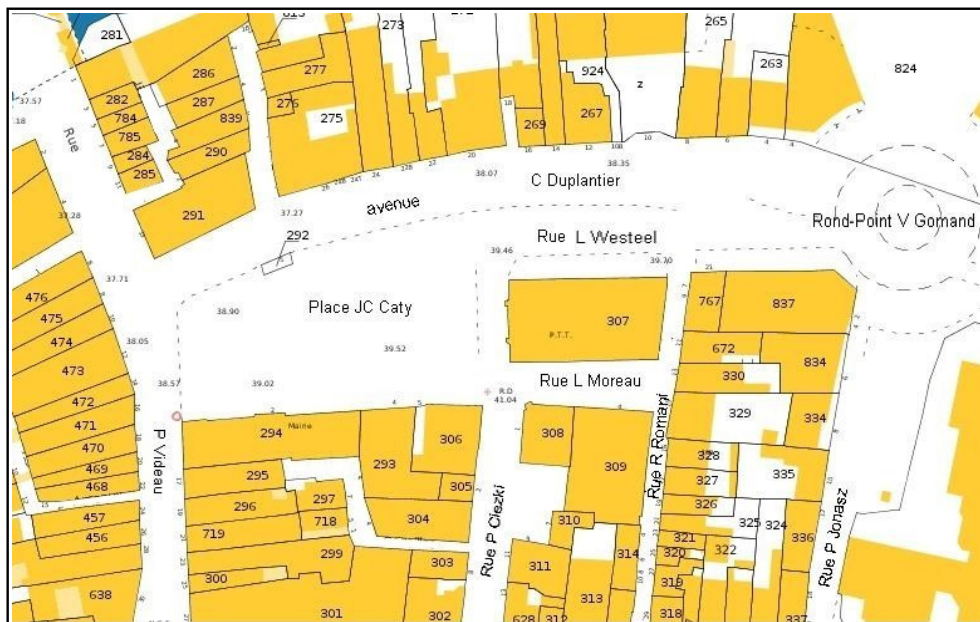


STANDARD FOR EXCHANGING COMPUTERIZED MAP OBJECTS BASED ON THE EDIGÉO STANDARD

2013 version



WARNING

This document describes the procedures for exchanging computerised cadastral map data.

It is based on the EDIGéO standard (reference: AFNOR Z 52 000) and the CNIG nomenclature, to which reference should be made where necessary.

It cancels and replaces the computerised cadastral map object exchange standard published in May 2002.

The main updates concern :

- a presentation of the files making up an EDIGéO batch and their interactions;
- a presentation of the geometry of the objects in the computerised cadastral map ;
- a presentation of place names ;
- recommendations for the vectorisation of cadastral maps ;
- a presentation of the cadastral map objects and their characteristics, as well as their relationships, present in an EDIGéO batch.

ABBREVIATIONS

DGFiP: Direction générale des finances publiques

(Public Finance Department) PCI: Plan cadastral
informatisé (Computerised cadastral plan)

MCD: conceptual data model SCD:
conceptual data schema

In general, coordinate sets are indicated in the form $(X, Y, [Z])$, and only for coordinates in plane projection.

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LEXICON

Arc

Element of the conceptual data model with dimension 1 :

- topological information: connection between two nodes, directed from an initial node to an end node;
- geographical information representing a curve, a broken line, etc.

Attribute

Specified characteristic or property :

- an object representing the entity ;
- of a primitive ;
- a relationship.

Coordinates (x,y,[z])

A set of two or three components specifying a geographical location. The third component may be absent from the data exchange when it is in 2D.

Cartesian coordinates

These are the coordinates of the point used to determine its position in a geodetic system. They are given as (X,Y,Z)

Geographical coordinates

These are the coordinates of the point used to determine its position relative to a reference ellipsoid. They are given as (latitude, longitude, height relative to the ellipsoid) or (lambda, phi, h).

Projected coordinates

These are the co-ordinates of the point used to determine its position in a plane representation according to a projection system. They are given as (E,N) or (East,North).

Face

Element of the conceptual data model of dimension 2 :

- or topological information: the face is defined by a minimal circuit of arcs;
- or geometric information: the face is the inner zone delimited by the arcs.

Conceptual data model (CDM)

A set of rules for structuring or modelling geographic information.

Matrix mode

Representation on a grid with values at the grid intersections. Also called Raster or Maillé.

Network model

Conceptual data model used to represent geographical entities using three geometric figures (point, linear, surface). The topological relationships between linear and point features must be explicitly identified.

Spaghetti model

Conceptual data model used to represent geographical entities using three geometric figures (point, linear, surface). They are explicitly identified but can be treated independently of each other.

Vector mode

A representation method that translates any geometric figure into oriented linear elements.

Topological model

Conceptual data model used to represent geographical entities using three geometric figures (point, linear and surface). The topological relationships between linear, point and surface features are explicitly identified.

Node

Element of the conceptual data model with dimension 0 :

- or topological information: end of arc or belonging to a face;
- geometric information: coordinates of a geographical feature. Object

Digital representation of a geographical entity.

Primitive

Element of the conceptual data model, node, arc or face that describes the geometry and/or topology of a geographic object.

Construction relationship

A relationship in the conceptual data model that allows an object to be constructed exclusively using the following relationships:

- compositional relationships between geographical objects ;
- representation relationships between simple objects and primitives of the same type :
- is represented by " ;
- " is represented by +/- " ;
- relationships between primitives, which can be :

- a for initial node", "a for final node" between arcs and nodes ;
- a for left face", "a for right face" between arcs and faces;
- " is included in " between isolated nodes and faces ;
- belongs to" between isolated nodes and arcs.

Semantic relationship

A logical relationship in the conceptual data model used to describe relationships between objects and which is not part of the relationship for constructing an object.

Topological relationship

Neighbourhood" relationship between objects. This is used to express the relative position of objects in relation to each other. There is a set of six minimal topological relationships from which all other possible topological relationships can be deduced. In the conceptual vector model, topological relationships are expressed between the primitives on which objects are based.

Conceptual data schema (CDS)

The SCD describes the logical organisation of a batch of data in accordance with the EDIGéO Conceptual Data Model. It is implemented within the exchange by the issuer of the geographic data. It specifies the elements of the EDIGéO DCM (objects, primitives, relationships, attributes) in which the data in the communicated set is stored.

Graph theory

Mathematical theory often applied to solve network problems (flows, paths, optimal path, etc.). The geometric network of geographic data is considered to be a graph made up of nodes, arcs and faces. Graph theory does not manage the shape of the arc or face, only the relationships.

Topology

Branch of mathematics dealing with neighbourhoods. A term often used in reference to graph theory.

1. General

1.1. Definitions

The EDIGéO standard is a set of standardised rules for exchanging geographic data.

Published by AFNOR under reference Z 52 000, it enables the exchange of geographical data organised according to vector (topological vector, network vector and spaghetti vector) and raster structures.

Network vector and raster structures are not covered in this document as they are not involved in the PCI/EDIGéO exchange.

The exchange will focus on :

- a conceptual data model (CDM) of the vector type (topological and spaghetti for PCI);
- an exchange nomenclature ;
- a quality model ;
- a conceptual data schema (CDS) ;
- rules for implementing EDIGéO files.

1.2. Conceptual data model

The conceptual data model is the general model on which the exchange is based. It is used to manage all the rules for structuring and modelling the geographic information exchanged.

The set of geographic objects in an EDIGéO exchange is made up of 4 subsets (point, linear, surface and complex objects)

These 4 subsets form a partition (symbolised by the XT inheritance in the diagram on the following page).

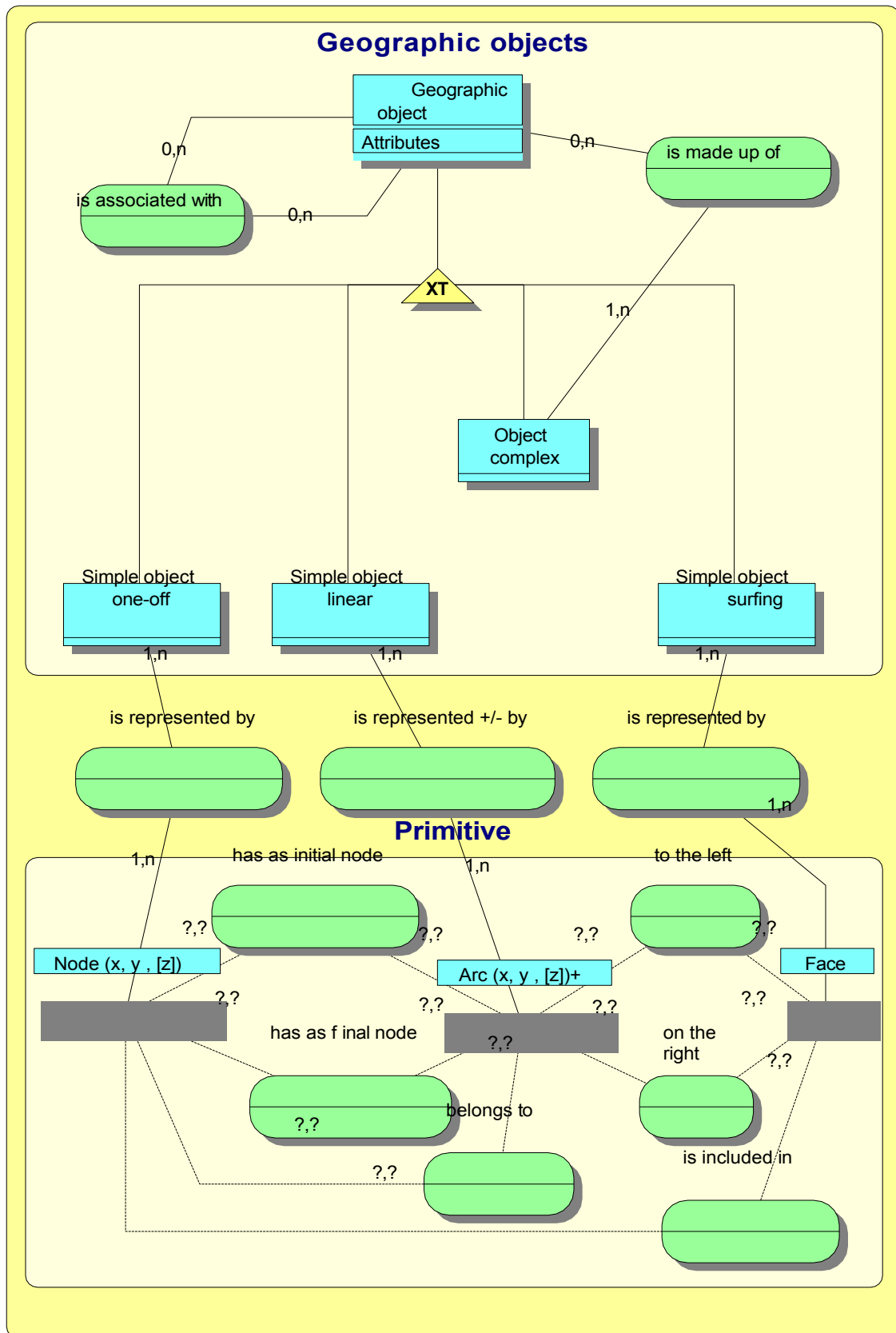
As a result,

- the intersection of any 2 by 2 subsets is empty;
- the union of these 4 subsets is equal to the set of geographic objects.

A complex object (not managed in the PCI exchange standard) is made up of geographical objects (point, linear, surface and/or complex).

Each geographic object can be associated with any other object via a semantic relationship.

We will see in more detail in Chapter 5 that the geometry of objects is dissociated from them. Each object is therefore linked to one or more primitives, depending on its nature.



1.3. Elements of the conceptual data model

1.3.1. Geographic objects on the cadastral map

These objects are :

- **simple** and, in this case, they can be :
 - **points** if they are represented by a node. This is the case for the following objects: building complex, building point, boundary symbol, road number, property boundary marker, cross, bolt, topographic point detail and canvas point;
 - **linear** if they are made up of one or more arcs. This is the case for the objects: communication zone and linear topographic detail ;
 - **surface** if they are made up of one or more faces. This is the case for the following objects: section, section subdivision, parcel, building, parcel charge, tax subdivision, municipality, surface topographic detail, locality, road network object and watercourse section;
- **complex**: these are objects made up of either simple objects, complex objects, or both simple and complex objects. The PCI does not use this type of object.

1.3.1. Primitives

Primitives are used to describe a geographic object.

These are the nodes, arcs and faces.

1.3.2.1. KNOTS (isolated or not)

Nodes use a set of coordinates to define a geographical position for point objects or initial and final nodes.

1.3.2.2. ARCS

Arcs are made up of a series of lines that can be used to draw a line segment, a broken line, a circular arc or a curve of any kind.

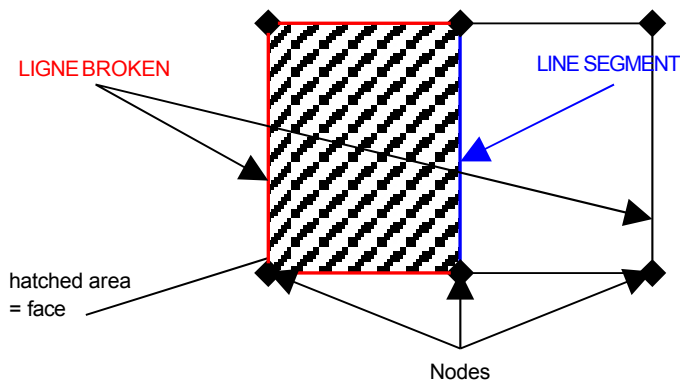
In linear objects, the direction is defined by the "is represented +/- by" construction relationship between the simple linear object and the arc.

In surface topological objects, the direction of an arc is determined by the presence of the declaration of an initial node and an end node. The direction is defined from the start node to the end node.

In spaghetti objects, arcs do not necessarily have an initial node and an end node.

1.3.2.3. FACES

The faces are used to define a geographical area (surface).



The relationships used between primitives reveal the structure chosen for the conceptual data model.

1.3.2. Attributes

The attribute adds a characteristic to an object, a relationship or sometimes a primitive. It contains one or more values.

Example: The building object has an attribute called DUR which qualifies the building. This attribute has two values: code 01 for a hard building and code 02 for a light building.

1.3.3. Building relationships

Construction relations are used to define and describe objects. There are nine of them:

- **"has for initial node"**: provides a relationship between an arc and a node located at the origin of this arc; this relationship is only present in vector files with a topological structure.
- **"has for end node"**: provides a relationship between an arc and a node located at the end of this arc; this relationship is only present in vector files with a topological structure.
- **"a for left face"**: provides a relationship between an arc and a face located to the left of this arc, in the direction of travel from the initial node to the final node.
vector files with a topological structure and, by default, in vector files with a spaghetti structure. In the latter case, it is simply used to relate the arc to the face.
- **"a for right face"**: provides a relationship between an arc and a face located to the right of this arc, in the direction of travel from the initial node to the final node.
vector files with a topological structure and, by default, in vector files with a spaghetti structure. In the latter case, it is simply used to relate the arc to the face.
- **"is included in"**: provides a relationship between an isolated node and a face containing that node; this relationship is not used in PCI/EDIGeO exchanges.
- **"belongs to"**: provides a relationship between an isolated node and an arc to which this node belongs; this relationship is not used in the PCI/EDIGeO exchange.
- **"is represented by"**: provides a relationship between a simple object (point or surface) and the primitives (nodes or faces) that make up this object.
- **"is represented by +/-"**: provides a relationship between a simple linear object and the arc(s) making up that object.
- **"is composed of"**: provides a relationship between a complex object and the simple or complex objects that make it up; this relationship is not used in the PCI/EDIGeO exchange.

1.3.1. Semantic relationships

They are strictly reserved for relationships between objects; they allow objects to be associated with each other in a non-graphical way.

Example: NUMBER_PARCEL relationship: used to link the road number object to a parcel.

1.4. Exchange nomenclature

The EDIGéO standard does not provide a nomenclature of objects, but it does require the presence of a nomenclature internal to the exchange, known as the EDIGéO exchange nomenclature. This is designed to enable the receiver to interpret the codes associated with the geographical information communicated by the sender. It is a list of the codes for all the objects and attributes. It may come from a user, a group of users or an independent body; this is the case with the CNIG nomenclature used in PCI/EDIGéO exchanges.

The DIC file lists the exchange nomenclature in EDIGéO batches.

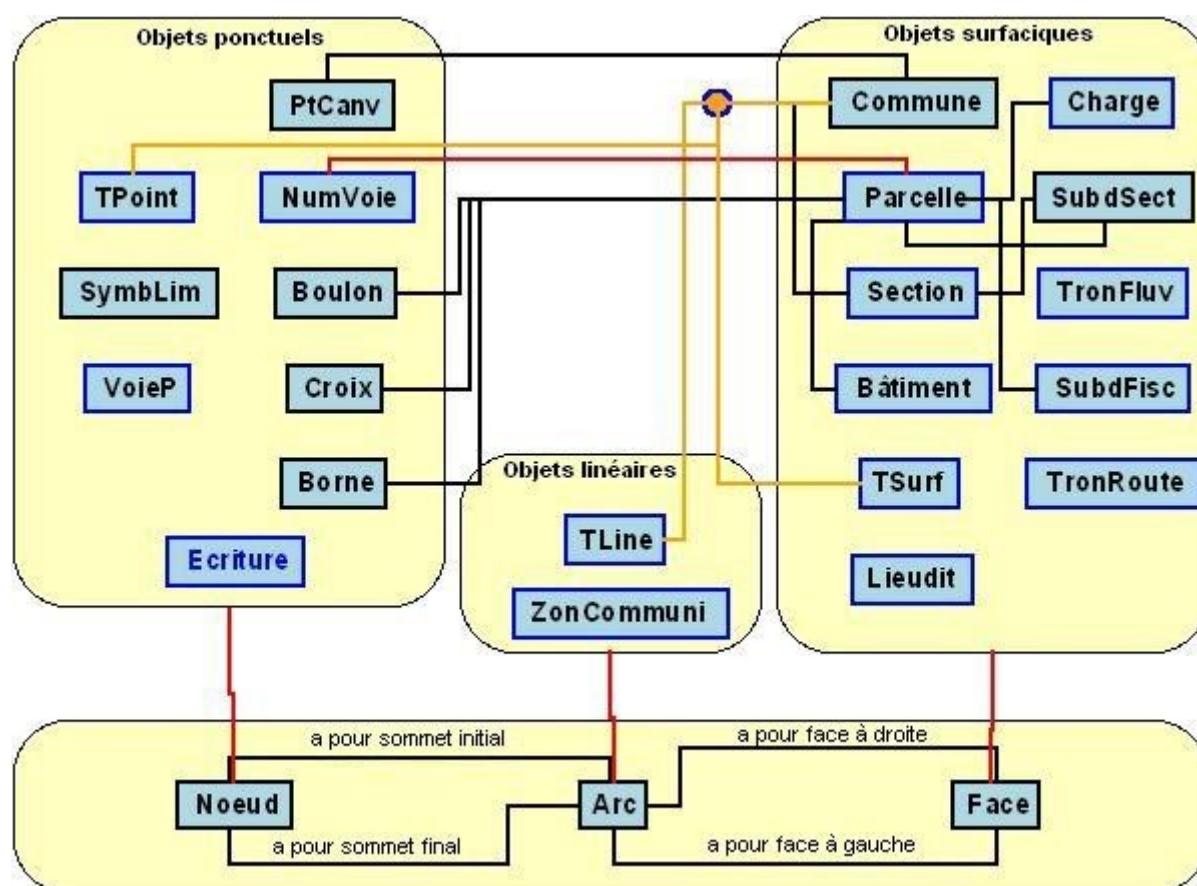
1.5. Conceptual data schema

The conceptual data schema (CDS) is an application-specific conceptual data model (the PCI conceptual data schema is presented in Chapter 4).

