, association role	If in an application schema a property is considered to be part of the life-cycle information of a spatial object type, the property shall receive this stereotype.
version	Association role	If in an application schema an association role ends at a spatial object type, this stereotype denotes that the value of the property is meant to be a specific version of the spatial object, not the spatial object in general.

5.2 Application schema Addresses

5.2.1 Description

5.2.1.1 Narrative description

5.2.1.1.1 General concept

An address is a spatial object that in a human readable way identifies a fixed location of a property. For this purpose an address has an identifier, e.g. an address number or a building name, which enables a user to distinguish it from the neighbour addresses, as well as a geographic position, which enables an application to locate the address spatially. The human readable identifier is in the application schema defined as the address “locator”. The geographic position is represented as a geographic point.

To identify the address unambiguously in a wider context, within the city, region and country, an address must be associated with a number of "address components" that defines its location within a certain geographic area. Each of the address components represents a spatial identifier as for example the name of a road, district, postcode, municipality, region or country. The application schema defines four subclasses of address components, namely: 'thoroughfare name', 'address area name', 'postal descriptor' and 'administrative unit name'.

5.2.1.1.2 The address

The address is in the application schema managed as a spatial object with an INSPIRE identifier, a possible alternative identifier (see section 5.2.1.4) as well as temporal properties and life-cycle information (see section 5.2.1.7).

5.2.1.1.3 The address position

One of the attributes of an address is "position" which by use of the data type "geographic position" expresses the "geometry" of the address represented as a GML point in 2D or 3D.

In the application schema it is mandatory that every address has a geographic position.

In addition to the GML point, the datatype "geographic position" has two attributes "specification" and "method" which expresses the quality and source information related to the geographic position.

The "metod" attribute describes, by use of a code list, how and by whom the position was created.
The position could either be decided and created manually by the address authority itself or by another party (e.g. by field surveying or digitizing of paper maps), or it could be derived automatically from the addressable object or from another spatial object type.

The "specification" attribute expresses, by use of a code list, which type of spatial object that is used as a basis of or target for the position of the address.

EXAMPLE 1 The position could be decided according to a specification that aims to identify the actual location of the entrance door or gate to which the address is assigned.

EXAMPLE 2 The position could be decided or automatically derived as a centre point of the building or cadastral parcel to which the address is associated.

EXAMPLE 3 The position could be automatically calculated as a point within a polygon of the address area or administrative unit in which the address is located. Allthough this position is not wery accurate, it will be usefull in applications that do not require a high degree of accuracy.

Requirement 4	In the data set, the position of the address shall be represented by the coordinates of the actual location with the best available accuracy. This will be the most precise directly captured coordinates or, if none exist, then coordinates derived from one of the address components, with priority given to the component that allows the position to be most accurately determined.

Recommendation 2	If the position is derived automatically from another spatial object related to the address, it is recommended to use an object type and a method which results in the most accurate position (For example using the centroid of the cadastral parcel will in general result in a better accuracy than using a centroid of the municipality).

Recommendation 3	The method and specification used as the basis for the creation of the position should be expressed in the "method" and "specification" attributes of the geographic position.

In the application schema, it is possible to represent more than one geographic position for an address, if each of these positions is created according to different specifications.

EXAMPLE A position of an address would most commonly identify the location of addressable object (e.g. the buiding). As an addition to this another position could be created to identify e.g. the postal delivery point (mailbox), the point of utility sevice or the point on the street centre line, from where access to the address is most feasible.

Requirement 5	If an address has more than one position, the “specification” attribute must be populated with a different value for each of these.

Finally, the “geographic position” has a “default” attribute. This value of the attribute is boolean (true or false) and expresses which of the alternative positions that by default should be used in an application e.g. in a default portrayal (see section 11).

Requirement 6	For an address, excatly one geographic position must have the attribute "default" with value "true".

5.2.1.1.4 The address locator

The purpose of the address “locator” attribute is to enable a user to distinguish the address from its neighbours. In the application schema the locator is represented by the datatype “address locator” which has the attributes “designator”, “name” and “level”.

An address must have at least one locator, but also addresses with more than one locator are possible, for example “Mainstreet 14, App. 34”, where one locator (“14”) identifies the building and another locator (“App. 34”) identifies a dwelling or business unit inside the same building.

5.2.1.1.5 Locator level

The locator “level” attribute classifies the level of detail expressed by this locator. The locator level will allow a better understanding and a comparison between addresses and address locators from different countries and regions. For example: in The Netherlands an address number identifies a dwelling or business unit inside a building, while in many other countries an address number is assigned to a building.

The locator level could also express that the locator identifies a dedicated postal delivery point like e.g. a P.O. Box.

5.2.1.1.6 Locator designator

The most common example of a locator is a “designator” like an address number or building number, optionally with an extension and even a second extension. Other common address designators are floor identifiers (like 0, 1, 2, 3 etc.) and unit identifiers (e.g. appartment A10, A11, A12 etc.).

It is characteristic that these designators, according to tradition or to a specific set of rules, are assigned systematically. For example address numbers are most often assigned in ascending order with odd and even numbers on each side of the thoroughfare. Another example is the floor identifier that in a standardized way expresses on which level the address is located. When this is the case, address locators have the additional property that they actually help the user to locate the address.

For each designator the “type” attribute must express the type of designator in question (and thus the sematics) according to a code list of designator types.

The need for this is especially obvious for addresses with more than one locator designator.

EXAMPLE The address “Calle Grand Vía 6, Izquierda 1 3”, has four designators. Here the “type” attribute could express that the “6” is the address number, the “Izquierda” is the stair identifier, the “1” is the floor and the “3” it the unit (flat) identifier. In another example the “type” will express that in the address “Storelien 17B H0203” the “17B” is an address identifier and the “H0203” is a unit identifier.

As shown in Annex D, the traditions and rules for the composition of address designators vary widely across the different countries and regions of Europe. On the basis of the INSPIRE reference material a total of 14 different locator types has been identified and represented in the locator type code list.

5.2.1.1.7 Locator name

As an alternative or addition to a locator designator, also a locator name can be used.

EXAMPLE 1 The name of the site (e.g. the estate, property or complex) or the name of the building to which the address is assigned (e.g. “Rose Cottage”).

EXAMPLE 2 If the address identifies a specific part of a building, the name of a room (e.g. “Grand suite” or “Auditorium 13”) can be used.

EXAMPLE 3 A narrative, textual description can be used as an address locator name, e.g. “The little house by the lake”.

The locator name uses the “geographical name” data type (from the INSPIRE Annex I theme Geographical Names) that allows names in different languages and scripts as well as inclusion of alternative name, alternative spellings, historical name and exonyms.

As for the locator designator, the “type” of locator name must also be reported, using the code list for locator name types.

5.2.1.1.8 Locator within scope of

One of the most characteristic properties of address locators is that they are unambiguous within a defined scope. For address numbers, the most common rule is that they should be unique within the scope of the thoroughfare name. For other addresses (often in rural areas) the rule is that the address number is unique inside the address area name (e.g. the name of the village) or postal designator (e.g. the postcode).

In a typical address dataset, some of the addresses may follow one rule while others follow another. As both categories of addresses may have an association to a thoroughfare name as well as to an address area name, postcode etc., the user will need extra information to distinguish between these categories.

The association “within scope of” enables the dataset to express the specific relation between a locator and the specific address component (e.g. thoroughfare or address area name) that defines the ‘scope of unambiguousness’.

This is also useful in situations where addresses have more than one locator, each of them following a separate set of rules for unambiguousness.

EXAMPLE 1 From Praha in the Czech Republic, in the address “Na Pankráci 1690/125, Nusle" the designator “1690” is a building number unique within the address area (cz: cast obce) “Nusle”, while the “125” is an address number that has the thoroughfare name as its scope.

EXAMPLE 2 The so called “corner addresses” in Estonia and Lithuania. A corner address has two address numbers (designators). Each of them referring to a thoroughfare name (primary and secondary street name). E.g. in Vilnius the address designated “A. Stulginskio gatvė 4 / A. Smetonos gatvė 7” is situated on the corner of the two streets.

If a locator is not assigned according to rules that seek unambiguousness within an address component, the “within scope of” association should not be populated.

EXAMPLE The address “Prince Street 225, Flat 7”, has two locators. While the first “225” is unambiguous within the scope of the thoroughfare name “Prince Street”, the second “Flat 7” is not (presumably it is unique within the building). The “within scope of” should therefore not be populated for the locator “Flat 7”.

Requirement 7	The “within scope of” association shall be populated for all locators which are assigned according to rules that seek to ensure unambiguousness within a specific address component (that is thoroughfare name, address area name, postal descriptor or administrative unit name).

5.2.1.1.9 Parent address

In many countries a concept of "parent" and "sub-addresses" exist, e.g. where the main (parent) address identifies the building or the main entrance door, while the more detailed sub-addresses identify the individual appartments in the building.

Most commonly the sub-addresses share the locator and the address components of the parent address.

EXAMPLE The address designated "Prince Street 225", could be the parent address of the (sub) addresses "Prince Street 225, Flat 1", "Prince Street 225, Flat 2", "Prince Street 225, Flat 3" and so on.

In the application schema this tight relationship between a subaddress and a parent (or main) address is represented by the self-association "parent address".

In some countries (like, e.g.,The Netherlands) only one type of addresses exists; therefore this association will not be populated. In other countries two or more "levels" of parent-child addresses exists.

Requirement 8	The association role "parentAddress" shall be populated for all addresses which are connected to a parent (or main) address.

5.2.1.1.10 Association to cadastral parcel and building

The application schema includes a voidable 0...* association from the address object type to the cadastral parcel object type from the INSPIRE Annex I theme "Cadastral parcels". This association represents that the address is assigned to or related with one or more cadastral parcels.

The application schema also includes a voidable 0...* association form the address object type to the INSPIRE Annex III theme "Buildings". The association represents that the address is assigned to or related with one or more buildings. As the application schema for buildings is not yet developed, a temporary placeholder for the building object type has been created.

Recommendation 4	If a data provider has access to information on relationship between the addresses and the cadastral parcels or buildings, the relevant associations in the addresses application schema should be populated.

5.2.1.1.11 Address components

In order to identify the address within a wider context, an address must be associated to a set of "address components".

EXAMPLE The address "Calle Mayor 13, Cortijo del Marqués, 41037, Écija, Sevilla, España" has six address components, each of them representing a spatial identifier or name:

- Calle Mayor,
- Cortijo del Marqués,
- 41037,
- Écija,
- Sevilla,
- España.

Together with the address locator "13" they define the specific identity of the address and its location in a specific city, district and street in Spain.

The traditions, regulations and use of these address components differ from region to region and country to country. In order to improve interoperability and comparison, the application schema therefore defines four commonly used, generic subclasses of address components, namely: 'thoroughfare name', 'address area name', 'postal descriptor'and 'administrative unit name'.

Requirement 9	An address shall have an association to the name of the country in which it is located. Futhermore, an address must have associations to the additional address components necessary to the unambiguous identification and location of the address instance.

In the following the components and the attributes will be explained. See also an overview in Figure 1 (For datatypes we refer to Figure 4 and for codelists we refer to Figure 5.

5.2.1.1.12 Component situated within

It is characteristic that the address components always form a certain hierarchy, with the name of the country in the top and most often the thoroughfare name or the address area name in the bottom. It is also characteristic, though, that the structure of this hierarchy is different from country to country and even from region to region.

In order to express this hierarchy, an instance of an address component could be associated to an instance of another address component, within which it is situated. This association “situated within” facilitates queries e.g. for a specific thoroughfare name within a given municipality or postcode as well as updates of, for example, a gazetteer based on the hierarchical structure of the address components.

Using the previous example, the “situated within” association could express that the address area name “Cortijo del Marqués” is situated within the municipality (admin area name) “Écija” and so forth.

It is also possible to express that a specific thoroughfare like e.g. “Roskildevej” in the western suburbs of Copenhagen, crosses several municipal boarders and thus it is situated within these municipalities.

Recommendation 5	The association “situated within” should at least be populated so that it expresses: - The hierarchy of administrative unit names (e.g. Municipality -> Region -> Country), - How thoroughfare names and address area names are situated within the lowest level of administrative unit name or postal designators (e.g. Thoroughfare name -> Municipality name(s) and Thoroughfare name -> Postcode(s))

5.2.1.1.13 General attributes for all components

It is characteristic that the address components represent real world features like, for example a street name, the name of a village or municipality etc., that exist independently of the addresses to which they are associated.

The application schema enables that any address component type could be implemented as a proper real world object, including a global and persistent identifier, an alternative identifier, valid from/valid to time stamps and life cycle info.

This approach would enable change-based queries for address components themselves, like for example new or updated thoroughfare names during a certain timeframe; it also allows representation of component instances with no connection to an address.

If in a dataset one or several of the address components are managed as simple attributes of the address, the identifier and life cycle elements of the address components are not populated.

EXAMPLE In some address databases, the post code is stored as a simple attribute value of the address.

5.2.1.1.14 Administrative Unit Name

The address component subtype “admin unit name” refers to administrative units as defined in the INSPIRE Annex I: “Units of administration, dividing areas where Member States have and/or exercise

jurisdictional rights, for local, regional and national governance, separated by administrative boundaries".

EXAMPLE Administrative unit names used in addresses are the name of the country, region or municipality.

Administrative unit names have two specific attributes: the "name" using the "geographical name" data type that allows names in different languages and scripts as well as inclusion of alternative name, alternative spellings, historical name and exonyms. It also has an attribute of "level" which expresses the 'position' of the administrative unit in the administrative hierarchy, e.g. so that level 1 is the country level and level 5 could be the municipality level.

The application schema includes an association between the administrative unit name and the "administrative unit" object class of the INSPIRE theme Administrative Units.

This allows a user or application to link to and access additional information such as the spatial extent and boundaries of the administrative units. It also allows consistency between the name used in the addresses application schema and the name used in the schema of administrative units.

5.2.1.1.15 Address Area Name

The address component subtype "address area name" represents the name of an area or locality that groups a number of addressable objects for addressing purposes, without being an administrative unit. Typical examples of address area names are the name of a village or of a district in a town used for the purpose of addressing. Also names of natural features like a lake, island, or bay are used.

The purpose of adding an address area name is sometimes to obtain unambiguousness of thoroughfare names; in other situations the purpose is just to make the complete address more informative and descriptive by adding a well known place name. This is particularly useful if the municipality or postcode covers a large area.

Sometimes an address area name is a true subdivision of for example a municipality. In other situations the concept of address area name is less formalised and based on local tradition or specific needs. As an example in Sweden a "kommunedel" is a named subdivision of a municipality which ensures that street names are unique. In some countries such as Spain, more than one level of address area names is sometimes used.

Similar to administrative unit names, the address area name's attribute "name" uses the "geographical name" data type that allows names in different languages and scripts as well as inclusion of alternative name, alternative spellings, historical name and exonyms.

The application schema includes an association between the address area name and the "named place" object class of the INSPIRE theme Geographical Names. If this link is present, a user or application can access additional information such as the spatial extent or boundaries of address area.

Note however that if the link is populated, it is important that the area covered by the associated Named Place is exactly the same as the area covered by the address area name in question; if this is not the case the association would result in an inconsistency.

5.2.1.1.16 Thoroughfare Name

The address component subtype "thoroughfare name" represents the name of a passage or way through from one location to another like a road or a waterway. The most common examples of thoroughfare names are road names, but also a name of a waterway, a square, a cul de sac, or a network of smaller roads or paths for example in a small village or settlement are possible thoroughfare names.

For thoroughfare names the "name" attribute has a special datatype "thoroughfare name value" which for the complete name uses the "geographical name" data type that allows names in different languages and scripts as well as inclusion of alternative name, alternative spellings, historical name and exonyms.

In addition to this a “parts of name” data type allows optionally a representation of the name subdivided into separate, semantic parts. This could improve parsing of abbreviated or misspelled names, and the creation of alphabetically sorted street gazetteers.

EXAMPLE "Avenue" + "de la" + "Poste" or “Little” + “Strand” + “Street”.

The concept of subdivision of thoroughfare names in the applications schema is complying with the Universal Postal Union (UPU) standard S.42. In the data type “parts of name” it enables a dataset to express that the part of the name is:

- The “type” of thoroughfare, like e.g. "Rua", in " Rua da Abelheira"
- The “name” like e.g. "Madeleine" in “Place de la Madeleine”
- The “prefix” like e.g. "del" in “Calle del Christo Canneregio”
- The “qualifier” like e.g. "Little" in “Little Strand Street”

The “parts of name” data type allows only one language and one script. For thoroughfare names in different languages or scripts this means that an instance of the “thoroughfare name value” has to be created for each language or script.

The application schema includes an association between the thoroughfare name and the “transport link” object class of the INSPIRE theme Transport Network.

If this association is present a user or application can access the Transport links and segments of road (or waterways) related to the thoroughfare name and the properties of these.

5.2.1.1.17 Postal Descriptor

The address component subtype “postal descriptor” represents the identification of a subdivision of addresses and postal delivery points created for postal purposes. The most common example of a postal descriptor is a post code associated with the name of the post office, town or area.

Even though the original purpose of post codes was sorting and delivery of mail, the usage of post codes has been extended into many other sectors and applications.

The concept, structure and formats of national postal descriptor systems are different. For example in some countries post codes are seen as a proper geographic subdivision of the country, in other countries the post code is regarded only as an attribute that characterises a small number of adjacent postal delivery points and addresses.

Sometimes the post code itself is the only information required for a complete address; in other situations both the post code and the associated name of post office or town is required. Sometimes there is a simple 1:1 relationship between the code and the name; in other situations a set of postcodes are associated with a single post office or town. In some countries such as The Republic of Ireland, no post code system currently exists; therefore the postal descriptor is only represented by the name of the post town.

5.2.1.1.18 Address representation

As an addition to the application schemas comprehensive representation of address datasets, a simple “address representation” data type has been defined.

This data type is intended for use in external applications that need to represent the basic, address information in a readable way, including an optional reference to the full address object. For example the address representation type could be used in a register of buildings which includes the basic information on the addresses assigned to each building instance.

The address representation must not be used as an alternative to the application schema; for the exchange and sharing of an address data set, the full application schema for addresses must be used.

5.2.1.2 UML Overview

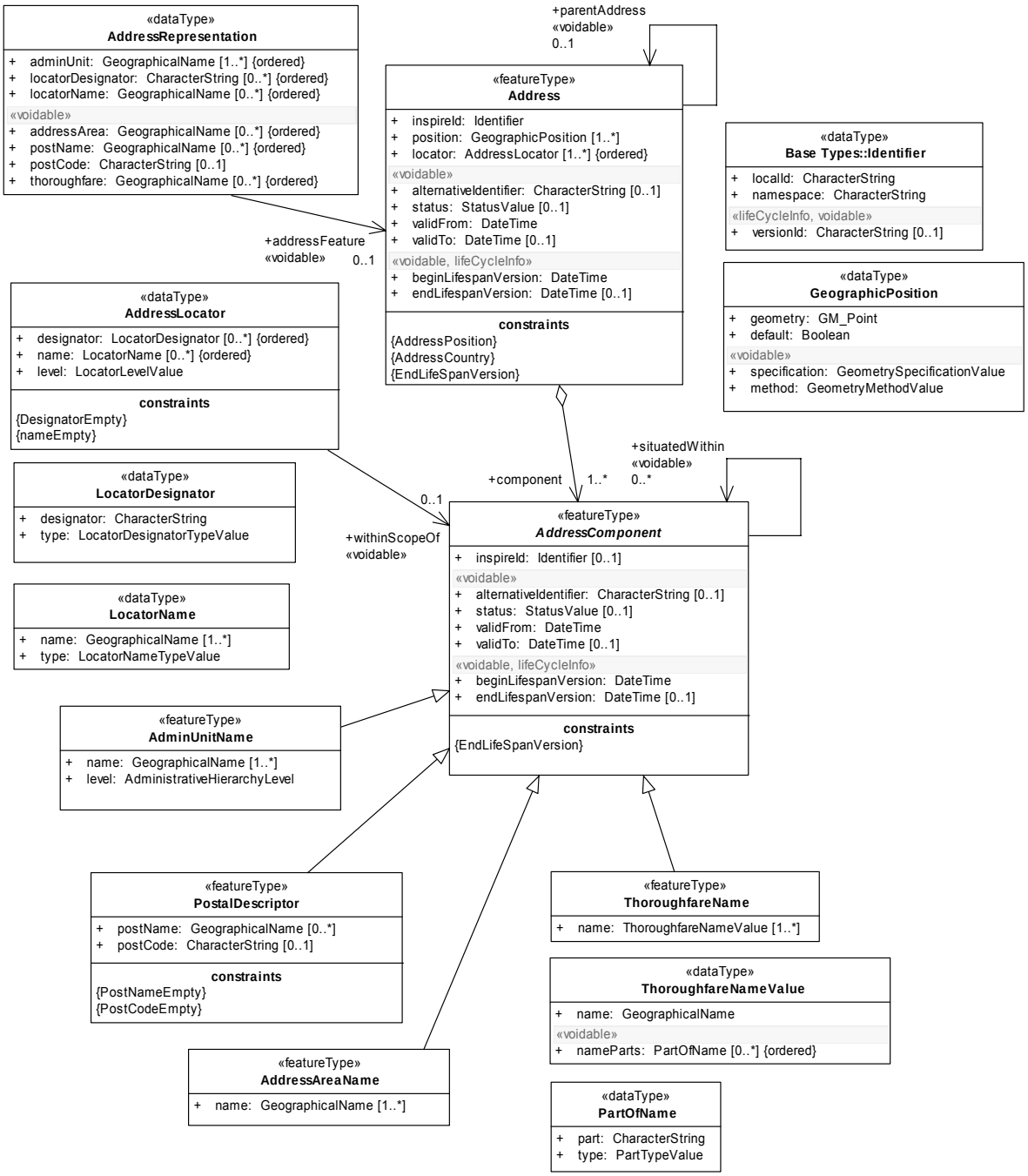


Figure 1 – UML class diagram: Overview of the *Addresses* application schema

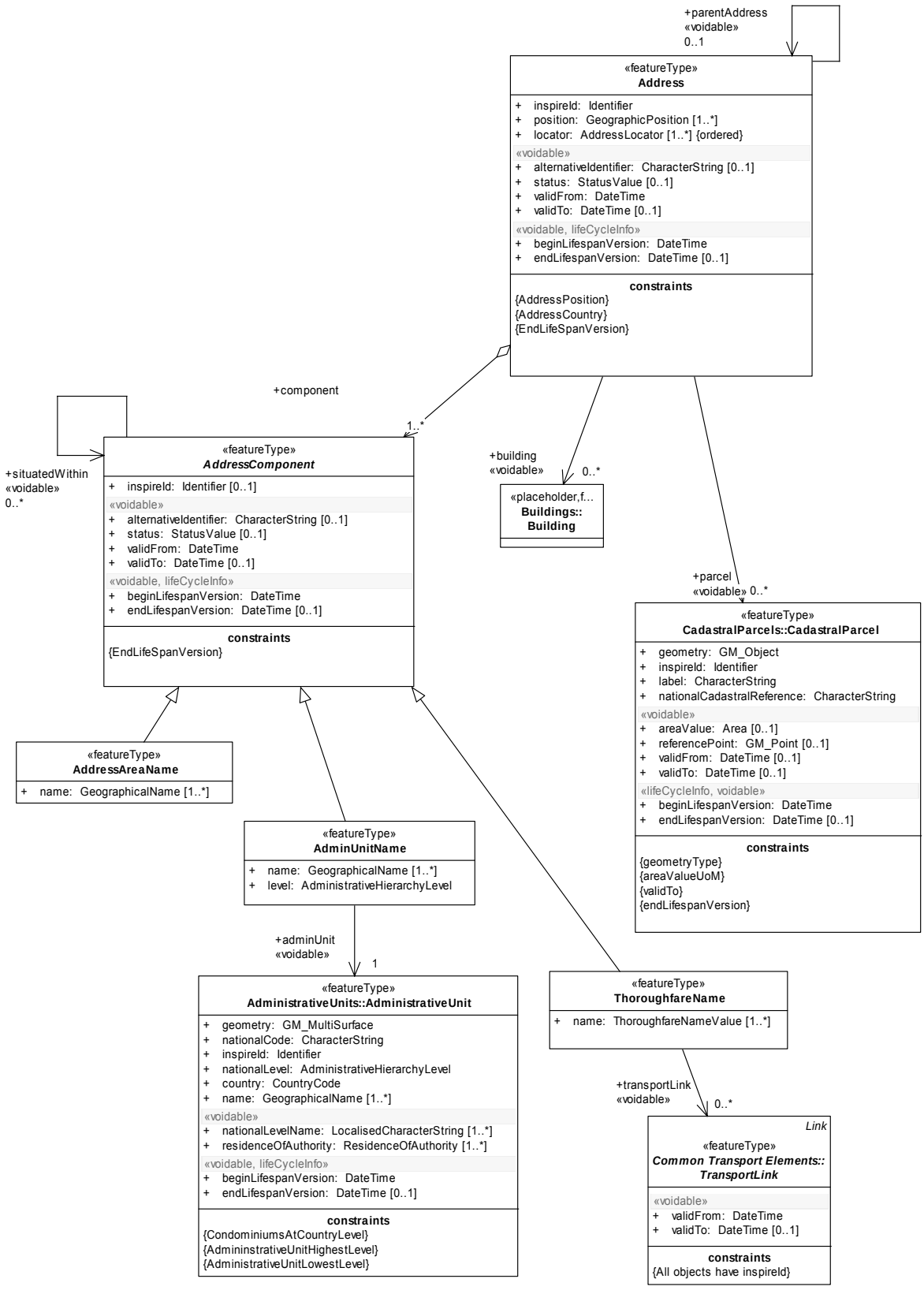


Figure 2 – UML class diagram: Overview of cross-theme relationships

5.2.1.3 Consistency between spatial data sets

There are no other consistency rules than those defined within the application schema.

5.2.1.4 Identifier management

For all address objects an external object identifier must be included, according to the INSPIRE Generic Conceptual Model (D2.5).

Recommendation 6 Changes in the attributes of the address, or changes in address components related to the address, should not change the identity of the address, only a new version should be created. The life-cycle rules for addresses in the data set should be documented in the lineage metadata element of the data set.

NOTE For further information on the metadata element on lineage see also section 8.3.2.

Optionally also an alternative identifier could be included, in order, for example, to obtain interoperability with existing legacy systems or applications. Alternative identifiers are not necessarily persistent in the lifetime of the address instance.

For address components an external object identifier as well as an alternative identifier could optionally be included.

Annex C gives examples of how the life-cycle works. See also section 5.2.1.7.

5.2.1.5 Modelling of object references

Object references are described in section 5.2.1.1. If dataproviders choose to implement external object references to spatial object types in other themes, they should ensure that update mechanisms are in place in order to ensure consistency among the referenced objects.

5.2.1.6 Geometry representation

Requirement 10 The value domain of spatial properties used in this specification shall be restricted to the Simple Feature spatial schema as defined by EN ISO 19125-1.

NOTE 1 The specification restricts the spatial schema to 0-, 1-, 2-, and 2.5-dimensional geometries where all curve interpolations are linear.

NOTE 2 The topological relations of two spatial objects based on their specific geometry and topology properties can in principle be investigated by invoking the operations of the types defined in ISO 19107 (or the methods specified in OGC 06-103r3).

NOTE 3 Please note that the *Addresses* application schema only uses 0-dimensional geometries

5.2.1.7 Temporality representation

The application schema includes two concepts of how to represent the temporal aspects of addresses and address components:

- The life-cycle information with the attributes “beginLifespanVersion” and “endLifespanVersion”, represent the versions and updates of the objects in the spatial dataset
- The attributes “status”, “valid from” and “valid to” applies to the validity and life-cycle of the real world object

It is important to distinguish because addresses often are managed in an administrative process by the responsible authority, in which the address is approved, changed or retired at a specific date, which is not necessarily the same as the date at which the information is recorded in the dataset.

5.2.1.7.1 Life-cycle Info

The application schema uses the derived attributes "beginLifespanObject" and "endLifespanObject" to record the lifespan of a spatial object.

The attributes "beginLifespanVersion" specifies the date and time at which this version of the spatial object was inserted or changed in the spatial data set. The attribute "endLifespanVersion" specifies the date and time at which this version of the spatial object was superseded or retired in the spatial dataset.

Regarding rules for life-cycle information and versions of spatial objects in the dataset refer to Recommendation 6.

NOTE 1 The attributes specify the beginning of the lifespan of the version in the spatial dataset itself, which is different from the temporal characteristics of the real-world phenomenon described by the spatial object. This lifespan information, if available, supports two requirements: First, knowledge about the spatial dataset content at a specific time; second, knowledge about changes to a dataset in a specific time frame. The lifespan information should be as detailed as in the dataset (i.e. if the lifespan information in the dataset includes seconds, the seconds should be represented in data published in INSPIRE) and include time zone information.

NOTE 2 Changes to the attribute "endLifespanVersion" does not trigger a change in the attribute "beginLifespanVersion".

Recommendation 7 If life-cycle information is not maintained as part of the spatial dataset, all spatial objects belonging to this dataset should provide a void value with a reason of "unpopulated".

5.2.1.7.2 Validity status of real world object

In the application schema both the address and the address component have a set of attributes that reflects the validity and life-cycle of the real world phenomena, for example, an address, a post code or a thoroughfare name. These attributes are the “status” attribute and the two temporal attributes: “valid from” and “valid to”.

This concept is important, because the date on which an address or an address component is proposed, approved as current, changed or retired sometimes has a legal impact.

In a situation where an address or address component is approved by the authority at one date, but not recorded in the dataset until some days or weeks later, a significant event could occur between these dates.

EXAMPLE: A new address is assigned and approved for a property, and is valid from this date, but the address is first recorded in the public address register the following week. The valid from attribute will inform a user on the correct date of validity.

Also the opposite situation can occur, where a new or updated address or address component is approved, but with a decision that the change will take effect at a future date. Such a decision would be particularly necessary in situations where the parties directly affected and users of address data need a period of time to prepare for the change.

EXAMPLE: A municipality approves a new street name and decides that the name will first take effect from the 1st of next month. The “valid from” attribute allows that this information could be recorded in the dataset immediately, so that the users can receive advanced warning information of when the new street name will become valid.

Recommendation 8 There should be no time overlaps or gaps between the ”valid to” of a previous version and the ”valid from” of a new version of a spatial object.

If the dataset does not include valid from and valid to information a user must, based on their own judgement, expected temporal quality of the dataset, assess whether the life-cycle information attributes reflects the actual real world status of the spatial objects with sufficient accuracy for their purpose.

The “status” attribute represents the validity in the real world of the address or address component in question. If life-cycle information or versioning is implemented in the dataset, the attribute represents the status of the object “as is” for the appropriate timespan or version.

The status code list has the values reserved, proposed, current, retired and even alternative, If the status information is not maintained for an address or address component, it could be assumed that the validity of the object is “current”, unless otherwise stated.

Annex C gives examples of how the life-cycleinfo and the validity status can be implemented in a dataset.