The SCD file is a subset that sets out the construction rules for elements of the object, primitive, attribute, semantic relationship and construction relationship types. It represents the implementation of the EDIGéO SCD in terms of the objects, attributes and relations used. It enables the PCI Vecteur application to check the consistency of the information communicated.

Any object likely to be present graphically on the cadastral map must be defined in the SCD file, along with any relationships and attributes relating to these objects.

For each object encountered in the vector files, the application checks in the SCD whether the conceptual schema for each object has been respected: the nature of the objects, the presence of attributes, the construction links and the various semantic relationships. It then checks that the names given to the objects correspond to the nomenclature in the DIC file.



1.6. EDIGéO quality model

Data quality is defined using nine criteria:

- **genealogy** (information on the origin of the data and the processing carried out on it);
- **currency** (validity of data over time, date of last update);
- **planimetric accuracy** (probable difference between the value supplied and the exact value of the data);
- **altimetric accuracy** (probable difference between the value supplied and the exact value of the data);
- **metric accuracy** (probable difference between the value supplied and the exact value of the data);
- **completeness** (proportion of items included in the exchange compared with the total number of items existing in the field in the same geographical area);
- **semantic accuracy** (knowledge of the proportion of correctly coded elements in relation to the total number of elements existing on the ground in the same geographical area);
- **logical consistency** (knowledge of a number of objects, relationships and attributes that comply with a certain number of specifications);
- **the specific quality** (used for other qualities not defined above).

For the time being, the Directorate General of Public Finances is only using the "topicality" criterion for PCI/EDIGéO exchanges.

2. Creation of an EDIGéO exchange

2.1. Organisation of an EDIGéO exchange

An EDIGéO exchange consists of :

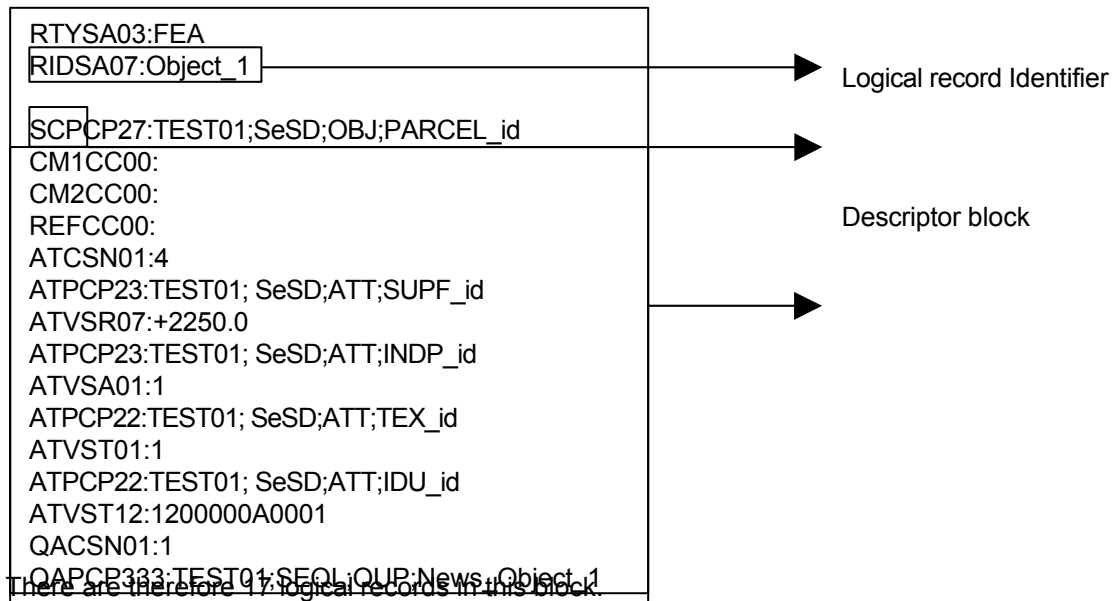
- a single batch of general data specific to the transmission (.THF extension, 1 per exchange);
- one or more batches of geographic data, each comprising :
 - A description data set consisting of five files:
 - ❶ **XXXXXXxx.GEN**: contains general data indicating the structure and geographical extent of the data (one per set) ;
 - ❷ **XXXXXXxx.GEO**: contains the coordinate reference (example: one of the 9 conforming conic zones, one per set) ;
 - ❸ **XXXXXXxx.QAL**: provides quality information (0 or 1 per set);
 - ❹ **XXXXXXxx.DIC**: defines the nomenclature of objects, attributes and relationships (1 per set is mandatory if there is at least one VEC file);
 - ❺ **XXXXXXxx.SCD**: defines the conceptual data schema (1 per set is mandatory if there is at least one VEC file) ;
 - A set of geographical data :
 - ❻ **XXXXXXxx.VEC**: contains vector geographic data (0 or N per set; in the PCI/EDIGéO exchange, N = 4);
 - ❼ **XXXXXXxx.MAT**: contains raster geographic data (0 or N per set; in the PCI/EDIGéO exchange, N = 0).

where **XXXXXX** represents the name of the exchange batch and **xx** represents the names of the subsets

In PCI exchanges, EDIGéO batches are made up of 9 or 10 files. These are named as follows:

| | Naming the files in an EDIGéO batch |
|-------------------------|--|
| Main towns | E + Prefix (3c) + Section (2c) + Section subdivision (2c). THF ED+Section (2c) + Section subdivision (2c) + 2 characters specific to the EDIGéO standard (2c). extension |
| Municipalities absorbed | E + Prefix (3c) + Section (2c) + Section subdivision (2c). THF A + Serial number of the absorbed municipality (1c) + Section (2c) + Section subdivision (2c) + 2 characters specific to the EDIGéO standard (2c). extension |

2.2. Organisation of a sub-assembly



Each record contains six fields, the first five of which form an eight-character header:

| Zone Name | Nature Zone | Format zone | Zone Length | Boundary zone | Value Zone |
|-----------|-------------|-------------|-------------|---------------|------------|
|-----------|-------------|-------------|-------------|---------------|------------|

Name field: always contains three characters.

Example: SCPCP27:TEST01;SeSD;OBJ;PARCELLE_id

It corresponds to the name of the record, which always begins with a capital letter.

Nature zone: always contains a character which is :

- T, for a reserved logical record ;
- S, for a simple field (1 value only) ;
- C, for a compound field (several values).

Example: SCPCP27:TEST01;SeSD;OBJ;PARCELLE_id

Format field: always contains a character which is :

- A, for a string of characters ;
- C, for coordinates ;
- D, for a date ;
- E, for a real number with exponent ;
- I, for a signed integer ;
- N, for an integer with no sign ;
- P, for the descriptor reference ;

- R, for a real number with no exponent,
- T, for text,
- a space for a reserved logical record.

Example: SCPCP27:TEST01;SeSD;OBJ;PARCELLE_id

Length field: always contains two characters:

It corresponds to the length of the value field. Example:

SCPCP27:TEST01;SeSD;OBJ;PARCELLE_id

Delimiter field: always contains the ":" character.

Example: SCPCP27:TEST01;SeSD;OBJ;PARCELLE_id

Value field: contains 0 to 72 characters:

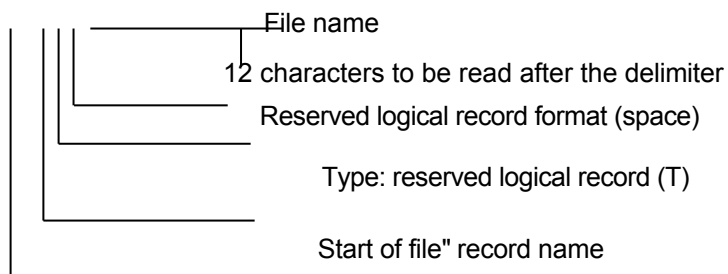
It provides the value of the logical record (and can be zero). The semicolon is used as a separator between values.

Example: SCPCP27:TEST01;SeSD;OBJ;PARCELLE id

Three reserved logical records are always present in EDIGéO files.

These are :

- **BOM** which indicates the logical start of the file and has as its value the name and type of the file BOMT 12:TEST01T1.VEC



- **CSE** which indicates the name of the character set used Example: CSET 03:IRV

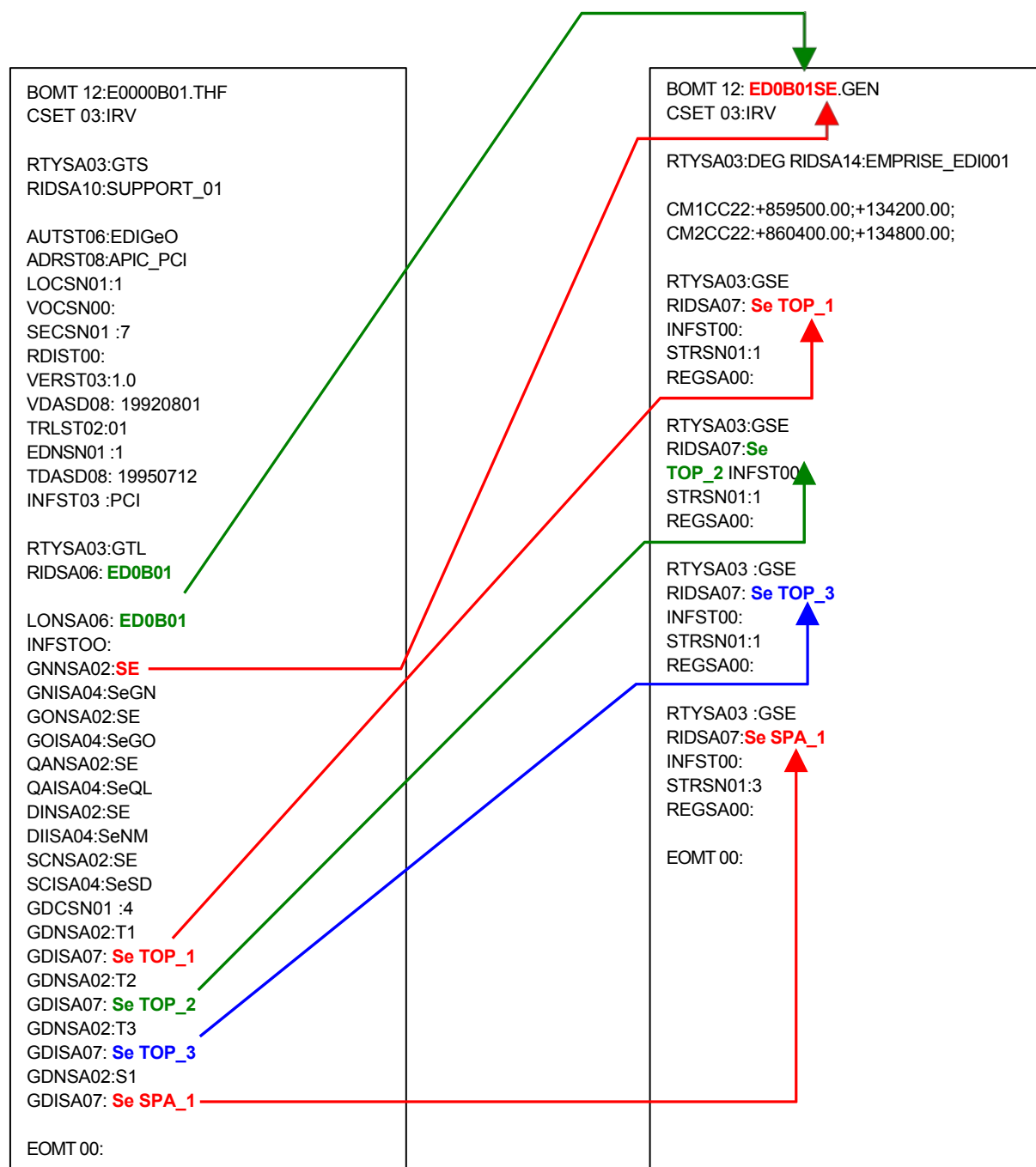
IRV corresponds to the international version of ISO 646.

- **EOM** indicates the logical end of the file; its value is always zero. Example: EOMT 00:

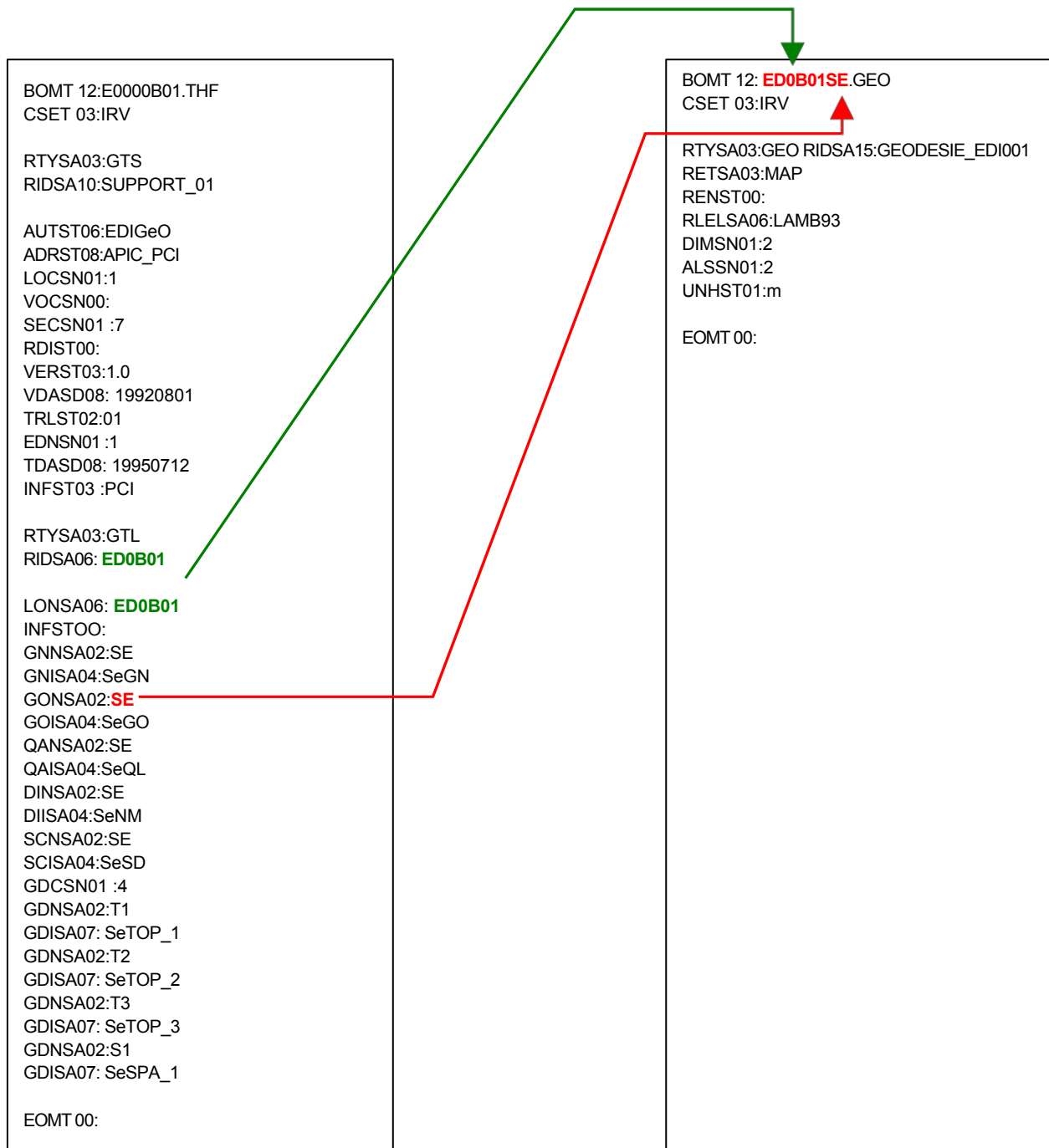
Between the CSE and EOM records are all the descriptor blocks describing nodes, arcs, faces, geographical objects, construction relationships and semantic relationships...

3. Linking different files

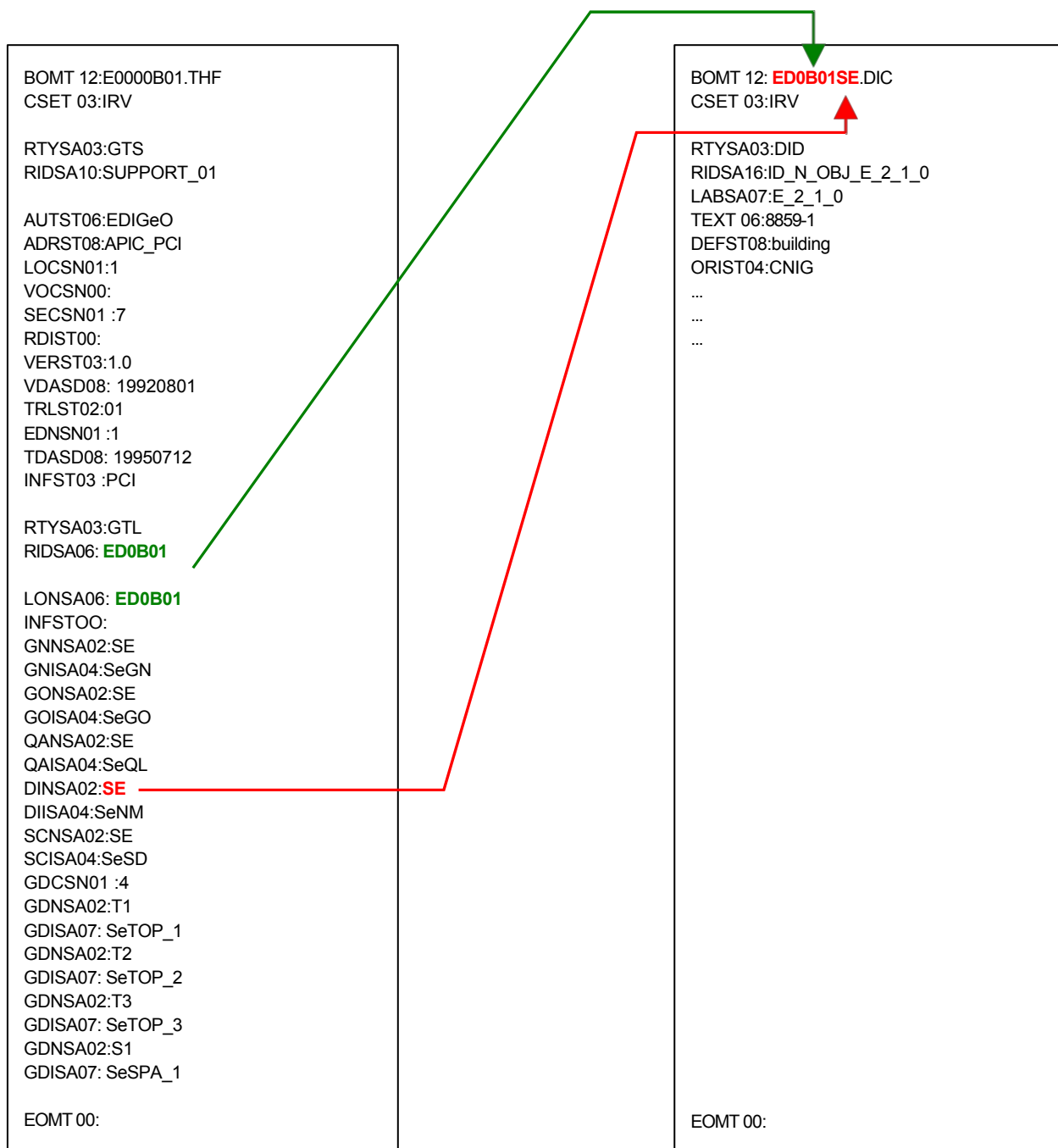
3.1. Links between the file corresponding to the general transmission data set and the file corresponding to the general data subset



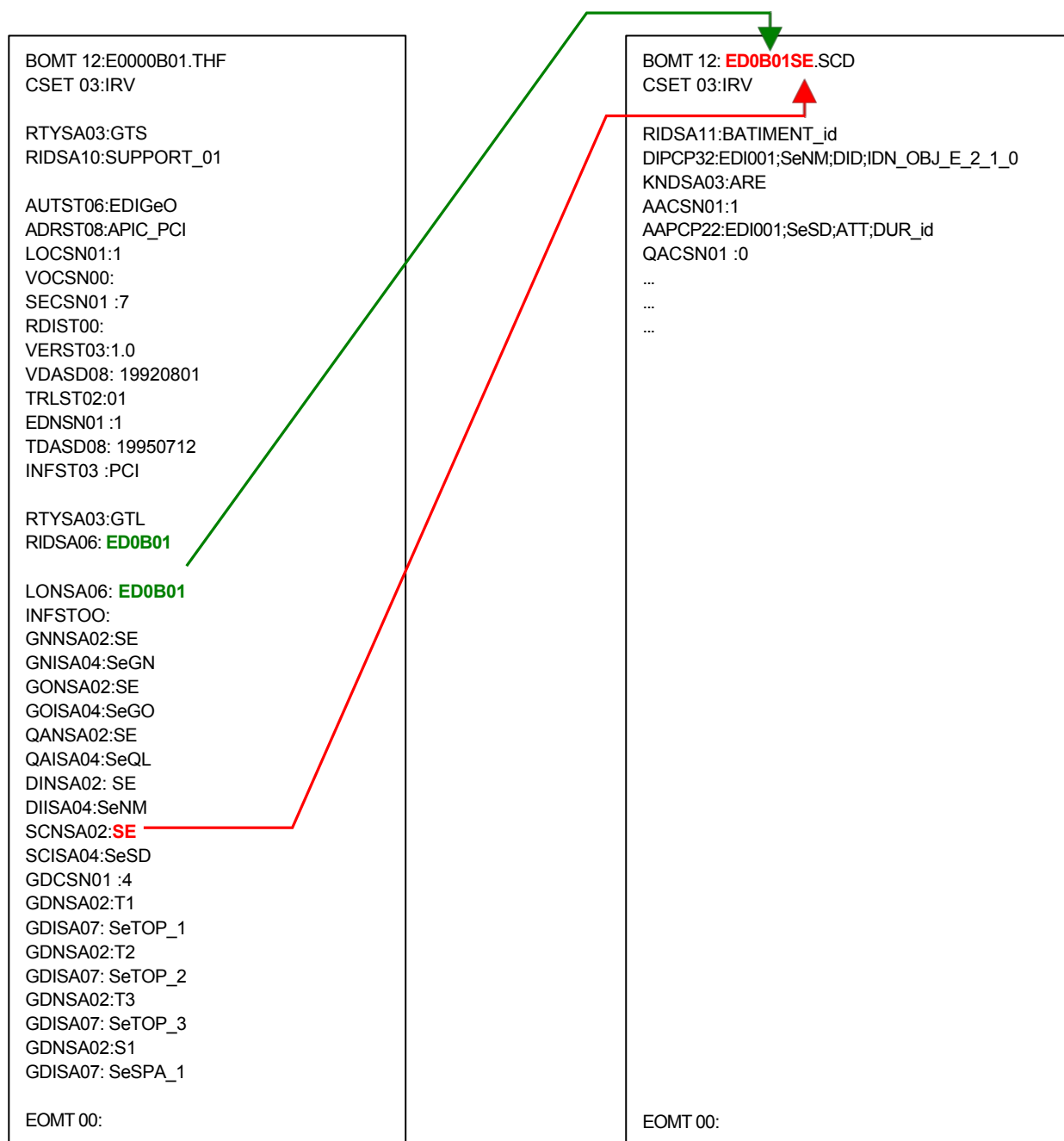
3.2. Links between the file corresponding to the general transmission data set and the file corresponding to the coordinate reference subset



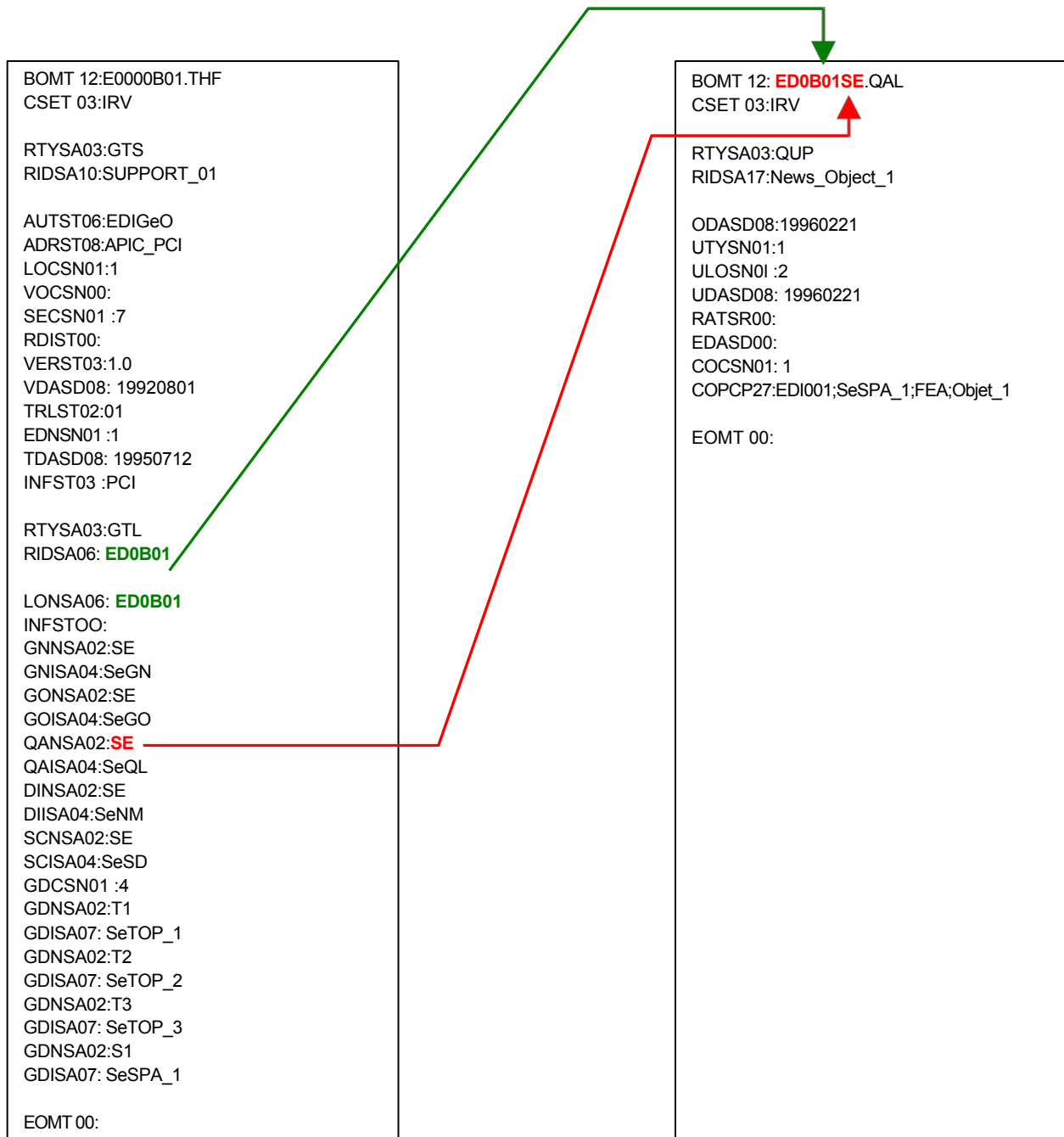
3.3. Links between the file corresponding to the general transmission data set and the file corresponding to the nomenclature definition sub-set



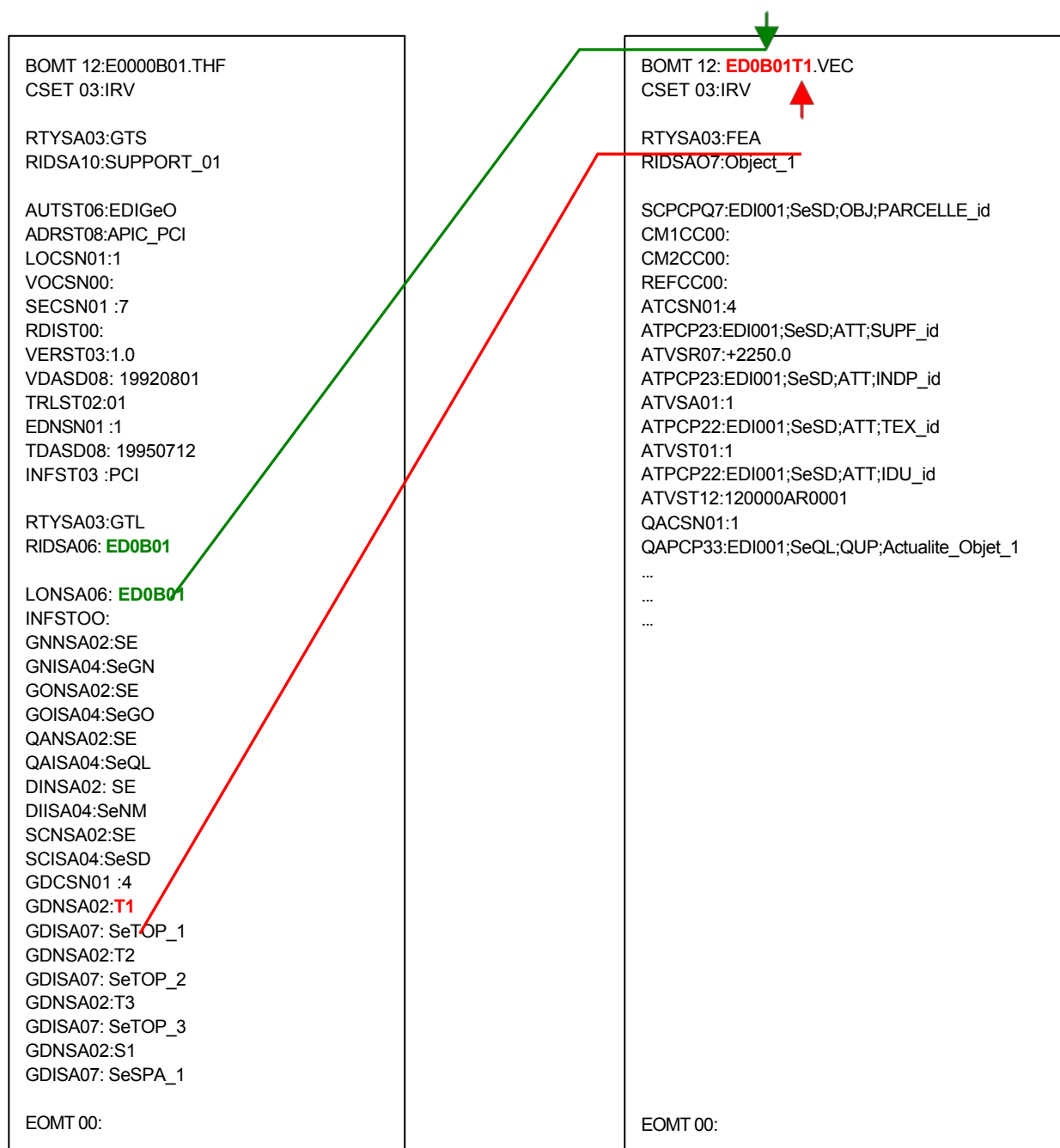
3.4. Links between the file corresponding to the general transmission data set and the file corresponding to the definition sub-set of the conceptual data schema



3.5. Links between the file corresponding to the general transmission data set and the file corresponding to the quality description subset



3.6. Links between the file corresponding to the batch of general transmission data and the file corresponding to the subset of topological or spaghetti vector geographical data



3.7. Links between the file corresponding to the BOM definition subset and the file corresponding to the data conceptual schema definition subset



In the example above, the identifier (pointer) SeNM of the BOM definition sub-assembly refers to the BOM definition file where the description of the object called ID_N_OBJ_E_2_1_0 should be located.

The SeSD identifier of the SCD definition subset refers to the SCD definition file where the description of the DUR attribute should be found (this reference can be inside the file, which is the case here).

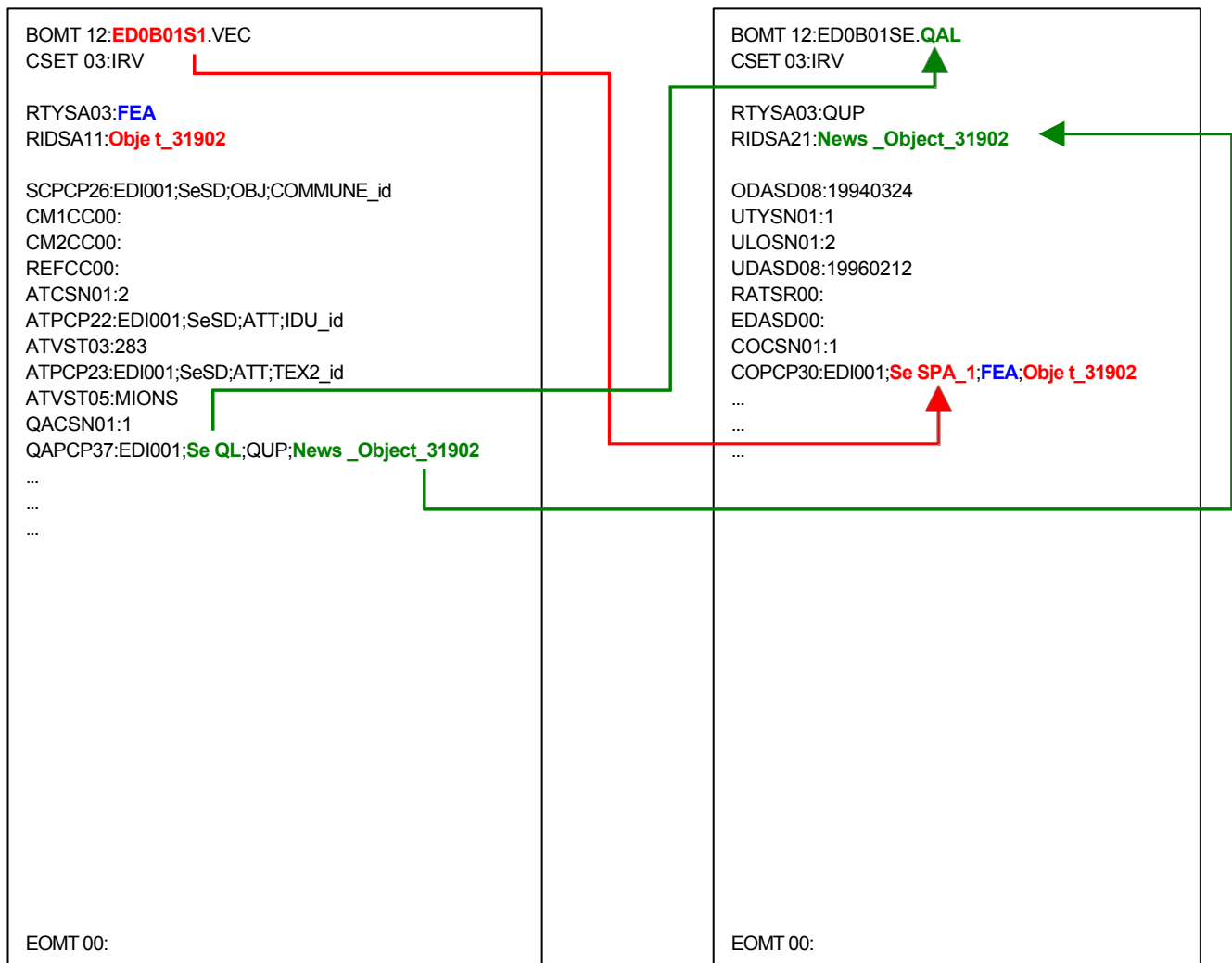
3.8. Links between the file corresponding to the definition subset of the conceptual data schema and the file corresponding to the topological or spaghetti vector geographic data subset

In the example below, we consider only the topological file containing the parcels (T1.VEC file).



The SeSD identifier of the SCD definition subset refers to the SCD file containing the descriptions of the PARCELLE object and the IDU and SUPF attributes.

3.9.L liaisons between the file corresponding to the quality description subset and the file corresponding to the topological or spaghetti vector geographic data subset



The SeQL pointer or identifier of the quality description subset refers to the QAL file where the description of the Actual_Object_31902 object should be located.

The SeSPA_1 pointer or identifier of the geographic vector data subset refers to file S1.VEC where the description of object_31902 should be located.

4. IMPLEMENTATION OF EDIGéO FILES

The following tables give the structure of the types of descriptor blocks that exist in each of the files in the exchange. A single characteristic block is described for each descriptor.

4.1. File corresponding to batch of data general from transmission (from the THF file)

It consists of :

- ⇒ a support descriptor ;
- ⇒ a batch descriptor for each batch of geographic data.