Recommendation 9 If life-cycle information and or validity status is maintained, the data provider should preserve it within the dataset, as it may be of use in the future.

5.2.2 Feature catalogue

Table 3 – Feature catalogue metadata

Feature catalogue name	INSPIRE feature catalogue Addresses
Scope	Addresses
Version number	3.0.1
Version date	2010-04-26
Definition source	INSPIRE data specification Addresses

Table 4 – Types defined in the feature catalogue

Type	Package	Stereotypes	Section
Address	Addresses	«featureType»	5.2.2.1.1
AddressAreaName	Addresses	«featureType»	5.2.2.1.2
AddressComponent	Addresses	«featureType»	5.2.2.1.3
AddressLocator	Addresses	«dataType»	5.2.2.2.1
AddressRepresentation	Addresses	«dataType»	5.2.2.2.2
AdminUnitName	Addresses	«featureType»	5.2.2.1.4
GeographicPosition	Addresses	«dataType»	5.2.2.2.3
GeometryMethodValue	Addresses	«codeList»	5.2.2.3.1
GeometrySpecificationValue	Addresses	«codeList»	5.2.2.3.2
LocatorDesignator	Addresses	«dataType»	5.2.2.2.4
LocatorDesignatorTypeValue	Addresses	«codeList»	5.2.2.3.3
LocatorLevelValue	Addresses	«codeList»	5.2.2.3.4
LocatorName	Addresses	«dataType»	5.2.2.2.5
LocatorNameTypeValue	Addresses	«codeList»	5.2.2.3.5
PartOfName	Addresses	«dataType»	5.2.2.2.6
PartTypeValue	Addresses	«codeList»	5.2.2.3.6
PostalDescriptor	Addresses	«featureType»	5.2.2.1.5
StatusValue	Addresses	«codeList»	5.2.2.3.7
ThoroughfareName	Addresses	«featureType»	5.2.2.1.6

Type	Package	Stereotypes	Section
ThoroughfareNameValue	Addresses	«dataType»	5.2.2.2.7
Building	Buildings	«placeholder,featureType»	5.2.2.4.1

5.2.2.1 Spatial object types

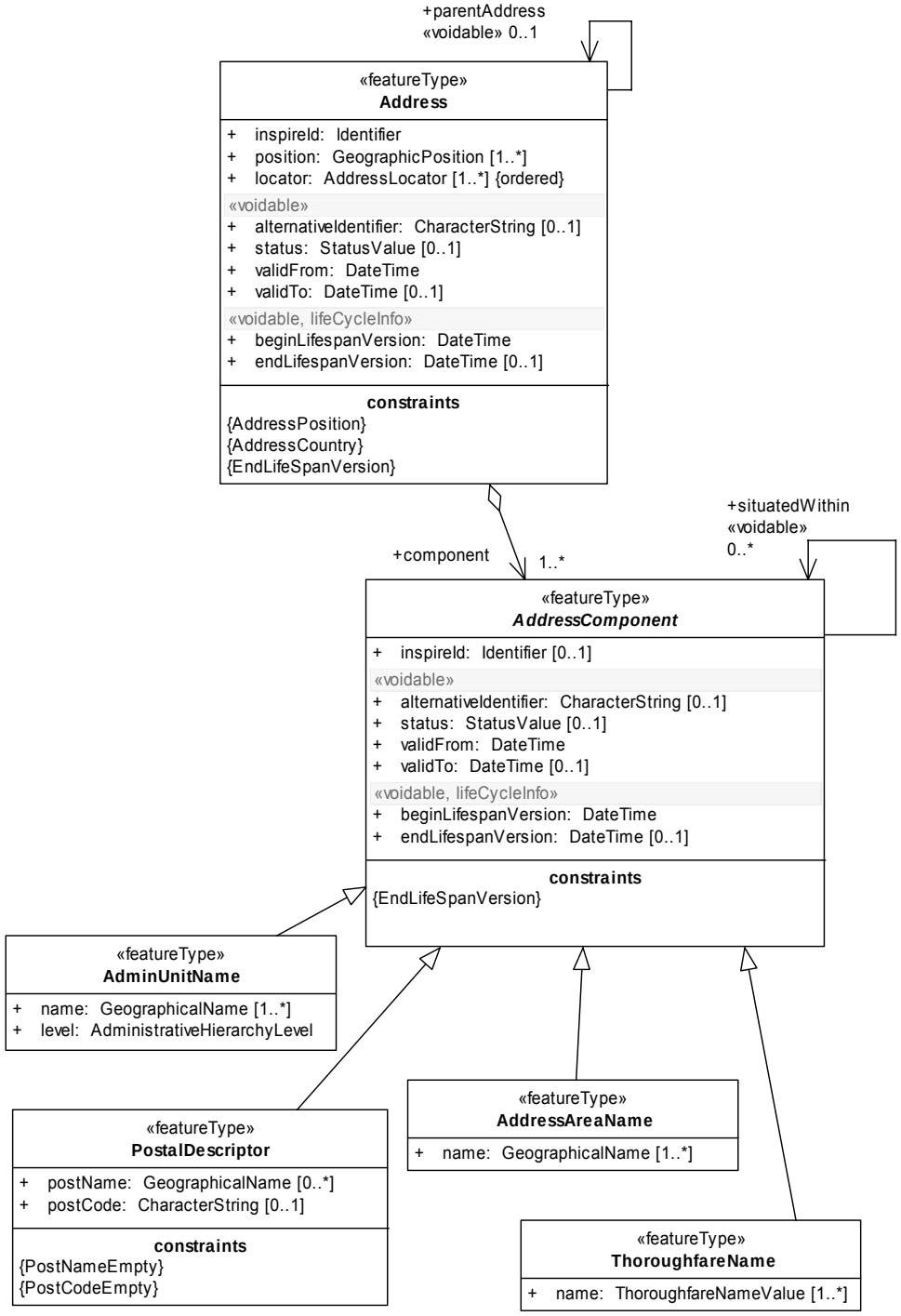


Figure 3 – UML class diagram: Spatial object types

5.2.2.1.1 Address

Address

Address

Definition: An identification of the fixed location of property by means of a structured composition of geographic names and identifiers.

Description: NOTE 1 The spatial object, referenced by the address, is defined as the "addressable object". The addressable object is not within the application schema, but it is possible to represent the address' reference to a cadastral parcel or a building through associations. It should, however, be noted that in different countries and regions, different traditions and/or regulations determine which object types should be regarded as addressable objects.

NOTE 2 In most situations the addressable objects are current, real world objects. However, addresses may also reference objects which are planned, under construction or even historical.

NOTE 3 Apart from the identification of the addressable objects (like e.g. buildings), addresses are very often used by a large number of other applications to identify object types e.g. statistics of the citizens living in the building, for taxation of the business entities that occupy the building, and the utility installations.

NOTE 4 For different purposes, the identification of an address can be represented in different ways (see example 3).

EXAMPLE 1 A property can e.g., be a plot of land, building, part of building, way of access or other construction,

EXAMPLE 2 In the Netherlands the primary addressable objects are buildings and dwellings which may include parts of buildings, mooring places or places for the permanent placement of trailers (mobile homes), in the UK it is the lowest level of unit for the delivery of services, in the Czech Republic it is buildings and entrance doors.

EXAMPLE 3 Addresses can be represented differently. In a human readable form an address in Spain and an address in Denmark could be represented like this: "Calle Mayor, 13, Cortijo del Marqués, 41037 Écija, Sevilla, España" or "Wildersgade 60A, st. th, 1408 Copenhagen K., Denmark".

Status: Proposed

Stereotypes: «featureType»

Attribute: inspireId

Value type: Identifier

Definition: External object identifier of the spatial object.

Description: NOTE 1 An external object identifier is a unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object. The identifier is an identifier of the spatial object, not an identifier of the addressable object.

NOTE 2 The primary purpose of this identifier is to enable links between various sources and the address components.

EXAMPLE An address spatial object from Denmark could carry this identifier:
Namespace: DK_ADR
Local identifier: 0A3F507B2AB032B8E0440003BA298018
Version identifier: 12-02-2008T10:05:01+01:00

Multiplicity: 1

Attribute: alternativeIdentifier

Value type: CharacterString

Definition: External, thematic identifier of the address spatial object, which enables interoperability with existing legacy systems or applications.

Address	
Description:	NOTE 1 Compared with the proper identifier of the address, the alternative identifier is not necessarily persistent in the lifetime of the address spatial object. Likewise it is usually not globally unique and in general does not include information on the version of the address spatial object. NOTE 2 Often alternative address identifiers are composed by a set of codes that, e.g., identify the region and the municipality, the thoroughfare name and the address number. These alternative identifiers will not remain persistent e.g. in the case of the merging of two municipalities. EXAMPLE In Denmark many legacy systems (e.g. in the Statistics Denmark or the Central Business Register) uses as address identification the three digit municipality code plus the four character street name code plus the address number.
Multiplicity:	0..1
Stereotypes:	«voidable»
Attribute: position	
Value type:	GeographicPosition
Definition:	Position of a characteristic point which represents the location of the address according to a certain specification, including information on the origin of the position.
Multiplicity:	1..*
Attribute: status	
Value type:	StatusValue
Definition:	Validity of the address within the life-cycle (version) of the address spatial object.
Description:	NOTE This status relates to the address and is not a property of the object to which the address is assigned (the addressable object).
Multiplicity:	0..1
Stereotypes:	«voidable»
Attribute: locator	
Value type:	AddressLocator
Definition:	Human readable designator or name.
Multiplicity:	1..*
Collection Constraints:	ordered
Attribute: validFrom	
Value type:	DateTime
Definition:	Date and time of which this version of the address was or will be valid in the real world.
Description:	NOTE This date and time can be set in the future for situations where an address or a version of an address has been decided by the appropriate authority to take effect for a future date.
Multiplicity:	1
Stereotypes:	«voidable»
Attribute: validTo	
Value type:	DateTime
Definition:	Date and time at which this version of the address ceased or will cease to exist in the real world.
Multiplicity:	0..1
Stereotypes:	«voidable»
Attribute: beginLifespanVersion	
Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was inserted or changed in the spatial data set.

Address	
Description:	NOTE This date is recorded to enable the generation of change only update files.
Multiplicity:	1
Stereotypes:	«voidable,lifeCycleInfo»
Attribute: endLifespanVersion	
Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was superseded or retired in the spatial data set.
Description:	NOTE This date is recorded primarily for those systems which "close" an entry in the spatial data set in the event of an attribute change.
Multiplicity:	0..1
Stereotypes:	«voidable,lifeCycleInfo»
Association role: parcel	
Value type:	CadastralParcel
Definition:	Cadastral parcel that this address is assigned to or associated with.
Description:	NOTE An address could potentially have an association to zero, one or several cadastral parcels. Also it is possible (but this is not expressed in this application schema) that several addresses are associated to a single cadastral parcel. EXAMPLE In the street "Wildersgade" in Copenhagen, Denmark, the address designated as "Wildersgade 66, 1408 København K" is associated to the cadastral parcel identifier "81" in the district of "Christianshavn".
Multiplicity:	0..*
Stereotypes:	«voidable»
Association role: parentAddress	
Value type:	Address
Definition:	The main (parent) address with which this (sub) address is tightly connected.
Description:	NOTE 1 The relationship between a set of subaddresses and the main address most often means that the sub addresses use the same locator and address components (for example , thoroughfare name, address area, post code) as the parent address. For each sub address additional address locators are then included for identification, like e.g. flat number, floor identifier, door number. NOTE 2 In some countries several levels of parent-, sub- and sub-sub-addresses exist. In other countries the concept of parent addresses does not exist; all addresses are thus of the same level. EXAMPLE 1 In a Spanish city the address "Calle Gran Vía 8" is a parent address where the locator "8" represents the building. In the building, the sub address "Calle Gran Via 8, door 3" represents a sub-address, while the more detailed sub-sub address "Calle Gran Via 8, door 3, staircase A, floor 5, dwelling 1" represents the address of a specific dwelling. EXAMPLE 2 In Denmark the legislation on addresses define two types of addresses: the parent "access level" and the sub "unit level". In the city of Copenhagen "Wildersgade 60A" is a parent access address that represents a specific entrance to a building. Inside the entrance, subaddresses using floor and door designators identifies the individual dwellings like e.g. "Wildersgade 60A, 1st floor, left door". EXAMPLE 3 In The Netherlands only one level of addresses exists.
Multiplicity:	0..1
Stereotypes:	«voidable»
Association role: building	
Value type:	Building

Address	
Definition:	Building that the address is assigned to or associated with.
Description:	NOTE An address could potentially have an association to zero, one or several buildings. Also it is possible (but this is not expressed in this application schema) that several addresses are associated to a single building. EXAMPLE In Praha, The Czech Republic, the address designated "NaPankráci 1690/125" is associated to a specific building in the street, in this case the building with number 1690 in the district (cz: cast obce) "Nusle".
Multiplicity:	0..*
Stereotypes:	«voidable»
Association role: component	
Value type:	AddressComponent
Definition:	Represents that the address component is engaged as a part of the address.
Description:	EXAMPLE For the address designated "Calle Mayor 13, Cortijo del Marqués, 41037, Écija, Sevilla, España" the six address components "Calle Mayor", "Cortijo del Marqués", "41037", "Écija", "Sevilla" and "España" are engaged as address components.
Multiplicity:	1..*
Constraint: AddressCountry	
Natural language:	An address must have an admin unit address component spatial object whose level is 1 (Country)
OCL:	inv: self.component -> forAll (a1 | exists(a1.parent.oclIsTypeOf(AdminUnitName) and a1.parent.level=1))
Constraint: AddressPosition	
Natural language:	An address must have exactly one default geographic position (default attribute of GeographicPosition must be true)
OCL:	inv: self.position -> one(a1 | a1.default = true)
Constraint: EndLifeSpanVersion	
Natural language:	If date set endLifespanVersion must be later than beginLifespanVersion (if set)
OCL:	inv: self.endLifespanVersion.isAfter(self.beginLifespanVersion)

5.2.2.1.2 AddressAreaName

AddressAreaName	
Subtype of:	AddressComponent
Definition:	An address component which represents the name of a geographic area or locality that groups a number of addressable objects for addressing purposes, without being an administrative unit.

AddressAreaName	
Description:	NOTE 1 In some countries and regions an address area is a true subdivision of an administrative unit (most often a municipality), so that every address area is fully inside the municipality and so that every part of the municipality is within an address area. In other countries, the concept of address area names is less strict and based on local tradition or specific needs. NOTE 2 In some situations an address area name is not required to obtain unambiguousness; instead the purpose is to make the complete address more informative and descriptive, adding a well known place name (e.g. of a village or community) to the address. This is particularly useful if the municipality or post code covers a large area. EXAMPLE 1 In Sweden a "Kommundel" (en: Municipal sub division) is a type of address area names that ensures that street names are unique within the sub division. EXAMPLE 2 In Spain an "Entidad de población" (en: population entity) has the same function. It is the general address area which depending on its characteristics can be classified as "Entidad Singular" (en: singular entity) or "Entidad Colectiva" (en: collective entity). Moreover, according to the population distribution, these areas can contain one or several "Núcleo de población" (en: population core) and/or "Población diseminada" (en: scattered population). EXAMPLE 3 In Denmark "Supplerende bynavn" (en: Supplementary town name) is sometimes compulsory to ensure uniqueness of street names within the post code, sometimes it is just useful extra information, that makes the address more informative.
Status:	Proposed
Stereotypes:	«featureType»
Attribute: name	
Value type:	GeographicalName
Definition:	Proper noun applied to the address area.
Description:	NOTE The data type allows names in different languages and scripts as well as inclusion of alternative name, alternative spellings, historical name and exonyms.
Multiplicity:	1..*
Association role: namedPlace	
Value type:	NamedPlace
Definition:	The named place that this address area name represents.
Description:	NOTE In order to populate this association, it is important that the area covered by the identified Named Place is exactly the same as the area covered by the address area name in question; if this is not the case the association would result in an inconsistency. EXAMPLE The geographical name "Huskvarna", which represents a part of the municipality of Jönköping in Sweden, is the source of the address area name, "Huskvarna".
Multiplicity:	0..1
Stereotypes:	«voidable»

5.2.2.1.3 AddressComponent

AddressComponent (abstract)	
Definition:	Identifier or geographic name of a specific geographic area, location, or other spatial object which defines the scope of an address.

AddressComponent (abstract)

Description: NOTE 1 Four different subclasses of address components are defined:
- Administrative unit name, which may include name of country, name of municipality, name of district
- Address area name like e.g. name of village or settlement
- Thoroughfare name, most often road name
- Postal descriptor

In order to construct an address, these subclasses are often structured hierarchically.

NOTE 2 It is the combination of the address locator and the address components, which makes a specific address spatial object readable and unambiguous for the human user.

EXAMPLE The combination of the locator "13" and the address components "Calle Mayor" (thoroughfare name), "Cortijo del Marqués" (address area name), "41037" (postal descriptor), "Écija", "Sevilla" and "España" (administrative unit names) makes this specific address spatial object readable and unambiguous.

Status: Proposed

Stereotypes: «featureType»

Attribute: inspireId

Value type: Identifier

Definition: External object identifier of the spatial object.

Description: NOTE 1 An external object identifier is a unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object. The identifier is an identifier of the spatial object, not an identifier of the real-world phenomenon.

NOTE 2 The primary purpose of this identifier is to enable links between various sources and the address components.

EXAMPLE An address component spatial object from Denmark could carry this identifier:
Namespace: DK_ADR
Local identifier: 0A3F507B2AB032B8E0440003BA298018
Version identifier: 12-02-2008T10:05:01+01:00

Multiplicity: 0..1

Attribute: alternativeIdentifier

Value type: CharacterString

Definition: External, thematic identifier of the address component spatial object, which enables interoperability with existing legacy systems or applications.

Description: NOTE Compared with a proper identifier of the address component, the alternative identifier is not necessarily persistent in the lifetime of the component spatial object. Likewise it is most often not globally unique and in general does include information on the version of the spatial object.

EXAMPLE 1 National or regional sector-specific identifiers (like e.g. a number- or letter code) for administrative units, address areas (localities, villages, sub-divisions) or thoroughfare names, which are used by a number of existing legacy systems.

EXAMPLE 2 In Denmark the four character municipal "road name code" (0001-9899) is only unique within the present municipality, thus if two municipalities merge, it is necessary to assign new road name codes.

Multiplicity: 0..1

Stereotypes: «voidable»

Attribute: beginLifespanVersion

AddressComponent (abstract)	
Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was inserted or changed in the spatial data set.
Description:	NOTE This date is recorded to enable the generation of change only update files.
Multiplicity:	1
Stereotypes:	«voidable,lifeCycleInfo»
Attribute: endLifespanVersion	
Value type:	DateTime
Definition:	Date and time at which this version of the spatial object was superseded or retired in the spatial data set.
Description:	NOTE This date is recorded primarily for those systems which "close" an entry in the spatial data set in the event of an attribute change.
Multiplicity:	0..1
Stereotypes:	«voidable,lifeCycleInfo»
Attribute: status	
Value type:	StatusValue
Definition:	Validity of the address component within the life-cycle (version) of the address component spatial object.
Description:	NOTE This status relates to the address component and is not a property of the object to which the address is assigned (the addressable object).
Multiplicity:	0..1
Stereotypes:	«voidable»
Attribute: validFrom	
Value type:	DateTime
Definition:	Date and time of which this version of the address component was or will be valid in the real world.
Description:	NOTE This date and time can be set in the future for situations where an address component or a version of an address component has been decided by the appropriate authority to take effect for a future date.
Multiplicity:	1
Stereotypes:	«voidable»
Attribute: validTo	
Value type:	DateTime
Definition:	Date and time at which the address component ceased/will cease to exist in the real world.
Multiplicity:	0..1
Stereotypes:	«voidable»
Association role: situatedWithin	
Value type:	AddressComponent
Definition:	Another address component within which the spatial object represented by this address component is situated.

AddressComponent (abstract)	
Description:	NOTE 1 The association enables the application schema to express that the subtypes of address components in the dataset form a hierarchy e.g. like: thoroughfare name within municipality within region within country NOTE 2 The representation of the hierarchy facilitates queries e.g. for a specific thoroughfare name within a given municipality or postcode. It is also necessary where the application schema is used to create or update, for example , a gazetteer which is based on the hierarchical structure of the address components. NOTE 3 The multiplicity of the association allows it to express that a thoroughfare name is situated in a certain municipality and in a certain postcode. It is also possible to express, for example, that some thoroughfare names cross borders between municipalities and thus is situated within more than one municipality. EXAMPLE 1 In Spain many spatial objects of the thoroughfare name "Calle Santiago" exist. The association can express that one of the spatial objects is situated within in the municipality of Albacete. From the same example the municipality name "Albacete" is situated within the administrative name (region) of "Castilla La Mancha". EXAMPLE 2 In Denmark, several address area names entitled "Strandby" exists. In order to identify a specific spatial object it is necessary to know that the relevant spatial object is situated e.g. in the municipality of "Frederikshavn".
Multiplicity:	0..*
Stereotypes:	«voidable»
Constraint: EndLifeSpanVersion	
Natural language:	If date set endLifespanVersion must be later than beginLifespanVersion (if set)
OCL:	inv: self.endLifespanVersion .isAfter(self.beginLifespanVersion)

5.2.2.1.4 AdminUnitName

AdminUnitName	
Subtype of:	AddressComponent
Definition:	An address component which represents the name of a unit of administration where a Member State has and/or exercises jurisdictional rights, for local, regional and national governance.
Status:	Proposed
Stereotypes:	«featureType»
Attribute: name	
Value type:	GeographicalName
Definition:	Official, geographical name of the administrative unit, given in different languages where required.
Description:	NOTE The data type allows names in different languages and scripts as well as inclusion of alternative name, alternative spellings, historical name and exonyms.
Multiplicity:	1..*
Attribute: level	
Value type:	AdministrativeHierarchyLevel
Definition:	The level of administration in the national administrative hierarchy.
Multiplicity:	1
Association role: adminUnit	
Value type:	AdministrativeUnit
Definition:	The administrative unit that is the source of the content of the administrative unit name.

AdminUnitName	
Description:	EXAMPLE The administrative unit (municipality) "Gävle" in Sweden is the source of the address component administrative unit name, "Gävle".
Multiplicity:	1
Stereotypes:	«voidable»

5.2.2.1.5 PostalDescriptor

PostalDescriptor	
Subtype of:	AddressComponent
Definition:	An address component which represents the identification of a subdivision of addresses and postal delivery points in a country, region or city for postal purposes.
Description:	NOTE 1 The postal descriptor is specified by means of a post code and/or names of the associated post office, town or area. NOTE 2 In some countries post codes are seen as a proper geographic subdivision of the country, in other countries the post code is regarded only as an attribute that characterizes a (usually small) number of adjacent postal delivery points and addresses. NOTE 3 The postal descriptors are created and developed on the basis of postal requirements (e.g. efficient sorting, logistics, transport and distribution). Consequently, there is not often a tight relationship between the postal areas and administrative units in the same area. NOTE 4 The structure schema and formats of national postal descriptor systems are different. Sometimes (for example in the UK) the post code itself is the only information required for a valid address; in other situations both the post code and the associated name of post office or town is required. Sometimes there is a simple relationship between the code and the name; in other situations a set of postcodes are associated with a single post office or town. NOTE 5 In some countries like e.g. The Republic of Ireland, no post code system currently exists, therefore the postal descriptor is only represented by the name of the post town. EXAMPLE 1 In the UK the post code "EC4M 7DR" is sufficient, as a postal descriptor, while the related town name "London" is informative, but not necessary in the postal address. EXAMPLE 2 In Sweden all postcodes starting with "80" is related to the postal name "Gävle". Therefore in the postal descriptor "802 74 Gävle", the postcode "802 74" bears all postal necessary information, while the town name "Gävle" is extra information. EXAMPLE 3 In Denmark, outside the centre of Copenhagen, each postcode has a 1:1 relationship to one post name only: Postcode "6372" relates to the village "Bylderup-Bov". EXAMPLE 4 In Germany the lowest level of the Postal descriptor (the 5 digit Postleitzahl) often does not fall within an administrative unit (e.g. municipality). The Postleitzahl is handled completely independent from the hierarchal systematic of the addresses. In addition, some "Postleitzahlen" represent not a delivery area, but institutions with a big amount of post.
Status:	Proposed
Stereotypes:	«featureType»
Attribute: postName	
Value type:	GeographicalName

PostalDescriptor	
Definition:	One or more names created and maintained for postal purposes to identify a subdivision of addresses and postal delivery points.
Description:	NOTE 1 Often the post name (or names) is a supplementary identification of the post office to which the associated post code belongs. For example it may be the name of the town in which the office is situated. In other situations the post name could be an independent descriptor without any post code or it could be a postal subdivision connected to a parent postal descriptor (post code and post name). NOTE 2 In some countries like e.g. Spain and The Netherlands, no post names exit therefore the postal descriptor is only represented by the post code. NOTE 3 Even though the post name is the same as the name of an administrative unit or an address area, the area covered are not necessarilythe same.
Multiplicity:	0..*
Attribute: postCode	
Value type:	CharacterString
Definition:	A code created and maintained for postal purposes to identify a subdivision of addresses and postal delivery points.
Description:	NOTE 1 The structure, schema and formats of post codes are different in different countries. Often the components of the post code are hierarchical, e.g. when the first character(s) identifies the region covered by the post code and the next characters define the subdivision. NOTE 2 In some countries, e.g., The Republic of Ireland, no post codes exists therefore the postal descriptor is only represented by the post name (e.g. town name). EXAMPLE In the UK postcodes starting with W covers the Western (W1) and Paddington (W2-14) districts of the London postal district. In Sweden all postcodes starting with "80" is related to the postal name "Gävle".
Multiplicity:	0..1
Constraint: PostCodeEmpty	
Natural language:	If no post code exists, a post name is required.
OCL:	inv: self.postCode->isEmpty() implies self.postName->notEmpty()
Constraint: PostNameEmpty	
Natural language:	If no post name exists, a post code is required.
OCL:	inv: self.postName->isEmpty() implies self.postCode->notEmpty()

5.2.2.1.6 ThoroughfareName

ThoroughfareName	
Subtype of:	AddressComponent
Definition:	An address component which represents the name of a passage or way through from one location to another.
Description:	NOTE 1 A thoroughfare can, e.g., be a road or a waterway NOTE 2 Thoroughfare names includes names of squares and of cul de sacs, and they can also represent the network of smaller roads or paths e.g. in a small village or settlement.
Status:	Proposed
Stereotypes:	«featureType»
Attribute: name	
Value type:	ThoroughfareNameValue

ThoroughfareName	
Definition:	Name of the thoroughfare.
Description:	NOTE 1 The name can optionally include an often used alternative name, alternative spelling of the name, a historic name or spelling, which is still in use. It may also optionally include a subdivision of the name into parts. NOTE 2 Most often thoroughfares are roads, in this situation the thoroughfare name is the road name. NOTE 3 The data type also allows a representation of the thoroughfare name in separate parts e.g. "rue" + "de la" + "Paix"
Multiplicity:	1..*
Association role: transportLink	
Value type:	TransportLink
Definition:	One or several transport network links to which the spatial object of the thoroughfare name has been designated.
Description:	EXAMPLE The thoroughfare name "Na Pankráci" in Praha, The Czech Republic, has been designated as a road name for a number of road links (street segments) in the city.
Multiplicity:	0..*
Stereotypes:	«voidable»

5.2.2.2 Data types

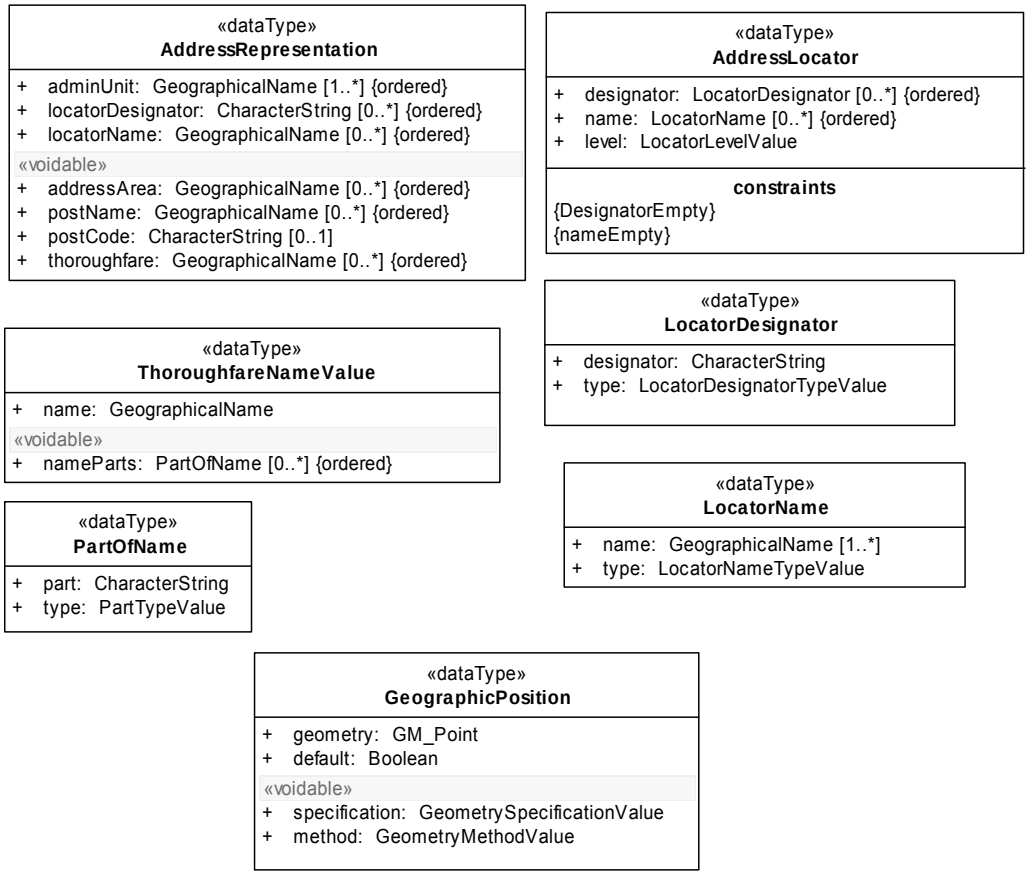


Figure 4 – UML class diagram: Datatypes

5.2.2.2.1 AddressLocator

AddressLocator	
Definition:	Human readable designator or name that allows a user or application to reference and distinguish the address from neighbour addresses, within the scope of a thoroughfare name, address area name, administrative unit name or postal designator, in which the address is situated.
Description:	NOTE 1 The most common locators are designators like an address number, building number or flat identifier as well as the name of the property, complex or building. NOTE 2 The locator identifier(s) are most often only unambiguous and meaningful within the scope of the adjacent thoroughfare name, address area name or post code. NOTE 3 The locator could be composed of one or more designators e.g., address number, address number suffix, building number or name, floor number, flat or room identifier. In addition to these common locator types, also narrative or descriptive locators are possible. NOTE 4 The locators of an address could be composed as a hierarchy, where one level of locators identifies the real property or building while another level of locators identifies the flats or dwellings inside the property. EXAMPLE 1 In a Spanish city a "site-level" locator could identify a building on the thoroughfare name "Calle Gran Vía using the address number "8". If the building has four entrance doors, the door number "3" could be the "access-level" locator. The 3rd door could, via two staircases "A" and "B", give access to a number of floors, identified by a number "1" to "5" on which a number of dwellings are situated, also identified by numbers "1" to "3"; The "unit level" locator will thus composed of staircase-, floor- and dwelling identification e.g. "staircase A, floor 5, dwelling 1". In total, the three parent-child levels of locators uniquely identify the dwelling. EXAMPLE 2 In Copenhagen an "access level" locator could identify a specific entrance door in a building on the thoroughfare name "Wildersgade" using the address number "60A" (In Denmark the optional suffix is a part of the address number). The entrance door gives access to a number of floors, e.g, "st", "1", "2", "3", on which two dwellings are situated "tv" and "th". The "unit level" locator will thus be composed by a floor- and a door identifier: "2. th." (2nd floor, door to the right). In total, the two parent-child levels of locators uniquely identify the dwelling. EXAMPLE 3 In The Netherlands only one level of locators exists. The individual apartment within a large complex, a dwelling, a part of other kinds of buildings (for example an office), a mooring place or a place for the permanent placing of trailers are addressable objects which must have an address. This address is the only level of the locator. This locator could be composed by three attributes the house number, plus optionally an additional house letter, plus optionally an additional housenumber suffix. EXAMPLE 4 Sometimes the building name is an alternative identifier to the address number e.g. the house located in "Calle Santiago, 15, Elizondo-Baztán, Navarra, Spain" is also identified by the building name "Urtekoetxea"
Status:	Proposed
Stereotypes:	«dataType»
Attribute: level	
Value type:	LocatorLevelValue
Definition:	The level to which the locator refers.
Multiplicity:	1

AddressLocator

Attribute: designator

Value type:	LocatorDesignator
Definition:	A number or a sequence of characters that uniquely identifies the locator within the relevant scope(s).
Multiplicity:	0..*
Collection Constraints:	ordered

Attribute: name

Value type:	LocatorName
Definition:	A geographic name or descriptive text associated to a property identified by the locator.
Description:	NOTE 1 The locator name could be the name of the property or complex (e.g. an estate, hospital or a shopping mall), of the building or part of the building (e.g. a wing), or it could be the name of a room inside the building. NOTE 2 As locator name it is also possible to use a description that allows a user to identify the property in question. NOTE 3 The locator name could be an alternative addition to the locator designator (e.g. the address number) or it could be an independent identifier. EXAMPLE In the address "Calle Santiago, 15, Elizondo-Baztán, Navarra, Spain" the building name "Urtekoetxea" is an alternative to the building identifier "3".
Multiplicity:	0..*
Collection Constraints:	ordered

Association role: withinScopeOf

Value type:	AddressComponent
Definition:	The address component that defines the scope within which the address locator is assigned according to rules ensuring unambiguousness.