4.1.1. Support descriptor block

This block provides general information about the exchange, such as the author of the exchange, the recipient, the version of EDIGéO used, the number of geographical batches, etc.

| Example | Recording | Zone name | Value for this block |
|--|--|--|----------------------|
| RTYSA03:GTS RIDSA10:SUPPORT_2 | Type of descriptor Descriptor identifier | RTY RID | GTS |
| AUTST15:CDIF of AUXERRE ADRST17:PCI Export V2.4.1 LOCSN01:1 VOCN00: SECSN01:7 RDIST00: VERST03:1.0 VDASD08:20120101 TRLST02:01 EDNSN01:1 TDASD08:20101104 INFST42:Exchange from computerised cadastral map | Author Recipient Number of geographical lots Number of volumes Safety classification Broadcast restrictions EDIGéO version EDIGéO version date Transmission name Transmission edition number Date of transmission General information on the transfer | AUT ADR LOC VOC SEC RDI VER VDA TRL EDN TDA INF | |

Value for safety classification :

- 1 defence secrets
- 2 : secret industry
- 3 confidential
- 4 defence confidential
- 5 confidential industry
- 6 restricted distribution or for official use only
- 7 unprotected

4.1.2. Batch descriptor block

This block is used to identify a batch of geographic data in the exchange, in particular by giving a name to the various subsets.

| Example | Recording | Zone name | Value for this block |
|--|---|--|----------------------|
| RTYSA03:GTL RIDSA06:EDHK01 | Descriptor type Descriptor identifier | RTY RID | GTL |
| LONSA06:EDI002 INFST00: GNNSA02:SE GNISA04:SeGN GONSA02:SE GOISA04:SeGO | Lot name Lot information Name of the general data subset Identifier of the data subset Name of the subset of the coordinate reference Identification of the subset of the coordinate reference | LON INF GNN GNI GON GOI | |
| QANSA02:SE | Name of the quality description subset | QAN | |

| | | | |
|------------------|---|-----|--|
| QAISA04:SeQL | Quality description subset identifier | IAQ | |
| DINSA02:SE | Name of the definition subset of the nomenclature | DIN | |
| DIISA04:SeNM | Identifier of the BOM definition sub-assembly | DII | |
| SCNSA02:SE | Name of the SCD definition subset | SCN | |
| SCISA02:SE | SCD definition subset identifier | SCI | |
| GDCSN01:4 | Number of geographic data subsets | GDC | |
| GDNSA02:T1 | Name of the topological geographic data subset | GDN | |
| GDISA07:SeTOP_1 | Identifier of the geographic data subset T1 | GDI | |
| GDNSA02:T2 | Name of the topological geographic data subset | GDN | |
| GDISA07:SeTOP_2 | Identifier of geographic data subset T2 | GDI | |
| GDNSA02:T3 | Name of the topological geographic data subset | GDN | |
| GDISA07:SeTOP_3 | Identifier of the T3 geographic data subset | GDI | |
| GDNSA02:S1 | Name of the geographic data subset spaghetti | GDN | |
| GDSISA07:SeSPA_1 | Identifier of the geographic data subset S1 | GDI | |

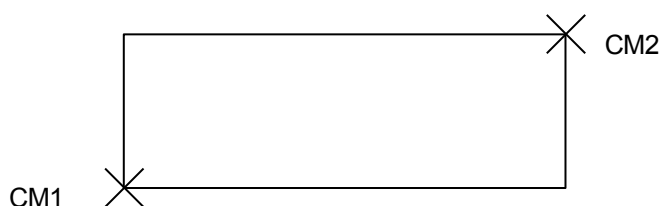
4.2. File corresponding to subset of general data (from the GEN file)

It contains :

- ⇒ a geographical descriptor ;
- ⇒ a geographic data subset descriptor for each geographic data subset.

4.2.1. Geographical extent descriptor block

This block sets the geographical framework for the exchange



| Example | Recording | Zone name | Value for this block |
|--|---|------------|----------------------|
| RTYSA03:DEG RIDSA14:EMPRISE_EDHK01 | Descriptor type Descriptor identifier | RTY RID | DEG |
| CM1CC24:+1686819.00;+7121489.00; CM2CC24:+1801836.00;+7245523.00; | Minimum geographical coordinates Maximum geographical coordinates | CM1 CM2 | |

4.2.2. Geographic data subset descriptor block

This block provides information about the subset and the structure of the geographic data subset.

| Example | Recording | Zone name | Value for this block |
|-----------------------------------|---|-------------------|----------------------|
| RTYSA03:GSE RIDSA07:SeTOP_1 | Descriptor type Descriptor identifier | RTY RID | GSE |
| INFST00: STRSN01:1 REGSA00: | Information on the sub-assembly Data structure Coding descriptor identifier | INF STR REG | |

Code values for the data structure :

- 1 **Topological vector**
- 2 : Network
- 3 : **Spaghetti**
- 4 : Real-valued matrix
- 5 : Matrix with coded values

Values 2, 4 and 5 are not accepted in exchanges with PCI.

4.3. File corresponding to the subset of the coordinate reference (from the GEO file)

It contains a coordinate reference descriptor which describes the reference used for the geographic data in the batch.

It essentially tells you the type and name of the coordinate reference, as well as the unit used.

| Example | Recording | Zone name | Value for this block |
|---|---|--|----------------------|
| RTYSA03:GEO RIDSA15:GEODESIE_EDHK01 RETSA03:MAP RENT00: RELSA06:LAMB93 DIMSN01:2 ALSSN01:2 UNHST01:M | Descriptor type Descriptor identifier Type of coordinate reference Name of coordinate reference Code of coordinate reference Dimension of coordinates Use of altitude system Unit of measurement for planimetric coordinates | RTY RID RET REN REL DIM ALS UNH | GEO |

⇒ Three types of references are used:

- CAR, for Cartesian coordinates ;
- GEO, for geographical coordinates ;
- MAP, for coordinates in projection.

⇒ Two coordinate dimension codes are possible:

- 2, if the coordinates have two components ;
- 3, if the coordinates have three components.

⇒ There are two possible codes for using an altitude system:

- 1, if the geodetic reference system is by definition two-dimensional and if we want an altitude system ;
- 2, if the geodetic reference system is by definition three-dimensional or if we do not want to use an altitude system.

4.4. File corresponding to the BOM definition subset (of the DIC file)

It is used to provide the recipient with a list of codes for the objects, attributes and relationships likely to be used within the batch.

It contains :

- ⇒ object definition descriptors ;
- ⇒ attribute definition descriptors ;

⇒ relationship definition descriptors.

4.4.1. Object definition descriptor block

It is used to describe the object codes used in the data set.

Example: Parcel with code H_11_4_0 (code taken from the CNIG nomenclature)

| Example | Recording | Zone name | Value for this block |
|--|---|------------|----------------------|
| RTYSA03:DID RIDSA17:ID_N_OBJ_H_11_4_0 | Descriptor type Descriptor identifier | RTY RID | DID |
| LABSA08:H_11_4_0 TEXT 06:8859-1 | Object code | LAB DEF | |
| DEFST08:PARCEL ORIST04:CNIG | Object definition Object definition source | ORI CAT | |

4.4.2. Attribute definition descriptor block

It is used to describe the attribute codes used and the occurrences attached to them in the data set.

Example: the DUR attribute is used to describe the nature of a building.

| Example | Recording | Zone name | Value for this block |
|---|--|-------------------|----------------------|
| RTYSA03:DIA RIDSA12:ID_N_ATT_DUR | Descriptor type Descriptor identifier | RTY RID | DIA |
| LABSA03:DUR DEFST00: ORIST04:CNIG | Attribute code Attribute definition Attribute definition source | LAB DEF ORI | |
| CATSA01:P TYP SA01:A | Attribute category Attribute type | CAT TYP | |
| UNIST00: AVCSN01:2 | Default unit Number of pre-coded values | UNI AVC | |
| AVLSA02:01 AVDST08:hard | Pre-coded value Description of the pre-coded value | AVL AVD | |
| building AVLSA02:02 AVDST10:light construction | Pre-coded value Description of the pre-coded value | AVL AVD | |

Remarks :

- a space is equal to a character ;
- the attribute category is given by the CNIG nomenclature.

4.4.3. Semantic relationship definition descriptor block

It is used to describe the semantic relationship codes used in the data set.

| Example | Recording | Zone name | Value for this block |
|---|---|-------------------|----------------------|
| RTYSA03:DIR RIDSA12:ID_N_REL_APP | Descriptor type Descriptor identifier | RTY RID | DIR |
| LABSA03:APP DEFST00: ORIST04:CNIG | Relationship code Relationship definition Source of relationship definition | LAB DEF ORI | |
| CATSA01:P | Relationship category | CAT | |

4.5. File corresponding to subset of definition of the Conceptual Data Schema (from the SCD file)

It enables the recipient of the exchange to know the actual structure of the data set communicated by the sender.

It contains :

- ⇒ descriptors defining an element of the MCD of type object ;
- ⇒ definition descriptors for an MCD element of primitive type ;
- ⇒ definition descriptors for an MCD element of type attribute ;
- ⇒ definition descriptors for a semantic relationship type MCD element;
- ⇒ descriptors defining an element of the MCD of the construction relationship type.

4.5.1. Descriptor block for defining an MCD element of type Object

This is used to describe an object that may be present in the exchange.

Example: Building object

| Example | Recording | Zone name | Value for this block |
|---|--|--|----------------------|
| RTYSA03:OBJ RIDSA11:BUILDING_id | Descriptor type Descriptor identifier | RTY RID | OBJ |
| DIPCP32:EDHK01;SeNM;DID;ID_N_OBJ_E_2_4_0 KNDSA03:ARE AACSN01:1 AAPCP22 EDHK01;SeSD;ATT;DUR_id AAPCP22:EDHK01;SeSD;ATT;TEX_id QACSN01:0 | Nomenclature reference Nature of element Number of attributes SCD reference of attribute element SCD reference of attribute element Number of quality indications | DIP KND AAC AAP AAP QAC | |

4.5.2. Descriptor block for defining an MCD element of type Attribute

Used to describe an attribute likely to be present in the exchange. Example:

DUR attribute

| Example | Recording | Zone name | Value for this block |
|---|--|---------------------------------|----------------------|
| RTYSA03:ATT RIDSA06:DUR_id | Descriptor type Descriptor identifier | RTY RID | ATT |
| DIPCP28:EDHK01;SeNM;DIA;ID_N_ATT_DUR CANSN01:2 UNIST00: AV1SA00: AV2SA00: | Nomenclature reference Maximum number of characters Unit other than default Minimum value of the attribute | DIP CAN UNI AV1 AV2 | |

4.5.3. Descriptor block for defining an MCD element of type Primitive

It is used to describe an object likely to be present in the exchange. Example:

the face primitive

| Example | Recording | Zone name | Value for this block |
|-------------------------------------|---------------------------------------|------------|----------------------|
| RTYSA03:PGE RIDSA12:ID_S_PRI_FAC | Descriptor type Descriptor identifier | RTY RID | PGE |

| | | | |
|---------------------------------------|--|-------------------|--|
| KNDSA03:FAC AACSN01:0 QACSN01:0 | Type of element Number of attributes Number of quality indications | KND AAC QAC | |
|---------------------------------------|--|-------------------|--|

⇒ There are three types of element:

- NOD: for a node ;
- ARC: for a bow ;
- FAC: for one side.

4.5.4. Descriptor block for defining a semantic relationship MCD element

It is used to describe and give the name of a semantic relationship likely to be present in the exchange.

Example: relationship linking the PARCEL NUMBER object and the PARCEL object: PARCEL_NUMBER.

| Example | Recording | Zone name | Value for this block |
|---|--|--|----------------------|
| RTYSA03:ASS RIDSA16:PARCEL_LANE_NUMBER DIPCP28:ED0A01;SeNM;DIR;ID_N_REL_APP CA1SN01:0 CA2SN01:0 SCCSN01:2 SCPCP28 :ED0A01;SeSD;OBJ;NUMVOIE_id OCCSN01:1 SCPCP27 ED0A1;SeSD;PGE;PARCELLE_id OCCSN01:1 AACSN01:0 QACSN01:0 | Descriptor type Descriptor identifier BOM reference Minimum cardinality Maximum cardinality Number of object types SCD reference for the element of type Object Number of occurrences of the object type SCD reference for the element of type Object Number of occurrences of the object type Number of attributes Number of quality indications | RTY RID DIP CA1 CA2 SCC SCP OCC SCP OCC AAC QAC | ASS |

4.5.5. Descriptor block for defining an MCD element of the construction relationship type

It is used to describe and give the code for a construction relationship that is likely to be present in the exchange.

Example: construction relationship between a building and a face.

| Example | Recording | Zone name | Value for this block |
|---|---|--|----------------------|
| RTYSA03:REL RIDSA20:ID_S_RCO_BATIMENT_id KNDSA03 :IDB CA1SN01:0 CA2SN01:0 SCCSN01:2 SCPCP27:EDHK01;SeSD;OBJ;BATIMENT_id OCCSN01:1 SCPCP28 EDHK01;SeSD;PGE;ID_S_PRI_FAC OCCSN01:0 AACSN01:0 QACSN01:0 | Descriptor type Descriptor identifier Nature of relationship Minimum cardinality Maximum cardinality Number of element types SCD reference for the element Number of occurrences of the associated element SCD reference for the element Number of occurrences of the associated element Number of attributes Number of quality indications | RTY RID KND CA1 CA2 SCC SCP OCC SCP OCC AAC QAC | REL |

⇒ There are nine types of relationship:

- ICO, "is composed of", composition relationship linking one or more complex objects and/or simple objects;

- IDB, "is represented by", representation relation linking a simple point or surface object to primitives of the same type;
- IDR, "is represented by +/-", a representation relation linking a simple linear object with bows ;
- IND, "has as its initial node", relationship between an arc and its initial node ;
- FND, "has an end node", relationship between an arc and its end node ;
- LPO, "has for left face", relationship between an arc and the face or faces to its left;
- RPO, "has for right face", relationship between an arc and the face or faces to its right;
- ILI, "is included in", relationship between an isolated node and the face or faces containing that node;
- BET, "belongs to", relationship between an isolated node and the arc(s) containing that node.

4.6. File corresponding to the quality description subset (of the QAL file)

Only the topical descriptor block is described, as the descriptor blocks corresponding to the other eight quality criteria are not involved in PCI/EDIGéO exchanges.

It is used to introduce the temporal aspect of the data (date of observation, type of update, durability and date of update, annual rate of change and expiry date).

Example: quality on a parcel object with the name Object_37.

| Example | Recording | Zone name | Value for this block |
|---------------------------------------|---------------------------------------|------------|----------------------|
| RTYSA03:QUP RIDSA18:News_Object_37 | Descriptor type Descriptor identifier | RTY RID | QUP |
| ODASD08:20090327 | Observation date | ODA | |
| UTYSN01:1 | Type of update | UTY | |
| ULOSN01:2 | Durability of update | ULO | |
| UDASD08:20100126 | Date of update | UDA | |
| RATSR00: | Annual rate of change | RAT | |
| EDASD00: | Validity end date | EDA | |
| COCSN01:1 | Number of items | COC | |
| COPCP26:EDHK01;SeSD;OBJ;LIEUDIT_id | MCD element reference | COP | |

⇒ Codes for update types :

- 0: no change to the receiving data ;
- 1: data creation ;
- 2: replacement of the receiving data ;
- 3: deletion of the receiving data.

In PCI, the creation of the data (code 1) corresponds to the date on which the object was loaded, created or updated.

⇒ Codes for ongoing updates :

- 1: provisional update ;
- 2: final update.

4.7. File corresponding to the subset of topological or spaghetti vector geographic data (from the VEC file)

It can contain :

⇒ descriptors of geographic objects ;

- ⇒ node descriptors ;
- ⇒ arc descriptors ;
- ⇒ face descriptors ;
- ⇒ relationship descriptors.

4.7.1. Node descriptor block

It provides all the parameters needed to describe a node.

Example: Node_1 with coordinates X = 1 743 020.76; Y = 7 718 777.64

| Example | Recording | Zone name | Value for this block |
|--|--|---|----------------------|
| RTYSA03:PNO RIDS07:Node_1 SCPCP28:EDHK01;SeSD;PGE;ID_S_PRI_NOD TYPN01:1 CORCC24:+1743020.76;+7178777.64; ATCSN01:0 QACSN01:0 | Descriptor type Descriptor identifier SCD reference Node type Node coordinates Number of attributes Number of quality indications | RTY RID SCP TYP COR ATC QAC | PNO |

- ⇒ Node type: two possible values:
 - 1: for an initial or final node (for topological objects) ;
 - 2: for an isolated node.

4.7.2. Arc descriptor block

It gives all the parameters needed to describe an arc. Example:

Arc_32

| Example | Recording | Zone name | Value for this block |
|---|--|---|----------------------|
| RTYSA03:PAR RIDS06:Arc_32 SCPCP28:EDHK01;SeSD;PGE;ID_S_PRI_ARC CM1CC00: CM2CC00: TYPN01:1 PTCSN01:2 CORCC24:+1743020.76;+7178777.64; CORCC24:+1743011.92;+7178779.80; ATCSN01:0 QACSN01:0 | Descriptor type Descriptor identifier Reference to the SCD Minimum coordinates Maximum coordinates Type of bow Number of points Initial point of the arc End point of the arc Number of attributes Number of quality indications | RTY RID SCP CM1 CM2 TYP PTC COR COR ATC QAC | BY |

- ⇒ Bow type: three possible values:
 - **1: broken line**
 - 2: arc of a circle
 - 3: curve

Values 2 and 3 are not accepted in exchanges with PCI. The arc points are defined from the start node to the end node.

4.7.3. Face descriptor block

It gives all the parameters needed to describe a face. Example:

Face_0

| Example | Recording | Zone name | Value for this block |
|--|---|---------------------------------|----------------------|
| RTYSA03:EFPP RIDS06:Face_0 | Descriptor type Descriptor identifier | RTY RID | PFE |
| SCPCP28:EDHK01;SeSD;PGE;ID_S_PRI_FAC CM1CC00: CM2CC00: ATCSN01:0 QACSN01:0 | Reference to the SCD Minimum coordinates Maximum coordinates Number of attributes Number of quality indications | SCP CM1 CM2 ATC QAC | |

4.7.4. Geographic object descriptor block

It gives all the parameters used to describe a geographic object. Example:

Object_31: hard building (pavilion for example).

| Example | Recording | Zone name | Value for this block |
|--|--|---|----------------------|
| RTYSA03:FEA RIDS011:Objet_66110 | Descriptor type Descriptor identifier | RTY RID | FEA |
| SCPCP27:EDHK01;SeSD;OBJ;BATIMENT_id CM1CC00: CM2CC00: REFCC00: ATCSN01:1 ATPCP22:EDHK01;SeSD;ATT;DUR_id ATVSA02:01 QACSN01:1 QAPCP37:EDHK01;SeQL;QUP;News_Object_66110 | Reference to the SCD Minimum coordinates Maximum coordinates Reference point Number of attributes SCD attribute definition Attribute value Number of quality indications Indication of quality | SCP CM1 CM2 REF ATC ATP ATV QAC QAP | |

4.7.5. Relationship descriptor block

It gives all the parameters used to describe a relationship.

Example: Relationship between an object and its arcs

| Example | Recording | Zone name | Value for this block |
|---|--|---|----------------------|
| RTYSA03:LNK RIDS021:Compo_IDR_Obj_67294 | Descriptor type Descriptor identifier | RTY RID | LNK |
| SCPCP33:EDHK01;SeSD;REL;ID_S_RCO_TLINE_id FTCSN01:4 FTPCP30:EDHK01;SeSPA_1;FEA;Obj_67294 FTPCP30:EDHK01;SeSPA_1;PAR;Arc_67294_1 SNSSA01:P FTPCP30:EDHK01;SeSPA_1;PAR;Arc_67294_2 SNSSA01:P FTPCP30:EDHK01;SeSPA_1;PAR;Arc_67294_3 SNSSA01:P ATCSN01:0 QACSN01:0 | Reference to the SCD Number of elements in the MCD Related element Relating element Composition direction Relating element Composition direction Relating element Composition direction Number of attributes Number of quality indications | SCP FTC FTP FTP SNS FTP SNS FTP SNS ATC QAC | |

⇒ The value of the composition direction is :

- P, if it is a "is represented + by" relationship,
- M, if it is a "is represented by" relationship.

5. Geometry

5.1. Geometry representation

5.1.1. Principle: objects are separated from their geometry

4 types of object :

- Simple one-off objects,
- Simple linear objects,
- Simple surface objects,
- Complex objects (not used in cadastral models).

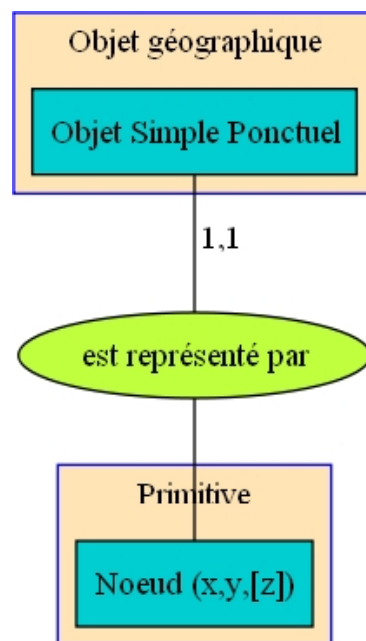
5.1.2. Representing the geometry of a simple point object

A simple point object must be linked to its geometry.