AddressLocator	
Description:	NOTE 1 For the assignment of unambiguous locators (e.g. address numbers) different rules exists in different countries and regions. According to the most common rule, an address number should be unique within the scope of the thoroughfare name. In other areas the address number is unique inside an address area name (e.g. the name of the village) or postal designator (e.g. the post code). In some areas even a combination of rules are applied: e.g. addresses with two locators, each of them referencing to a separate address component. NOTE 2 Locators that has the level of unit (like e.g. floor identifier and door or unit identifiers) are most often assigned so that they are unambiguous within the more narrow scope of the property or building; for these locators the association should therefore not be populated. EXAMPLE 1 In a typical European address dataset, parts of the addresses have locators which are unambiguous within the scope of the road name (thoroughfare name) while others are unambiguous within the name ogf the village or district (address area name). EXAMPLE 2 In Lithuania and Estonia a concept of "corner addresses" exists. Corner addresses have two address numbers (designators) each of them referring to a thoroughfare name (primary and secondary street name). E.g. in Vilnius the address designated "A. Stulginskio gatve 4 / A. Smetonos gatve 7" is situated on the corner of the two streets. EXAMPLE 3 In the Czech Republic in some cities an address has two locator designators: A building number which referres to the address area (district, cz: "cast obce") and a address number that referres to the thoroughfare name. As an example in Praha for address designated "Na Pankráci 1690/125, Nusle" the designator "1690" is a building number unique within the address area (cz cast obce) "Nusle", while the "125" is an address number that has the thoroughfare name as its scope.
Multiplicity:	0..1
Stereotypes:	«voidable»
Constraint: DesignatorEmpty	
Natural language:	If no designator exists, a name is required.
OCL:	inv: self.designator->isEmpty() implies self.name->notEmpty()
Constraint: nameEmpty	
Natural language:	If no name exists, a designator is required.
OCL:	inv: self.name->isEmpty() implies self.designator->notEmpty()

5.2.2.2.2 AddressRepresentation

AddressRepresentation	
Definition:	Representation of an address spatial object for use in external application schemas that need to include the basic, address information in a readable way.
Description:	NOTE 1 The data type includes the all necessary readable address components as well as the address locator(s), which allows the identification of the address spatial objects, e.g., country, region, municipality, address area, post code, street name and address number. It also includes an optional reference to the full address spatial object. NOTE 2 The datatype could be used in application schemas that wish to include address information e.g. in a dataset that registers buildings or properties.
Status:	Proposed
Stereotypes:	«dataType»

AddressRepresentation

Attribute: postCode

Value type: CharacterString
Definition: A code created and maintained for postal purposes to identify a subdivision of addresses and postal delivery points.
Multiplicity: 0..1
Stereotypes: «voidable»

Attribute: thoroughfare

Value type: GeographicalName
Definition: The name or names of a passage or way through from one location to another like a road or a waterway.
Multiplicity: 0..*
Stereotypes: «voidable»
Collection Constraints: ordered

Attribute: adminUnit

Value type: GeographicalName
Definition: The name or names of a unit of administration where a Member State has and/or exercises jurisdictional rights, for local, regional and national governance.
Multiplicity: 1..*
Collection Constraints: ordered

Attribute: locatorDesignator

Value type: CharacterString
Definition: A number or a sequence of characters which allows a user or an application to interpret, parse and format the locator within the relevant scope. A locator may include more locator designators.
Multiplicity: 0..*
Collection Constraints: ordered

Attribute: locatorName

Value type: GeographicalName
Definition: Proper noun(s) applied to the real world entity identified by the locator.
Multiplicity: 0..*
Collection Constraints: ordered

Attribute: addressArea

Value type: GeographicalName
Definition: The name or names of a geographic area or locality that groups a number of addressable objects for addressing purposes, without being an administrative unit.
Multiplicity: 0..*
Stereotypes: «voidable»
Collection Constraints: ordered

Attribute: postName

Value type: GeographicalName
Definition: One or more names created and maintained for postal purposes to identify a subdivision of addresses and postal delivery points.
Multiplicity: 0..*
Stereotypes: «voidable»
Collection Constraints: ordered

Association role: addressFeature

AddressRepresentation	
Value type:	Address
Definition:	Reference to the address spatial object.
Multiplicity:	0..1
Stereotypes:	«voidable»

5.2.2.2.3 GeographicPosition

GeographicPosition	
Definition:	The position of a characteristic point which represents the location of the address according to a certain specification, including information on the origin of the position.
Status:	Proposed
Stereotypes:	«dataType»
Attribute: geometry	
Value type:	GM_Point
Definition:	The position of the point expressed in coordinates in the chosen spatial reference system.
Multiplicity:	1
Attribute: specification	
Value type:	GeometrySpecificationValue
Definition:	Information defining the specification used to create or derive this geographic position of the address.
Multiplicity:	1
Stereotypes:	«voidable»
Attribute: method	
Value type:	GeometryMethodValue
Definition:	Description of how and by whom the geographic position of the address was created or derived.
Description:	NOTE The geographic position could be created manually by the address authority itself, by an independent party (e.g. by field surveying or digitizing of paper maps) or it could be derived automatically from the addressable object or from other Inspire features.
Multiplicity:	1
Stereotypes:	«voidable»
Attribute: default	
Value type:	Boolean
Definition:	Specifies whether or not this position should be considered as the default.
Description:	NOTE As a member state may provide several positions of an address, there is a need to identify the commonly used (main) position. Preferrably, the default position should be the one with best accuracy.
Multiplicity:	1

5.2.2.2.4 LocatorDesignator

LocatorDesignator	
Definition:	A number or a sequence of characters that uniquely identifies the locator within the relevant scope(s). The full identification of the locator could include one or more locator designators.

LocatorDesignator	
Description:	NOTE 1 Locator designators are often assigned according to a set of commonly known rules which enables a user or application to "parse" the information: Address numbers are most often assigned in ascending order with odd and even numbers on each side of the thoroughfare. In a building, the floor identifier represents the level according to the traditions within the area, e.g., 1, 2, 3. NOTE 2 Several types of locator designators exist, such as: Address number, address number suffix, building identifier, building name. A locator could be composed by an ordered set of these. EXAMPLE In Paris, France a locator could be composed by two locator designators: address number "18" and address number suffix: "BIS".
Status:	Proposed
Stereotypes:	«dataType»
Attribute: designator	
Value type:	CharacterString
Definition:	The identifying part of the locator designator composed by one or more digits or other characters.
Description:	NOTE The value is often a descriptive code assigned according to certain well known rules e.g. like ascending odd and even address numbers along the thoroughfare, or like floor identifiers: 0, 1, 2, 3. EXAMPLE Address number "2065", Address number suffix "B", Floor identifier "7" door identifier "B707" are all locator attribute values.
Multiplicity:	1
Attribute: type	
Value type:	LocatorDesignatorTypeValue
Definition:	The type of locator value, which enables an application to interpret, parse or format it according to certain rules.
Description:	NOTE The type enables a user or an application to understand if the value "A" is e.g. an identifier of a specific building, door, staircase or dwelling.
Multiplicity:	1

5.2.2.2.5 LocatorName

LocatorName	
Definition:	Proper noun applied to the real world entity identified by the locator.
Description:	NOTE The locator name could be the name of the property or complex, of the building or part of the building, or it could be the name of a room inside a building.
Status:	Proposed
Stereotypes:	«dataType»
Attribute: name	
Value type:	GeographicalName
Definition:	The identifying part of the locator name.

LocatorName	
Description:	NOTE 1 The data type allows names in different languages and scripts as well as inclusion of alternative name, alternative spellings, historical name and exonyms. NOTE 2 The locator name could be the name of the property or complex, of the building or part of the building (e.g. a wing), or it could be the name of a room or similar inside the building. NOTE 3 The locator name sometimes refer to the name of the family or business entity which at present or in the past has owned or occupied the property or building; although this is the case the locator name must not be confused with the name of the addressee(s). NOTE 4 As locator name it is also possible to use a descriptive text that allows a user to identify the property in question. EXAMPLE 1 The "Radford Mill Farm" in Timsbury, Bath, UK; The allotment house area "Brumleby" in Copenhagen, Denmark, the university campus "Cité Universitaire", in Paris, France. EXAMPLE 2 "Millers House" in Stromness, Orkney Isles, UK; "Ulla's Pension" in Niederfell, Rheinland-Pfalz, Germany. EXAMPLE 3 "Multi-storey car park at Southampton Magistrates Courts" in Southampton, UK.
Multiplicity:	1..*
Attribute: type	
Value type:	LocatorNameTypeValue
Definition:	The type of locator value, which enables the application to interpret, parse or format it according to certain rules.
Description:	NOTE The type enables a user or an application to understand if the name "Radford Mill Farm" is for example a name of a specific site or of a building.
Multiplicity:	1

5.2.2.2.6 PartOfName

PartOfName	
Definition:	A part of the full name resulting from the subdivision of the thoroughfare name into separate, semantic parts, using the same language and script as the full thoroughfare name.
Description:	NOTE Each part of the name must be qualified by using the type attribute.
Status:	Proposed
Stereotypes:	«dataType»
Attribute: part	
Value type:	CharacterString
Definition:	The character string that expresses the separate part of the name using the same language and script as the full thoroughfare name.
Multiplicity:	1
Attribute: type	
Value type:	PartTypeValue
Definition:	A classification of the part of name according to its semantics (meaning) in the complete thoroughfare name.
Multiplicity:	1

5.2.2.2.7 ThoroughfareNameValue

ThoroughfareNameValue

ThoroughfareNameValue	
Definition:	Proper noun applied to thoroughfare optionally including a subdivision of the name into parts.
Description:	NOTE 1 The data type allows names in different languages and scripts as well as inclusion of alternative name, alternative spellings, historical name and exonyms. NOTE 2 The data type allows optionally a representation of the thoroughfare name subdivided into separate, semantic parts e.g. "Avenue" + "de la" + "Poste".
Status:	Proposed
Stereotypes:	«dataType»
Attribute: name	
Value type:	GeographicalName
Definition:	Proper noun applied to the thoroughfare.
Description:	NOTE 1 The complete name of the thoroughfare must be applied in this attribute, including type, prefix or qualifier, like for example "Avenue de la Poste", "Calle del Christo Canneregio" or "Untere Quai". The name part attribute enables a representation of the name subdivided into separate semantic parts. NOTE 2 The data type allows names in different languages as well as inclusion of exonyms.
Multiplicity:	1
Attribute: nameParts	
Value type:	PartOfName
Definition:	One or several parts into which the thoroughfare name can be subdivided.
Description:	NOTE 1 This is a definition which is consistent with that adopted by the UPU NOTE 2 A subdivision of a thoroughfare name into semantic parts could improve parsing (e.g. of abbreviated or misspelled names) and for sorting of address data for example for postal delivery purposes. It could also improve the creation of alphabetically sorted street gazetteers. NOTE 3 The data type requires that each part of the subdivided thoroughfare name is qualified with information on the semantics e.g. if it is a thoroughfare type (e.g., Rua, Place, Calle, Street), a prefix (e.g., da, de la, del), a qualifier (e.g., Unterer, Little) or if it is the core of the name, which would normally be used for sorting or indexing. NOTE 4 In some countries or regions and for some thoroughfare names it is not feasible or it does not add value to subdivide the thoroughfare name into parts. EXAMPLE In France the thoroughfare name "Avenue de la Poste" could be subdivided into these parts: "Avenue" + "de la" + "Poste".
Multiplicity:	0..*
Stereotypes:	«voidable»
Collection Constraints:	ordered

5.2.2.3 Enumerations and code lists

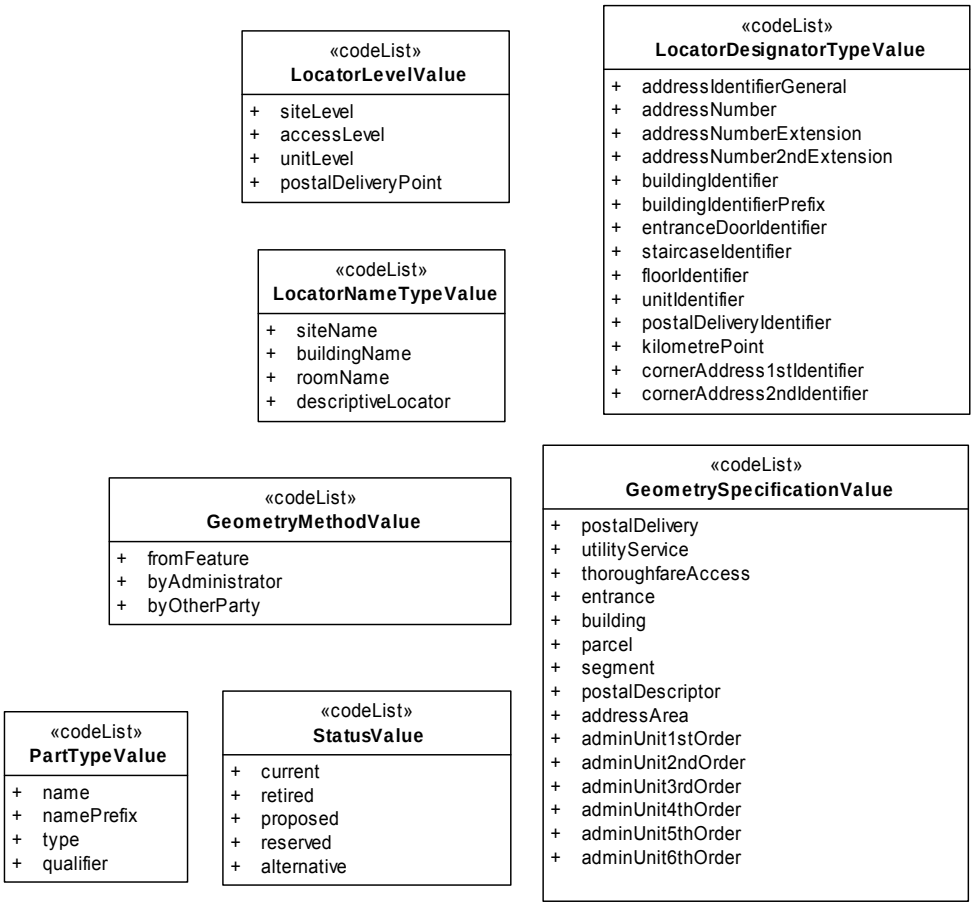


Figure 5 – UML class diagram: Codelists

5.2.2.3.1 GeometryMethodValue

GeometryMethodValue	
Definition:	Description of how and by whom this geographic position of the address was created or derived.
Description:	NOTE Information on what type of spatial feature the geographic position of the address was created or derived from, is represented by the GeometrySpecificationValue.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:GeometryMethodValue
Value: fromFeature	
Definition:	Derived automatically from another INSPIRE spatial object which is related to the address or address component.
Description:	NOTE This method implies that the position is calculated automatically e.g. as a centre point of the polygon or linestring that describes the feature in question. EXAMPLE Geometries can be derived from a building, cadastral parcel, thoroughfare link, address area (named place) or administrative unit.
Value: byAdministrator	

GeometryMethodValue	
Definition:	Decided and recorded manually by the official body responsible for address allocation or by the dataset custodian.
Value: byOtherParty	
Definition:	Decided and recorded manually by other party.

5.2.2.3.2 GeometrySpecificationValue

GeometrySpecificationValue	
Definition:	Information defining the specification used to create or derive this geographic position of the address.
Description:	NOTE 1 Multiple address points can be derived from one polygon spatial object. NOTE 2 If the position of an address is derived from a polygon spatial object a number of different approaches is used. EXAMPLE 1 The same point (e.g. centre point of the polygon) is used for each address, thus, multiple address points will be overlapping. EXAMPLE 2 Each point position is unique within the polygon to be able to visually distinguish the representation of each address.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:GeometrySpecificationValue
Value: postalDelivery	
Definition:	Position aims at identifying a postal delivery point.
Value: utilityService	
Definition:	Position aims at identifying a point of utility service.
Value: thoroughfareAccess	
Definition:	Position aims at identifying the access point from the thoroughfare.
Value: entrance	
Definition:	Position aims at identifying the entrance door or gate.
Value: building	
Definition:	Position aims at identifying the related building.
Value: parcel	
Definition:	Position aims at identifying the related land parcel.
Value: segment	
Definition:	Position derived from the related segment of a thoroughfare.
Value: postalDescriptor	
Definition:	Position derived from the related postcode area.
Value: addressArea	
Definition:	Position derived from the related address area.
Value: adminUnit1stOrder	
Definition:	Position derived from the related administrative unit of 1st order.
Value: adminUnit2ndOrder	
Definition:	Position derived from the related administrative unit of 2nd order.
Value: adminUnit3rdOrder	
Definition:	Position derived from the related administrative unit of 3rd order.
Value: adminUnit4thOrder	
Definition:	Position derived from the related administrative unit of 4th order.
Value: adminUnit5thOrder	
Definition:	Position derived from the related administrative unit of 5th order.
Value: adminUnit6thOrder	

GeometrySpecificationValue	
Definition:	Position derived from the related administrative unit of 6th order.

5.2.2.3.3 LocatorDesignatorTypeValue

LocatorDesignatorTypeValue	
Definition:	Description of the semantics of the locator designator.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:LocatorDesignatorTypeValue
Value: addressIdentifierGeneral	
Definition:	Address identifier composed by numbers and/or characters.
Value: addressNumber	
Definition:	Address identifier composed only by numbers.
Value: addressNumberExtension	
Definition:	Extension to the address number.
Description:	EXAMPLE E.g., in the Czech Republic a new address situated between two old addresses with numbers "2" and "3" receives a number "2" with an extension "a" so the full address number becomes "2a".
Value: addressNumber2ndExtension	
Definition:	Second extension to the address number.
Value: buildingIdentifier	
Definition:	Building identifier composed by numbers and/or characters.
Value: buildingIdentifierPrefix	
Definition:	Prefix to the building number.
Description:	EXAMPLE In the Czech Republic the building numbers can have prefix to distinguish between two types of buildings: "c. p." (descriptive number) for buildings of permanent character and "c. evid." (registration number) for temporary dwelling (e.g. holiday cottagesand garages).
Value: entranceDoorIdentifier	
Definition:	Identifier for an entrance door, gate, or port.
Value: staircaseIdentifier	
Definition:	Identifier for a staircase, normally inside a building.
Value: floorIdentifier	
Definition:	Identifier of a floor or level inside a building.
Value: unitIdentifier	
Definition:	Identifier of a door, dwelling, suite or room inside a building.
Value: postalDeliveryIdentifier	
Definition:	Identifier of a postal delivery point.
Description:	EXAMPLE A Post office box (P.O. box).
Value: kilometrePoint	
Definition:	A mark on a road whose number identifies the existing distance between the origin point of the road and that mark, measured along the road.
Value: cornerAddress1stIdentifier	
Definition:	Address identifier related to the primary thoroughfare name in a corner address.
Description:	NOTE The concept of corner addresses with a primary and secondary thoroughfare name, each with an address identifier. Is used, e.g. in Lithuania and Estonia.
Value: cornerAddress2ndIdentifier	
Definition:	Address identifier related to the secondary thoroughfare name in a corner address.

LocatorDesignatorTypeValue	
Description:	NOTE The concept of corner addresses with a primary and secondary thoroughfare name, each with an address identifier. Is used, e.g. in Lithuania and Estonia.

5.2.2.3.4 LocatorLevelValue

LocatorLevelValue	
Definition:	The level to which the locator refers.
Description:	NOTE The locator level attribute enables the comparison of locators from different countries. EXAMPLE In The Netherlands a single locator, the address number, identifies a dwelling or business entity unit (unit level locator). In Spain up to four locators could be needed to obtain the same level of detail: Address number, entrance number, stair identifier plus a floor and door identifier.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:LocatorLevelValue
Value: siteLevel	
Definition:	The locator identifies a specific plot of land, building or similar property by use of an address number, building number, building or property name.
Value: accessLevel	
Definition:	The locator identifies a specific access to a plot of land, building or similar by use of an entrance number or similar identifier.
Value: unitLevel	
Definition:	The locator identifies a specific part of a building.
Description:	EXAMPLE The unit level can be, e.g., a dwelling, flat, apartment, room or household, inside a building by use of for example staircase identifier, floor identifier and/or unit number, name.
Value: postalDeliveryPoint	
Definition:	The locator identifies a postal delivery point.
Description:	EXAMPLE Postal delivery point can be, e.g., a P.O. box, a private bag, a business reply mail or a large volume receiver.

5.2.2.3.5 LocatorNameTypeValue

LocatorNameTypeValue	
Definition:	Description of the semantics of the locator name.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:LocatorNameTypeValue
Value: siteName	
Definition:	Name of real estate, building complex or site.
Description:	EXAMPLE The name of a manor, shopping mall or university campus.
Value: buildingName	
Definition:	Name of building or part of building.
Description:	EXAMPLE "East Wing".
Value: roomName	
Definition:	Identifier of a dwelling, suite or room inside a building.
Value: descriptiveLocator	
Definition:	Narrative, textual description of the location or addressable object.

5.2.2.3.6 PartTypeValue

PartTypeValue

PartTypeValue	
Definition:	A classification of the part of name according to its semantics in the complete thoroughfare name.
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:PartTypeValue
Value: name	
Definition:	The part of name constitutes the core or root of the thoroughfare name.
Description:	EXAMPLE "Abelheira" in Rua da Abelheira (Caçém, Portugal), "Madeleine" in Place de la Madeleine (Paris, France), "Christo Canneregio" in Calle del Christo Canneregio (Venezia, Italy), "Quai" in Unterer Quai (Biel/Bienne, Switzerland) and "Strand" in Little Strand Street (Dublin, Ireland).
Value: namePrefix	
Definition:	The part of name is used to separate connecting words without sorting significance from the core of the thoroughfare name.
Description:	EXAMPLE "da" in Rua da Abelheira (Caçém, Portugal), "de la " in Place de la Madeleine (Paris, France) and "del" in Calle del Christo Canneregio (Venezia, Italy).
Value: type	
Definition:	The part of name indicates the category or type of thoroughfare.
Description:	EXAMPLE "Rua" in Rua da Abelheira (Caçém, Portugal), "Place" in Place de la Madeleine (Paris, France), "Calle" in Calle del Christo Canneregio (Venezia, Italy) and "Street" in Little Strand Street (Dublin, Ireland).
Value: qualifier	
Definition:	The part of name qualifies the thoroughfare name.
Description:	EXAMPLE "Unterer" in Unterer Quai (German name in Biel/Bienne, Switzerland), "Bas" in Quai Bas (French name for same street) and "Little" in Little Strand Street (Dublin, Ireland).

5.2.2.3.7 StatusValue

StatusValue	
Definition:	Current validity of the real world address or address component.
Description:	NOTE 1 This element enables the application schema to represent a full life-cycle of an address and address component, from proposed to reserved, current and retired, or even alternative. NOTE 2 The status value relates to the real world address or address component and not to the property to which the address or address component is assigned (the addressable object).
Status:	Proposed
Stereotypes:	«codeList»
Governance:	Centrally managed in INSPIRE code list register. URN: urn:x-inspire:def:codeList:INSPIRE:StatusValue
Value: current	
Definition:	Current and valid address according to official body responsible for address allocation or deemed, by the dataset custodian, to be the most appropriate, commonly used address.
Value: retired	
Definition:	An address no longer in every day use or abolished by the official body responsible for address allocation or by the dataset custodian.
Value: proposed	
Definition:	An address awaiting approval by the dataset custodian or official body responsible for address allocation.
Value: reserved	

StatusValue	
Definition:	An address approved by the by the official body responsible for address allocation or by the dataset custodian, but yet to be implemented.
Value: alternative	
Definition:	An address in common use but different from the master address as determined by the official body responsible for address allocation or by the dataset custodian.

5.2.2.4 Candidate types and placeholders

5.2.2.4.1 Building

Building	
Package:	Buildings [Placeholder to be fully specified in Annex II/III INSPIRE data specification]
Definition:	A building is a covered facility, usable for the protection of humans, animals, things or the production of economic goods. A building refers to any structure permanently constructed or erected on its site.

5.2.2.5 Imported types

5.2.2.5.1 NamedPlace

NamedPlace	
Package:	Geographical Names [see DS-D.2.8.I.3]
Definition:	Any real world entity referred to by one or several proper nouns.

5.2.2.5.2 AdministrativeUnit

AdministrativeUnit	
Package:	AdministrativeUnits [see DS-D.2.8.I.4]
Definition:	Unit of administration where a Member State has and/or exercises jurisdictional rights, for local, regional and national governance.

5.2.2.5.3 CadastralParcel

CadastralParcel	
Package:	CadastralParcels [see DS-D.2.8.I.6]
Definition:	Areas defined by cadastral registers or equivalent.
Description:	SOURCE [INSPIRE Directive:2007]. NOTE As much as possible, in the INSPIRE context, cadastral parcels should be forming a partition of national territory. Cadastral parcel should be considered as a single area of Earth surface (land and/or water), under homogeneous real property rights and unique ownership, real property rights and ownership being defined by national law (adapted from UN ECE 2004 and WG-CPI, 2006). By unique ownership is meant that the ownership is held by one or several joint owners for the whole parcel.

5.2.2.5.4 TransportLink

TransportLink (abstract)	
Package:	Common Transport Elements [see DS-D.2.8.I.7]
Definition:	A linear spatial object that describes the geometry and connectivity of a transport network between two points in the network.

5.2.2.5.5 GeographicalName

GeographicalName	
Package:	Geographical Names [see DS-D.2.8.I.3]
Definition:	Proper noun applied to a real world entity.

5.2.2.5.6 Identifier

Identifier	
Package:	Base Types [see DS-D.2.5]
Definition:	Unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object.
Description:	NOTE1 External object identifiers are distinct from thematic object identifiers. NOTE 2 The voidable version identifier attribute is not part of the unique identifier of a spatial object and may be used to distinguish two versions of the same spatial object. NOTE 3 The unique identifier will not change during the life-time of a spatial object.

5.2.2.5.7 Boolean

Boolean	
Package:	Truth [see ISO/TS 19103]
Definition:	Most valuable in the predicate calculus, where items are either True or False, unless they are ill formed.

5.2.2.5.8 AdministrativeHierarchyLevel

AdministrativeHierarchyLevel	
Package:	AdministrativeUnits [see DS-D.2.8.I.4]
Definition:	Levels of administration in the national administrative hierarchy.

6 Reference systems

6.1 Coordinate reference systems

6.1.1 Datum

Requirement 11	For the coordinate reference systems used for making available the INSPIRE spatial data sets, the datum shall be the datum of the European Terrestrial Reference System 1989 (ETRS89) in areas within its geographical scope, and the datum of the International Terrestrial Reference System (ITRS) or other geodetic coordinate reference systems compliant with ITRS in areas that are outside the geographical scope of ETRS89. Compliant with the ITRS means that the system definition is based on the definition of the ITRS and there is a well established and described relationship between both systems, according to EN ISO 19111.

6.1.2 Coordinate reference systems

Requirement 12	INSPIRE spatial data sets shall be made available using one of the three-dimensional, two-dimensional or compound coordinate reference systems specified in the list below. Other coordinate reference systems than those listed below may only be used for regions outside of continental Europe. The geodetic codes and parameters for these coordinate reference systems shall be documented, and an identifier shall be created, according to EN ISO 19111 and ISO 19127.