The geometry of a point object is a node.

Consequently, the definition of such an object implies the presence of 3 descriptors:

- The object descriptor (RTY value: FEA)
- The node descriptor (RTY value: PNO)
- The descriptor of the relationship (RTY value: LNK) linking the object to the node.



5.1.3. Representing the geometry of a simple linear object

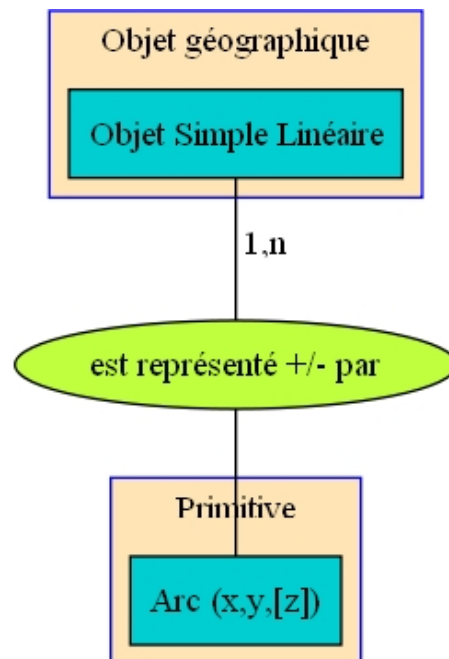
A simple linear object must be linked to its geometry.

The geometry of a linear object is made up of one or more arcs.

Consequently, the definition of such an object implies the presence of at least 3 descriptors:

- The object descriptor (RTY value: FEA)

- Arc descriptors (RTY value: PAR)
- Relationship descriptors (RTY value: LNK) linking the object to its arc(s).



5.1.4. Representation of the geometry of a simple surface object

A simple surface object must be linked to its geometry.

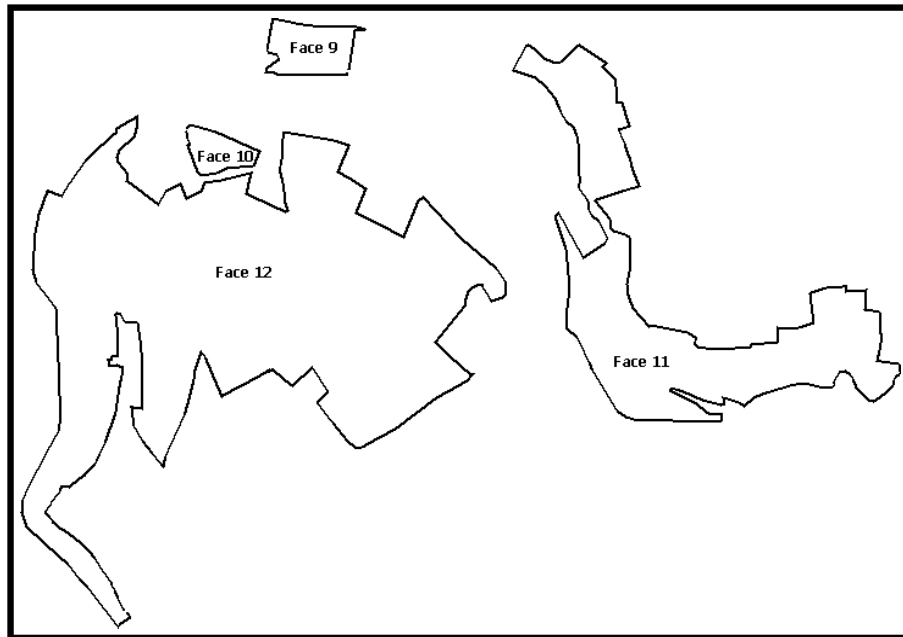
The geometry of a surface object is one or more faces.

Consequently, the definition of such an object implies the presence of at least 3 descriptors:

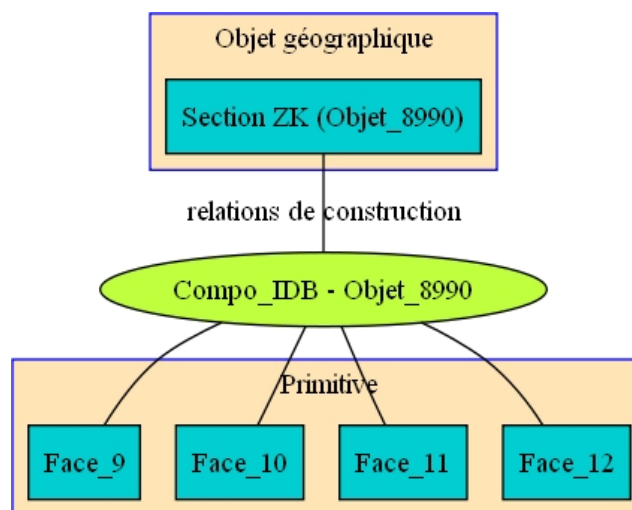
- The object descriptor (RTY value: FEA)
- Face descriptors (RTY value: PFE)
- Relationship descriptors (RTY value: LNK) linking the object to its face or faces.

The SECTION cadastral object can be multi-sided, for example.

Example of a SECTION object (Section identifier 242000ZK) made up of 4 faces in an EDIGéO exchange



The descriptors to be placed in the VEC metafile are symbolised by the following diagram:



Descriptor for section 242 000 ZK (RID identifier = "OBJECT_8990") in the EDIGéO exchange (The SECTION object must only be described by a single descriptor):

```

RTYSA03:FEA
RIDS10:OBJET_8990
SCPCP26:EDZK01;SeSD;OBJ;SECTION_id
CM1CC00:
CM2CC00:
REFCC00:
ATCSN01:2
ATPCP22:EDZK01;SeSD;ATT;TEX_id
TEXT 06:8859-1
ATVST02:ZK
ATPCP22:EDZK01;SeSD;ATT;IDU_id
TEXT 06:8859-1
ATVST08:242000ZK
  
```

```
QACSN01:1
QAPCP36:EDZK01;SeQL;QUP;Actualite_Obj_8990
```

This section is linked to the 4 faces of its geometry by a relationship (with identifier RID="COMPO_IDB_OBJET_8990"). We can see that the 4 faces linked to the section have the identifiers (RID) "Face_9", "Face_10", "Face_11" and "Face_12" respectively.

```
RTYSA03:LNK
RIDS020:Compo_IDB_Obj_8990
SCPCP35:EDZK01;SeSD;REL;ID_S_RCO_SECTION_id
FTCSN01:5
FTPCP29:EDZK01;SeTOP_3;FEA;Obj_8990
FTPCP25:EDZK01;SeTOP_3;PFE;Face_9
FTPCP26:EDZK01;SeTOP_3;PFE;Face_10
FTPCP26:EDZK01;SeTOP_3;PFE;Face_11
FTPCP26:EDZK01;SeTOP_3;PFE;Face_12
ATCSN01:0
QACSN01:0
```

Each of these 4 faces is itself defined in a descriptor. Here is the descriptor for the "Face_9" face

```
RTYSA03:PFE
RIDS006:Face_9
SCPCP28:EDZK01;SeSD;PGE;ID_S_PRI_FAC
CM1CC00:
CM2CC00:
ATCSN01:0
QACSN01:0
```

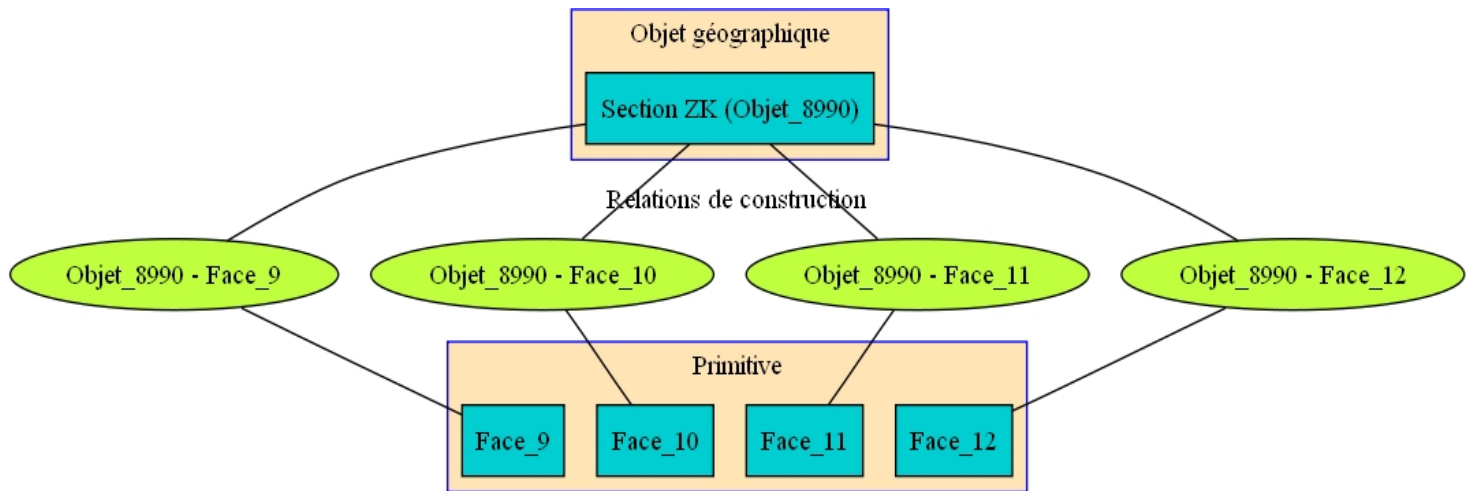
Each of the 4 faces is itself linked to the arcs that make it up. Consider the case of the Face_9 face linked to the Arc_6 arc by the "Compo_RPO_Arc_6_Face_9" relationship (the face is to the right of the arc).

```
RTYSA03:LNK
RIDS022:Compo_RPO_Arc_6_Face_9
SCPCP33:EDZK01;SeSD;REL;ID_S_RCO_FAC_DRTE
FTCSN01:2
FTPCP24:EDZK01;SeTOP_3;PAR;Arc_6
FTPCP25:EDZK01;SeTOP_3;PFE;Face_9
ATCSN01:0
```

The geometry of the Arc_6 arc is fully defined in the corresponding descriptor.

```
RTYSA03:PAR
RIDS005:Arc_6
SCPCP28:EDZK01;SeSD;PGE;ID_S_PRI_ARC
CM1CC00:
CM2CC00:
TYPN01:1
PTCSN02:26
CORCC23:+493186.14;+6547928.42;
CORCC23:+493184.58;+6547923.92;
...
CORCC23:+493198.44;+6548013.44;
CORCC23:+493186.14;+6547928.42;
ATCSN01:0
QACSN01:0
QACSN01:0
```

Another way of defining the object and its geometry is to define 4 relationships, schematised as follows:



5.1.5. Representation of the geometry of a face

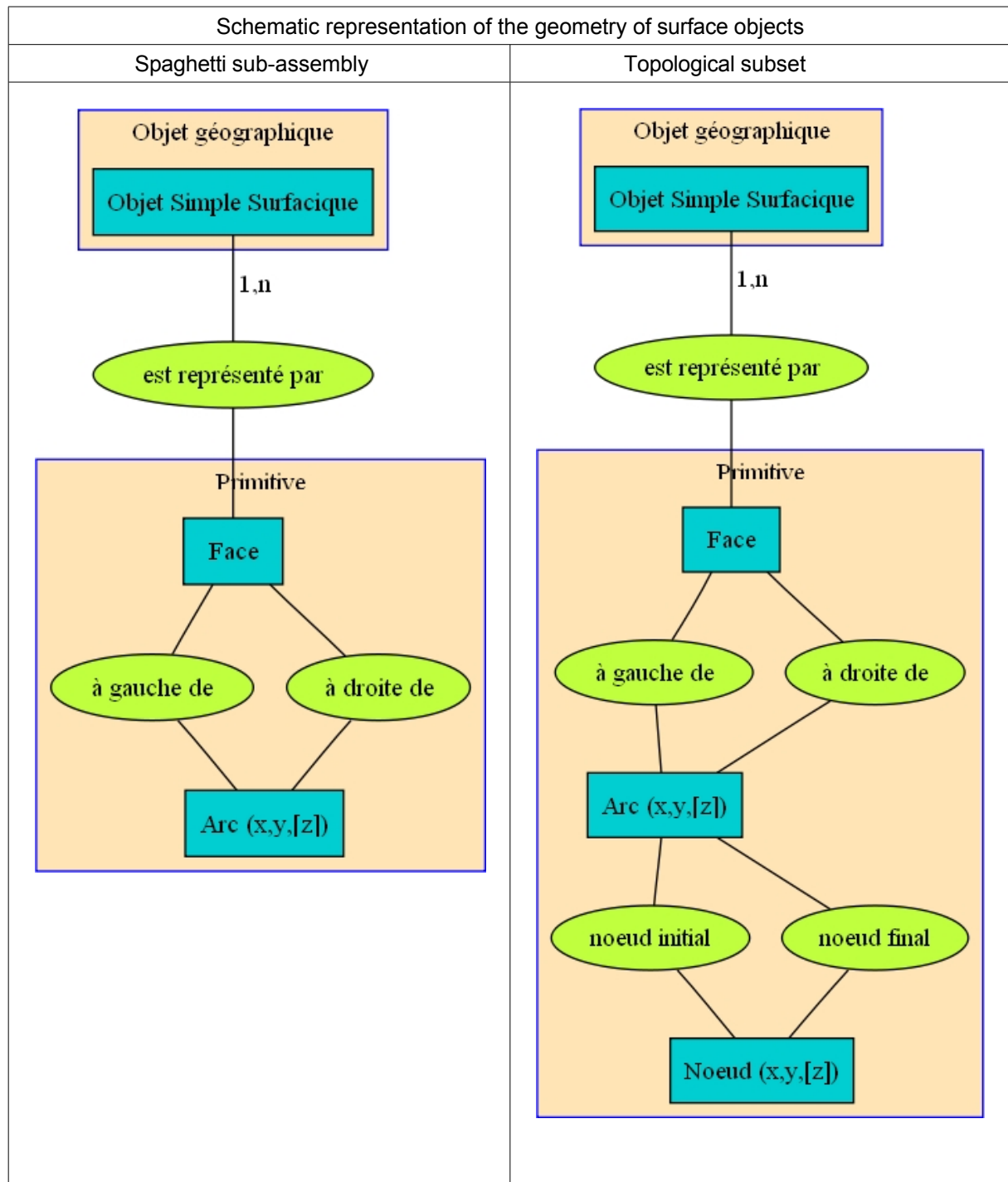
Definition: A face is a single surface element.

Furthermore, in EDIGÉO, a face itself is dissociated from its geometry. The geometry of a face is defined by the arcs linked to that face

Consequently, the definition of a face implies the presence of at least 3 descriptors:

- Face descriptor (RTY value: PFE)
- Arc descriptors (RTY value: PAR)
- The relationship descriptors (RTY value: LNK) linking the face to its arcs.

A face made up of n arcs implies the presence of $1+2n$ descriptors.

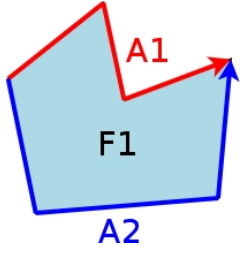


5.2. Examples of faces

Given the definition of a face, there are several special cases.

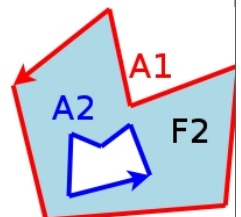
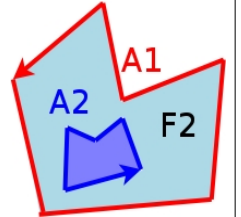
5.2.1. Single-sided

A simple face is defined by the set of relationships linking this face to the arcs of the contour. Here is a simple face made up of 2 arcs.

| | |
|---|---|
|  | <p>2 relationships define the F1 face</p> <ol style="list-style-type: none"> 1. The face is to the right of arc A1, 2. The face is to the left of the A2 arch. <p>The face is in one piece</p> |
|---|---|

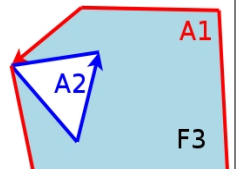
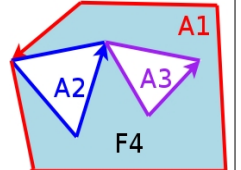
5.2.2. Face to hole

A face with a hole is defined by the set of relationships linking this face to the arcs of the outer contour and the arcs of the inner contour of the hole. Here is a face with a hole made up of 2 arcs (the arc of the outer contour and the arc of the inner contour).

| | |
|--|--|
|  | <p>2 relationships define the F2 side</p> <ol style="list-style-type: none"> 1. The face is to the left of arch A1, 2. The face is to the right of the A2 arch. <p>The face is in one piece</p> |
|  | <p>CAUTION: an F2 face defined to the left of arcs A1 and A2 would be inconsistent. The hole would be counted twice and not subtracted as required.</p> |

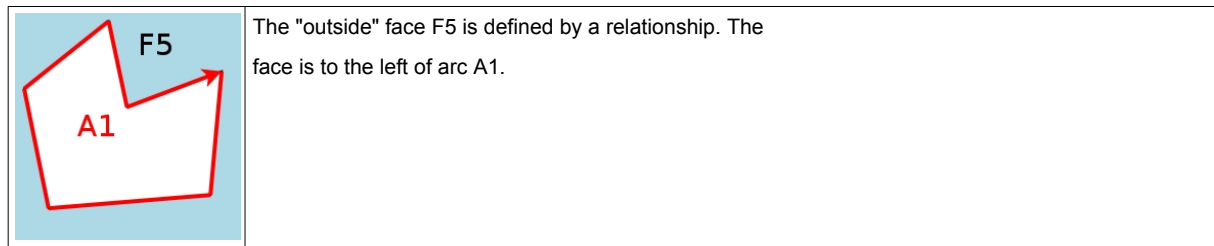
5.2.3. Faces with holes touching the outer edge

A face with a hole is defined by the set of relationships linking this face to the arcs of the outer contour and the arcs of the inner contour of the hole. Here is a face with a hole made up of 2 arcs (the arc of the outer contour and the arc of the inner contour). A face with a hole always contains at least two arcs. Special feature: the outer and inner contours of the face touch at one point.

| | |
|---|--|
|  | <p>2 relationships define the F3 side</p> <ol style="list-style-type: none"> 1. The face is to the left of arch A1, 2. The face is to the right of the A2 arch. <p>The face is in one piece</p> |
|  | <p>The previous case can be generalised. We can add interior contours touching each other in cascade.</p> <p>3 relationships define the F4 face</p> <ol style="list-style-type: none"> 1. The face is to the left of arch A1, 2. The face is to the right of the A2 arch, 3. The face is on the right of arc A3. <p>The face is in one piece</p> |

5.2.4. External side

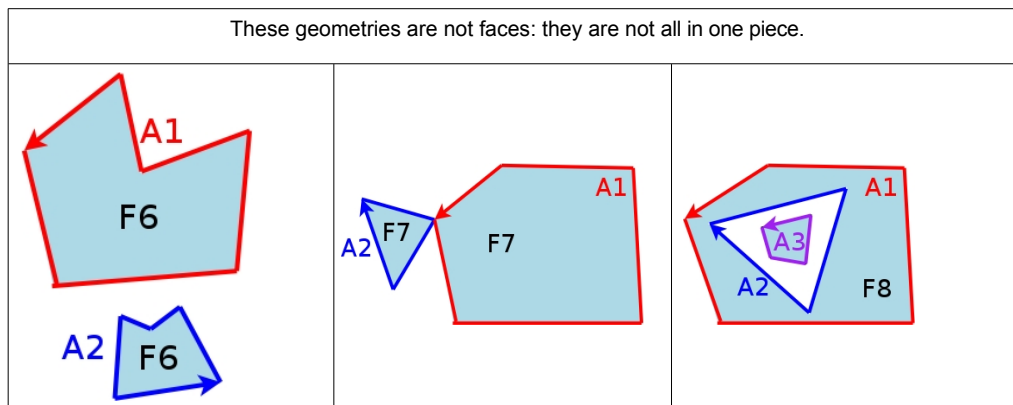
An external face is represented by the external part of a contour.