1. Three-dimensional Coordinate Reference Systems
   - Three-dimensional Cartesian coordinates
   - Three-dimensional geodetic coordinates (latitude, longitude and ellipsoidal height), using the parameters of the GRS80 ellipsoid

2. Two-dimensional Coordinate Reference Systems
   - Two-dimensional geodetic coordinates, using the parameters of the GRS80 ellipsoid
   - Plane coordinates using the Lambert Azimuthal Equal Area projection and the parameters of the GRS80 ellipsoid
   - Plane coordinates using the Lambert Conformal Conic projection and the parameters of the GRS80 ellipsoid
   - Plane coordinates using the Transverse Mercator projection and the parameters of the GRS80 ellipsoid

3. Compound Coordinate Reference Systems
   - For the horizontal component of the compound coordinate reference system, one of the two-dimensional coordinate reference systems specified above shall be used
   - For the vertical component on land, the European Vertical Reference System (EVRS) shall be used to express gravity-related heights within its geographical scope
   - Other vertical reference systems related to the Earth gravity field shall be used to express gravity-related heights in areas that are outside the geographical scope of EVRS. The geodetic codes and parameters for these vertical reference systems shall be documented and an identifier shall be created, according to EN ISO 19111 and ISO 19127
   - For the vertical component measuring the depth of the sea floor, where there is an appreciable tidal range, the Lowest Astronomical Tide shall be used as reference surface. In marine areas without an appreciable tidal range, in open oceans and effectively in waters that are deeper than 200 m, the depth of the sea floor shall be referenced to the Mean Sea Level
   - For the vertical component measuring depths above the sea floor in the free ocean, barometric pressure shall be used
   - For the vertical component in the free atmosphere, barometric pressure, converted to height using ISO 2533:1975 International Standard Atmosphere shall be used

6.1.3 Display

Requirement 13	For the display of the INSPIRE spatial data sets with the View Service specified in D003152/02 Draft Commission Regulation implementing Directive 2007/2/EC of the European Parliament and of the Council as regards Network Services, at least the two dimensional geodetic coordinate system shall be made available.

6.1.4 Identifiers for coordinate reference systems

Requirement 14	For referring to the non-compound coordinate reference systems listed in this Section, the identifiers listed below shall be used. For referring to a compound coordinate reference system, an identifier composed of the identifier of the horizontal component, followed by a slash (/), followed by the identifier of the vertical component, shall be used.

- ETRS89-XYZ for Cartesian coordinates in ETRS89
- ETRS89-GRS80h for three-dimensional geodetic coordinates in ETRS89 on the GRS80 ellipsoid
- ETRS89-GRS80 for two-dimensional geodetic coordinates in ETRS89 on the GRS80
- EVRS for height in EVRS
- LAT for depth of the sea floor, where there is an appreciable tidal range
- MSL for depth of the sea floor, in marine areas without an appreciable tidal range, in open oceans and effectively in waters that are deeper than 200m
- ISA for pressure coordinate in the free atmosphere
- PFO for Pressure coordinate in the free ocean
- ETRS89-LAEA for ETRS89 coordinates projected into plane coordinates by the Lambert Azimuthal Equal Area projection
- ETRS89-LCC for ETRS89 coordinates projected into plane coordinates by the Lambert Conformal Conic projection
- ETRS89-TMzn for ETRS89 coordinates projected into plane coordinates by the Transverse Mercator projection

6.2 Temporal reference system

Requirement 15	The Gregorian Calendar shall be used for as a reference system for date values, and the Universal Time Coordinated (UTC) or the local time including the time zone as an offset from UTC shall be used as a reference system for time values.

7 Data quality

This section includes a description of data quality elements and sub-elements as well as the associated basic data quality measures to be used to describe data related to the spatial data theme *Addresses* (see Table 5).

NOTE Additional guidance documents on procedures and methods that can be used to implement the basic data quality measures introduced in this section will be provided at a later stage.

In addition, recommendations on minimum data quality are included for specific elements.

Data quality information can be described at level of spatial object (feature), spatial object type (feature type), dataset or dataset series. Data quality information at spatial object level is modelled directly in the application schema (Chapter 5).

Recommendation 10	Aggregated data quality information should ideally be collected at the level of spatial object types and included in the dataset (series) metadata.

Chapter 8 describes the corresponding metadata elements to report about this data quality information.

Table 5 – List of all data quality elements used in the spatial data theme *Addresses*

Section	Data quality element	Data quality sub-element	Scope(s)
7.1.1	Completeness	Commission	dataset
7.1.2	Completeness	Omission	dataset
7.2.1	Positional accuracy	Absolute or external accuracy	dataset
7.3.1	Logical consistency	Conceptual consistency	spatial object type
7.3.2	Logical consistency	Domain consistency	spatial object type
7.4.1	Temporal accuracy	Temporal consistency	spatial object type
7.5.1	Thematic accuracy	Non-quantitative attribute correctness	spatial object type

7.1 Completeness

7.1.1 Commission

Commission should be documented using the rate of excess items.

Name	Rate of excess items
Alternative name	–
Data quality element	Completeness
Data quality sub-element	Commission
Data quality basic measure	Error rate
Definition	Number of excess items in the dataset in relation to the number of items that should have been present.
Description	For each address data set there shall be a rate of how many addresses there are in the data set compared to the expected number of addresses. There are different rules in different Member States which real life objects can have addresses and which shall have addresses and how those addressable objects can be counted. Some of the addressable objects may not belong to any INSPIRE theme, thus the quality data measure can provide deviant results when applied only on INSPIRE features. The data quality measure shows the excess items in the dataset and it is calculated as the number of addressable objects with addresses compared to the total number of addressable objects that should or could have addresses. There can for an address data set be multiple correct items. This quality element can provide different results regarding to which source reference is chosen.
Parameter	–
Data quality value type	Real, percentage, ratio (example: 0,0189 ; 98,11% ; 11:582)
Data quality value structure	–
Source reference	Data bases containing addressable objects
Example	In the official addresses database of Spain 3.42% of the total number of addresses are duplicated in the dataset.
Measure identifier	3 (ISO 19138)

7.1.2 Omission

Omission should be documented using the rate of missing items.

Name	**Rate of missing items**
Alternative name	–
Data quality element	Completeness
Data quality sub-element	Omission
Data quality basic measure	Error rate
Definition	Number of missing items in the dataset in relation to the number of items that should have been present.
Description	For each address data set there shall be a rate of how many addresses there are in the data set compared to the expected number of addresses. There are different rules in different Member States which real life objects can have addresses and which shall have addresses and how those addressable objects can be counted. Some of the addressable objects may not belong to any INSPIRE theme. The data quality measure shows the absence of items in the dataset and it is calculated as the number of addressable objects with addresses compared to the total number of addressable objects that should or could have addresses. There can for an address data set be multiple correct items rates depending on which types of addressable objects are considered.
Parameter	–
Data quality value type	Real, percentage, ratio (example: 0,0189 ; 98,11% ; 11:582)
Data quality value structure	–
Source reference	Data bases containing addressable objects
Example	In Sweden 0.4% of registered buildings for which addresses are compulsory are not connected to any address. - In Sweden 2/5 of all buildings >20 sqm that are registered in the national geographic data base can not be connected to an address
Measure identifier	7 (ISO 19138)

7.2 Positional accuracy

7.2.1 Absolute or external accuracy

Absolute or external accuracy should be documented using mean value of positional uncertainties (2D).

Name	**Mean value of positional uncertainties (2D)**
Alternative name	
Data quality element	Positional accuracy
Data quality sub-element	Absolute or external accuracy
Data quality basic measure	Two-dimensional random variable X and Y
Definition	Mean value of the positional uncertainties for a set of positions where the positional uncertainties are defined as the distance between a measured position and what is considered as the corresponding true position.
Description	For a number N of addresses (coordinates X,Y allocated to each address), the measured positions are given as Xmi and Ymi coordinates. A corresponding set of addresses coordinates, Xti and Yti, are considered to represent the true positions. The errors

	are calculated as $ei = \sqrt{(Xmi - Xti)^2 + (Ymi - Yti)^2}$ The mean positional uncertainties of the horizontal absolute or external positions is then calculated as $\bar{e} = \frac{1}{N}\sum_{i=1}^{N} e_i$ A criterion for the establishing of correspondence should also be stated (e.g. allowing for correspondence to the closest position, correspondence on vertices or along lines, etc.). The criterion/criteria for finding the corresponding points shall be reported with the data quality evaluation result.
Parameter	-
Data quality value type	Measure
Data quality value structure	-
Source reference	-
Example	In Spain the value of addresses positional uncertainties is 2 meters
Measure identifier	28 (ISO 19138)

Absolute or external accuracy should be documented using mean value of positional uncertainties (1D).

Name	**Mean value of positional uncertainties (1D)**
Alternative name	-
Data quality element	Positional accuracy
Data quality sub-element	Absolute or external accuracy
Data quality basic measure	One-dimensional random variable, Z
Definition	Mean value of the positional uncertainties for a set of positions where the positional uncertainties are defined as the distance between a measured position and what is considered as the corresponding true position
Description	For a number N of addresses (heights allocated to each address), the measured positions are given as Zmi coordinate. A corresponding set of height coordinates of addresses, Zti, are considered to represent the true vertical positions. The errors are calculated as $ei = \lvert (Zmi - Zti) \rvert$ The mean vertical uncertainties is then calculated as $\bar{e} = \frac{1}{N}\sum_{i=1}^{N} e_i$ A criterion for the establishing of correspondence should also be stated (e.g. allowing for correspondence to the closest position, correspondence on vertices or along lines, etc.). The criterion/criteria for finding the corresponding points shall be reported with the data quality evaluation result.
Parameter	-
Data quality value type	Measure
Data quality value structure	-
Source reference	-
Example	The value of the addresses vertical uncertainties is 5 meters
Measure identifier	28 (ISO 19138)

7.3 Logical consistency

7.3.1 Conceptual consistency

Conceptual consistency should be documented using compliance rate with the rules of the conceptual schema.

Name	**Compliance rate with the rules of the conceptual schema**
Alternative name	-
Data quality element	Logical consistency
Data quality subelement	Conceptual consistency
Data quality basic measure	Correct items rate
Definition	Number of items in the dataset in compliance with the rules of the conceptual schema in relation to the total number of items
Description	No mandatory components or attributes are missing and no constraints are violated for any addresses
Parameter	-
Data quality value type	Real, percentage, ratio (example: 0,0189 ; 98,11% ; 11:582)
Data quality value structure	-
Source reference	-
Example	The 95% of the mandatory components or attributes exist and no constraints are violated within the dataset
Measure identifier	13 (ISO 19138)

7.3.2 Domain consistency

Domain consistency should be documented using value domain conformance rate.

Name	**Value domain conformance rate**
Alternative name	-
Data quality element	Logical consistency
Data quality subelement	Domain consistency
Data quality basic measure	Error rate
Definition	Number of items in the dataset that are in conformance with their value domain in relation to the total number of items in the dataset.
Description	Number of addresses in the dataset that are in conformance with their value domain in relation to the total number of addresses in the dataset addresses.
Parameter	-
Data quality value type	Percentage, ratio
Data quality value structure	-
Source reference	-
Example	95% of the addresses consist of address components whose values are within the domains stated in the application schema for each of them (i.e. the values the attribute level of AdminUnitName should be any of 6 values defined in Administrative Hierarchy Level, etc.)
Measure identifier	17 (ISO 19138)

7.4 Temporal accuracy

7.4.1 Temporal consistency

Temporal consistency should be documented using percentage of items that are correctly events ordered.

Name	**Percentage of items that are correctly events ordered**
Alternative name	-
Data quality element	Temporal accuracy
Data quality subelement	Temporal consistency
Data quality basic measure	Error rate
Definition	Correctness of ordered events or sequences.
Description	In an address, the attribute endLifespanVersion cannot contain a datetime value earlier than the value of the attribute beginLifespanVersion.
Parameter	-
Data quality value type	Percentage, ratio
Data quality value structure	-
Source reference	-
Example	In the data set 99 % of all life-cycle events occur in the correct order.
Measure identifier	There is no measure for temporal accuracy in ISO 19138

7.5 Thematic accuracy

7.5.1 Non-quantitative attribute correctness

Non-quantitative attribute correctness should be documented using the rate of incorrect attributes values.

Name	**Rate of incorrect attributes names values**
Alternative name	–
Data quality element	Thematic accuracy
Data quality subelement	Non-quantitative attribute correctness
Data quality basic measure	Error rate
Definition	Number of attribute values where incorrect values are assigned in relation to the total number of attribute values
Description	Number of items that contain wrong values of thoroughfare names to compare them with the true values, in relation to the total.
Parameter	–
Data quality value type	Real, percentage, ratio (example: 0,0189 ; 98,11% ; 11:582)
Data quality value structure	–
Source reference	Official data base from thoroughfare name register;
Example	The 10% of the thoroughfare names of addresses are in error
Measure identifier	67 (ISO 19138)

8 Dataset-level metadata

Metadata can be reported for each individual spatial object (spatial object-level metadata) or once for a complete dataset or dataset series (dataset-level metadata). Spatial object-level metadata is fully described in the application schema (section 5). If data quality elements are used at spatial object

level, the documentation shall refer to the appropriate definition in section 7. This section only specifies dataset-level metadata elements.

For some dataset-level metadata elements, in particular on data quality and maintenance, a more specific scope can be specified. This allows the definition of metadata at sub-dataset level, e.g. separately for each spatial object type. When using ISO 19115/19139 to encode the metadata, the following rules should be followed:

- The scope element (of type DQ_Scope) of the DQ_DataQuality subtype should be used to encode the scope.
- Only the following values should be used for the level element of DQ_Scope: Series, Dataset, featureType.
- If the level is featureType the levelDescription/MDScopeDescription/features element (of type Set< GF_FeatureType>) shall be used to list the feature type names.

NOTE The value featureType is used to denote spatial object type.

Mandatory or conditional metadata elements are specified in section 8.1. Optional metadata elements are specified in section 8.2. The tables describing the metadata elements contain the following information:

- The first column provides a reference to a more detailed description.
- The second column specifies the name of the metadata element.
- The third column specifies the multiplicity.
- The fourth column specifies the condition, under which the given element becomes mandatory (only for Table 6 and Table 7).

The metadata specified in this specification have been defined according to INSPIRE Metadata Implementing Rules and ISO 19115 so they can be implemented according to ISO 19139 (this standard provides XML examples)

8.1 Mandatory and conditional metadata elements

Requirement 16	The metadata describing a spatial data set or a spatial data set series related to the theme *Addresses* shall comprise the metadata elements required by Regulation 1205/2008/EC (implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata) for spatial datasets and spatial dataset series (Table 6) as well as the metadata elements specified in Table 7.

Table 6 – Metadata for spatial datasets and spatial dataset series specified in Regulation 1205/2008/EC (implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata)

Metadata Regulation Section	Metadata element	Multiplicity	Condition
1.1	Resource title	1	
1.2	Resource abstract	1	
1.3	Resource type	1	
1.4	Resource locator	0..*	Mandatory if a URL is available to obtain more information on the resource, and/or access related services.

1.5	Unique resource identifier	1..*	
1.7	Resource language	0..*	Mandatory if the resource includes textual information.
2.1	Topic category	1..*	
3	Keyword	1..*	
4.1	Geographic bounding box	1..*	
5	Temporal reference	1..*	
6.1	Lineage	1	
6.2	Spatial resolution	0..*	Mandatory for data sets and data set series if an equivalent scale or a resolution distance can be specified.
7	Conformity	1..*	
8.1	Conditions for access and use	1..*	
8.2	Limitations on public access	1..*	
9	Responsible organisation	1..*	
10.1	Metadata point of contact	1..*	
10.2	Metadata date	1	
10.3	Metadata language	1	

Table 7 – Mandatory and conditional theme-specific metadata for the theme Addresses

INSPIRE Data Specification *Addresses* Section	**Metadata element**	**Multiplicity**	**Condition**
8.1.1	Coordinate Reference System	1	
8.1.2	Temporal Reference System	0..*	Mandatory, if the spatial data set or one of its feature types contains temporal information that does not refer to the Gregorian Calendar or the Coordinated Universal Time.
8.1.3	Encoding	1..*	
8.1.4	Character Encoding	0..*	Mandatory, if a non-XML-based encoding is used that does not support UTF-8

8.1.1 Coordinate Reference System

Metadata element name	**Coordinate Reference System**

Definition	Description of the coordinate reference system used in the dataset.
ISO 19115 number and name	13. referenceSystemInfo
ISO/TS 19139 path	referenceSystemInfo
INSPIRE obligation / condition	mandatory
INSPIRE multiplicity	1
Data type(and ISO 19115 no.)	189. MD_CRS
Domain	Either the referenceSystemIdentifier (RS_Identifier) or the projection (RS_Identifier), ellipsoid (RS_Identifier) and datum (RS_Identifier) properties shall be provided.
Implementing instructions	The following properties are expected: code: CharacterString codeSpace: CharacterString
Example	referenceSystemIdentifier: code: EPSG:4258 codeSpace: INSPIRE RS registry
Example XML encoding	
Comments	

8.1.2 Temporal Reference System

Metadata element name	**Temporal Reference System**
Definition	Description of the temporal reference systems used in the dataset.
ISO 19115 number and name	13. referenceSystemInfo
ISO/TS 19139 path	referenceSystemInfo
INSPIRE obligation / condition	Mandatory, if the spatial data set or one of its feature types contains temporal information that does not refer to the Gregorian Calendar or the Coordinated Universal Time.
INSPIRE multiplicity	0..*
Data type(and ISO 19115 no.)	186. MD_ReferenceSystem
Domain	No specific type is defined in ISO 19115 for temporal reference systems. Thus, the generic MD_ReferenceSystem element and its reference SystemIdentifier (RS_Identifier) property shall be provided.
Implementing instructions	The following properties are expected: code: CharacterString codeSpace: CharacterString
Example	referenceSystemIdentifier: code: GregorianCalendar codeSpace: INSPIRE RS registry
Example XML encoding	
Comments	

8.1.3 Encoding

Metadata element name	**Encoding**
Definition	Description of the computer language construct that specifies the representation of data objects in a record, file, message, storage device or transmission channel
ISO 19115 number and name	271. distributionFormat
ISO/TS 19139 path	distributionInfo/MD_Distribution/distributionFormat
INSPIRE obligation / condition	mandatory
INSPIRE multiplicity	1
Data type (and ISO 19115 no.)	284. MD_Format

Domain	See B.2.10.4. The following property values shall be used for default and alternative encodings specified in section 9.2: Default Encoding – name: Addresses GML application schema – version: version 3.0; GML, version 3.2.1 – specification: D2.8.I.5 Data Specification on Addresses – Draft Guidelines Alternative Encoding – name: <Encoding name> – version: version <version of the encoding> – specification: <specification>
Implementing instructions	The following properties are expected: name: CharacterString version: CharacterString specification: CharacterString
Example	name: Addresses GML application schema version: version 3.0, GML, version 3.2.1 specification: D2.8.I.5 Data Specification on Addresses – Draft Guidelines
Example XML encoding	
Comments	

8.1.4 Character Encoding

Metadata element name	**Metadata dataset character set**
Definition	Full name of the character coding standard used for the dataset.
ISO 19115 number and name	4. characterSet
ISO/TS 19139 path	IdentificationInfo/*/characterSet
INSPIRE obligation / condition	Mandatory, if a non-XML-based encoding is used that does not support UTF-8
INSPIRE multiplicity	0..*
Data type(and ISO 19115 no.)	40. MD_CharacterSetCode
Domain	Codelist (See B.5.10 of ISO 19115)
Implementing instructions	
Example	
Example XML encoding	
Comments	

8.2 Optional metadata elements

Recommendation 11 The metadata describing a spatial data set or a spatial data set series related to the theme *Addresses* should comprise the theme-specific metadata elements specified in Table 8.

Table 8 – Optional theme-specific metadata for the theme *Addresses*

INSPIRE Data Specification *Addresses* Section	**Metadata element**	**Multiplicity**

8.2.1	Maintenance Information	0..1
8.2.2	Data Quality – Completeness – Commission	0..*
8.2.3	Data Quality – Completeness – Omission	0..*
8.2.4	Data Quality - Positional Accuracy – Absolute or external accuracy	0..*
8.2.5	Data Quality – Logical Consistency – Conceptual Consistency	0..*
8.2.6	Data Quality – Logical Consistency – Domain Consistency	0..*
8.2.7	Data Quality – Temporal accuracy – Temporal Consistency	0..*
8.2.8	Data Quality – Thematic accuracy – Non-quantitative attribute correctness	0..*
8.2.9	Data Identification – Spatial Representation type	0..*

8.2.1 Maintenance Information

Metadata element name	**Maintenance information**
Definition	information about the scope and frequency of updating
ISO 19115 number and name	30. resourceMaintenance
ISO/TS 19139 path	identificationInfo/MD_Identification/resourceMaintenance
INSPIRE obligation / condition	optional
INSPIRE multiplicity	0..1
Data type(and ISO 19115 no.)	142. MD_MaintenanceInformation
Domain	This is a complex type (lines 143-148 from ISO 19115). At least the following elements should be used (the multiplicity according to ISO 19115 is shown in parentheses): – maintenanceAndUpdateFrequency [1]: frequency with which changes and additions are made to the resource after the initial resource is completed / domain value: MD_MaintenanceFrequencyCode: – updateScope [0..*]: scope of data to which maintenance is applied / domain value: MD_ScopeCode – maintenanceNote [0..*]: information regarding specific requirements for maintaining the resource / domain value: free text
Implementing instructions	
Example	
Example XML encoding	maintenanceAndUpdateFrecuency: annually
Comments	

8.2.2 Data Quality – Completeness – Commission

Metadata element name	**Data Quality – Completeness – Commission**
Definition	DQ Completeness: presence and absence of features, their attributes and their relationships; Commission: excess data present in the dataset, as described by the scope
ISO 19115 number and name	18. dataQualityInfo
ISO/TS 19139 path	dataQualityInfo
INSPIRE obligation / condition	optional
INSPIRE multiplicity	0..*

Data type (and ISO 19115 no.)	109. DQ_CompletenessCommission
Domain	Lines 100-107 from ISO 19115
Implementing instructions	This metadata should be filled, at least, with these elements: - valueUnit: UnitOfMeasure - value: Record
Example	
Example XML encoding	
Comments	See section 7.1.1 for detailed information.

8.2.3 Data Quality – Completeness – Omission

Metadata element name	**Data Quality – Completeness – Omission**
Definition	data absent from the dataset, as described by the scope
ISO 19115 number and name	18. dataQualityInfo
ISO/TS 19139 path	dataQualityInfo
INSPIRE obligation / condition	optional
INSPIRE multiplicity	0..*
Data type (and ISO 19115 no.)	110. DQ_CompletenessOmission
Domain	Lines 100-107 from ISO 19115
Implementing instructions	This metadata should be filled, at least, with these elements: - valueUnit: UnitOfMeasure - value: Record
Example	
Example XML encoding	
Comments	See section 7.1.2 for detailed information.

8.2.4 Data Quality – Positional Accuracy – Absolute or external accuracy

Metadata element name	**Data Quality - Positional accuracy - Absolute or external accuracy**
Definition	closeness of reported coordinate values to values accepted as or being true
ISO 19115 number and name	18. dataQualityInfo
ISO/TS 19139 path	dataQualityInfo
INSPIRE obligation / condition	optional
INSPIRE multiplicity	0..*
Data type(and ISO 19115 no.)	117. DQ_AbsoluteExternalPositionalAccuracy
Domain	Lines 100-107 from ISO 19115
Implementing instructions	This metadata should be filled, at least, with these elements: - valueUnit: UnitOfMeasure - value: Record This optional metadata element should not be used if the address sample contains addresses whose geometry specification values are different from entrance or building.
Example	
Example XML encoding	
Comments	See section 7.2.1 for detailed information.

8.2.5 Data Quality – Logical Consistency – Conceptual Consistency

Metadata element name	**Data Quality – Logical Consistency – Conceptual Consistency**
Definition	adherence to rules of the conceptual schema
ISO 19115 number and name	18. dataQualityInfo

ISO/TS 19139 path	dataQualityInfo
INSPIRE obligation / condition	Optional
INSPIRE multiplicity	0..*
Data type (and ISO 19115 no.)	112. DQ_ConceptualConsistency
Domain	Lines 100-107 from ISO 19115
Implementing instructions	This metadata should be filled, at least, with these elements: - valueUnit: UnitOfMeasure - value: Record
Example	
Example XML encoding	
Comments	See section 7.3.1 for detailed information.

8.2.6 Data Quality – Logical Consistency – Domain Consistency

Metadata element name	**Data Quality – Logical Consistency – Domain Consistency**
Definition	adherence of values to the value domains
ISO 19115 number and name	18. dataQualityInfo
ISO/TS 19139 path	dataQualityInfo
INSPIRE obligation / condition	Optional
INSPIRE multiplicity	0..*
Data type (and ISO 19115 no.)	113. DQ_DomainConsistency
Domain	Lines 100-107 from ISO 19115
Implementing instructions	This metadata should be filled, at least, with these elements: - valueUnit: UnitOfMeasure - value: Record
Example	
Example XML encoding	
Comments	See section 7.3.2 for detailed information.

8.2.7 Data Quality – Temporal accuracy – Temporal Consistency

Metadata element name	**Data Quality – Logical Consistency – Domain Consistency**
Definition	accuracy of the temporal attributes and temporal relationships of features
ISO 19115 number and name	18. dataQualityInfo
ISO/TS 19139 path	dataQualityInfo
INSPIRE obligation / condition	Optional
INSPIRE multiplicity	0..*
Data type (and ISO 19115 no.)	120. DQ_TemporalConsistency
Domain	Lines 100-107 from ISO 19115
Implementing instructions	This metadata should be filled, at least, with these elements: - valueUnit: UnitOfMeasure - value: Record
Example	
Example XML encoding	
Comments	See section 7.4.1 for detailed information.

8.2.8 Data Quality – Thematic accuracy – Non-quantitative correctness

Metadata element name	**Data Quality – Thematic accuracy- Non-quantitative attribute correctness**
Definition	accuracy of non-quantitative attributes
ISO 19115 number and name	18. dataQualityInfo
ISO/TS 19139 path	dataQualityInfo

INSPIRE obligation / condition	Optional
INSPIRE multiplicity	0..*
Data type (and ISO 19115 no.)	126. DQ_NonQuantitativeAttributeAccuracy
Domain	Lines 100-107 from ISO 19115
Implementing instructions	This metadata should be filled, at least, with these elements: - valueUnit: UnitOfMeasure - value: Record
Example	
Example XML encoding	
Comments	See section 7.5.1 for detailed information.

8.2.9 Data Identification – Spatial Representation Type

Metadata element name	**Data Identification – Spatial Representation type**
Definition	Method used to spatially represent geographic information
ISO 19115 number and name	12. spatialRepresentationInfo
ISO/TS 19139 path	spatialRepresentationInfo/MD_SpatialRepresentation
INSPIRE obligation / condition	Optional
INSPIRE multiplicity	0..*
Data type (and ISO 19115 no.)	37. spatialRepresentationType
Domain	MD_SpatialRepresentationTypeCode, Codelist (See B.5.26 of ISO 19115)
Implementing instructions	
Example	Vector
Example XML encoding	
Comments	

8.3 Guidelines on using metadata elements defined in Regulation 1205/2008/EC

8.3.1 Conformity

The *Conformity* metadata element defined in Regulation 1205/2008/EC allows to report the conformance with the Implementing Rule for interoperability of spatial data sets and services or another specification. The degree of conformity of the dataset can be *Conformant* (if the dataset is fully conformant with the cited specification), *Not Conformant* (if the dataset does not conform to the cited specification) or *Not evaluated* (if the conformance has not been evaluated).

Recommendation 12 In order to report conceptual consistency with this INSPIRE data specification, the *Conformity* metadata element should be used. The value of *Conformant* should be used for the *Degree* element only if the dataset passes all the requirements described in the abstract test suite presented in Annex A. The *Specification* element should be given as follows:
- title: “INSPIRE Data Specification on Addresses – Guidelines”
- date:
  - dateType: publication
  - date: 2010-04-26

8.3.2 Lineage

Following the ISO 19113 Quality principles, if a data provider has a procedure for quality validation of their spatial data sets then the data quality elements listed in the Chapter 8 should be used. If not, the

Lineage metadata element (defined in Regulation 1205/2008/EC) should be used to describe the overall quality of a spatial data set.

According to Regulation 1205/2008/EC, lineage "is a statement on process history and/or overall quality of the spatial data set. Where appropriate it may include a statement whether the data set has been validated or quality assured, whether it is the official version (if multiple versions exist), and whether it has legal validity. The value domain of this metadata element is free text".

Recommendation 13 Apart from describing the process history, if feasible within a free text, the overall quality of the dataset (series) should be included in the *Lineage* metadata element. This statement should contain any quality information required for interoperability and/or valuable for use and evaluation of the data set (series).

In addition, this metadata should report the information regarding the attributes specification, base and method of GeometryPosition datatype

8.3.3 Temporal reference

According to Regulation 1205/2008/EC, at least one of the following temporal reference metadata elements shall be provided: temporal extent, date of publication, date of last revision, date of creation.

Recommendation 14 If feasible, the date of the last revision of a spatial data set should be reported using the *Date of last revision* metadata element.

9 Delivery

9.1 Delivery medium

Requirement 17 Data conformant to this INSPIRE data specification shall be made available through an INSPIRE network service.

Requirement 18 All information that is required by a calling application to be able to retrieve the data through the used network service shall be made available in accordance with the requirements defined in the Implementing Rules on Network Services.

EXAMPLE 1 Through the Get Spatial Objects function, a download service can either download a pre-defined data set or pre-defined part of a data set (non-direct access download service), or give direct access to the spatial objects contained in the data set, and download selections of spatial objects based upon a query (direct access download service). To execute such a request, some of the following information might be required:

- the list of spatial object types and/or predefined data sets that are offered by the download service (to be provided through the Get Download Service Metadata operation),
- and the query capabilities section advertising the types of predicates that may be used to form a query expression (to be provided through the Get Download Service Metadata operation, where applicable),
- a description of spatial object types offered by a download service instance (to be proviced through the Describe Spatial Object Types operation).

EXAMPLE 2 Through the Transform function, a transformation service carries out data content transformations from native data forms to the INSPIRE-compliant form and vice versa. If this operation

is directly called by an application to transform source data (e.g. obtained through a download service) that is not yet conformant with this data specification, the following parameters are required:
Input data (mandatory). The data set to be transformed.

- Source model (mandatory, if cannot be determined from the input data). The model in which the input data is provided.
- Target model (mandatory). The model in which the results are expected.
- Model mapping (mandatory, unless a default exists). Detailed description of how the transformation is to be carried out.

9.2 Encodings

9.2.1 Encoding for application schema Addresses

Requirement 19	Data conformant to the application schema Addresses shall be encoded using the encoding specified in section 9.2.1.1.

9.2.1.1 Default Encoding: GML Application Schema

Format name: Addresses GML Application Schema
Version of the format: Addresses, GML, version 3.2.1
Reference to the specification of the format: ISO 19136:2007
Character set: UTF-8

The GML Application Schema is distributed in a zip-file separately from the data specification document.

Recommendation 15	It is recommended that subclasses of “addressComponent” are encoded by reference.

NOTE The result of this recommendation is that address components are not embedded in the address spatial object features in the GML documents, but are first level objects in a feature collection. In this way, e,g, redundant representations of address components are avoided.

10 Data Capture

There is no specific guidance required in respect to data capture.

11 Portrayal

This clause defines the rules for layers and styles to be used for portrayal of the spatial object types defined for this theme.

In section 11.1, the *types* of layers are defined that are to be used for the portrayal of the spatial object types defined in this specification. A view service may offer several layers of the same type, one for each dataset that it offers on a specific topic.

Section 11.2 specifies the default styles to be used for each of these layer types, while section 11.3 specifies other well-defined styles.

The XML fragments in these sections use the following namespace prefixes:

- sld="http://www.opengis.net/sld" (WMS/SLD 1.1)
- se="http://www.opengis.net/se" (SE 1.1)
- ogc="http://www.opengis.net/ogc" (FE 1.1)

11.1 Layer Types

Requirement 20	If an INSPIRE view services supports the portrayal of data related to the theme *Addresses*, it shall provide layers of the types specified in this section.

Table 9: Layer types for the spatial data theme *Addresses*

Layer Name	Layer Title	Spatial object type(s)	Keywords
AD.Address	Addresses	Address	Address

11.2 Default Styles

Requirement 21	If an INSPIRE view network service supports the portrayal of spatial data sets corresponding to the spatial data theme *Addresses*, it shall support the default styles specified in the tables in this section. If no user-defined style is specified in a portrayal request for a specific layer to an INSPIRE view service, the default style specified in this section for that layer shall be used.

Recommendation 16	If an address has multiple geographic positions, only the position where the "default" attribute is true should be portrayed.

Requirement 22	If an INSPIRE view services support the portrayal of data related to the theme *Addresses*, it shall imply an accurate scale of the geographic position of the address.

The geographic position of the address can be an exact (point) position or it can be derived from others spatial object types – see CodeList GeometrySpecificationValue. To avoid misunderstanding it is necessary to express an accuracy level in Address portrayal. We recommend using four levels of accuracy depending on the GeometrySpecification value:

GeometrySpecification value	Accuracy	Portrayal recommendation
postalDelivery, utilityService, thoroughfareAccess, entrance	Exact Level (most accurate portrayal)	6 pixel square with black border and white (#ffffff) fill
building, parcel,	Locator Level	6 pixel square with black border and 75% grey (#c0c0c0) fill
segment	Thoroughfare level	6 pixel square with black border and 50% grey (#808080) fill
others (postalDescriptor, addressArea, Administrative units (level 1-6) or void)	Other or unknown level (least accurate portrayal)	6 pixel square with black border and 25% grey (#404040) fill

Table 10: Default styles for the spatial data theme *Addresses*

Layer Name	**AD.Address**
Style Name	AD.Address.Default
Style Title	Address Default Style
Style Description	6 pixel square with black (#000000) border and – white (#FFFFFF) fill, if the position of the address represents the postal delivery point, a point of utility service, the access point from the thoroughfare, or the entrance door or gate, – 75% grey (#C0C0C0) fill, if the position of the address represents the building or parcel, – 50% grey (#808080), if the position of the address represents the related segment of a thoroughfare, and – 25% grey (#404040), otherwise.
Symbology	<sld:NamedLayer> <se:Name> AD.Address</se:Name> <sld:UserStyle> <se:Name>AD.Address.Default</se:Name> <sld:IsDefault>1</sld:IsDefault> <se:FeatureTypeStyle version="1.1.0"> <se:Description> <se:Title> Address Default Style</se:Title> <se:Abstract> The point is rendered as 6 pixel square with black (#000000) border and white (#FFFFFF) fill, if the position of the address represents the postal delivery point, a point of utility service, the access point from the thoroughfare, or the entrance door or gate; 75% grey (#C0C0C0) fill, if the position of the address represents the building or parcel; 50% grey (#808080), if the position of the address represents the related segment of a thoroughfare; and 25% grey (#404040), otherwise. </se:Abstract> </se:Description> <se:FeatureTypeName>AD:Address</se:FeatureTypeName> <se:Rule> <!--The highest accuracy - Exact Level - white--> <se:Filter> <OR> <se:PropertyIsEqualTo> <ogc:PropertyName>AD:Address.position.specification</ogc:PropertyName> <ogc:Literal>postalDelivery</ogc:Literal> </se:PropertyIsEqualTo> <se:PropertyIsEqualTo> <ogc:PropertyName>AD:Address.position.specification</ogc:PropertyName> <ogc:Literal>utilityService</ogc:Literal> </se:PropertyIsEqualTo> <se:PropertyIsEqualTo> <ogc:PropertyName>AD:Address.position.specification</ogc:PropertyName> <ogc:Literal>thoroughfareAccess</ogc:Literal> </se:PropertyIsEqualTo> <se:PropertyIsEqualTo> <ogc:PropertyName>AD:Address.position.specification</ogc:PropertyName> <ogc:Literal>entrance</ogc:Literal> </se:PropertyIsEqualTo> </OR> </se:Filter>

```
        <se:PointSymbolizer>
          <se:Geometry>
            <ogc:PropertyName>geometry</ogc:PropertyName>
          </se:Geometry>
          <se:Graphic>
            <se:Mark>
              <se:WellKnownName>square</se:WellKnownName>
              <se:Fill>
                <se:SvgParameter name="fill">#ffffff</se:SvgParameter>
              </se:Fill>
              <se:Stroke>
                <se:SvgParameter name="stroke">#000000</se:SvgParameter>
                <se:SvgParameter name="stroke-width">1</se:SvgParameter>
              </se:Stroke>
            </se:Mark>
            <se:Size>
              <se:SvgParameter> name="size">6</se:SvgParameter>
            </se:Size>
          </se:Graphic>
        </se:PointSymbolizer>
      </se:Rule>

      <se:Rule>
        <!--The highest accuracy - Locator Level - 75% gray-->
        <se:Filter>
          <OR>
            <se:PropertyIsEqualTo>

<ogc:PropertyName>AD:Address.position.specification</ogc:PropertyName>
              <ogc:Literal>building</ogc:Literal>
            </se:PropertyIsEqualTo>
            <se:PropertyIsEqualTo>

<ogc:PropertyName>AD:Address.position.specification</ogc:PropertyName>
              <ogc:Literal>parcel</ogc:Literal>
            </se:PropertyIsEqualTo>
          </OR>
        </se:Filter>
        <se:PointSymbolizer>
          <se:Geometry>
            <ogc:PropertyName>geometry</ogc:PropertyName>
          </se:Geometry>
          <se:Graphic>
            <se:Mark>
              <se:WellKnownName>square</se:WellKnownName>
              <se:Fill>
                <se:SvgParameter name="fill">#c0c0c0</se:SvgParameter>
              </se:Fill>
              <se:Stroke>
                <se:SvgParameter name="stroke">#000000</se:SvgParameter>
                <se:SvgParameter name="stroke-width">1</se:SvgParameter>
              </se:Stroke>
            </se:Mark>
            <se:Size>
              <se:SvgParameter> name="size">6</se:SvgParameter>
            </se:Size>
          </se:Graphic>
        </se:PointSymbolizer>
      </se:Rule>

      <se:Rule>
        <!--The middle accuracy - Thoroughfare level - 50% gray-->
        <se:Filter>
<ogc:PropertyName>AD:Address.position.specification</ogc:PropertyName>
          <ogc:Literal> segment</ogc:Literal>
        </se:PropertyIsEqualTo>
        </se:Filter>
        <se:PointSymbolizer>
          <se:Geometry>
            <ogc:PropertyName>geometry</ogc:PropertyName>
          </se:Geometry>
          <se:Graphic>
            <se:Mark>
              <se:WellKnownName>square</se:WellKnownName>
              <se:Fill>
                <se:SvgParameter name="fill">#808080</se:SvgParameter>
              </se:Fill>
```

```
            <se:Stroke>
              <se:SvgParameter name="stroke">#000000</se:SvgParameter>
              <se:SvgParameter name="stroke-width">1</se:SvgParameter>
            </se:Stroke>
          </se:Mark>
          <se:Size>
            <se:SvgParameter name="size">6</se:SvgParameter>
          </se:Size>
        </se:Graphic>
      </se:PointSymbolizer>
    </se:Rule>

    <se:Rule>
      <!--The lowest accuracy - others or unknown level - 25% gray-->
     <se:ElseFilter/>
      <se:PointSymbolizer>
        <se:Geometry>
          <ogc:PropertyName>geometry</ogc:PropertyName>
        </se:Geometry>
        <se:Graphic>
          <se:Mark>
            <se:WellKnownName>square</se:WellKnownName>
            <se:Fill>
              <se:SvgParameter name="fill">#404040</se:SvgParameter>
            </se:Fill>
            <se:Stroke>
              <se:SvgParameter name="stroke">#000000</se:SvgParameter>
              <se:SvgParameter name="stroke-width">1</se:SvgParameter>
            </se:Stroke>
          </se:Mark>
          <se:Size>
            <se:SvgParameter name="size">6</se:SvgParameter>
          </se:Size>
        </se:Graphic>
      </se:PointSymbolizer>
    </se:Rule>

   </se:FeatureTypeStyle>
  </sld:UserStyle>
</sld:NamedLayer>
```

Minimum & maximum scales	No scale limits.

This is the simplest version of the layer definition - the address is portrayed as a point without any text representation.

The hierarchical structure of the address components as well as the rules for the address text representation (composition of the text from the names and designators of the address components) are different in different member states. Thus, they are not possible to express generally in this data specification.

The best overview of how addresses are represented when used for post distribution can be found in UPU documents, specifically

http://www.upu.int/post_code/en/postal_addressing_systems_member_countries.shtml

11.3 Other Well-defined Styles

No other well-defined styles defined.

11.4 Layers organization

No special layer organization defined.

Bibliography

[63 70 03:200X] SVENSK STANDARD, SS 63 70 03:200X Geographic information – Locational Addresses – Application Schema, , Sweden

BeSt, Standard for exchanging address information, Belgium, Work group STRATEGIS-DICO (AGDP-AAPD, IGN-NGI, AGIV, CIRB, MET), Version 1.2, 09-07-2007

British profile GEMINI

[BS7666-2:2006] Spatial datasets for geographical referencing, part 2: specification for a land and property gazetteer, United Kingdom, Technical committee IST/36 geographical information, Third edition, 28-07-2006

CartoCiudad Project Description, Spain, Ministry of Public Works and Transports of Spain, National Geographic Institute, version 0.3, 20-8-2008

Composante adresse du RGE, Spécifications de contenu, (version projet), France, Institut Géographique National, Service des Bases de Données Vecteurs, Version 1.0, 02-09-2003

Description of Key Register of Addresses in The Netherlands, The Netherlands, VROM, Central Services, project BAG, First draft, 10-03-2008

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) http://www.ec-gis.org/inspire/directive/l_10820070425en00010014.pdf

Draft Description of the Danish Address Reference System, Denmark, Morten Lind, National Survey and Cadastre – DK, version 1.2, 03-03-2008

Draft Guidelines – INSPIRE Metadata Implementing Rules, http://www.ec-gis.org/inspire/reports/ImplementingRules/INSPIRE_Metadata ImplementingRule_v3_20071026.pdf

[DS-D2.3] INSPIRE DS-D2.3, Definition of Annex Themes and Scope, v3.0, http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.3_Definition_of_Annex_Themes_and_scope_v3.0.pdf

[DS-D2.5] INSPIRE DS-D2.5, Generic Conceptual Model, v3.1, http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.5_v3.1.pdf

[DS-D2.6] INSPIRE DS-D2.6, Methodology for the development of data specifications, v3.0, http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.6_v3.0.pdf

[DS-D2.7] INSPIRE DS-D2.7, Guidelines for the encoding of spatial data, v3.0, http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/DataSpecifications/D2.7_v3.0.pdf

[DS-D2.8.I.3] INSPIRE DS-D2.8.I.3, INSPIRE data specification on Geographical names – Guidelines, v3.0

[DS-D2.8.I.4] INSPIRE DS-D2.8.I.4, INSPIRE data specification on Administrative units – Guidelines, v3.0

[DS-D2.8.I.6] INSPIRE DS-D2.8.I.3, INSPIRE data specification on Cadastral Parcels – Guidelines, v3.0

[DS-D2.8.I.7] INSPIRE DS-D2.8.I.7, INSPIRE data specification on Transport Networks – Guidelines, v3.0

[Flemish GIS-metadata profile] Flemish GIS-metadata profile V2.1.1

[ISO 19101] EN ISO 19101:2005 Geographic information – Reference model (ISO 19101:2002)

[ISO 19103] ISO/TS 19103:2005, Geographic information – Conceptual schema language

[ISO 19107] EN ISO 19107:2005, Geographic information – Spatial schema (ISO 19107:2003)

[ISO 19108] EN ISO 19108:2005 Geographic information - Temporal schema (ISO 19108:2002)

[ISO 19111] EN ISO 19111:2007 Geographic information - Spatial referencing by coordinates (ISO 19111:2007)

[ISO 19115] EN ISO 19115:2005, Geographic information – Metadata (ISO 19115:2003)

[ISO 19118] EN ISO 19118:2006, Geographic information – Encoding (ISO 19118:2005)

[ISO 19135] EN ISO 19135:2007 Geographic information – Procedures for item registration (ISO 19135:2005)

[ISO 19138] EN ISO 19138:2006 Geographic information -- Data quality measures SIS/TK 466, Locational addresses, version 2, 11-04-2008

[ISO 19139] ISO/TS 19139:2007, Geographic information – Metadata – XML schema implementation

[Metadata Spanish Core] (NEM: Núcleo Español de Metadatos), http://www.idee.es/resources/recomendacionesCSG/NEM.pdf

[OGC 06-103r3] Implementation Specification for Geographic Information - Simple feature access – Part 1: Common Architecture v1.2.0

[UIR-ADR] Territorial Identification Register of Addresses, Czech Republic, Version 4.2

[ISO 19101] EN ISO 19101:2005 Geographic information – Reference model (ISO 19101:2002)

[ISO 19103] ISO/TS 19103:2005, Geographic information – Conceptual schema language

[ISO 19107] EN ISO 19107:2005, Geographic information – Spatial schema (ISO 19107:2003)

[ISO 19108] EN ISO 19108:2005 Geographic information - Temporal schema (ISO 19108:2002)

[ISO 19111] EN ISO 19111:2007 Geographic information - Spatial referencing by coordinates (ISO 19111:2007)

[ISO 19115] EN ISO 19115:2005, Geographic information – Metadata (ISO 19115:2003)

[ISO 19118] EN ISO 19118:2006, Geographic information – Encoding (ISO 19118:2005)

[ISO 19135] EN ISO 19135:2007 Geographic information – Procedures for item registration (ISO 19135:2005)

[ISO 19139] ISO/TS 19139:2007, Geographic information – Metadata – XML schema implementation

[OGC 06-103r3] Implementation Specification for Geographic Information - Simple feature access – Part 1: Common Architecture v1.2.0

Annex A
(normative)

Abstract Test Suite

Any dataset conforming to this INSPIRE data specification shall meet all requirements specified in this document.

NOTE A common abstract test suite including detailed instructions on how to test each requirement will be added at a later stage.

Annex B
(informative)
Examples of metadata elements specified in INSPIRE Metadata Regulation [Commission Regulation (EC 1205/2008)]

The following examples are examples of INSPIRE Implementing Rule on Metadata customised to the address data specification.

B.1 Identification

Resource title

Metadata element name	**Resource title**
Definition	Name by which the cited resource is known.
Example	CartoCiudad: national street-map of Spain

B.1.1 Resource abstract

Metadata element name	**Resource abstract**
Definition	Brief narrative summary of the content of the resource(s).
Example	Spanish official data base consists of the thoroughfare network and the urban background of cities and villages all over Spain, supplemented by postal and statistical information.

B.1.2 Resource Type

Metadata element name	**Resource Type**
Definition	Scope to which metadata applies
Example	Dataset

B.1.3 Resource Locator

Metadata element name	**Resource locator**
Definition	Location (address) for on-line access using a Uniform Resource Locator address or similar addressing scheme.
Example	http://www.cartociudad.es

B.1.4 Unique resource identifier

Metadata element name	Unique resource identifier
Definition	Value uniquely identifying an object within a namespace.
Example	Example 1 code: http://www.ign.fr/9876543210#dataId Example 2: code: 9876543210 codeSpace: http://www.ign.fr Example 3: Code: 527c4cac-070c-4bca-9aaf-92bece7be902

B.1.5 Resource Language

Metadata element name	Resource language
Definition	Language(s) used within the datasets
Example	spa

B.2 Classification of spatial data

B.2.1 Topic category

Metadata element name	Topic category
Definition	Main theme(s) of the dataset
Example	location

B.3 Keyword

B.3.1 Keyword value

Metadata element name	Keyword value
Definition	Commonly used word(s) or formalised word(s) or phrase(s) used to describe the subject
Example	GEOGRAPHY.regions of the Community countries.regions of Spain, Madrid

B.3.2 Originating controlled vocaburaly

Metadata element name	Originating controlled vocabulary
Definition	Name of the formally registered thesaurus or a similar authoritative source of keywords
Example	title: “AGROVOC” date: dateType: publication date: 2008-04-14

B.4 Geographic Location

B.4.1 Geographic bounding box west bound longitude

Metadata element name	**Geographic bounding box west bound longitude**
Definition	Western-most coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east).
Example	2.50

B.4.2 Geographic bounding box east bound longitude

Metadata element name	**Geographic bounding box east bound longitude**
Definition	Eastern-most coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east).
Example	-2.50

B.4.3 Geographic bounding box south bound latitude

Metadata element name	**Geographic bounding box south bound latitude**
Definition	Southern-most coordinate of the limit of the dataset extent, expressed in latitude in decimal degrees (positive north).
Example	40.25

B.4.4 Geographic bounding box north bound latitude

Metadata element name	**Geographic bounding box north bound latitude**
Definition	Northern-most coordinate of the limit of the dataset extent, expressed in latitude in decimal degrees (positive north).
Example	45.50

B.5 Temporal reference

B.5.1 Temporal extent

Metadata element name	**Temporal extent**
Definition	Time period covered by the content of the dataset.
Example	From 1977-03-10T11:45:30 to 2005-01-15T09:10:00

B.5.2 Data of publication

Metadata element name	**Date of publication**
Definition	Reference date for the cited resource – publication
Example	2007-09-15 or 2007-11-15T11:15:00

B.5.3 Date of last revision

Metadata element name	**Date of last revision**
Definition	Reference date for the cited resource – revision
Example	2007-09-15 or 2007-11-15T11:15:00

B.5.4 Date of creation

Metadata element name	Date of creation
Definition	Reference date for the cited resource – creation
Example	2007-09-15 or 2007-11-15T11:15:00

B.6 Quality and validity

B.6.1 Lineage

Metadata element name	Lineage
Definition	General explanation of the data producer's knowledge about the lineage of a dataset.
Example	Dataset produced from the integration of data supplied by Cadastre, Post Office and Statistical Office and IGN

B.6.2 Spatial resolution: equivalent scale

Metadata element name	Spatial resolution equivalent scale
Definition	Level of detail expressed as the scale denominator of a comparable hardcopy map or chart
Example	1000 (e.g. 1:1000 scale map)

B.7 Conformity

B.7.1 Degree

Metadata element name	Conformity degree
Definition	Indication of the conformance result
Example	True (it is conformant)

B.7.2 Specification

Metadata element name	Conformity specification
Definition	Citation of the product specification or user requirement against which data is being evaluated.
Example	Title: "INSPIRE Implementing rules laying down technical arrangements for the interoperability and harmonisation of addresses". date: dateType: publication date: 2009-05-15

B.8 Constraints related to access and use

B.8.1 Conditions applying to access and use

Metadata element name	**Conditions applying to access and use**
Definition	Restrictions on the access and use of a resource or metadata
Example	not to be used for navigation

B.8.2 Limitation on public access: access constraints

Metadata element name	**Access constraints**
Definition	Access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the resource.
Example	Intellectual Property Rights (rights to financial benefit from and control of distribution of non-tangible property that is a result of creativity).

B.8.3 Limitation on public access: other constraints

Metadata element name	**Other constraints**
Definition	Other restrictions and legal prerequisites for accessing and using the resource or metadata.
Example	Private data

B.8.4 Limitation on public access: classification

Metadata element name	Classification
Definition	Name of the handling restrictions on the resource.
Example	restricted (not for general disclosure)

B.9 Responsible organization

B.9.1 Responsible party

Metadata element name	**Responsible party**
Definition	Identification of, and means of communication with, person(s) and organization(s) associated with the resource(s)
Example	organisationName: National Geographic Institute of Spain contactInfo: address: electronicMailAddress: cartociudad@ign.es

B.9.2 Responsible party role

Metadata element name	**Responsible party role**
Definition	Function performed by the responsible party
Example	resourceProvider

B.10 Metadata on Metadata

B.10.1 Metadata point of contact

Metadata element name	**Metadata point of contact**
Definition	Party responsible for the metadata information
Example	organisationName: National Geographic Institute of Spain contactInfo: address: electronicMailAddress: cartociudad@ign.es role: pointOfContact

B.10.2 Metadata date

Metadata element name	**Metadata date**
Definition	Date that the metadata was created.
Example	2006-12-30

B.10.3 Metadata language

Metadata element name	**Metadata language**
Definition	Language used for documenting metadata.
Example	spa

Annex C
(informative)
Address Component Life Cycle

Although the life-cycle of an address sometimes will broadly mirror the life-cycle of the addressable object to which it relates, there are also many instances where an address or one of the components that make up an address may change in response to events unrelated to physical changes in the property.

Examples of such cases include:

- the municipal authority may create an address for a property that has not yet been built;
- a new occupier may wish an existing property to be known by a new name;
- the postal service may make a change to a postcode to reflect new delivery patterns;
- an error in the recording of an address component or attribute may need to be corrected.

The application schema distinguishes between, two sets of attributes: i) the temporal attributes that relate to a spatial object and its version in the dataset (represented by the beginLifespanVersion and endLifespanVersion) and ii) the attributes that reflects the status and validity of the real world phenomena (represented by “status”, “validFrom” and “validTo”), for example of the address, the post code or the thoroughfare name.

As an illustration of how to implement and maintain the integrity between these attributes consider the following two examples.

NOTE 1 In following tables the use of ***bold and italic*** highlights the change of an existing version and inserts/update of a new version into the dataset.
NOTE 2 For validFrom and beginLife dates it is assumed that the timestamp is 12:00:00. For validTo and endLife dates it is assumed that the timestamp is 11:59:59.

C.1 Life-cycle of a thoroughfare name (created, changed and discontinued)

Event A:
01-02-2009: City Council approves the creation of a new street name “West Street”
03-02-2009: The new street name is recorded in the dataset

Id	Vers.	Thorough.Name	Status	validFrom	validTo	beginLife	endLife
9999	***1***	***West Street***	***current***	***01-02-2009***		***03-02-2009***	

Event B:
13-02-2009: City Council decides to change the street name to “Centre Street”. The new name shall take effect from 01-03-2009
15-02-2009: The decision is recorded by updating the dataset

Id	Vers.	Thorough.Name	Status	validFrom	validTo	beginLife	endLife
9999	1	West Street	current	01-02-2009	***01-03-2009***	03-02-2009	***15-02-2009***
9999	***2***	***Centre Street***	***current***	***01-03-2009***		***15-02-2009***	

Event C:

20-04-2010: The city council approves a construction project which will result in the existing "Centre Street" being abandoned from 01-05-2010. From this date the street name will be historic.
25-04-2010: The decision is recorded by updating the dataset.

Id	Vers.	Thorough.Name	Status	validFrom	validTo	beginLife	endLife
9999	1	West Street	current	01-02-2009	01-03-2009	03-02-2009	15-02-2009
9999	2	Centre Street	current	01-03-2009	***01-05-2010***	15-02-2009	***25-04-2010***
9999	***3***	***Centre Street***	***retired***	***01-05-2010***		***25-04-2010***	

C.2 Life-cycle of an address (proposed, current and discontinued)

Event A:
01-02-2009: The municipal administration proposes a new address with the locator (address number) "114A" for a planned property on "Mill Road". The proposal is published for consultation.
03-02-2009: The proposal is recorded in the dataset

Id	Vers.	Locator	Status	validFrom	validTo	beginLife	endLife
8888	***1***	***114A***	***proposed***	***01-02-2009***		***03-02-2009***	

Event B:
13-02-2009: The administration approves the new address, but instead of having "114A" as a locator, it is changed to "114". The address will be official from 01-03-2009
15-02-2009: The decision is recorded by updating the dataset

Id	Vers.	Locator	Status	validFrom	validTo	beginLife	endLife
8888	1	114A	proposed	01-02-2009	***01-03-2009***	03-02-2009	***15-02-2009***
8888	***2***	***114***	***current***	***01-03-2009***		***15-02-2009***	

Event C:
20-04-2010: The property is merged together with the neighbour property and it is decided that the address will no longer be valid from this date.
25-04-2010: The decision is recorded by updating the dataset.

Id	Vers.	Locator	Status	validFrom	validTo	beginLife	endLife
8888	1	114A	proposed	01-02-2009	01-03-2009	03-02-2009	15-02-2009
8888	2	114	current	01-03-2009	***20-04-2010***	15-02-2009	***25-04-2010***
8888	***3***	***114***	***retired***	***20-04-2010***		***25-04-2010***	

Annex D
(informative)
Address assignment in Europe

As mentioned in the introduction of this document, all Member States use addresses, but almost all have adopted a different structure for their addresses.

The TWG undertook a survey of those Member States[22] which were represented in the TWG experts group to compare the structure of typical addresses in a number of real world situations, described as follows:

1. A street with houses
2. Multiple apartments in a building,
3. Shops in a shopping centre,
4. Buildings in an industrial area and
5. Houses in a rural area.

The results of this survey are summarised in the tables A and B below.

The tables below show the use of the attributes. Each attribute used is filled out with the appropriate description in native language.

Table A shows the components AdminUnitName, AddressAreaName and ThoroughfareName.
Table B represents the locator and postal descriptor.

The list shows clearly the different numbers of admin units levels used in each country. This ranges from only one level in Denmark (DK) to five levels in Turkey (TR) below the national level.

The address areas, representing the subdivisions of the municipality – e.g. to make street names unique - are necessary in 6 countries. The Address Areas in United Kingdom (UK) and Sweden (SE) are used to record the elements of the addresses in these countries.

Thoroughfare Names are used in all countries, except in very rural areas.

The complete results of the survey are documented in the Annex E of this document.

[22] Although not a member State Turkey (TR) was also included as representative of a different approach ro addressing in many instances.

Table A – Synopsis of Administrative Units, Address Areas and Thoroughfares used in addressing

Component	Meaning	Flanders	CZ	DE	DK	ES	NL	UK	SE	TR
AdminUnitName [1…6]										
AdminUnitName-Level1	First level	Land	Stat	Bundes-republik	Land	Reino	Land	United Kingdom	Kungarike	Ülke
AdminUnitName-Level2	Second level	Gewest	Kraj	Bundes-Land	Region	Comunidad Autónoma	Provincie	GreatBritain	Lan	Il
AdminUnitName-Level3	Third level	Provincie	Okres	Regierungs-bezirk	Kommuner	Provincia	Gemeente	Country	Kommun	Ilçe
AdminUnitName-Level4	Fourth level	Arrondisse-ment	Obec	Land- / Stadt-Kreis	----	Término Municipal, Ciudad Autónoma (+ Condominio	----	Metropolitan District, County, Unitary Authority	----	Bucak
AdminUnitName-Level5	Fifth level	Gemeente	----	Verwaltungs-gemeinschaft	----	----	----	District, Council	----	Belediye / Köy
AdminUnitName-Level6	Sixth level	---	----	Stadt / Gemeinde	----	----	----	----	----	Mahalle
AddressAreaName										
AddressAreaName 1	Part of municipality	---	Cast obce	Ortsteil	Supplerende bynavn	Entidad de Población	Woonplaats-naam	Town	Kommundel	----
AddressAreaName 2		---	----	----	----	----	----	Locality	By-adressområde	----
AddressAreaName 3		---	----	----	----	----	----	----	Gårds-adressområde	----
ThoroughfareName										
ThoroughfareName	Street or Waterway Name	Straat-Naam	Ulice	Strasse	Vejnavn	Vía	Straat (naam openbare ruimte)	Street	Gatu-adressområde	CSBM

Table B shows the Locator and PostalDescriptor component.

The Locator can take many forms. Generally we can distinguish between the part describing the entrance of the house in the street and identifying the entrance door of the dwelling unit, however, in some Member States the dwelling unit can't be identified, only the entrance of the house is defined.
An address can be decomposed into up to 6 parts as shown for Spain (ES), from the number of the building (Número de portal) to the door number of the dwelling unit (Puerta).

In some cases the entrances of the houses are not numbered along the streets, but with a number in the village or a kilometre point along the road.
The systematic of the addresses is the result of a very long historical process and cannot be changed. Therefore the TWG has developed a specification using a multi representation of the attributes, identifying the parts using attribute types.

The Postal Descriptor is used to record the postcode information. In some cases the post name has to be distinguished from the postcode.

Table B – Synopsis of Locator Designator types and Postal descriptor used in addressing

Component	**Meaning**	**Flanders**	**CZ**	**DE**	**DK**	**ES**	**NL**	**UK**	**SE**	**TR**
Locator [1…*]										
Locator Designator-Type 1:	Address identifier (general)	Huis-nummer	---	Haus-nummer	Hus-nummer	Portal o Número de Policía	----	PAON	Gatu-adressplats	---
Locator Designator-Type 2:	Address number only	---	Cislo orientacni	Haus-nummer	----	Número de portal	huisnummer	----	----	Binalara numara
Locator Designator-Type 3:	Address Extension	---	Pismeno cisla orientacniho	Zusatz	----	Extesión de portal	huisletter	----	----	? Numara
Locator Designator-Type 4:	2nd Extension	---	---	---	----	----	huisnummer-toevoeging	----	uppgång	----
Locator Designator-Type 5:	Buildings number	---	Cislo domovni	---	----	----	----	----	----	Number
Locator Designator - Type 12:	Building number prefix	---	Typ cisla domovniho	---	----	----	----	----	----	----
Locator Designator-Type 6:	Entrance door identifier	---	---	---	----	Entrada	----	----	----	---
Locator Designator-Type 7:	Staircase Identifier	---	---	---	----	Escalera	----	----	----	---
Locator Designator-Type 8:	Floor identfier	---	---	---	Etage	Planta	----	----	----	---
Locator Designator-Type 9:	Unit /Dwelling /Apartment / door identifier	Subadres (bus- of appartementsnummer)	---	---	Dør	Puerta	----	SAON	Lägenhet	Daire numara
Locator Designator-Type 20:	Kilometre Point	---	---	---	----	PK (Punto Kilométrico)	----	----	----	---
Locator Designator - Type 10:	Postal delivery ident.	---	Postovni prihradka	---	----	----	----	----	----	----

Locator Name - Type 1:	Site name	---	---	---	----	----	----	----	----	---
Locator Name - Type 2:	Building name	---	---	Gebäude	Gårdnavn (bygningsnavn)	Nombre del edificio	----	----	----	---
Locator Name - Type 3:	Room name	---	---	Raum	----	----	----	----	----	---

Annex E
(informative)
Address Assignment Examples

E.1 Scope

In compiling this data specification, the working group were concerned that it should be as simple as possible for member states to be able to "map" their data into the INSPIRE specification. In this Annex we provide examples of real world addressing scenarios and how they might be represented in the specification. It is hoped that these examples will act as a guide to member states as to the best approach to representing their data.