Example: side 0 in the parcels file (T1), which represents unregistered land.

5.2.5. Geometries that do not represent faces

Some geometric descriptions in an EDIGÉO exchange do not represent faces.



5.3. The EDIGéO topological model

The objects in an EDIGÉO topological model must form a space without gaps or overlaps. To facilitate this principle, the geometry of these objects must respect an overall consistency. This consistency is reflected in a set of rules.

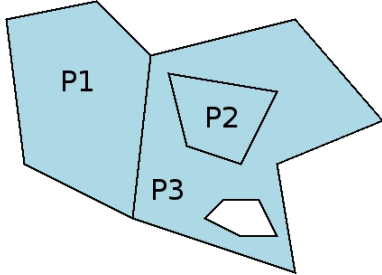
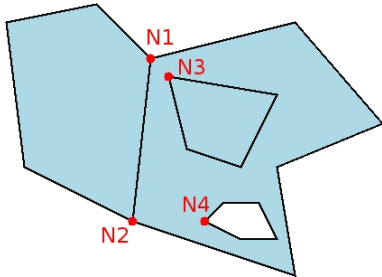
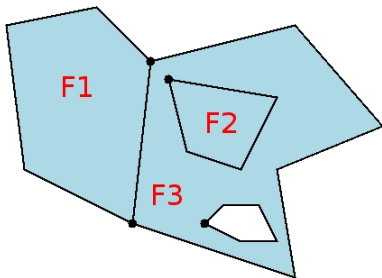
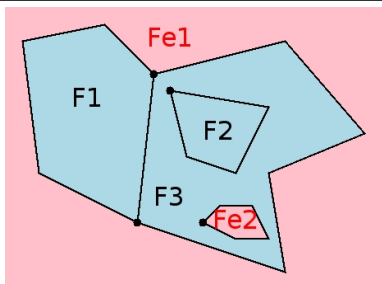
5.3.1. Rules for creating the geometry of a topological model.

- The entire geometry of the objects is broken down into elementary arcs. An elementary arc lies between two nodes (points). A node is either the junction of at least three segments, or any point in a closed circuit.
- Each of the objects is then associated with one or more faces, depending on whether or not the object is multi-faceted.
- The exterior of all the objects is also highlighted. This exterior is itself made up of one or more faces, which are added to the list of faces making up the objects.
- The various faces thus listed must be related to the arcs that make them up.
- At the end of this stage, each arc must be linked to two faces. One is to its left, the other to its right.

- The set of faces that are not linked to any object constitute the exterior of the space.

5.3.2. Example of the decomposition of parcels, the objects of a topological model.

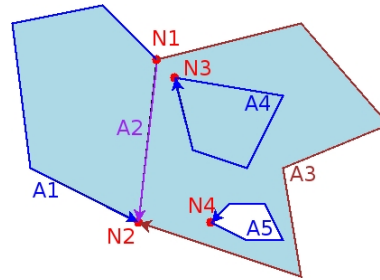
Cadastral parcels must form a whole with no gaps or overlaps. What's more, the definition of a parcel implies that its geometry is in one piece. A parcel is therefore linked to one and only one face.

| | |
|---|--|
| <p>Consider the set of 3 plots P1, P2 and P3. Plot P3 "contains" 2 holes. One of the holes is occupied by plot P2, while the other is part of the public domain.</p> |  |
| <p><u>Searching for model nodes</u></p> <p>Nodes N1 and N2 are at the intersection of 3 segments.</p> <p>Nodes N3 and N4 are a point in a closed circuit.</p> |  |
| <p><u>Association Objects - Faces</u></p> <p>The 3 parcels are associated with 3 faces:</p> <ul style="list-style-type: none"> ➤ Plot P1 is associated with side F1, ➤ The P2 plot is associated with the F2 side, ➤ Plot P3 is associated with side F3. |  |
| <p><u>Association Extérieur - Faces</u></p> <p>The exterior consists of 2 faces: Fe1 and Fe2</p> |  |

Searching for model arcs

The arcs of the model, breaking down the geometry of the parcels, are :

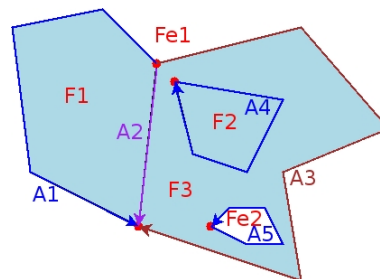
- > arc A1 from N1 to N2,
- > the A2 arc from N1 to N2,
- > the A3 arc from N1 to N2,
- > the A4 arc from N3 to N3,
- > the A5 arc from N4 to N4.



Linking arcs and faces

The following relationships can be used to define face geometry:

- > arc A1 has the face F1 on the left;
- > the arc A1 has the face Fe1 on the right;
- > arc A2 has F3 on the left;
- > the A2 arc has the F1 face on the right;
- > arc A3 has the face Fe1 on the left;
- > arc A3 has the face F3 on the right;
- > the face of arc A4 is F3 on the left;
- > the face of arc A4 is F2 on the right;
- > the face of arc A5 is Fe2 on the left;
- > arc A5 faces F3 on the right;



6. Policies and place names

6.1. General principles for positioning place names

6.1.1. Principles

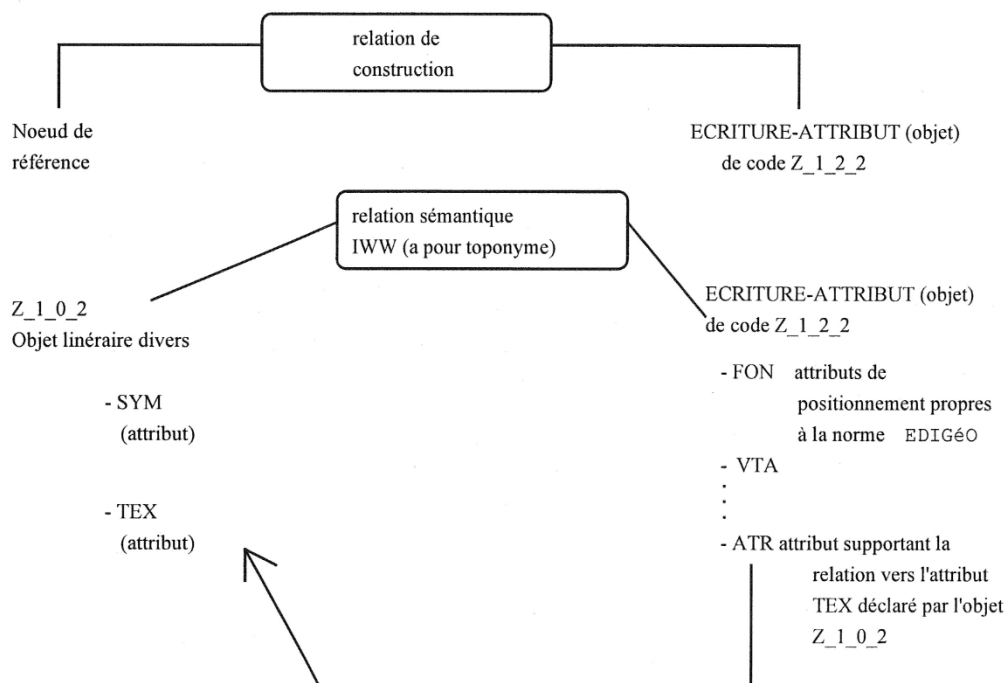
Positioning a place name (or script) involves :

- a descriptor for a reference node used to position the toponym ;
- the "TEX" attribute associated with the object supporting the text to be positioned;
- the write-attribute object (Z_1_2_2) used by the EDIGéO standard;
- a construction relationship linking the write-attribute object (Z_1_2_2) and the reference node ;
- a semantic relationship "a for toponym", code IWW linking the write-attribute object (Z_1_2_2) to the object concerned.

The write-attribute object (Z_1_2_2) has the property :

- support positioning attributes ;
- point to the "TEX" attribute declared in any object ;
- to link the writing-attribute object (Z_1_2_2) and the object concerned by a semantic relationship "has for toponym" code IWW.

To position a label associated with a miscellaneous linear object (Z_1_0_2) in PCI, the model is as follows:



To position several words, you need to generate as many TEX, TEX2, TEX3, TEX4 attributes... (limited to TEX10) and writing-attribute objects (Z_1_2_2) for each word to be positioned.

In the case of objects with more than 10 words, it is possible to include several words in a single label, but this must not exceed 255 characters, including spaces.

The TEX2 to TEX10 attributes are managed in the same way as the TEX attribute.

Example: Avenue du Général de Gaulle

- the TEX attribute is used to position the word "Avenue";
- the TEX2 attribute is used to position the word "du";
- the TEX3 attribute is used to position the word "General";
- the TEX4 attribute is used to position the word "de";
- the TEX5 attribute is used to position the word "Gaulle".

Note: When vectorising, it is important to :

- enter the place name ;
- enter the positioning attributes for this text.

In addition, for transmission, the place name must be associated with one or more TEX, TEX2... attributes and the positioning elements with the write-attribute object (Z_1_2_2).

6.1.2. Practical details

The positioning parameters are defined by the write-attribute object (Z_1_2_2).

Each text or graphic symbol must be inscribed in a fictitious envelope polygon, which is a rectangle with dimensions :

- a length equal to that of the text or symbol to be positioned ;
- a height equal to that of the text or symbol to be positioned.

The orientation of this polygon is defined by its height vector and its base vector. The positioning of this polygon uses parameters to determine :

- its horizontal alignment ("HTA" attribute) and vertical alignment ("VTA" attribute), in relation to a reference node;
- its orientation (X and Y components of the base vector constituting its "DI3" and "DI4" attributes);
- its inclination (X and Y components of the height vector constituting its "DI1" and "DI2" attributes);
- the writing direction ("TPA" attribute) ;
- the font ("FON" attribute);
- the height of the characters ("HEI" attribute) ;
- the units used for character height ("TYU" and "UNI" attributes) ;

- the enlargement factor or width to height ratio of the characters ("CEF" attribute) ;
- the spacing between characters ("CSP" attribute).

6.1.2.1. The orientation of the polygon relative to the reference axes

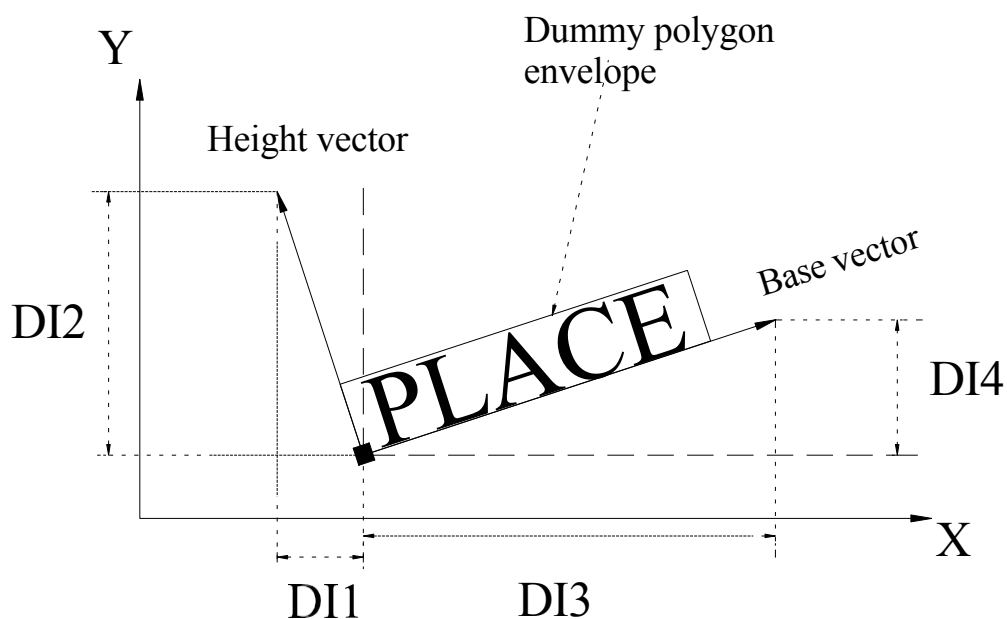
The reference vector is the base vector.

The attributes used (associated with the Z_1_2_2 write-attribute object) are :

- DI3 for the X component of the base vector ;
- DI4 for the Y component of the base vector.

Orientation uses the X and Y components (coordinates) of the end point of the base vector, the origin point of this vector being the reference node.

The base vector is then merged with one of the five vertical alignment lines described below.



6.1.2.2. The inclination of the polygon in relation to the reference axes

The reference vector is the height vector.

The attributes used (associated with the write-attribute object Z_1_2_2) are :

- DI1 for the X component of the height vector ;
- DI2 for the Y component of the height vector.

Orientation uses the X and Y components (coordinates) of the end point of the height vector, the origin point being the reference node.

6.1.2.3. The alignment of the polygon in relation to the reference node

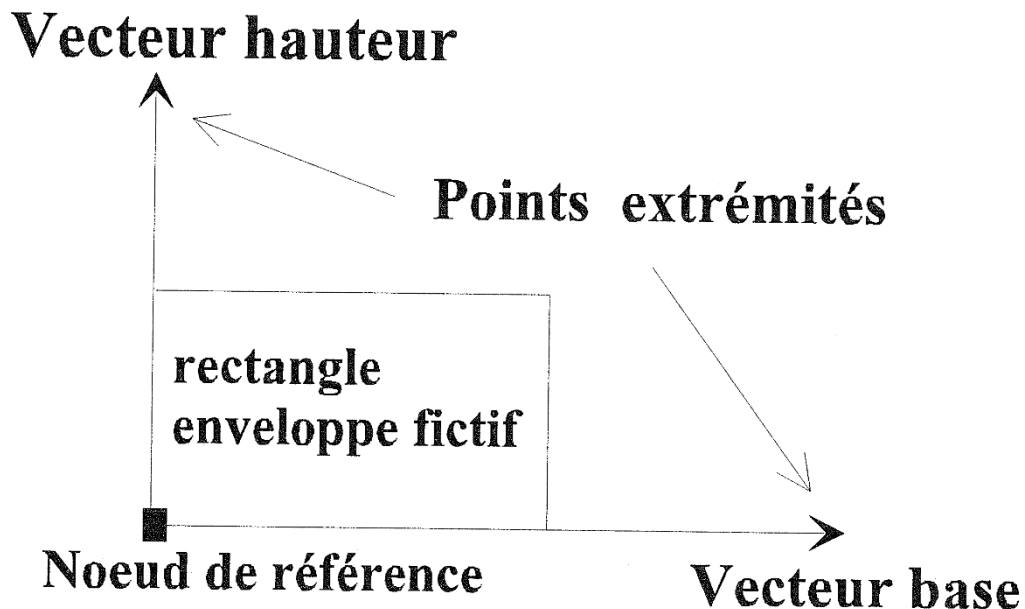
6.1.2.3.1 Horizontal alignment

The attribute used (associated with the Z_1_2_2 writing-attribute object) is HTA (horizontal text alignment).

The possible occurrences of this attribute are :

- 01: normal (the reference node is the one defined by default by the EDIGéO standard) ;
- 02: left ;
- 03 : middle ;
- 04: right.

The solution adopted by the General Directorate of Public Finance is: HTA = 01



The reference node is at the extreme left and bottom of the fictitious envelope polygon.

6.1.2.3.2 Vertical alignment

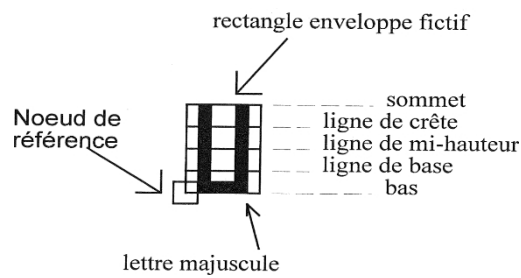
The attribute used (associated with the Z_1_2_2 write-attribute object) is VTA (vertical text alignment).

The possible occurrences of the attribute are :

- 01: normal (the reference node is the one defined by default by the EDIGéO standard) ;
- 02 : summit ;
- 03: peak ;
- 04: half-height ;
- 05 : base ;
- 06: low.

The solution adopted by the General Directorate of Public Finance is: VTA = 01.

Vertical alignment is performed using the reference node and one of the five possible lines of the fictitious envelope polygon (the reference node is located on one of these five lines as required).



6.1.2.4. The meaning of writing

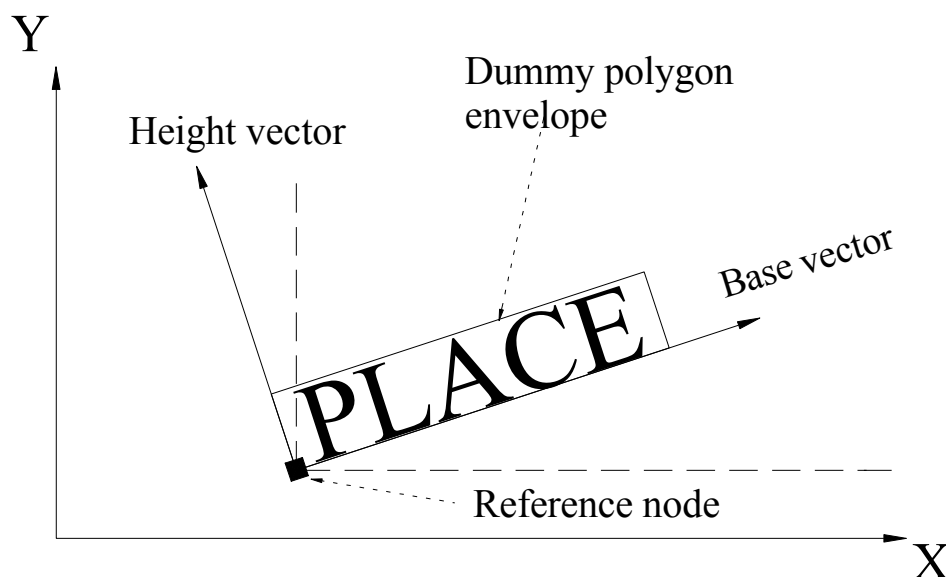
The writing direction indicates the orientation of the character string in relation to the reference nodes.

The attribute used is TPA.

The possible occurrences are as follows:

- 01 : right ;
- 02: left ;
- 03 : top ;
- 04: low.

The solution adopted by the General Directorate of Public Finance is: TPA = 01.



Note: It should be noted that when exchanging computerised cadastral map objects under EDIGéO, whatever the values of the HTA and VTA attributes communicated to the DGFIP when importing, the values previously specified for the HTA, VTA and TPA attributes are used when exporting.

It is therefore essential to respect these parameters when delivering digital cadastral map data.