This document was compiled as the result of a survey of selected address assignments in Member States[23] to demonstrate the different but representative approaches in these countries.

E.2 Introduction

All member states use addresses, but almost all addresses have a different structure. Knowing this, the TWG Addresses engaged representatives from all areas of Europe with a total of 10 countries represented.

To get concrete information about the structure of the addresses which are common in the different member states a survey was performed. A set of examples was created which cover different situations in address assignment. The survey has contributions from all TWG members.

The following situations were considered:

1. A street with houses
2. Multiple apartments in a building,
3. Shops in a shopping centre,
4. Buildings in an industrial area and
5. Houses in a rural area.

[23] With the addition of Turkey

The overall concept of addresses, a hierarchal description of a path from the nation, the subdivision of the nation, the municipality and the streets to the houses and respective dwellings is represented in the different address components.

To describe all administrative units of a member state, up to six levels are necessary. With some exceptions, the street, called thoroughfare to acknowledge the existence of waterways and footpaths as access routes in addition to streets is the centre of addresses.

The description along the street varies in composition and complexity. Two main parts are identifiable: the end of the path at the door of the house and the end of the path at the door of the dwelling. Within each group the presentation of the description differs between the countries. E.g. some MS distinguish between house number [17] and house number extension [A], some not [17A]. Some use the information concerning the stairs used to access an apartment but not all. Some distinguish between floor and apartment door, other do not.

As described in note 3 of the address locator definition (see section 5), the locator could be composed of one or more designators. To avoid a difficult and in some cases ambiguous scanning of one string, the designator should be provided at the finest level of detail possible. To differentiate the designator and to describe the meaning, a designator type is associated to each designator.

In these examples a maximum of four designators are used to describe the national situation. A correct interpretation requires the use of the column “Type”, which contains the code of the designator type. The code list of the designator type is called “LocatorDesignatorTypeValue” and defined as follows:

Table C – Designator type

Code
addressIdentifierGeneral (full text)
addressNumber (only)
addresNumberExtension
addressNumber2ndExtension
buildingIdentifier
buildingIdentifierPrefix
entranceDoorIdentifier
staircaseIdentifier
floorIdentifier
unitIdentifier
postalDeliveryIdentifier
kilometerPoint
cornerAddress1stIdentifier
cornerAddress2ndIdentifier

E.3 Examples

E.3.1 A Street with Houses

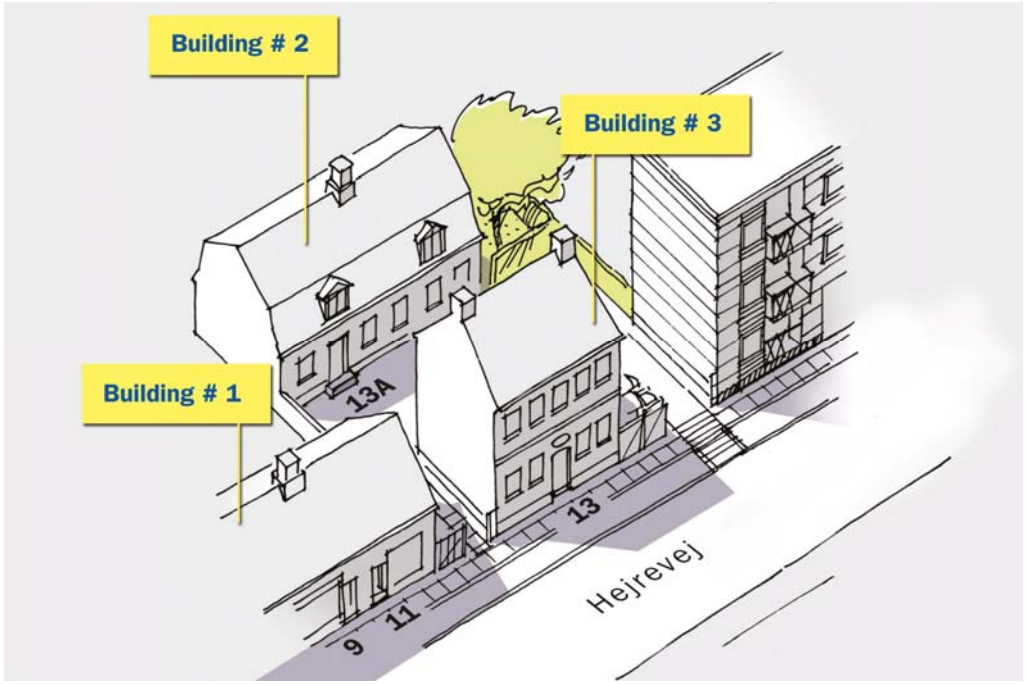


Figure A – Standard Situation in a street

This might be described as the “normal” situation in urbanised areas where the houses are numbered along a road side.

Note: In the begian examples addresses from Flanders have been selected. In other parts of Belgium three language representations are necessary. Whilst, the specification will support the representation of three languages, it is cannot be readily accommodated in this Annex.

E.3.1.1 Assignment in Belgium (Flanders)

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder	Land (Country)		01000 (Belgie			
2	AdminUnit2ndOrder	Gewest (region)		02000 (Vlaanderen)			
3	AdminUnit3rdOrder	Provincie (province)		10000 (Antwerpen)			
4	AdminUnit4thOrder	Arrondissement (district)		11000 (Antwerpen)			
5	AdminUnit5thOrder	Gemeente (municipality)		11002 (Antwerpen)			
6	AdminUnit6thOrder						
AddressAreaName							
	Area 1	-------					
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	Straatnaam		123456 (streetnamecode) Alt (heyrevey, NIScode, 01/01/1830)			
PostalDescriptor							
	PostName						
	Postcode	Postcode		2140	2140	2140	2140
Locator (hierarchal, ordered)							
1	Designator 1	huisnummer	1	9	11	13A	13

Remarks:
<Straatnaam> is unique within a municipality and is identified by a streetnamecode (straatnaamid). It is the straatnaamid that makes the straatnaam unique within the municipality and within Flanders. Apart from the streetnamecode, <straatnaam> can be identified by an alternative identifier which consists of straatnaam(=name of the street)+NIScode(municipalitycode)+startdate.

NIScode is the code given to a municipality by the Directorate-general Statistics Belgium. NIScode consists of five figures, the first figure identifies the province, the second figure identifies the arrondissement and the last three figures identify the municipality within the arrondissement.

If the same street name appears several times in a municipality, every occurrence receives its own streetnamecode and a sequential number is added onto the name following an underscore (_).

The example above represents a general case. Not all entrances in Belgium receive a seperate housenumber. It is possible that more entrances have the same Locator. The municipal adminstration decides if an entrance gets its own housenumber.

E.3.1.2 Assignment in the Czech Republic

In the Czech Republic are three possibilities depending on the existing of the streets and / or street numbers.

(I) Municipality or area with streets and street numbers

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder	Stat		Ceska republika			
2	AdminUnit2ndOrder						
3	AdminUnit3rdOrder	Okres		Praha			
4	AdminUnit4thOrder						
5	AdminUnit5thOrder						
6	AdminUnit6thOrder	Obec		Praha			
AddressAreaName							
	Area 1	Cast obce		Chodov			
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	Ulice		Hejrevej			
PostalDescriptor							
	PostName	Posta		Praha 41			
	Postcode	PSC		149 00			
Locator (hierarchal, ordered)							
1	Designator 1	Cislo domovni	5	2511		3156	256
2	Designator 2	Cislo orientacni	2	9	11	13	13
3	Designator 3	Pismeno cisla orientacniho	3			a	
4	Designator 4	Cislo vchodu		1	2	1	1

(II) Municipality or area with streets but without street numbers

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder	Stat		Ceska republika			
2	AdminUnit2ndOrder						
3	AdminUnit3rdOrder	Okres		Liberec			
4	AdminUnit4thOrder						
5	AdminUnit5thOrder						
6	AdminUnit6thOrder	Obec		Cesky Dub			
AddressAreaName							
	Area 1	Cast obce		Cesky Dub III			
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	Ulice		Hejrevej			
PostalDescriptor							
	PostName	Posta		Cesky Dub			
	Postcode	PSC		463 43			
Locator (hierarchal, ordered)							
1	Designator 1	Cislo domovni	5	2511		3156	256
2	Designator 2	Cislo vchodu		1	2	1	1

(III) Municipality or area without streets and without street numbers

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder	Stat		Ceska republika			
2	AdminUnit2ndOrder						
3	AdminUnit3rdOrder	Okres		Svitavy			
4	AdminUnit4thOrder						
5	AdminUnit5thOrder						
6	AdminUnit6thOrder	Obec		Morasice			
AddressAreaName							
	Area 1	Cast obce		Rikovice			
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	Ulice		---			
PostalDescriptor							
	PostName	Posta		Litomysl			
	Postcode	PSC		570 01			
Locator (hierarchal, ordered)							
1	Designator 1	Cislo domovni	5	2511		3156	256
2	Designator 2	Cislo vchodu		1	2	1	1

E.3.1.3 Assignment in Denmark

In Denmark a road name (here “Hejrevej”) must be unique within the post code area. Due to the latest merging of municipalities in 2007, a road name can occur several times within the borders of a municipality. As a consequence it has been stated by law that the system of postcodes is a part of the Danish infrastructure, and that the four digit post code is an integrated component of the official address system.

The post code system is managed by the Post Denmark according to law, but with a certain public control – e.g. it is not possible for the Post Denmark to move borders of a post code or to merge together post code areas, if the result is that road names and addresses within the new area are not any longer unambiguous.

All road names are assigned by the municipality according to the “statutory order on road names and addresses”. The name of a road can be composed by up to 40 characters. For each road name a four digit road code (0001-9899) is assigned, which is unambiguous within the municipality. Each municipality has a four digit municipality code.

Address numbers are according to tradition and to the statutory order composed by the numbers 1-999, optionally with an addition of a capital letter A-Z. Letters are only assigned when it is necessary to avoid re-numbering the following address numbers (e.g. in a situation of subdivision of land or of a building. Address numbers with and without letters are on equal level so “14” is equal to “14A”. The sort order is “14”, “14A”, “14B” etc.
According to the Danish statutory order on road names and addresses, a so called “access address” identifies the entrance to a building or to a way of access to a plot of land or other construction. An access address is composed by a post code, a street name and an address number.

Access addresses are decided by the municipality who also decides which named road (and road code) the address is connected to, and records which post code the address is situated in.

So for access addresses in Denmark the “addressable object” is in general not the property, not the building, but the entrance door or similar way of access. As it is shown in this example a building with several external main entrance doors has one access address (= one address number) assigned to entrance each door.

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder	Land		Denmark			
2	AdminUnit2ndOrder	----					
3	AdminUnit3rdOrder	Kommune		Sommerby			
4	AdminUnit4thOrder	----					
5	AdminUnit5thOrder	----					
6	AdminUnit6thOrder	----					
AddressAreaName							
	Area 1	Supplerende bynavn					
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	Vejnavn		Herjevej			
PostalDescriptor							
	PostName	Postdistrikt					
	Postcode	Postnummer		5720			
Locator (hierarchal, ordered)							
1	Designator 1	Husnummer	1	9	11	13A	13

E.3.1.4 Assignment in Germany

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder	Staat		Deutschland			
2	AdminUnit2ndOrder	Land		Hessen			
3	AdminUnit3rdOrder	Regierungsbezirk		Darmstadt			
4	AdminUnit4thOrder	Kreis		Main-Taunus			
5	AdminUnit5thOrder	Stadt /Gemeinde		Kelkheim			
6	AdminUnit6thOrder	-----					
AddressAreaName							
	Area 1	Ortsteil		Münster			
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	Strasse		Wiesenstrasse			
PostalDescriptor							
	PostName	-----					
	Postcode	Postleitzahl		63477			
Locator (hierarchal, ordered) Level 3: unit level: nummeraanduiding van verblijfsobject, standplaats, ligplaats							
1	Designator 1	Hausnummer	2	9	11	13	13
2	Designator 2	Hausnummernzusatz	3				A

E.3.1.5 Assignment in the Netherlands

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder	Land		The Netherland			
2	AdminUnit2ndOrder	Provincie					
3	AdminUnit3rdOrder	----					
4	AdminUnit4thOrder	----					
5	AdminUnit5thOrder	Gemeente					
6	AdminUnit6thOrder	----					
AddressAreaName							
	Area 1	Woonplaatsnaam		Amsterdam			
	Area 2						
	Area 3						
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	Naam Openbare ruimte		Hejrevej			
PostalDescriptor							
	PostName						
	Postcode						
Locator (hierarchal, ordered) Level 3: unit level: nummeraanduiding van verblijfsobject, standplaats, ligplaats							
1	Designator 1	Huisnummer	2	9	11	13	13
2	Designator 2	Huisletter	3			A	

Remarks:

Level 3: unit level: nummeraanduiding van verblijfsobject, standplaats, ligplaats

Each dwelling gets its own number. The rules for what number it should be (e.g. 1-2-3 or 2-4-6 or 2a-2b-2c or 2 I – 2 II – 2 III) can differ. The municipality decides. It is not dependent of the building in which the dwelling is situated or the entrance of a building via which the dwellings can be reached. It is the individual dwelling that gets a number.

E.3.1.6 Assignment in Spain

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder	Reino		España			
2	AdminUnit2ndOrder	Comunidad Autónoma		01 Andalucía			
3	AdminUnit3rdOrder	Provincia		41 Sevilla			
4	AdminUnit4thOrder	Término Municipal, Ciudad Autónoma (+Condominio)		039 Écija			
5	AdminUnit5thOrder	----					
6	AdminUnit6thOrder	----					
AddressAreaName							
	Area 1	Entidad de población (Population Entity)		41039000299 Diseminado Cortijo del Marqués			
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	Nombre de Via		Calle Hejrevej 410390000001(streetnamecode)			
PostalDescriptor							
	PostName						
	Postcode	Código postal		41037	41037	41037	41037
Locator (hierarchal, ordered)							
1	Designator 1	Portal or Número de Policía	1	9	9	11	13

Remarks:
1. - AdminUnit1stOrder: Reino (Country) is only mandatory for international applications (post delivery) but not inside national register.

2. – AdminUnit4thOrder: Término Municipal (Municipality); although its code consists of three numbers in most applications it is identified by the compound code of province code and municipality code (e.g. 41039).

3. - AddressAreaName 1: Entidad de población (Population Entity); Inhabited area located inside a municipality with a specific denomination which allows identifying it unambiguously. Depending on its characteristics it can be a "Singular Population Entity" or a "Collective Population Entity". In any case, both inhabited area types can consist of: population core, scattered population or a combination of both.

Singular Population Entity
Inhabited area located inside the municipality clearly distinguishable from the rest of the territory, with specific denomination. Urbanizations and residential areas are also included in this class.
If there is not more than one habitable area clearly differentiated within the municipality, the whole municipality is considered as a unique singular population entity.
Theses entities can consist of:

- *Population Core* (area where most people live): set of at least ten buildings (or with a population of 50 people) distributed among streets, squares and other urban roads.
- *Scattered populatio*n: buildings or dwellings of a singular population entity distributed in the territory that may not be included in the population core concept

Collective Population Entity
Group of singular population entities which has got its own personality and historic origin

A Population Entity is identified by a name and a code consists of 11 figures: the five first figures identify province and municipality, the two following numbers identify if it is a “Collective Entity”, and the last four figures specify that it is a “Singular Entity”.

4. - Nombre de vía (street name) must be unique within a municipality but sometimes it is possible that there is more than one street with the same name inside of the same municipality. To distinguish all streets, every one has got a unique numeric code consist of 12 figures (province code_municipality code *10.000.000 + number).

5. - Código postal (post code): This code is created by Postal Office so that every postal address is assigned to only one post code. Its two first figures are the province code. In small municipalities it is usual there is only one post code for all municipality, but the big municipalities are consist of more than one.

6. - Portal or número de policía: The numbering of buildings is ascending along the street, assigning even numbers to right side of the street and odd numbers to the left side. In order to identify every “portal” (house number), everyone has got a code consist of 12 figures equivalent to the numeric code of the street names. In the north of Spain is quite common that buildings are also identified by a name.

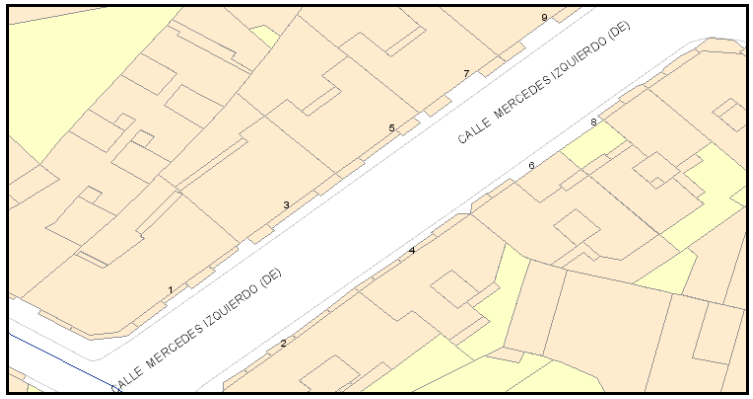


Figure B – Standard Situation in a street (ES)

If a building is demolished and on that place more than one building is built, the new house numbers assigned are usually a combination between the old house number and letters, but sometimes it can be new numbers without relationship with the previous one.

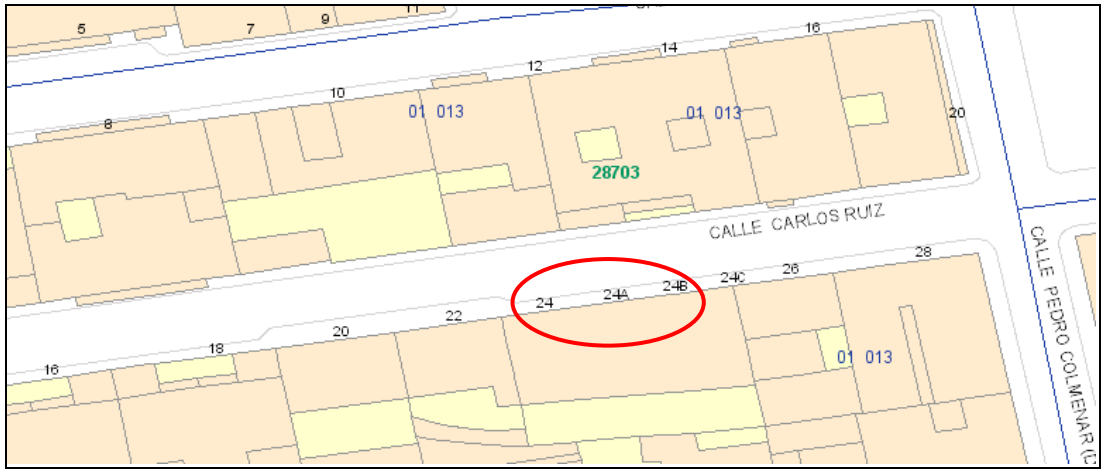


Figure C – Inserting a number (ES)

If there are buildings inside of an urban area limited by public streets whose entrances are not exactly on those streets (similar to first example), they receive consecutive numbers following the “chain” of the numbers assigned to the buildings located on the public street (Figure D) or a combination of numbers and letters (Figure E).

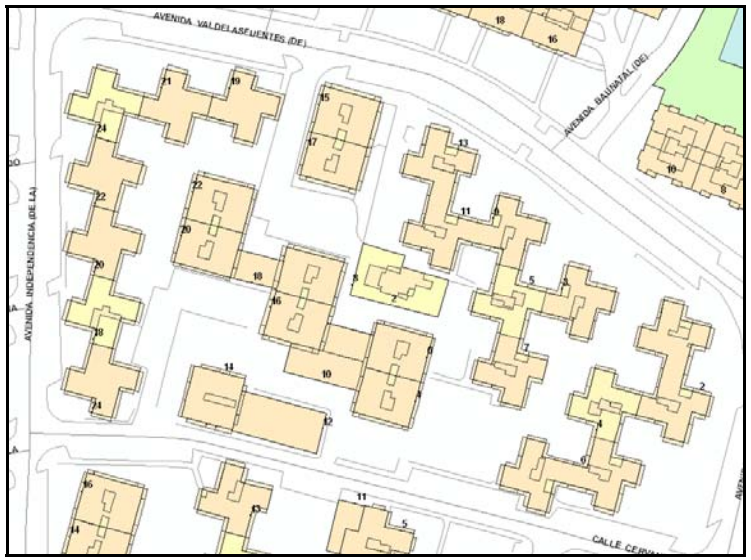


Figure D – Buildings inside of an urban area

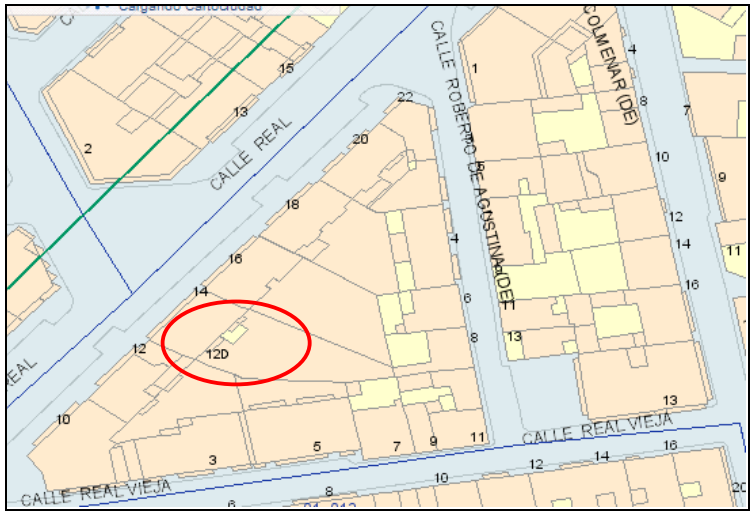


Figure E – Buildings inside of an urban area

E.3.1.7 Assignment in Sweden

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder	Land					
2	AdminUnit2ndOrder						
3	AdminUnit3rdOrder	Kommun (mandatory)		Stockholm			
4	AdminUnit4thOrder						
5	AdminUnit5thOrder						
6	AdminUnit6thOrder						
AddressAreaName							
	Area 1	Kommundel [1] (optional)		Farsta			
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	**Urban areas:** Gatuadressområdesnamn [2] **Rural areas:** [3]		Brunskogsbacken			
PostalDescriptor							
	PostName						
	Postcode	Postnummer [4]		12345			
Locator (hierarchal, ordered)							
1	Designator 1	**Urban areas:** Gatuadressplatsnamn [5]	1	9 11	13A (as in the example) or 13B *	13 (as in the example) or 13A *	
2	Designator 2	Lägenhetsnummer [6]	9	1001	1001, 1101		
3	Designator 3	[7]	8				

Remarks:
* It is preferable to have 13A and 13B instead of one “clean” number and one number with an added character. If the driveway to building 2 (the backyard building) had been situated between buildings 1 and 3, then the best solution would have been to give building 2 nr 13A and building 3 nr 13B.

In Sweden, about 0.4% of registered buildings for which addresses are compulsory are not connected to any address.

[1]) Kommundel = Part of municipality (optional)
[2]) Gatuadressområdesnamn = Street addressarea name (direct translation)
[3]) In a small number of municipalities the urban areas model is used also in the countryside.
[4]) Postnummer not in the standard, but added to every valid address when entered into the national address register. To every “postnummer” there is also a town name. One town name can be connected to one or many “postnummer” and can be the name of the town where the address actually can be found or the name of the town from which delivery is organized.
[5]) Gatuadressplatsnamn = Street addressplace name (direct translation).
Some municipalities use distance based numbering outside more densely built areas.
[6]) Lägenhetsnummer not in the address standard, but official dwelling numbers will be on this level. The first two digits describe which floor in the building, 10 means entrance level, 11 means first floor up
[7]) not neither in the address standard, nor in an official register of addresses but can be added to postal addresses to aid correct delivery, e.g. floor number.

E.3.1.8 Assignment in Turkey

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminLev1	Ülke					
2	AdminLev2	Il					
3	AdminLev3	Ilçe					
4	AdminLev4	Bucak					
5	AdminLev5	Belediye / Köy					
6	AdminLev6	Mahalle					
AddressAreaName							
	Area 1	--------					
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	CSBM		Atatürk Bulv.			
PostalDescriptor							
	PostName	---------					
	Postcode	Postakodu		06100			
Locator (optional hierarchal)							
1	Designator 1	Binalara numara	2	9	11	13	13
2	Designator 2	? Numara	3				A

E.3.1.9 Assignment in the United Kingdom

Component		Name in your country	Type	Building 1	Building 1	Building 2	Building 3
AdminUnitsName (hierarchal)							
1	AdminUnit1stOrder						
2	AdminUnit2ndOrder						
3	AdminUnit3rdOrder						
4	AdminUnit4thOrder						
5	AdminUnit5thOrder						
6	AdminUnit6thOrder						
AddressAreaName							
	Area 1	Admin Area		London Borough of Wandsworth			
	Area 2	Town		London			
	Area 3	Locality		Fairfield			
ThoroughfareName							
	ThoroughfareNameValue [Streetname]	Street		High Street			
PostalDescriptor							
	PostName						
	PostCode			SW18 1ED			
Locator (hierarchal, ordered)							
1	Designator 1	PAON	1	9	11	13A	13

Remarks:
PAON = Primary Addressable Object Name = can be a combination of Building Name and / or Building (street) Number, there is a separate attribute of the Addressable Object for organisation name but this may be used as the PAON in the absence of a building name or number.

SAON = Secondary Addressable Object Name = Unit (for a business) or Sub-Building Name (e.g. Flat 1)

Locality = neighbourhood, suburb, district within town, village, estate, settlement or parish, only used if there are more than one instance of a particular street within a “town” or where it is in common use locally

Town = A city, town, village, settlement

Neither town or locality boundaries are defined in the UK nor is there a definitive list of their names

Administrative Area = county, London Borough, District council, unitary authority, island or island Group and is not always held or used as part of an address

Postcode is held as an additional attribute of the Addressable Object and is allocated by Royal Mail for their own operational needs

Street names and building (street) numbers are allocated by the lowest level of local authority which has responsibility for the area where the property is located. In theory every property should display its given number but in many cases this is absent and the occupier may display their own chosen building name, which may be changed at anytime.

E.3.2 Assigning Addresses to Apartments

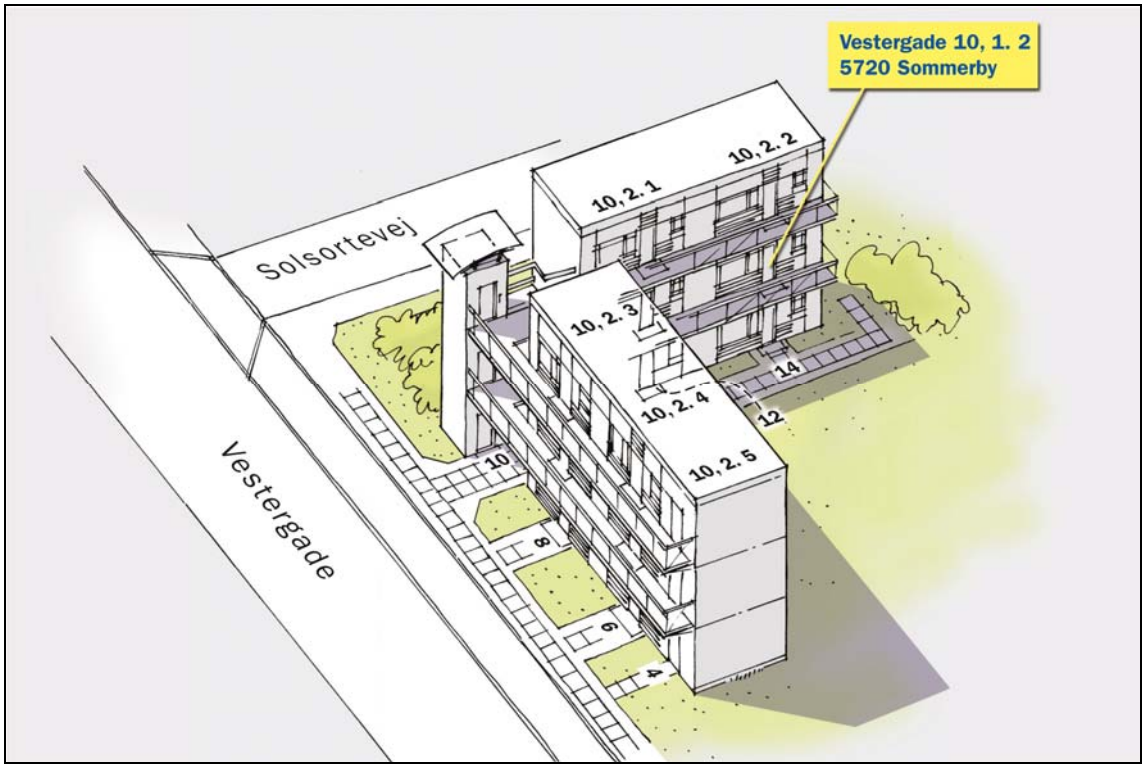


Figure F – Apartment house situation

This apartment house is situated on the corner, all 6 entrances are reached via Vestergade, and the entrances to the apartments looking to the Solsortvej side are on the backside. Each entrance serves for three apartments, one for each floor.