6.2. The writing style

From now on, all entries in the geographic data batches exchanged with the Direction générale des finances publiques will be in Times New Roman font.

The sizes of the entries for each label associated with the different types of object (point, linear, surface) are specified in the table below. For each occurrence, the table shows the size of the labels that can be associated with it.

| Object | Attribute or occurrence of the attribute | Style | Police | Height (1/1000 scale) (mm paper) |
|------------------------------|--|----------|-----------------|---|
| Parcel | Parcel number | Standard | Times New Roman | 2 |
| Tax subdivision | Letter of order | Standard | Times New Roman | 2 |
| Section | Section letter | Standard | Times New Roman | 6 |
| Track axis | Labels | Standard | Times New Roman | 2 |
| Section of track | Labels | Standard | Times New Roman | 2 |
| Section of watercourse | Labels | Standard | Times New Roman | 3 |
| Parcel load | Letter of order | Standard | Times New Roman | 2 |
| Street number | Street number | Standard | Times New Roman | 1 |
| Property complex | Street name | Standard | Times New Roman | 1,25 |
| Location | Place name (supported by 1 to 10 labels) | Standard | Times New Roman | 4 |
| Building | Building text | Standard | Times New Roman | 1,25 |
| Miscellaneous one-off items | 12: Calvary | Standard | Times New Roman | 2 |
| | 63: Well | Standard | Times New Roman | 2 |
| Miscellaneous linear object | 17: State limit | Standard | Times New Roman | 5 |
| | 18: Departmental boundary | Standard | Times New Roman | 5 |
| | 21: Path | Standard | Times New Roman | 2 |
| | 23: Path, pavements | Standard | Times New Roman | 2 |
| | 24: Gas or oil pipeline | Standard | Times New Roman | 2 |
| | 25: Aqueduct | Standard | Times New Roman | 2 |
| | 26: Cable car | Standard | Times New Roman | 2 |
| | 27: Power transmission line | Standard | Times New Roman | 2 |
| | 29: Railway track | Standard | Times New Roman | 2 |
| | 31: Connecting arrow | Standard | Times New Roman | 1,1 |
| | 62: Sports ground, small streams | Standard | Times New Roman | 2 |
| | 64 : Car park, terrace, overhang | Standard | Times New Roman | 2 |
| Miscellaneous surface object | 32: Boundary not forming a parcel | Standard | Times New Roman | 2,5 |
| | 33: Deck parapet | Standard | Times New Roman | 2,5 |
| | 34: Pond, lake | Standard | Times New Roman | 2,5 |
| | 37: Tunnel | Standard | Times New Roman | 2,5 |
| | 65 : Swimming pool | Standard | Times New Roman | 2 |
| | 51: Cemetery | Standard | Times New Roman | 2,5 |
| | 52: Jewish cemetery | Standard | Times New Roman | 2,5 |
| | 53: Muslim cemetery | Standard | Times New Roman | 2,5 |

7. Recommendations for vectorising cadastral maps

7.1. List of cadastral features to be vectorised

The cadastral map of a municipality is made up of parcel sheets that give a graphic representation of the municipal territory in all the details of its subdivision. It includes land parcels, buildings, administrative boundaries, roads, hydrography, toponymy and other information represented by conventional signs.

The definition and management rules specific to each entity are described in the descriptive sheets in Chapter 8 "Description of exchangeable objects and relationships".

Please note that the following items must not be entered or returned:

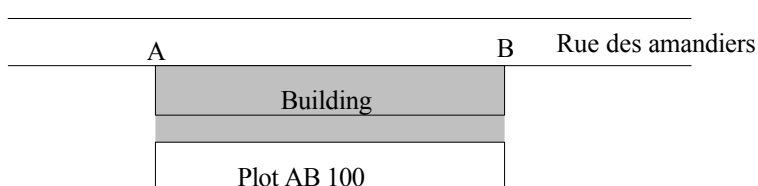
- cross-hatching for hard buildings and cross-hatching for light buildings;
- arrows linking buildings to plots of land;
- the crossed-out numbers of the original plots;
- crossed-out areas corresponding to the part of a leaf that has been subject to land consolidation;
- all entities outside the outline of the section subdivision, with the exception of information on neighbouring communes, departments or states (road headings, conventional boundary signs and place names of these administrative entities);
- the frame and title block of the sheet ;
- the orientation arrow ;
- the grid.

7.2. General principles of vectorisation

Principle 1

A segment common to several cadastral units has a unique geometric definition (the points on the common segment have unique coordinates).

Example: segment common to a plot and a building



The segment [AB], common to parcel AB 100 and the building included in this parcel, must have a single geometric definition, whatever the input method.

However, any object can include segment [AB] in its definition. All these segments are perfectly superimposable.

Principle 2

The cadastral map is made up of different objects.

The representation of the boundaries of the following objects must respect the hierarchy :

- municipality ;
- section ;
- section subdivision ;
- locality ;
- plot ;
- building ;
- tax subdivision ;
- surface topographic detail.

The section subdivision is the PCI exchange unit. Any section subdivision boundary that passes inside an object must split the object into two distinct objects. It is forbidden to have objects from the section subdivision outside its boundary.

In addition, on the same boundary between section subdivisions, it is not necessary to double the objects located on this boundary (roads, boundary markers, party symbols, river sections, etc.).

7.3. Preparation of cadastral plans

The input unit is the cadastral map sheet in "Grand Aigle" format (75 x 105 cm) transmitted in the form of a scanned image in TIFF format.

Preparation consists of a detailed reconnaissance of the plan to highlight :

- detection of areas where legibility is insufficient for correct vectorisation (following scanning);
- alignments ;
- points located on curved sections ;
- faint breaks in the contours of objects ;
- parcel numbers entered outside the perimeter of the parcel (parcel with a small graphic area that does not allow the number to be entered within its perimeter);
- the perimeter of cadastral entities, in particular for administrative boundaries (commune, section, subdivision of section, locality), for which it is common for only the initials to appear on the map;
- the demarcation of the axis of the roads used to record roads in the non-cadastral domain and the processing of the corresponding toponymy.

This work, carried out by the service provider, is intended to make it easier to enter all the objects on the map sheet. However, it is not a compulsory task and each service provider will decide whether it is appropriate to carry it out depending on its vectorisation method.

7.4. Sheet alignment

In the vectorisation process, the points recorded are assigned an initial set of coordinates. These are then transformed into the RGF 93 system, Lambert 93 projection or conformal conic projection¹ of the area corresponding to the department, or in the system and projection

¹ Given that the PCI-vector bases are managed in 9-zone Conformal Conic, this projection system should be preferred to Lambert 93.

for the French overseas departments² (see appendix 3 - Correspondence table), using known points in both coordinate systems, known as reference points. This change must be made by means of a transformation which does not involve any modification to the cadastral map, apart from a reorientation and scaling of the transformed area.

For control purposes, the service provider must provide identification of the reference points used for vectorisation in the form of an image file taken from the scanned cadastral map.

At the same time, the service provider must supply a document giving, for each calibration point, the x-axis deviation, the y-axis deviation, the corresponding position residual and the root mean square error of the residuals.

Finally, the service provider must supply an NXY file containing only the 9-zone conformal Conic or Lambert 93 (or DOM system) coordinates of the calibration points.

The auditor will check the calibration at the same points as those chosen by the service provider.

In the case of vectorisation using the scanned plan and a georeferencing file supplied by the service (from PCI-image or georeferencing software), the service provider does not have to supply all of the above elements.

7.4.1. Crinkled leaves

During the creation of some of the original map sheets, the grid was often drawn independently after the actual mapping, in addition to successive re-edits sometimes accompanied by a change of coordinate system. These methods have often led to a shift in the position, orientation or even homotheticity of the grid crossings in relation to the objects on the cadastral map. Therefore, a conformal transformation (Helmert) based systematically on the grid crossings does not always seem appropriate. In this case, the method for non-gridded sheets should be used.

In the case of verification of ground sheets, the alignment points must be evenly distributed over the whole of the cadastral map and their number must not be less than 10. In all cases, a minimum of 5 shimming points, evenly distributed, must be respected.

The deviations in position, known as residuals, resulting from the comparison between the coordinates of the reference points and their transformed coordinates, are subject to the tolerance $T = 0.04 \times E$, where E represents the scale factor of the plan and T is expressed in centimetres.

If the tolerance is exceeded, the method for unground sheets can be applied.

7.4.2. Non-grinded leaves

In this case, it is necessary that :

- the points selected for transformation (of which there must be at least five) are evenly distributed across the sheet;
- These points are chosen so as to minimise the residuals of the adaptation, eliminating only the points that are clearly outliers.

The service provider must use the reference points proposed by the georeferencing supplier.

For each calibration point, the DGFIP will compare the residuals obtained during its inspection with those recorded by the contractor. The difference between these residuals must only result from an acceptable point error.

The tolerance applicable to this deviation is set at $0.015 \times E$ (in centimetres).

² The Lambert 93 projection system is not used in the French overseas departments.

7.4.3. Special cases

For sheets containing excluded consolidation points, use the consolidation points on the periphery of the excluded area as reference points and apply a conformal transformation.

Margin enlargements are integrated using points on the periphery of the original zone as calibration points. The adjustment is made using a conformal transformation.

7.4.4. Controlling vectorised points

Verification is based on a check of the vectorised points. For each vectorised sheet, the service provider is required to supply a text file in NXY format containing, for each vectorised sheet, all the characteristic points (nodes in EDIGéO terminology), and indicating for each of them its number and its coordinates in the database.

Text files will be in the form NNNNN XXXXXX.XX YYYYYYY.YY, with :

- NNNNN: point number ;
- XXXXXX.XX: abscissa coordinate ;
- YYYYYYY.YY: ordinate coordinate.

7.5. General technical rules for vectorisation

The cadastral map is made up of simple geometric elements (points, text lines and areas) that support specific information.

7.5.1. Reminders

7.5.1.1. Le point

The point (corresponding to the "NŒUD" primitive in the EDIGéO standard) carries :

- location information (coordinates (X, Y), in the plane projection system);
- information about belonging to a polyline or polygon ;
- attributes.

There are four categories of points:

- the point of origin: the starting point of a polyline ;
- the end point: the end point of a polyline ;
- the intermediate point: point located on a polyline between the origin and the end point;
- the support point: a point used to locate a specific object and/or to position information relating to cadastral entities (parcel numbers, etc.). It is located within the perimeter of the latter, except in the specific cases presented in chapter 8.

Examples:

- canvas point ;

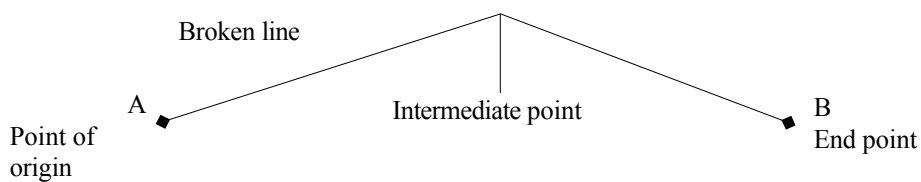
- specific topographical details (calvary, well, etc.) ;
- indicating the position of a text (plot number, road name, etc.).

7.5.1.2. The polyline

A polyline (corresponding to the "ARC" primitive in the EDIGéO standard) carries :

- location information (coordinates (X, Y) of the points defining it in the reference system);
- polygon membership information ;
- attributes.

The origin of a polyline can be the end point of another polyline. Example:



Using the intermediate point avoids splitting a polyline into several segments with the same characteristics.

Some polylines are generated by smoothing algorithms that include far too many points that are too close together. It is advisable to check that the points generated really correspond to an inflection visible at the original scale of the plan. In all cases, a distance of at least 10 cm should be maintained between each point.

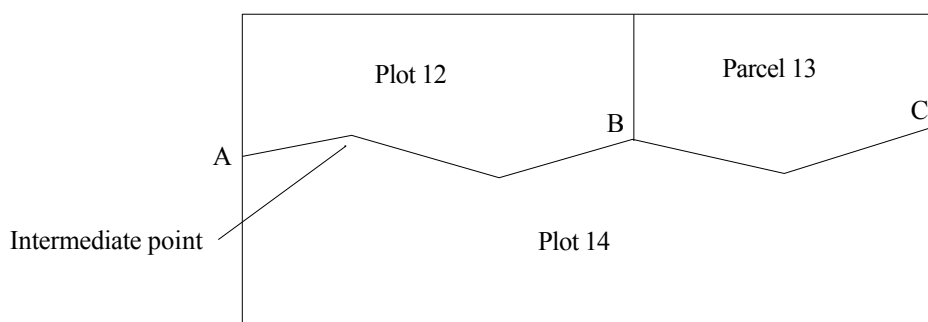
7.5.1.3. The polygon

A polygon (corresponding to the "FACE" primitive in the EDIGéO standard) is always represented by a closed perimeter.

It carries :

- location information (all the polylines defining it);
- attributes.

Example:



Polyline AB is shared by plot 12 and plot 14. It is the first polyline.

Polyline BC is shared by parcel 13 and parcel 14. It constitutes a second polyline that must be distinct from the previous one.

7.5.2. Orientation

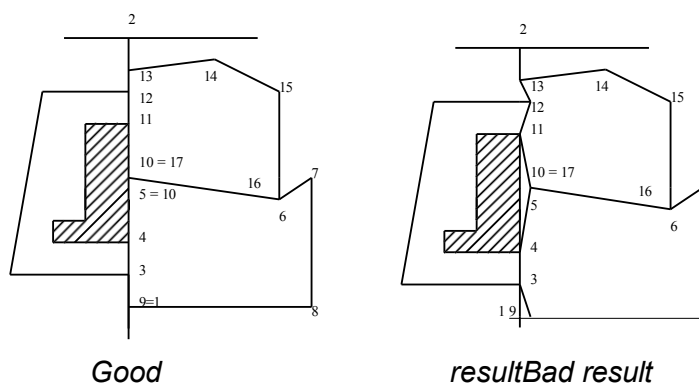
Information on the cadastral map that is parallel to the long side of the sheet (plot numbers, locality names, etc.) must be entered along the X axis of the reference system.

Road-related information (numbers, road axis labels, etc.) is reoriented as necessary to ensure that the map remains legible when viewed full north.

7.5.3. Application of alignment constraints

In the plan preparation phase, all the alignments are prepared for entry.

A "head of alignment" point and an "end of alignment" point must be entered. Intermediate points will be digitised and then processed later to comply with the predetermined alignment.



Points 1 to 5 and 10 to 13 are aligned. 1 is the start of the alignment and 2 is the end of the alignment. Points 3, 4, 5, 10, 11, 12 and 13 are treated to bring them into line. Similarly, when the buildings are treated, points 4 and 11 will be corrected to bring them into line with the previous alignment.

Between two alignment heads, intermediate points that are not attached to another object should not appear on the plan and should be eliminated.

7.5.4. Vectorisation of curved parts and shallow breaks in object contours

The curved parts and the slightly marked breaks, recognised prior to input (see § 7.3.), are processed so that their representation is as close as possible to the original document. A sufficient number of intermediate points are used to achieve this (in principle, the distance between two consecutive points on the curve must be less than a quarter of the radius of curvature at the point under consideration).

7.5.5. Parcel boundaries

A point on a parcel boundary must not be less than 10 cm from another parcel boundary.

When a polyline segment of a parcel boundary is rectilinear, the insertion of intermediate points should be avoided. If there are any, they should not be close together. Manual or automatic vectorisation methods occasionally multiply the presence of these points

points. It is necessary to limit the number of this type of point in order to manage the topology between plots more easily.

7.5.6. Topological consistency between entities of the same nature

Topological coherence is characterised by the absence of "gaps" or "overlaps" between entities.

A boundary common to two entities of the same type must therefore retain :

- a single name ;
- a single geometric definition.

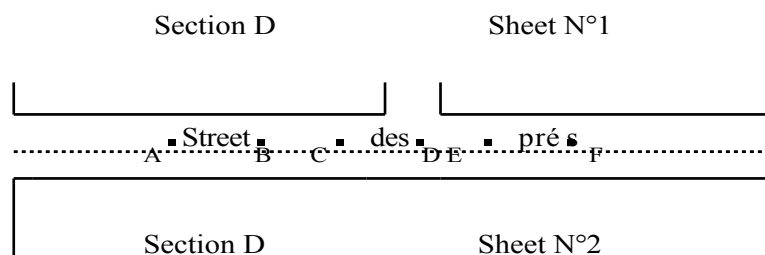
The methods for achieving this consistency for cadastral entities are explained in chapter 8 in the relevant descriptive sheets.

In this respect, it is pointed out that topological consistency can only be assessed using IT tools, as visual inspection cannot detect all defects in this area.

7.6. Positioning of place names and conventional signs

The vectorisation of a toponym or a conventional sign is achieved by positioning the text or conventional sign using the parameters of the writing-attribute object. This involves determining a reference node and a base vector indicating the orientation of each word or group of words in the text (see Chapter 6).

The place name associated with a road or watercourse must appear uniquely and harmoniously once the map sheets have been assembled to a single scale. This is necessary in order to avoid multiple inscriptions of the same place name when publishing all or part of the municipal territory.



A: reference node for the word "Rue".

C: reference node for the word "des".

E: reference node for the word "prés".

AB: base vector for the word "Street".

CD: base vector for the word "des".

EF: base vector for the word "meadows".

7.7. Loading of attributes of subdivisions from section which can be deduced from reading the cadastral base map

The attributes specific to the section subdivision entity can be deduced from the literal information contained in the conservation minute plans and must be entered by the service provider.

The attributes concerned are :

- the plan identifier (IDU) ;
- plan quality (QUPL);

| Quality of the plan | QUPL |
|---|------|
| Renewed, redrawn, reworked or rural land development plan, regardless of scale, drawn up before 20/03/1980. | 01 |
| Updated (or revised) plan, regardless of scale. | 02 |
| Renewed, redone, reworked or rural land development plan : -drawn up at a scale of 1:500 between 20/03/1980 and 15/09/2003 (ex-category P3); -or accuracy class [10 cm] since 16/09/2003. | 03 |
| Renewed, redone, reworked or rural land development plan : -drawn up at a scale of 1/1000 or 1/2000 between 20/03/1980 and 15/09/2003 (ex-category P4); -or accuracy class [20 cm] since 16/09/2003. | 04 |
| Renewed, redone, reworked or rural land development plan : -drawn up at a scale of 1:2000 between 20/03/1980 and 15/09/2003 (ex-category P5); -or accuracy class [40 cm] between 16/09/2003 and 01/01/2012. As well as rural land development plans drawn up at 1:2000 scale between 16/09/2003 and 01/01/2012. This quality of plan (precision class [40 cm] or ex-category P5) will no longer be produced by the DGFIP from 01/01/2012. | 05 |

- how the plan is drawn up (COPL) ;

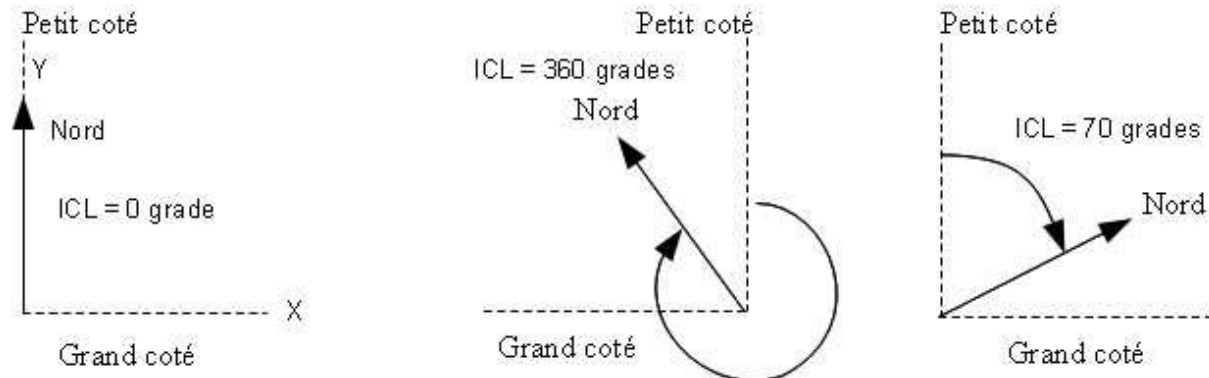
| How the plan is drawn up | COPL |
|---|------|
| Old plan | 01 |
| Updated plan | 02 |
| Renewed plan | 03 |
| Renovated plan | 04 |
| Redesigned plan | 05 |
| Plan obtained by land consolidation or AFAF | 06 |
| Plan obtained from survey plans | 07 |

It is considered that plans renovated by means of renewal, repair, reworking and new plans obtained after land development are regular plans.