Please describe Entrances 4, 6 and 14 only

E.3.2.1 Assignment in Belgium (Flanders)

Recommended since 2006 (only for new addresses):

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]			123457 (Vestergade)						123457 (Vestergade)		
PostalDescriptor												
	PostName											
	Postcode			2140	2140	2140	2140	2140	2140	2140	2140	2140
Locator (hierarchal, ordered)												
1	Designator 1	Huisnummer	1	4	4	4	6	6	6	14	14	14
2	Designator 2	Subadres (appartementnummer)	9	0.1	1.1	2.1	0.1	1.1	2.1	0.1	1.1	2.1

Remarks:
- apartment number (appartementnummer) consists of two components: floor and unitnumber
e.g. apartmentnumber 0.1: ground floor, unit 1

Recommended before 2006:

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]			123457 (Vestergade)						123457 (Vestergade)		
PostalDescriptor												
	PostName											
	Postcode			2140	2140	2140	2140	2140	2140	2140	2140	2140
Locator (hierarchal, ordered)												
1	Designator 1	Huisnummer	1	4	4	4	6	6	6	14	14	14
2	Designator 2	Subadres (busnummer)	9	1	2	3	1	2	3	1	2	3

Remarks:
letterboxnumbers (busnummers) identify dwellings

E.3.2.2 Assignment in the Czech Republic

General:

- There is no flat identification in the Czech Republic address register.
- We assume that the building has one house number - 2847

(I) Municipality or areas with streets and street numbers

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Stat		Ceska republika								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder	Okres		Praha								
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder	Obec		Praha								
AddressAreaName												
	Area 1	Cast obce		Chodov								
	Area 2											
	Area 3											
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Ulice		Vestergade						Solsortevej		
PostalDescriptor												
	PostName	Posta		Praha 41								
	Postcode	PSC		149 00								
Locator (hierarchal, ordered)												
1	Designator 1	Cislo domovni	5	2847								
2	Designator 2	Cislo orientacni	2	4			6			14		
3	Designator 3	Cislo vchodu		1			2			3		

(II) Municipality or areas with streets but without street numbers

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
	AdminUnit1stOrder	Stat		Ceska republika								
	AdminUnit2ndOrder											
	AdminUnit3rdOrder	Okres		Liberec								
	AdminUnit4thOrder											
	AdminUnit5thOrder											
	AdminUnit6thOrder	Obec		Cesky Dub								
AddressAreaName												
	Area 1	Cast obce		Cesky Dub III								
	Area 2											
	Area 3											
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Ulice		Vestergade						Solsortevej		
PostalDescriptor												
	PostName	Posta		Cesky Dub								
	Postcode	PSC		463 43								
Locator (hierarchal, ordered)												
1	Designator 1	Cislo domovni	5	2847								
2	Designator 2			entrances 4,6,8,10 undistinguishable (in postal addresses)						entrances 12, 14 undistinguishable (in postal addresses)		
3	Designator 3	Cislo vchodu		1			2			3		

(III) Municipality or areas without streets (and without street numbers)

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Stat		Ceska republika								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder	Okres		Svitavy								
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder	Obec		Morasice								
AddressAreaName												
	Area 1	Cast obce		Rikovice								
	Area 2											
	Area 3											
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Ulice		---						---		
PostalDescriptor												
	PostName	Posta		Litomysl								
	Postcode	PSC		570 01								
Locator (hierarchal, ordered)												
1	Designator 1	Cislo domovni	5	2847								
2	Designator 2			entrances 4,6,8,10,12,14 undistinguishable (in postal addresses)								
3	Designator 3	Cislo vchodu		1			2			3		

E.3.2.3 Assignment in Denmark

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Land		Denmark								
2	AdminUnit2ndOrder	----										
3	AdminUnit3rdOrder	Kommune		Sommerby								
4	AdminUnit4thOrder	----										
5	AdminUnit5thOrder	----										
6	AdminUnit6thOrder	----										
AddressAreaName												
	Area 1	Supplerende bynavn										
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Vejnavn		Vestergade								
PostalDescriptor												
	PostName	Postdistrikt		Sommerby								
	Postcode	Postnummer		5720								
Locator (hierarchal, ordered)												
1	Designator 1	Husnummer	1	10			10			10		
2	Designator 2	Etage	8	1	2	3	1	2	3	1	2	3
2	Designator 3	Dør	9	5	5	5	4	4	4	2	2	2

According to the Danish statutory order on road names and addresses, a so called “unit address” identifies the individual units (dwellings or apartments etc.) in a building. A unit address is composed by an “access address” (see pervious example) plus a floor designator and a door designator.
Unit addresses are assigned by the municipality who decides which floor- and door-designator should identify the address, and to which “access address” it connected.

For floor designators the standard values are that the ground floor has the designation “st” (danish: “Stuen”), 1st floor is “1”, 2nd is “2” etc. Basement is “kl” (Danish: “Kælder”).

Door designators could be composed in several ways. In this example it is assumed that there are more than three doors on each floor in the staircase, numbered “1”, “2”, “3“ etc. If there are up to three doors, the standard designation is “tv” (Danish: “til venstre” (left)), “th” (Danish: “til højre” (right)) and “mf” (Danish: “midt for” (middle)). Also other systematic sets of four character designators could be used, like e.g. B01, B02, B03 etc.

E.3.2.4 Assignment in Germany

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Staat		Deutschland								
2	AdminUnit2ndOrder	Land		Hessen								
3	AdminUnit3rdOrder	Regierungsbezirk		Darmstadt								
4	AdminUnit4thOrder	Kreis		Main-Taunus								
5	AdminUnit5thOrder	Stadt /Gemeinde		Kelkheim								
6	AdminUnit6thOrder	-----										
AddressAreaName												
	Area 1	Ortsteil		Hornau								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Strasse		Vestergade						Solsortevej		
PostalDescriptor												
	PostName											
	Postcode	Postleitzahl		67 433								
Locator (hierarchal, ordered)												
1	Designator 1	Hausnummer	2	4			6			14		
2	Designator 2	Hausnummernzusatz	3									

E.3.2.5 Assignment in the Netherlands

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder											
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1	Woonplaatsnaam		Amsterdam								
ThoroughfareName												
	ThouroughFareName [Streetname]	Naam openbare ruimte		Vestergade								
PostalDescriptor												
	PostName											
	Postcode											
Locator (hierarchal, ordered) Level 3: unit level: nummeraanduiding van verblijfsobject, standplaats, ligplaats												
1	Designator 1	Huisnummer	2	2	4	6	8	8	8	10	10	10
2	Designator 2	Huisletter	3				A	b	c			
3	Designator 3	huisnummertoevoeging	4							I	II	III

Remarks:

Each dwelling gets its own number. The rules for what number it should be (e.g. 1-2-3 or 2-4-6 or 2a-2b-2c or 2 I – 2 II – 2 III) can differ. The municipality decides. It is not dependent of the building in which the dwelling is situated or the entrance of a building via which the dwellings can be reached. It is the individual dwelling that gets a number.

E.3.2.6 Assignment in Spain

Component	Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
			Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)											
AdminUnit1stOrder			As in the previous example								
To											
AdminUnit6thOrder											
AddressAreaName											
Area 1			As in the previous example								
ThoroughfareName											
ThoroughfareNameValue [Streetname]	Nombre de Vía		Calle Vestergade 410390000001(streetnamecode)						Calle Vestergade 410390000001(streetnamecode)		
PostalDescriptor				Other							
PostName											
Postcode	Código postal		41037	41037	41037	41037	41037	41037	41037	41037	41037
Locator (hierarchal, ordered)											
Designator 1	Portal or Número de Policía	1	4	4	4	6	6	6	14	14	14
Designator 2	Escalera	7	Right /Left	Right /Left	Right /Left	Right /Left	Right /Left	Right /Left	Right /Left	Right /Left	Right /Left
Designator 3	Planta	8	1	2	3	1	2	3	1	2	3
Designator 4	Puerta	9	1...	1...	1...	1...	1...	1...	1...	1...	1...

Remarks:
1.- Streetname in Entrance 14: If there are buildings whose entrances are not just on the street (as e.g. entrance 14) but their house numbers are consecutive with the numbering assigned to the other buildings (those whose entrances are on the street) then it means that entrance 14 is also link to the same street. If the entrances 12 and 14 were just on the Solsortevej street then their numbers would belong to the numbering assigned to the other street.

2. - Escalera (stairs): This Spanish addresses component is not part of the general case (consist of entrance/floor/flat) but it is important to take it into account because it appears in a big percentage of addresses.

3. - Puerta (flat): This number depends on how many flats are in the same floor.

E.3.2.7 Assignment in Sweden

The example is a bit confusing as it shows a situation when number 4 seems to be a non-residential unit, e.g. a bicycle garage, while numbers 6 and 12 illustrate a situation where dwellings with direct access from the street have their own address numbers, while those dwellings on the upper floors have access through a common stairwell.

Assuming that you use entrances 4, 6 and 12 to access dwellings on the upper floors, the addresses (including dwelling-numbers) would be

Vestergade 4 1001, Vestergade 4 1101, Vestergade 4, 1201
Vestergade 6 1001 and so forth
Vestergade 12 1001 asf

(The illustrated example would also give Vestergade 10 1001, Vestergade 10 1101, 1102, 1103, 1104, 1105, Vestergade 10 1201, 1202 asf.)

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	GatuadressområdesNamn		Vestergade						Vestergade		
PostalDescriptor												
	PostName											
	Postcode	Postnummer		*								
Locator (hierarchal, ordered)												
1	Designator 1	AdressplatsNamn	1	4	4	4	6	6	6	14	14	14
2	Designator 2	Lägenhetsnummer [1])	9	1001	1101	1201	1001	1101	1201	1001	1101	1201

Remarks:

* The postcode can be different for different address numbers (FGE1) but not on dwelling level.

[1]) Lägenhetsnummer (dwelling number where the first two digits indicate floor where ground floor = 10 and the two following digits indicate door number on the floor clockwise.)

E.3.2.8 Assignment in Turkey

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Ülke		As in the previous example								
2	AdminUnit2ndOrder	Il										
3	AdminUnit3rdOrder	Ilçe										
4	AdminUnit4thOrder	Bucak										
5	AdminUnit5thOrder	Belediye / Köy										
6	AdminUnit6thOrder	Mahalle										
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	CSBM		Atatürk Bulv.								
PostalDescriptor												
	PostName											
	Postcode	Postakodu		06100								
Locator (optional hierarchal)												
	Designator 1	Binalara numara	2	4								
	Designator 2	Daire numara	9	1	2	3	4	5	6	7	8	…

E.3.2.9 Assignment in the United Kingdom

Component		Name	Type	Entrance# 4			Entrance# 6			Entrance# 14		
				Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3	Floor 1	Floor 2	Floor 3
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1	Administrative Area		As in the previous example								
	Area 2	Town										
	Area 3	Locality										
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Street		High Street								
PostalDescriptor												
	PostName											
	Postcode	Postcode		SW18 1ED								
Locator (hierarchal, ordered)												
1	Designator 1	PAON	1	4-14								
2	Designator 2	SAON	9	Flat 1	Flat 2	Flat 3	Flat 4	Flat 5	Flat 6	Flat 7	Flat 8	Flat 9
or												
1	Designator 1	PAON	1	4			6			14		
2	Designator 2	SAON	9	Ground floor	First floor	Second floor	Ground floor	First floor	Second floor	Ground floor	First floor	Second floor
or												
1	Designator 1	PAON	1	4A	4B	4C	6A	6B	6C	14A	14B	14C
2	Designator 2	SAON	9									

Remarks:

All three options are valid and used interchangeably within authority areas.
In all cases there will be a “parent” record within the NLPG (but not PAF, ADDRESS-POINT, OS MasterMap Address Layer or Address Layer 2) to hold details of the building as a separate entity for planning, cadastral or taxation purposes. Each of the “child” records will be explicitly related to the parent record

E.3.3 Assigning Addresses to Shops in Shopping Centers

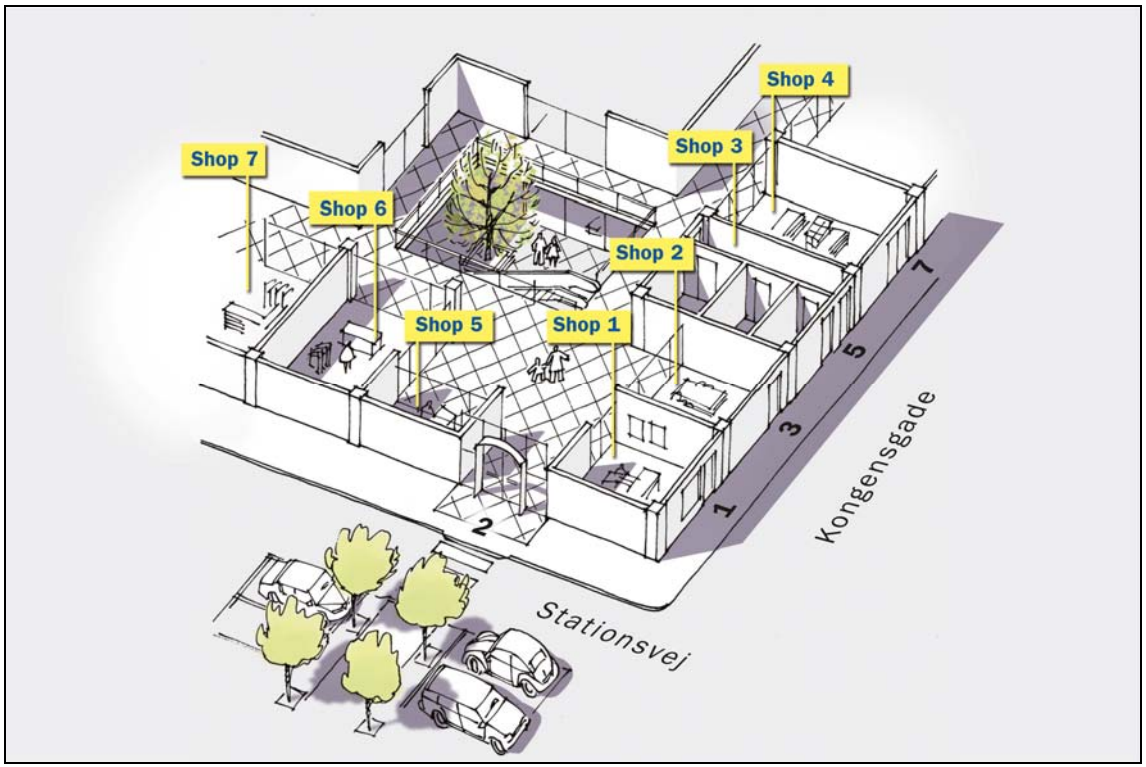


Figure G – Shopping centre situation

E.3.3.1 Assignment in Belgium (Flanders)

Address assignement in Belgium (Flanders), is illusterated by 2 separate tables:

- a house number as a whole
- each shop has a separate number.

Shopping centre has one house number as a whole:

Component		Name	Type	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]			123459 (stationstreet)						123459 (stationstreet)		
PostalDescriptor												
	Postname											
	Postcode				2140	2140	2140	2140	2140	2140	2140	
Locator (hierarchal, ordered)												
1	Designator 1	huisnummer	1		2	2	2	2	2	2	2	
2	Designator 2	busnummer	9		1	2	3	4	5	6	7	

Each shop in the shopping centre has its own house number:

Component		Name	Type	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]			123459 (stationstreet)						123459 (stationstreet)		
PostalDescriptor												
	Postname											
	Postcode				2140	2140	2140	2140	2140	2140	2140	
Locator (hierarchal, ordered)												
1	Designator 1	huisnummer	1		2A	2B	2C	2D	4	6	8	

E.3.3.2 Assignment in the Czech Republic

General: Promises inside the buildings / shopping centers are not distinguished. The shopping centres normally have one house number (e.g. 2847):

(I) Municipality or areas with streets and street numbers

Component		Name	Type	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Stat		Ceska republika								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder	Okres		Praha								
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder	Obec		Praha								
AddressAreaName												
	Area 1	Cast obce		Chodov								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Ulice		Stationstreet								
PostalDescriptor												
	PostName	Posta		Praha 41								
	Postcode	PSC		149 00								
Locator (hierarchal, ordered)												
1	Designator 1	Cislo domovni	5	2847								
2	Designator 2	Cislo orientacni	2	2	2	2	2	2	2	2	2	2
3	Designator 3	Pismeno cisla orientacniho	3		A	B	C	D				

E.3.3.3 Assignment in Denmark

Component		Name	Type	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Land		Denmark								
2	AdminUnit2ndOrder	----										
3	AdminUnit3rdOrder	Kommune		Sommerby								
4	AdminUnit4thOrder	----										
5	AdminUnit5thOrder	----										
6	AdminUnit6thOrder	----										
AddressAreaName												
	Area 1	Supplerende bynavn										
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Vejnavn		Stationstorvet								
PostalDescriptor												
	PostName	Postdistrikt										
	Postcode	Post-nummer		5720								
Locator (hierarchal, ordered)												
1	Designator 1	Husnummer	1	2	2	2	2	2	2	2	2	
2	Designator 2	Etage	8		st	St	st	st	st	st	st	
		Dør	9		B07	B06	B05	B04	B01	B02	B03	

Even though it is in this example assumed that there is only one floor in the shopping mall, the floor designator “st” (= ground floor) is necessary for a correct address.

The “unit addresses” for the shops inside the mall are all using the main entrance “2” as a reference (“access address”), and shop numbers (in this example “B01” etc.) which are assigned from the left to the right.

The secondary entrance doors (for staff or delivery of goods) could as shown have individual address numbers (access addresses) as shown: “2A”, “2B” etc.

E.3.3.4 Assignment in Germany

General: Promises inside the buildings / shopping centers are not distinguished. The shopping centres normally have one house number (e.g. 2):
They may be identified by house number extensions (e.g. A,B,C,…)

Component		Name	Type	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Staat		Deutschland								
2	AdminUnit2ndOrder	Land		Hessen								
3	AdminUnit3rdOrder	Regierungsbezirk		Darmstadt								
4	AdminUnit4thOrder	Kreis		Main-Taunus								
5	AdminUnit5thOrder	Stadt /Gemeinde		Kelkheim								
6	AdminUnit6thOrder	-----										
AddressAreaName												
	Area 1	Ortsteil		Sulzbach								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Strasse		Stationstr.								
PostalDescriptor												
	PostName											
	Postcode	Postleitzahl		65 284								
Locator (hierarchal, ordered)												
1	Designator 1	Hausnummer	2	2	2	2	2	2	2	2	2	
2	Designator 2	Hausnummernzusatz	3		A	B	C	D	E	F	G	

E.3.3.5 Assignment in the Netherlands

Component	Name	Type	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)											
AdminUnit1stOrder											
AdminUnit2ndOrder											
AdminUnit3rdOrder											
AdminUnit4thOrder											
AdminUnit5thOrder											
AdminUnit6thOrder											
AddressAreaName											
Unit1	Woonplaatsnaam		Amsterdam								
Unit2											
Unit3											
ThoroughfareName											
ThouroughFareName [Streetname]	Naam openbare ruimte		Stationstreet								
PostalDescriptor											
PostName											
Postcode											
Locator (hierarchal, ordered) Level 3: unit level: nummeraanduiding van verblijfsobject, standplaats, ligplaats											
Designator 1	Huisnummer	2		1	2	3	4	5	6	7	
Designator 2	Huisletter	3									
Designator 3	huisnummertoevoeging	4									

Remarks:

Each shop (if it meets the Dutch definitions of an addressable object) gets its own number. The rules for what number it should be (e.g. 1-2-3 or 2-4-6 or 2a-2b-2c or 2 I – 2 II – 2 III) can differ. The municipality decides. It is not dependent of the building in which the shop is situated or the entrance of a building via which the shops can be reached. It is the individual shop that gets a number

E.3.3.6 Assignment in Spain

Component	Name	Type	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)											
AdminUnit1stOrder			As in the previous example								
AdminUnit2ndOrder											
AdminUnit3rdOrder											
AdminUnit4thOrder											
AdminUnit5thOrder											
AdminUnit6thOrder											
AddressAreaName											
Area 1			As in the previous example								
ThoroughfareName											
ThoroughfareNameValue [Streetname]	Nombre de vía		Calle Stationstreet 4103900000001 (streetnamecode)	Calle Royalstreet 4103900000002 (streetnamecode)				Calle Stationstreet 4103900000001 (streetnamecode)			
PostalDescriptor											
PostName											
Postcode	Código postal		41037	41037	41037	41037	41037	41037	41037	41037	
Locator (hierarchal, ordered)											
Designator 1	Portal or Número de Policía	1	2	1	3	5	7	2	2	2	
Designator 2	Planta	8		0	0	0	0	0	0	0	
Designator 3	Número de identificación de local (unit identifier)	9						5	6	7	

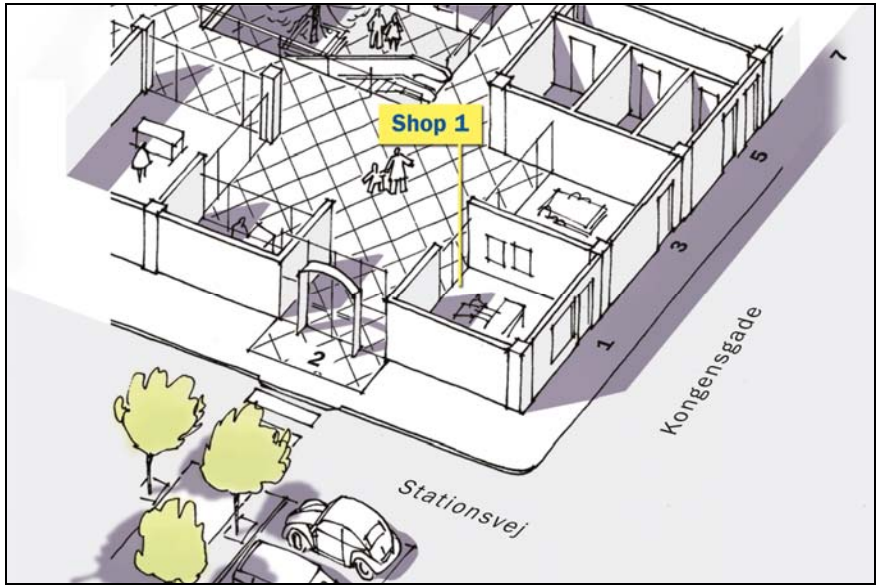


Figure H – Shopping centre situation (Detail)

Remarks:

1.- In general, if it is a shop center with a common entrance which is the unique access to the shops from outside, all the shops addresses consist of: “número de policía” (address number e.g. 2), “escalera” (stairs, when there is more than one), “planta” (floor) and “número de identificación de local” (unit identifier). However, if there are shops with direct entrances from the outside (e. g. shops 1, 2, 3 and 4) their addresses will not be referred to the common address number (2) but to their own entrances which will have numbers as the numbering of the street where they are (e.g. 1, 3, 5, 7, on e.g. Royal street).

2.- The shop identification number allows identifying every shop located inside of the shop center. Nevertheless shops are also real state so they have also (as it happens with dwellings) a unique identification code employed in the tax control.

E.3.3.7 Assignment in Sweden

There are no official registers containing information on which shop is where inside a shopping center. The partitions are seldom stable and shops open and close down often. The owner of the premises is responsible.

Component		Name	Type	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue	Gatuadressområdes-namn		Stationstreet						Stationstreet		
PostalDescriptor												
	PostName											
	Postcode			*								
Locator (hierarchal, ordered)												
1	Designator 1		1	2	2 or 2A [1])	2 or 2B [2])	2 2C [2])	2 2D [2])	2 2E [2])	2 2F [2])	2 2G [2])	
2	Designator 2	[3])	9									

Remarks:
* The postcode will probably be the same for all addresses.
[1]) 2 It would be normal to use the sample addresses to show the shop belongs to the shopping center – but the shops will prefer the commercial name of the center.
2A if the shop is open when the rest of the center is closed.
[2]) 2 or 2B for deliverers and as the personnel´s entrance
[3]) Here could internal numbers be used. They will not be officially registered.

E.3.3.8 Assignment in Turkey

There are no official registers containing information on which shop is where inside a shopping center. But if there is a numbering system inside a shopping centre it will follow these rules:

Component		Name	Type	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Ülke		As in the previous example								
2	AdminUnit2ndOrder	Il										
3	AdminUnit3rdOrder	Ilçe										
4	AdminUnit4thOrder	Bucak										
5	AdminUnit5thOrder	Belediye / Köy										
6	AdminUnit6thOrder	Mahalle										
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	CSBM		Atatürk Bulv.								
PostalDescriptor												
	PostName											
	Postcode	Postakodu		06100								
Locator (optional hierarchal)												
1	Designator 1	Binalara numara	2	2								
2	Designator 2	Daire numara	9	Z01	Z02	Z03	Z04					

Remarks: The second floor will be numbered 200, 201, 202,…
Shops on the ground floor are marked by a preceding “Z”.

E.3.3.9 Assignment in the United Kingdom

Component		Name	Part of the Key?	Main Entrance	Shop 1	Shop 2	Shop 3	Shop 4	Shop 5	Shop 6	Shop 7	
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1	Administrative Area		As in the previous example								
	Area 2	Town										
	Area 3	Locality										
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Street		Station Street								
PostalDescriptor												
	PostName											
	Postcode	Postcode		SW18 1ED								
Locator (hierarchal, ordered)												
1	Name	PAON	1	West Quay Shopping Centre 2								
2	Designator 1	SAON	9		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	

Remarks:
All occupier names will be held as attributes on the individual Addressable Objects
The Building name and building (street) number will be held together in the PAON

E.3.4 Assigning Addresses to Industrial Areas

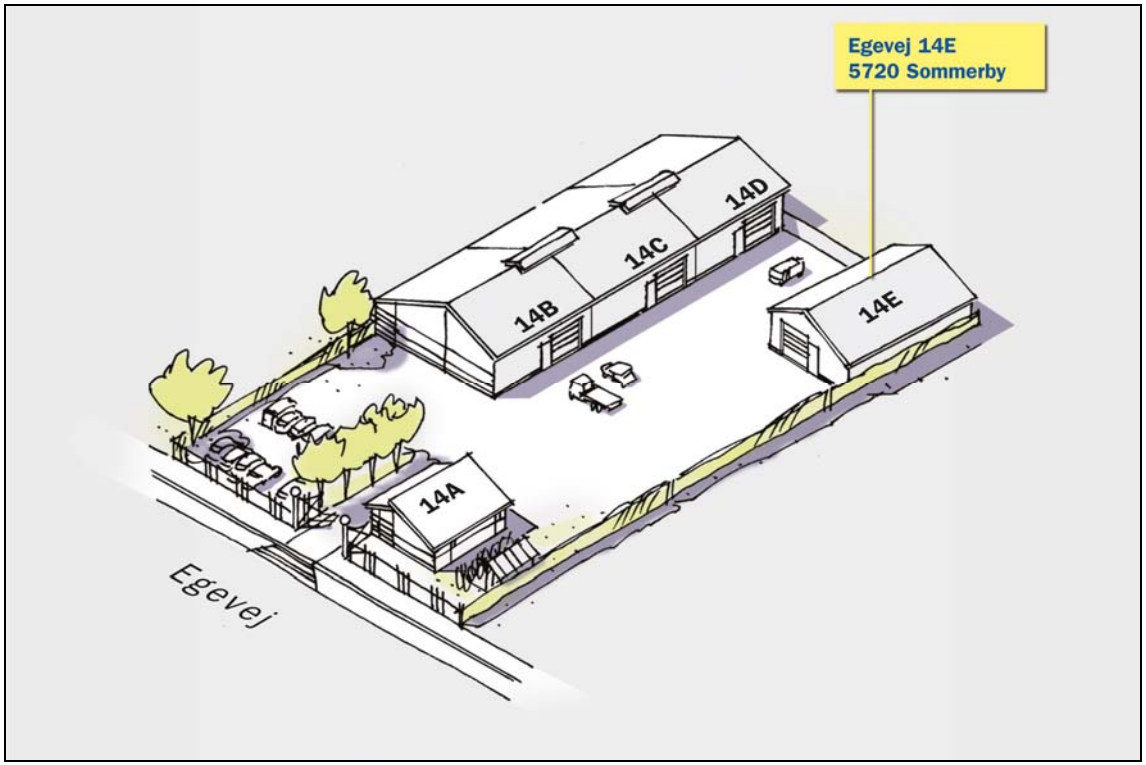


Figure I – Industrial area situation

The industrial area may have either:

- a house number as a whole
- each enterprise / part of a plant has a number.

E.3.4.1 Assignment in Flanders

Component		Name	Part of the Key?	Main Entrance	14A	14B	14C	14D	14E			
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
	Area 2											
	Area 3											
ThoroughfareName												
	ThoroughfareNameValue [Streetname]			2365894 (Egevey)								
PostalDescriptor												
	PostName											
	Postcode			2140								
Locator (hierarchal, ordered)												
1	Designator 1		1		14A	14B	14C	14D	14E			

E.3.4.2 Assignment in the Czech Republic

There are a lot of possibilities:

- The whole area has unique house number or each building has own house number
- The municipality has or hasn't named streets
- The municipality uses or doesn't use street numbers

All of these cases are described in the previous examples.
(e.g. I) Municipality with streets and street numbers, each building has own building number

Component		Name	Type	Main Entrance	14A	14B	14C	14D	14E			
AdminUnitsName (hierarchal)												
	AdminUnit1stOrder	Stat		Ceska republika								
	AdminUnit2ndOrder											
	AdminUnit3rdOrder	Okres		Praha								
	AdminUnit4thOrder											
	AdminUnit5thOrder											
	AdminUnit6thOrder	Obec		Praha								
AddressAreaName												
	Area 1	Cast obce		Chodov								
	Area 2											
	Area 3											
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Ulice		Egevej								
PostalDescriptor												
	PostName	Posta		Praha 41								
	Postcode	PSC		149 00								
Locator (optional hierarchal)												
1	Designator 1	Cislo domovni	5	---	582	2015			1901			
2	Designator 2	Cislo orientacni	2	---	14	14	14	14	14			
3	Designator 3	Pismeno cisla orientacniho	3		A	B	C	D	E			

E.3.4.3 Assignment in Denmark

Component		Name	Type	Main Entrance	14A	14B	14C	14D	14E			
AdminUnitsName (hierarchal)												
	AdminUnit1stOrder	Land		Denmark								
	AdminUnit2ndOrder	----										
	AdminUnit3rdOrder	Kommune		Sommerby								
	AdminUnit4thOrder	----										
	AdminUnit5thOrder	----										
	AdminUnit6thOrder	----										
AddressAreaName												
	Area 1	Supplerende bynavn										
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Vejnavn		Skolevej								
PostalDescriptor												
	PostName	Postdistrikt										
	Postcode	Post-nummer		5720								
Locator (optional hierarchal)												
1	Designator 1	Husnummer	1	---	14A	14B	14C	14D	14E			

E.3.4.4 Assignment in Germany

Component		Name	Type	Main Entrance	14A	14B	14C	14D	14E			
AdminUnitsName (hierarchal)												
	AdminUnit1stOrder	Land		Denmark								
	AdminUnit2ndOrder	----										
	AdminUnit3rdOrder	----										
	AdminUnit4thOrder	----										
	AdminUnit5thOrder	Kommune		Sommerby								
	AdminUnit6thOrder	----										
AddressAreaName												
	Area 1	Supplerende bynavn										
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Vejnavn		Egevej								
PostalDescriptor												
	PostName	Postdistrikt										
	Postcode	Post-nummer		5720								
Locator (optional hierarchal)												
1	Designator 1	Husnummer	1	---	14A	14B	14C	14D	14E			

In Denmark the addressable object is the entrance doors to the buildings, so even though this area is only one property and even though it perhaps only have one delivery point for post, the best practice for the municipality is to assign one “access address” (= one address number) for each entrance door. This way it is ensured that each business entity will have its own address and that rescue services, utility services etc. easily can locate the individual unit.

In this example it has, for some reason, been decided to use additional letters A, B, C etc. in the address number. In Denmark address numbers with and without an additional letters (litra) are equal; if it exists, the letter is an integrated part of the designator.

E.3.4.5 Assignment in the Netherlands

Component		Name	Type	Main Entrance	14A	14B	14C	14D	14E			
AdminUnitsName (hierarchal)												
	AdminUnit1stOrder			As in the previous example								
	AdminUnit2ndOrder											
	AdminUnit3rdOrder											
	AdminUnit4thOrder											
	AdminUnit5thOrder											
	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThouroughFareName [Streetname]	Naam openbare ruimte		Egevej								
PostalDescriptor												
	PostName											
	Postcode											
Locator (hierarchal, ordered) Level 3: unit level: nummeraanduiding van verblijfsobject, standplaats, ligplaats												
	Designator 1	Huisnummer	2		14							
	Designator 2	Huisletter	3		A							
	Designator 3	huisnummertoevoeging	4									

Remarks:
The question whether an object gets an address depends on the question if the (part of the) building meets the Dutch definition of an addressable object. If it is obvious that all buildings of this industrial complex belong to the same Main Building 14A (where for example the reception and the office are from where the rest of the industrial area is managed) then it is not necessary to give addresses to all buildings and then only the Main Building will be an addressable object and gets an address.

E.3.4.6 Assignment in Spain

Component		Name	Type	Main Entrance	14A	14B	14C	14D	14E			
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Nombre de Vía		Calle Egevej 410390000001(streetnamecode)								
PostalDescriptor												
	PostName											
	Postcode	Código Postal		41037								
Locator (optional hierarchal)												
	Designator 1	Portal o Número de Policía	1	14								
	Designator 2	Entrada	6		A	B	C	D	E			

Remarks:

Comment 1: The address number which allows identifying the whole industrial area can or not exist. Therefore it is possible that a building located inside the industrial area (e.g. building 14 A) is identified from two LocatorElements: Address Number: 14, and, Entrance Number:14 A.
In other cases there is not a general building number for the whole industrial area and so, an address number is directly assigned to each building. Thus, there would be one LocatorElement:

Locator (optional hierarchal)									

1	Designator 1	Portal o Número de Policía	1		14 A	14 B	14 C	14 D	14 E			

E.3.4.7 Assignment in Sweden

Industrial areas can be handled in a lot of ways. There are no formal rules or requirements, only recommendations.

The prime recommendation is that every entrance gets its own number as in the Danish example above. It will normally be very difficult for the municipality to keep address assigning up with changes in entrances for persons or deliveries.
The next recommendation is that every building or obviously separate part of a building (as in the example numbers 14B, 14C and 14D) gets its own number. Some buildings may be considered not needing any addresses of their own. But that information is an attribute to the building, not an address matter.

If the industrial site contains only one enterprise and is fenced and the gate is guarded, then just one address to the gate can be enough. In that case all responsibility to inform and guide deliverers, visitors, rescue service, and so forth should be on the enterprise – at least in theory.

In cases where an industrial site, a former military camp or a hospital area has been split up and developed for a number of industrial or commercial enterprises the recommended solution is that internal “streets” are given street names and entrances are numbered the normal way. Street names can also be assigned to private roads and streets after hearing the owners. Sometimes the owners already use their own address system. If those addresses are constructed in accordance with national and municipal standard and recommendations they can be approved by the municipality.

Component		Name	Type	Main Entrance	14A	14B	14C	14D	14E			
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue	Gatuadressområdesnamn		Industrigatan								
PostalDescriptor												
	PostName											
	Postcode											
Locator (optional hierarchal)												
1	Designator 1	Gatuadressplatsnamn	1	(14)	14A	14B	14C	14D	14E			
2	Designator 2		7		[1])							

[1]) in case two or more different units with different stairwells inside the building use the same door, a stairwell descriptor can be used, e.g. U1 and U2

E.3.4.8 Assignment in Turkey

Component		Name	Type	Main Entrance	14A	14B	14C	14D	14E			
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Ülke		As in the previous example								
2	AdminUnit2ndOrder	Il										
3	AdminUnit3rdOrder	Ilçe										
4	AdminUnit4thOrder	Bucak										
5	AdminUnit5thOrder	Belediye / Köy										
6	AdminUnit6thOrder	Mahalle										
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	CSBM		Atatürk Bulv.								
PostalDescriptor												
	PostName											
	Postcode	Postakodu		06100								
Locator (optional hierarchal)												
1	Designator 1	Binalara numara	2	14	14	14	14	14				
2	Designator 2	? Numara	3		A	B	C	D	E			

E.3.4.9 Assignment in the United Kingdom

Component		Name	Type	Industrial Estate	14a	14b	14c	14d	14e
AdminUnitsName (hierarchal)									
1	AdminUnit1stOrder	Administrative Area		As previous examples					
2	AdminUnit2ndOrder								
3	AdminUnit3rdOrder								
4	AdminUnit4thOrder								
5	AdminUnit5thOrder								
6	AdminUnit6thOrder								
AddressAreaName									
	Area 1	Town		As previous examples					
	Area 2	Locality		As previous examples					
	Area 3								
ThoroughfareName									
	ThoroughfareNameValue [Streetname]	Street		As previous examples					
PostalDescriptor									
	PostName								
	Postcode	Postcode		As previous examples					
Locator (hierarchal, ordered)									
1	Attribute 1	PAON	1	New Works Industrial Estate					
2	Attribute 2	SAON	9		Unit 14a	Unit 14b	Unit 14c	Unit 14d	Unit 14e

Remarks:
In all cases where a number of children exist for a parent record, in this case units on an industrial estate, a parent record has to be created and all of the child records will record the appropriate parent reference number. It is not necessary, although it is likely, that all of the children hold the parent locator as part of their address.

E.3.5 Assigning Addresses to Houses in rural Areas

The village may have either:

- a unique name for the village
- no streetnames

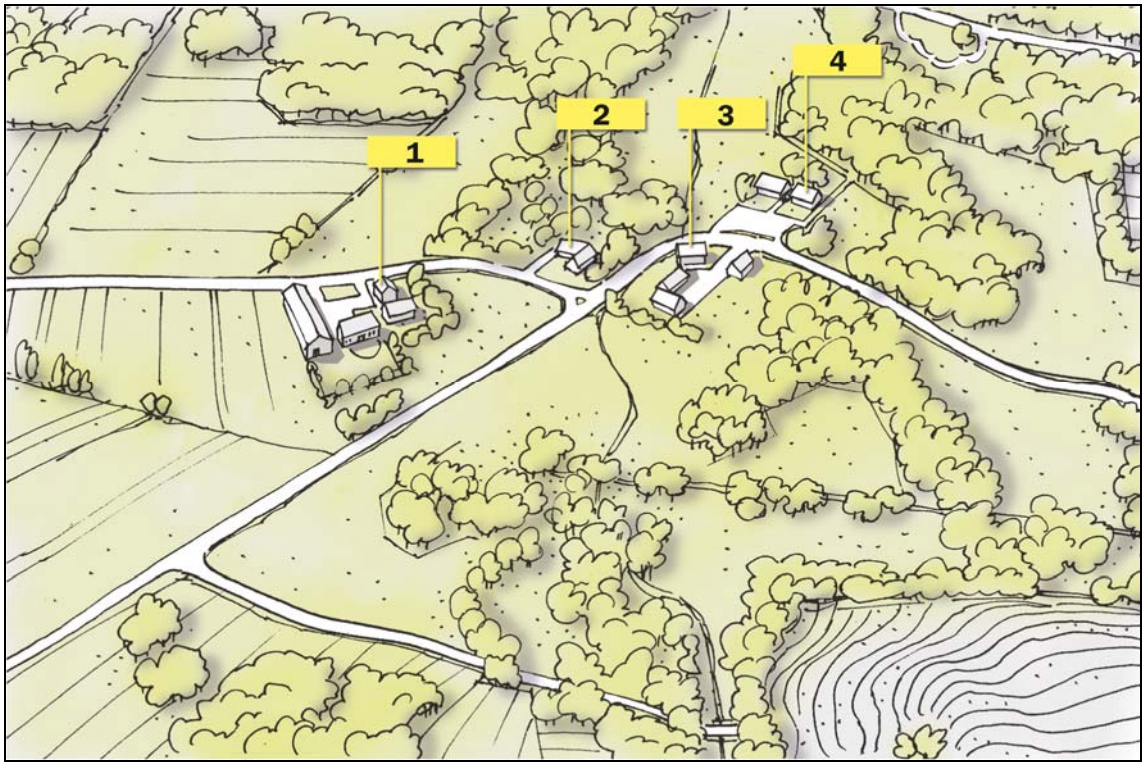


Figure J – Rural area situation

E.3.5.1 Assignment in Flanders

Component		Name	Type	House 1	House 2	House 3	House 4					
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThouroughFareName [Streetname]			5879251 (streetnamecode of the assigned streetname)								
PostalDescriptor												
	PostName											
	Postcode			2140								
Locator (hierarchal, ordered)												
1	Designator 1		1	1	2	3	4					

E.3.5.2 Assignment in the Czech Republic

Component		Name	Type	House 1	House 2	House 3	House 4					
AdminUnitsName (hierarchal)												
	AdminUnit1stOrder	Stat		Ceska republika								
	AdminUnit2ndOrder											
	AdminUnit3rdOrder	Okres		Svitavy								
	AdminUnit4thOrder											
	AdminUnit5thOrder											
	AdminUnit6thOrder	Obec		Morasice								
AddressAreaName												
	Area 1	Cast obce		Rikovice								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Ulice		---								
PostalDescriptor												
	PostName	Posta		Litomysl								
	Postcode	PSC		570 01								
Locator (optional hierarchal)												
1	Designator 1	Cislo domovni	5	1	2	3	4					

E.3.5.3 Assignment in Denmark

Component		Name	Type	House 1	House 2	House 3	House 4					
AdminUnitsName (hierarchal)												
	AdminUnit1stOrder	Land		Denmark								
	AdminUnit2ndOrder	----										
	AdminUnit3rdOrder	Kommune		Sommerby								
	AdminUnit4thOrder	----										
	AdminUnit5thOrder	----										
	AdminUnit6thOrder	----										
AddressAreaName												
	Area 1	Supplerende bynavn		Østermark								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]			Østermarksvej								
PostalDescriptor												
	PostName											
	Postcode											
Locator (optional hierarchal)												
1	Designator 1		1	1	3	5	7	…				

In Denmark all public and all common private roads must have a road name (and a road code), likewise for any private road or footpath which is used as a connection for addresses; as a result there are no rural settlements without road names. So in this example addresses are assigned in the normal way with odd and even address numbers on each side of the named thoroughfare (road, dirt road, foot path etc.).

For some small islands without a proper road network, the road name could be assigned to the area in general. In this case the name of the island or settlement replaces the thoroughfare name.

E.3.5.4 Assignment in Germany

Component		Name	Type	House 1	House 2	House 3	House 4					
AdminUnitsName (hierarchal)												
	AdminUnit1stOrder	Staat		Deutschland								
	AdminUnit2ndOrder	Land		Sachsen								
	AdminUnit3rdOrder	Regierungsbezirk		Dresden								
	AdminUnit4thOrder	Kreis		Pirna								
	AdminUnit5thOrder	Stadt /Gemeinde		Rosental / Sachsen								
	AdminUnit6thOrder	-----										
AddressAreaName												
	Area 1	Ortsteil		----								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Strasse		----								
PostalDescriptor												
	PostName											
	Postcode	Postleitzahl		09732								
Locator (optional hierarchal)												
1	Designator 1	Hausnummer	2	1	2	3	117			117		
2	Designator 2	Hausnummernzusatz	3				B			B		

E.3.5.5 Assignment in the Netherlands

This situation does not occur in the Netherlands. There will always have to be a ThoroughFare (streetname, “naam openbare ruimte”) in addresses.

E.3.5.6 Assignment in Spain

Component		Name	Type	House 1	House 2	House 3	House 4					
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	Nombre de Vía		Kasaba Yolu road								
PostalDescriptor												
	PostName											
	Postcode	Código Postal		41037								
Locator (optional hierarchal)												
1	Designator 1	Punto Kilométrico	11	KP 5	KP 5	KP 5	KP 5					
2	Designator 2	Portal o Número de Policía	1	1	2	3	4					

Remarks:
Comment 1: Once located inside a municipality two cases can happen:

1. - There are neither Street Names nor Buildings Numbers. In this case the Address Components used are: Address Area, Postcode, ThoroughFareName and Locators. ThoroughFareName is filled out with the nearest road name which access to the village and the locator used for each house is the kilometer point in which every house is located (KP 5 in the example). If there is any kind of additional descriptive information it is also stored.

2. - There are not Street Names but there are Buildings Numbers.
In this case the address components consist of address area, postcode, and locator (1, 2, and 3 in the example) and, if it exists, also any kind of additional descriptive information it is also stored.

GENERAL COMMENT:
In any case any building is always identified by a cadastral identification code in the Cadastral Register but that information is only used for cadastral applications not for addresses uses (like e.g. postal use) so it is not included as a LocatorElement

E.3.5.7 Assignment in Sweden

Unique names for small villages, settlements and single farms or houses but no recorded road or street names are the normal situation in rural areas. Farms and houses are often scattered and dense (originally) rural villages exist only in some parts of Sweden.
The “village address areas” (byadressområden) are constructed and the unique names are chosen from different points of view:
1. Is there a well defined area known by an in a larger neighbourhood unique name?
2. Is there a historic or cadastral name that can be used to describe the area?
3. Which settlements, farms and houses are closely related by the transport network?
4. Which names are indicated on official maps in scales 1:50 000 or 1:100 000?

If there are smaller groups of buildings, farms or houses known by a, within the address area, unique and well known name an extra level can be used, “farm address area” (gårdsadressområde).

“Byadressområden” and “gårdsadressområden” are equivalent to “gatuadressområden”. The differences are that numbering need not be done relative to one road and that the names describe real places; they are contrary to road and street names not constructed

Numbering can be done either with unique numbers for the whole village address area or with a unique number series in every farm address area and another numbering series for those addresses that don´t belong to any farm address area. (The first model is recommended.) The second example below shows a mix of models that is quite common. If needed to avoid renumbering when extra addresses are needed (as in the Turkish example with 3/1) the number can be extended by a letter, e.g. 3A.

Component		Name	Type	House 1	House 2	House 3	House 4					
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder			As in the previous example								
2	AdminUnit2ndOrder											
3	AdminUnit3rdOrder											
4	AdminUnit4thOrder											
5	AdminUnit5thOrder											
6	AdminUnit6thOrder											
AddressAreaName												
	Area 1	Kommundel (optional)		Farsta = = =								
	Area 2	Byadressområde (mandatory)		Eriksberg = = =								
	Area 3	Gårdsadressområde (optional)		Södergården = --- Skogstorp								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	---										
PostalDescriptor												
	PostName											
	Postcode	Postnummer [1])										
Locator (optional hierarchal)												
1	Designator 1	Byadressplats or gårdsadressplats [2])	1	1	2	3 (or 1)	22 (or 1)					

[1]) Postnummer (The town name is normally the name of a neighbouring city or town)
[2]) Byadressplats or gårdsadressplats depending on whether there is a gårdsadressområde.

Example Sweden 1

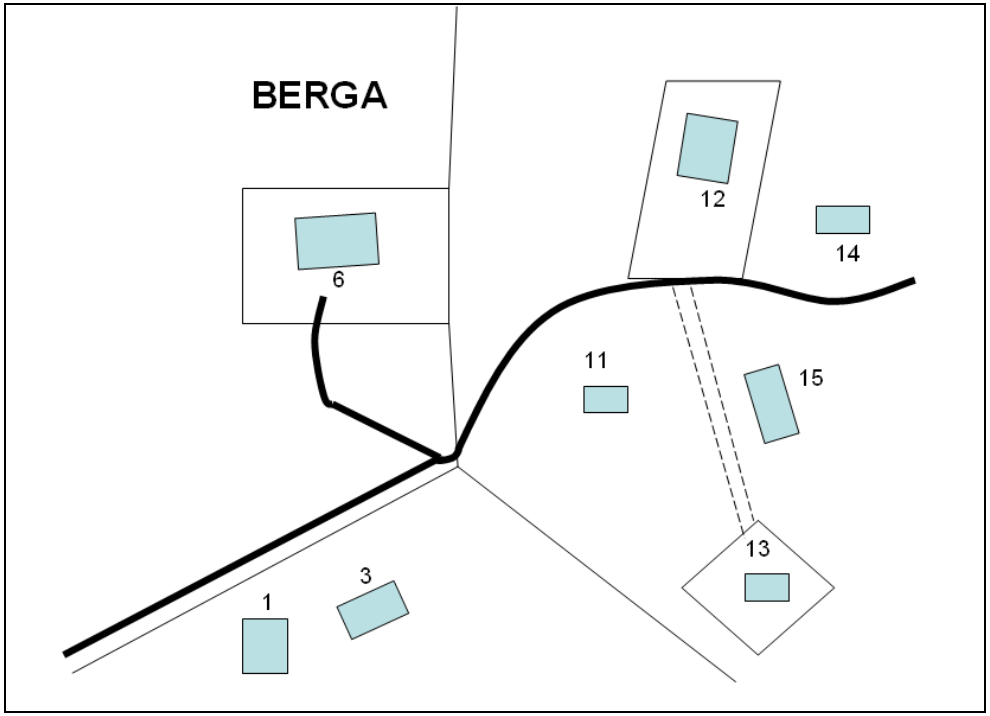


Figure K – Rural area situation

Figure K shows a quite simple example. The village name is Berga and the numbering is similar to street numbering.

Example Sweden 2

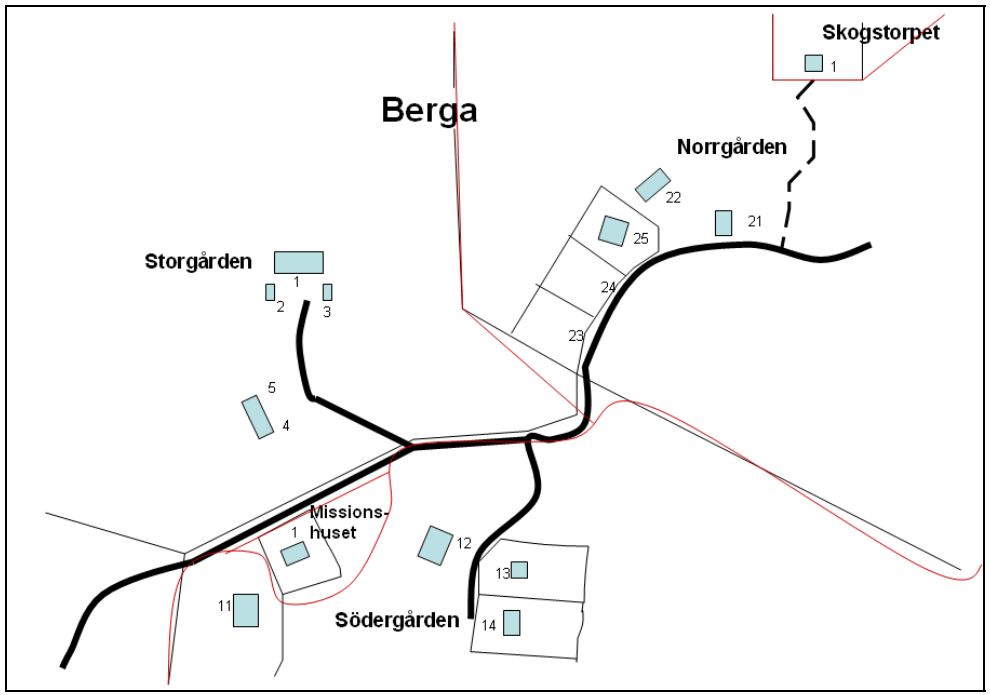


Figure L – Rural area situation

Figure L shows a situation where the village area name is Berga and all addresses contain also a farm address area name. (Boundaries between farm address areas are thin red lines.) There are different numbering systems used in different farm address areas. Of the five different farm address area names two (Missionshuset and Skogstorpet) are derived from house names while the other names represent a larger area, in these cases originally a farm. Unbuilt plots are assigned addresses, see Berga Norrgården 23 and 24. Also in rural areas shall every entrance leading to a dwelling have its own address, see Berga Storgården 4 and 5. In the case of Berga Storgården (the name Storgården implicates it was originally the biggest farm in the village) numbering is done with the main entrance to the manor as number 1 to indicate its importance.

Example Sweden 3

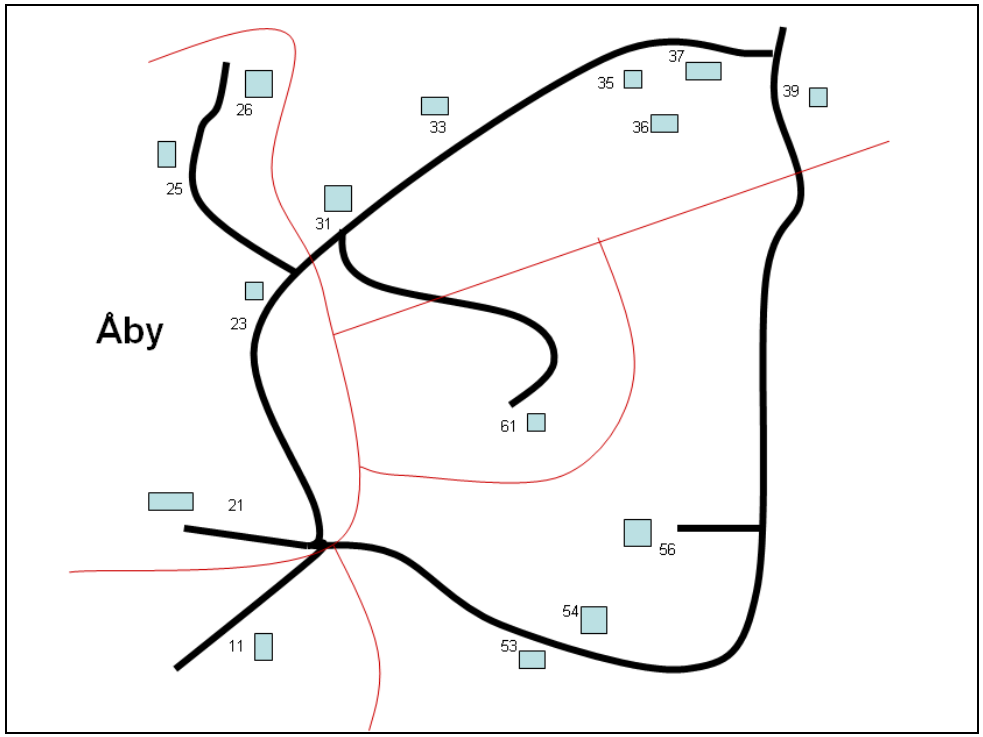


Figure M – Rural area situation

Figure M, shows an example where there are no farm address area names. The village address area name Åby covers a large area with a complex transport network. The numbering is as much as possible done on basis of the transport network with different number groups for addresses along different roads. Some numbers are not used as a help to the visitor to understand relative positions.

E.3.5.8 Assignment in Turkey

Component		Name	Type	House 1	House 2	House 3	House 4					
AdminUnitsName (hierarchal)												
1	AdminUnit1stOrder	Ülke		As in the previous example								
2	AdminUnit2ndOrder	Il										
3	AdminUnit3rdOrder	Ilçe										
4	AdminUnit4thOrder	Bucak										
5	AdminUnit5thOrder	Belediye/Köy										
6	AdminUnit6thOrder	Mahalle										
AddressAreaName												
	Area 1			As in the previous example								
ThoroughfareName												
	ThoroughfareNameValue [Streetname]	CSBM										
PostalDescriptor												
	PostName											
	Postcode	Postakodu		06100								
Locator (optional hierarchal)												
1	Designator 1	Binalara numara	2	1	2	3	7					

Remarks: Big villages use Mahalle to differentiate street names
Small Villages have only one Muchta but may be responsible for several Mahalles and street names unofficial.

E.3.5.9 Assignment in the United Kingdom

Component		Name	Type	House 1	House 2	House 3	House 4		
AdminUnitsName (hierarchal)									
1	AdminUnit1stOrder	Administrative Area		As previous examples					
2	AdminUnit2ndOrder								
3	AdminUnit3rdOrder								
4	AdminUnit4thOrder								
5	AdminUnit5thOrder								
6	AdminUnit6thOrder								
AddressAreaName									
	Area 1	Town		Small Settlement					
	Area 2	Locality							
	Area 3								
ThoroughfareName									
	ThoroughfareNameValue [Streetname]	Street		Road from A429 to Small Settlement					
PostalDescriptor									
	PostName								
	Postcode	Postcode		As previous examples					
Locator (hierarchal, ordered)									
1	Attribute 1	PAON	1	1	2	3	4		

Remarks:
All properties have to be related to a thoroughfare. Where there is no road running through a settlement, as in the example shown, the thoroughfare will be defined as the last thoroughfare traversed in order to gain access to the property or properties. These thoroughfares may have approved names, as allocated by the relevant local authority or descriptive names as in the example shown above.

Annex F
(informative)
Address Assignment Examples for Descriptive Locators

F.1 Scope

The Annexes D and E contain the results of the TWG survey of address assignment that was used as input to the specification process. In the course of the specification development it became clear that there were addresses in certain Member States, particularly in rural areas that lacked even basic structure but were essential entries in the dataset. Annex F represents a small collection of examples how to implement addresses in these situations using the specification.

The TWG Addresses was not able to collect and describe as complete a set of representative cases as had been possible as a result of the survey. It is therefore accepted that the examples are very limited and may not be representative. However, we believe they will still be of use in deciding how to use the specification in these special but important cases.

The TWG hopes that in the course of the time, this collection may be extended by the INSPIRE Community.

F.2 Introduction

The examples are drawn from Spain and the United Kingdom and are illustrated with map extracts.

This part of the document is not intended to provide definitive guidance. The Member State may not be able to use the conventions adopted in these cases for reasons of retaining consistency with other aspects of their implementation of the specification.

F.3 Examples

F.3.1 Spain: Address located by kilometer point

Carretera Nacional III Madrid-Valencia Punto kilométrico 9
28031 Madrid (Madrid)
Spain

This is an example of address which is defined with Kilometer Point as locator type. It consists of the following address components:

AdminUnits:
AdminUnitLevel3 (Province): Madrid
AdminUnitLevel4 (Municipality): Madrid
ThoroughFareName: Carretera Nacional III Madrid-Valencia
PostalDescriptor
PostCode: 28031
Locator:
Punto kilométrico 9

Figure N – Address with kilometre point (ES)

Component		Name in Spain		Value
Admin Units (hierarchal)				
1	AdminUnit1stOrder	Reino		España
2	AdminUnit2ndOrder	Comunidad Autónoma		
3	AdminUnit3rdOrder	Provincia		Madrid
4	AdminUnit4thOrder	Término Municipal, Ciudad Autónoma (+Condominio)		Madrid
5	AdminUnit5thOrder	----		
6	AdminUnit6thOrder	----		
AddressAreaName				
	Name1	Entidad de población		
ThoroughFareName				
	ThoroughFareNameValue [Streetname]	Nombre de Via		Carretera Nacional III Madrid-Valencia
PostalDescriptor				
	PostName			
	Postcode	Código postal		28031
Locator (hierarchal, ordered)				
	LocatorDesignatorName			Punto kilométrico 9
	LocatorDesignatorTypeValue	PK (Punto Kilométrico)		kilometerPoint

F.3.2 Example of addresses with name from United Kingdom

Adressees name
Jackson
Gosforth, Copeland
CA19 1YB
United Kingdom

In this example, a personal name is used in the Locator as a placeholder while a dispute is settled over the Building Name/Number. In the records this is identified by the name within brackets. The name is used within the dataset with permission of the owners and meets the U.K. Data Protection Act.

Figure O – Address with name (UK)

Component		Name in UK		Value
Admin Units (hierarchal)				
1	AdminUnit1stOrder	Country		United Kingdom
2	AdminUnit2ndOrder	County or Unitary Authority		
3	AdminUnit3rdOrder	----		
4	AdminUnit4thOrder	----		
5	AdminUnit5thOrder	District		Copeland
6	AdminUnit6thOrder	----		
AddressAreaName				
	Name 1	Town		
	Name 2	Locality		Gosforth
	Name 3	----		
ThoroughFareName				
	ThoroughFareNameValue [Streetname]	Street		

PostalDescriptor				
	PostName	----		
	Postcode	Postcode		CA19 1YB
Locator (hierarchal, ordered)				
	LocatorDesignatorName			(Jackson)
	LocatorDesignatorTypeValue			buildingIdentifier

F.3.3 Example of with name from United Kingdom

Multi-storey car park at Southampton Magistrates Courts
Carlton Crescent
Southampton, Bevois
SO17 1EY
United Konfdom

A descriptive name is given in the Locator for instances where an addressable object cannot be uniquely identified by its name – this is a combination of the *type* of object and its relation to another addressable object. Another example would be 'Pavilion 30m from 160 Abbots Way'.
Note that the DS does not describe *which* types of objects you must include – but this method does
1.

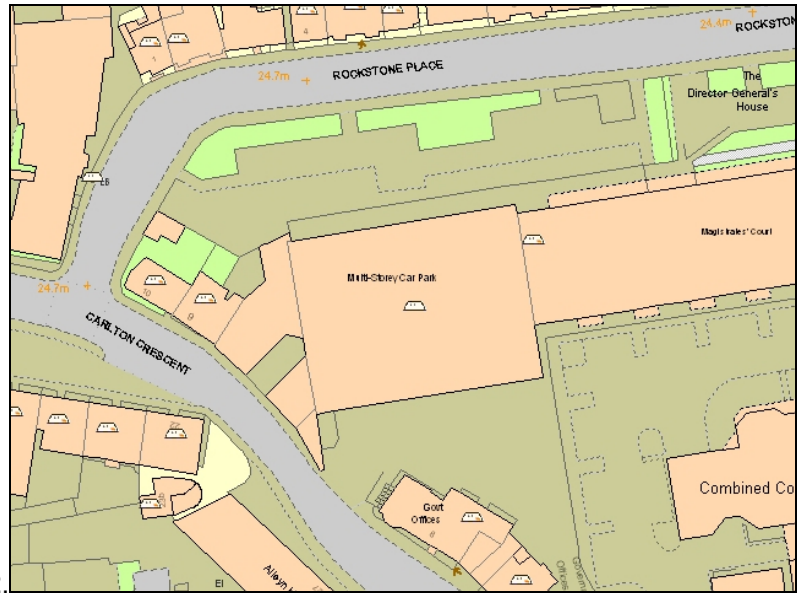
2. 

Figure P – Address with name (UK)

Component		Name in UK		Value
Admin Units (hierarchal)				
1	AdminUnit1stOrder	Country		United Kingdom
2	AdminUnit2ndOrder	County or Unitary Authority		
3	AdminUnit3rdOrder	----		
4	AdminUnit4thOrder	----		
5	AdminUnit5thOrder	District		City of Southampton
6	AdminUnit6thOrder	----		
AddressAreaName				
	Name 1	Town		Southampton
	Name 2	Locality		Bevois
	Name 3	----		
ThoroughFareName				
	ThoroughFareNameValue [Streetname]	Street		Carlton Crescent

PostalDescriptor				
	PostName	----		
	Postcode	Postcode		SO17 1EY
Locator (hierarchal, ordered)				
	LocatorName			Multi-storey car park at Southampton Magistrates Courts
	LocatorLevel			siteLevel