- the plan's original scale factor (EOR) ;
- the date on which the plan was drawn up (DEDI) ;
- the original orientation of the plane (ICL).

This orientation is given by the angle, measured clockwise, formed by the short side of the plan sheet with the graphic Y axis (NORTH projection, for example). Its value is always positive and rounded to the nearest ten grades.

Examples:



➤ the date of the last re-issue of the plan (DRED).

Example 1:

Map of the commune of VERNOUILLET (Department of YVELINES 78).

Section AB map sheet renewed for 1964, edition updated for 1983.

Code appearing at the edge of the C.M.P. frame: 78 0 643 VERNOUILLET AB 1/1000.

- IDU attribute (8 characters): 643000AB for the section identifier
- IDU attribute (10 characters): 643000AB01 for the section subdivision identifier
- QUPL attribute (2 characters) : 02
- COPL attribute (2 characters) : 02
- EOR attribute (6 characters maximum) : 1000
- DEDI attribute (maximum 10 characters) : 01/01/1964
- ICL attribute (maximum 7 characters): 40.0 for a rotation angle of 41.4 grades.
- DRED attribute (10 characters) : 01/01/1983

Example 2:

Map of the commune of SAINT-GENIES (Département du Gard 30).

Section A map sheet no. 1 updated for 1952, updated edition for 1989.























Code appearing at the edge of the C.M.P. frame: 30 0 255 SAINT-GENIES A 1/1250.

- IDU attribute (8 characters): 2550000A for the section identifier
- IDU attribute (10 characters) : 2550000A01 for the section subdivision identifier
- QUPL attribute (2 characters) : 03
- COPL attribute (2 characters) : 01
- EOR attribute (6 characters maximum) : 1250

- DEDI attribute (maximum 10 characters) : 01/01/1952
- ICL attribute (maximum 7 characters): 330.0 for a rotation angle of 328.0 degrees.
- DRED attribute (maximum 10 characters) : 01/01/1989

7.8. Representation of canvas points

With the introduction of this new exchange standard, the representation of canvas points has been reviewed and simplified (cadastral points, external points, levelling points, NGF points, municipal boundary markers).

| Description Standard year 2002 | | | | New description | | |
|---|------|----------------------------|---|---|------|--|
| Representation | Code | Meaning | | Representation | Code | Meaning |
|  | 01 | Bounded geodesic point | → |  | 71 | Bounded geodesic point |
|  | 02 | Unbounded geodesic point | → |  | 72 | Unbounded geodesic point |
|  | 03 | Bounded set canvas point | → |  | 73 | Bounded point on an ordinary cadastral map or a map prior to AFAP or as a support for a photographic survey enabling a map to be drawn up with an accuracy class of [20 cm]. |
|  | 04 | Unbounded set canvas point | | | | |
| | | | |  | 74 | Bounded point on a perennial or precision cadastral grid |
| | | | |  | 75 | Bounded point on the support canvas for a shot enabling a plan to be produced with an accuracy class of [10 cm]. |
|  | 05 | Bounded polygon point | → |  | 76 | Bounded point for georeferencing support |
|  | 06 | Unbounded polygon point | | | | |
|  | 07 | NGF benchmark | → |  | 77 | NGF benchmark |
|  | 08 | NGF marker | → |  | 78 | NGF marker |
|  | 09 | Levelling MRL | → |  | 79 | Levelling MRL |
|  | 10 | Other levelling marker | → |  | 80 | Other levelling marker |
|  | 11 | Municipal boundary bollard | → |  | 81 | Municipal boundary bollard |

7.9. Load attributes for objects that are not known simply by reading the cadastral base map

Some attributes do not appear on the cadastral map. They can only be known from the literal documentation managed by the DGFIP.

These attributes will be incorporated by the Land Registry (e.g. MAJIC content for the parcel entity).

7.10. General rules for creating identifiers for certain tradable objects

The rules for creating identifiers are described in the following table, for each object that has an identifier (objects that do not have an identifier are therefore not included).

| SUBJECT | COMPONENTS OF THE IDENTIFIER | | | | | | |
|---------------------|------------------------------|----------------|--------------|-----------------------------------|----------------------|----------------------------------|-------------------------------------|
| | Municipality code | Section prefix | Section code | Section subdivision serial number | Parcel serial number | Order number of the canvas point | Length (total number of characters) |
| | digital | digital | alphanumeric | digital | digital | digital | |
| Municipality | 3 because. | | | | | | 3 |
| Section | 3 because. | 3 because. | 2 because. | | | | 8 |
| Section subdivision | 3 because. | 3 because. | 2 because. | 2 because. | | | 10 |
| Parcel | 3 because. | 3 because. | 2 because. | | 4 because. | | 12 |
| Canvas point | 3 because. | | | | | 5 because. | 8 |

Example: map of the commune of Vernouillet (department of Yvelines - 78) - Sheet of section AB.

- local authority identifier: 643 ;
- section identifier: 643000AB ;
- section subdivision identifier: 643000AB01 ;
- parcel 143 identifier: 643000AB0143 ;
- canvas point identifier number 12: 64300012.

Special features of the municipality code and section prefix :

- For communes with arrondissements: the arrondissement code is given instead of the commune code.
For Paris, arrondissements from 101 to 120; for Lyon, arrondissements from 381 to 389; for Marseille, arrondissements from 331 to 346.
- In the case of absorbing or absorbed communes: the commune code is that of the absorbing commune, the section prefix is "000" for all sections of the absorbing commune, or the code of the absorbed commune for any section of the latter.
- Toulouse: the commune code is "555", the section prefix corresponds to the neighbourhood codes, from 801 to 846.

8. Description of exchangeable objects and relationships

The descriptive sheets below show the characteristics of each object and relationship present in EDIGÉO exchanges.

8.1. Description of objects

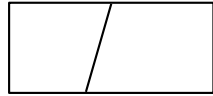
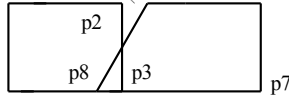
| SCD identifier | | CNIG code | | COMMUNE | | | | | |
|---|-----------|-----------|--------|---------|---|---------|-----------------------------|-------------------|---------------------------|
| COMMUNE_id | | H_1_6_0 | | | | | | | |
| Definitions, Comments : Area containing a whole number of cadastral section subdivisions. Its right-of-way is formed from the union of the section subdivisions that make it up at the time of the exchange. The outline of the "COMMUNE" object is calculated automatically from the section subdivisions received, even if the "COMMUNE" object was transmitted in the exchange. | | | | | | | | | |
| Geometry: Surface, multi-sided, spaghetti (S1) | | | | | | | Attendance: optional | | |
| Constraints : <i>between identical objects</i> : topological consistency between communes not mandatory. <i>between different objects</i> : | | | | | | | | | |
| Vectorisation recommendations : | | | | | | | | | |
| Relationships : ➤ SECTION_COMMUNE ➤ DETOPO_COMMUNE ➤ PTCANVS_COMMUNE | | | | | Place-name relationships : ➤ "has as its place name" (pointing to the TEX2 attribute) | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| INSEE code | IDU | IDU_id | T | | NO | 3 | mandatory | Example: 643 | unique for the department |
| Municipality name | TEX2 | TEX2_id | T | | NO | 1 - 255 | optional | | |

| SCD identifier | | CNIG code | | CADASTRAL SECTION | | | | | |
|--|-----------|-----------|--------|-------------------|----------|--|-------------------------------|------------------------------|-----------------------------|
| SECTION_id | | H_11_1_0 | | | | | | | |
| Definitions, Comments : Part of the cadastral map corresponding to a portion of the municipal territory and including, as the case may be, one or more subdivisions of section. This item must be included in all the lots forming the exchange. | | | | | | | | | |
| Geometry: Surface, multi-sided, topological (T3) | | | | | | | Attendance: compulsory | | |
| Constraints : <i>between identical objects:</i> the section is made up of 1 to n section subdivisions. Its right-of-way is formed from the union of the section subdivisions that make it up at the time of the exchange. Consequently, topological consistency between sections is the result of topological consistency between section subdivisions for neighbouring sections. <i>between different objects:</i> for geometric construction, see sections 5.3.1 and 5.3.2. | | | | | | | | | |
| Vectorisation recommendations : The wording of the section must be legible due north. | | | | | | | | | |
| Relationships between objects : ➤ SECTION_COMMUNE ➤ SUBDSECT_SECTION | | | | | | Place-name relationships : ➤ "has as its place name" (pointing to the TEX attribute) | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Identifier | IDU | IDU_id | T | | NO | 8 | mandatory | Examples: 6430000A, 643000ZA | unique for the municipality |
| Section letter(s) | TEX | TEX_id | T | | YES | 1 - 2 | mandatory | Examples: A, ZA | |

| SCD identifier | | CNIG code | | SECTION SUBDIVISION | | | | | |
|---|-----------|-----------|--------------|---------------------|-----------------------------------|--------|-------------------------------|---|-------------|
| SUBDSECT_id | | H_11_2_0 | | | | | | | |
| Definitions, Comments : Portion of cadastral section with its own characteristics, particularly with regard to : - its scale ; - its quality ; - how it is made. A section has at least one section subdivision. This object corresponds to the cadastral sheet. | | | | | | | | | |
| Geometry: Surface, multi-sided, topological (T2) | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects:</u> inconsistent representations at the edges of sheets are digitised as they are. They are then processed in conjunction with the DGFIP, in accordance with the recommendations set out in the technical notice in appendix 4. If one of the "SUBDSECT" objects loses its topological character, so do the other "SUBDSECT" objects in the same section. However, the corresponding "SECTION" object retains its topological character. <u>between different objects:</u> geometric consistency between section subdivisions and the section to which they belong is ensured by compliance with the first general principle presented in paragraph 7.2: the boundaries of peripheral section subdivisions of the same section merge with that of the section, i.e. the points merge. | | | | | | | | | |
| Vectorisation recommendations : Please note that vectorisation must be carried out sheet by sheet. When vectorised, the sheet boundaries are based on track axes, river sections and land parcels. The "SUBDSECT" object does not have a "TEX" attribute because its sequence number does not need to be positioned. | | | | | | | | | |
| Relationships between objects : ➤ SUBDSECT_SECTION ➤ PARCEL_SUBDSECT | | | | | Place-name relationships : | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Identifier | IDU | IDU_id | T | | NO | 10 | mandatory | Examples: 6430000A03, 643000ZA01 | |
| Quality of the plan | QUPL | QUPL_id | A, pre-coded | | NO | 2 | mandatory | 01 : Regular plan drawn up before 20/03/1980 02 : Non-regular plan 03: P3 or CP [10 cm] quality plane 04: P4 or CP [20 cm] quality plane 05: P5 or CP [40 cm] quality plane | |
| Mode of manufacture | COPL | COPL_id | A, pre-coded | | NO | 2 | mandatory | 01 Old plan 02 : updated plan 03 04: plan renovated by refurbishment | |

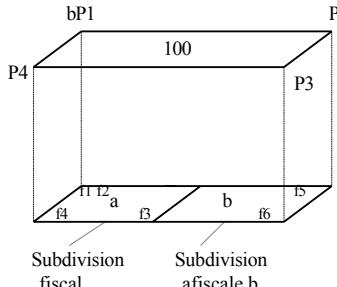
| | | | | | | | | | |
|--|------|---------|--------------|-------|----|-------|-----------|--|---|
| | | | | | | | | 05 A revised plan 06 plan obtained by land consolidation or AFAF 07 plan obtained from survey plans | |
| Original plan scale | EOR | EOR_id | T | | NO | 3 - 6 | mandatory | Example: 2000 | that the denominator |
| Date the plan was published or made | DEDI | DEDI_id | T | | NO | 10 | optional | | DD/MM/YYYY |
| Original orientation | ICL | ICL_id | R | grade | NO | 3 - 6 | mandatory | Example: +80. | format ³ : ([+-][0-9] ⁺ [..][0-9])? ([+-][0-9] [*] [..][0-9]) see paragraph 7.7 |
| Date of incorporation in PCI | DIS | DIS_id | T | | NO | 10 | optional | | DD/MM/YYYY |
| How it is incorporated into the plan | INP | INP_id | A, pre-coded | | NO | 2 | optional | 00 : unknown 01: manual scan 02: scan by scanner 03: direct incorporation without prior digitisation | |
| Reissue date | DRED | DRED_id | T | | NO | 10 | optional | | DD/MM/YYYY |

³ See Appendix D of the EDIGEO standard on page 302 for regular expression specifications.

| SCD identifier | CNIG code | PARCEL |
|--|-----------|---|
| PARCEL_id | H_11_4_0 | |
| Definitions, Comments : Portion of communal land in one piece located in a section subdivision and belonging to the same owner. Some parcels, included in the road network and awaiting legal regularisation, are not shown on the plan. | | |
| Geometry: Surface, single-sided, topological (T1) | | Attendance: compulsory |
| Constraints : <u>between identical objects:</u> this consistency only exists between parcels in the same set of contiguous parcels belonging to the same municipality. It is ensured by using a single polyline (same name and same point coordinates) to represent the boundary common to two parcels (except where there are discrepancies between these parcels, particularly at the boundary of a section subdivision). Example of plots on the same leaf: | | |
| <div><div><div><div>A1</div><div>A2</div><div>A3</div><div>A4</div><div>A5</div><div>A6</div></div><div>Good</div></div><div><div><div><div>p1</div><div>Hole</div><div>p5</div><div>p6</div><div>p2</div><div>p3</div><div>p4</div><div>p8</div><div>p7</div></div><div>Overlap</div><div>resultBad result</div></div></div><p>The median position of points p2 and p5 on the one hand, and p3 and p8 on the other, is chosen to give points A2 and A5 respectively.</p><p>If a "PARCEL" object is not topologically coherent with its environment, it causes the other "PARCEL" objects in the exchange to be classified in the spaghetti structure. However, the section subdivision(s) and the section(s) concerned are not downgraded.</p><p><u>between different objects:</u> A parcel boundary may be confused with the boundary of a locality, a section subdivision, a section, a commune, a department or a State when these boundaries have sections in common. Parcel boundaries comply with the first general principle presented in paragraph 7.2.</p></div> | | |
| Vectorisation recommendations : General principle for positioning a parcel number : When the parcel number cannot be entered in the parcel, it is positioned externally using a reference node and an attachment arrow. This is considered to be a linear topographic feature which has a "SYM" attribute with occurrence 31. The parcel number is written in the eastern direction, except in the case of "floorboard" plans. | | |
| Relationships between objects : <div><div>➤</div>PARCEL_SUBDSECT</div> <div><div>➤</div>SUBDFISC_PARCELLE</div> <div><div>➤</div>BUILDING_PLOT</div> <div><div>➤</div>PLOT_LOAD</div> <div><div>➤</div>PARCEL_STATION</div> <div><div>➤</div>CROSS_PARCEL</div> <div><div>➤</div>PLOT_BOLT</div> | | Place-name relationships : <div><div>➤</div>"has for toponym" (pointing to the TEX attribute)</div> |

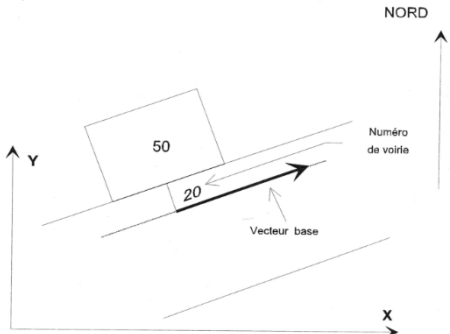
| | | | | | | | | | |
|--------------------|-----------|---------|--------------|------|----------|--------|----------------------|--|--|
| ➤ PLOT_NUMBER | | | | | | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Identifier | IDU | IDU_id | T | | NO | 12 | mandatory | Examples: 6430000A0031, 643000ZA0562 | |
| MAJIC capacity | SUPF | SUPF_id | R | m² | NO | 3 - 10 | optional | Example: +30523 | format ⁴ [+-][0-9] ⁺ [.,] |
| Plot shown on plan | INDP | INDP_id | A, pre-coded | | NO | 2 | mandatory | 01 plot shown on the plan 02 Parcel not shown on the plan | |
| Survey code | COAR | COAR_id | T | | NO | 1 | optional | A | |
| Parcel number | TEX | TEX_id | T | | YES | 1 - 4 | mandatory | | |

⁴ See Appendix D of the EDIGÉO standard on page 302 for regular expression specifications.

| SCD identifier | | CNIG code | | TAX SUBDIVISION | | | | | |
|--|-----------|-----------|--------|-----------------|----------|--|-----------------------------|-------------------|-------------|
| SUBDFISC_id | | H_11_5_0 | | | | | | | |
| Definitions, Comments : Part of a parcel of land with a single type of cultivation or ownership and constituting a unit for the purposes of direct local taxation. | | | | | | | | | |
| Geometry: Surface, single-sided, spaghetti (S1) | | | | | | | Attendance: optional | | |
| Constraints : <u>between identical objects :</u> <u>between different objects:</u> the vertices of tax subdivisions a and b will be treated to be geometrically consistent with the vertices of parcel 100. Example: parcel 100 and its tax subdivisions a and | | | | | | | | | |
|  | | | | | | | | | |
| Vectorisation recommendations : - Tax subdivisions shown on the map: identified by an indicative letter starting with a, the letter z being reserved for subdivisions classified by soil type. - Tax subdivisions not shown on the map: identified by an indicative letter from j, framed on the right. These are : • parcels with multiple classification ; • fractions of station plots; • tax subdivisions that have not yet been lifted ; • subdivisions corresponding to the division of undeveloped lots. Tax subdivisions classified by type of soil are to be created but without indicating the letter z. | | | | | | | | | |
| Relationships between objects : ➤ SUBDFISC_PARCELLE | | | | | | Place-name relationships : ➤ "has for toponym" (pointing to the TEX attribute) | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Letter of order | TEX | TEX_id | T | | YES | 1 | mandatory | | |

| SCD identifier | CNIG code | LOAD | | | | | | | |
|---|-----------|--------|--------|------|--|--------|-----------------------------|-------------------|-------------|
| LOAD_id | H_11_6_0 | | | | | | | | |
| Definitions, Comments : Part of a plot of land subject to a different charge or right. This feature only applies to the departments of Alsace and Moselle. | | | | | | | | | |
| Geometry: Surface, single-sided, spaghetti (S1) | | | | | | | Attendance: optional | | |
| Constraints : <u>between identical objects :</u> <u>between different objects:</u> the vertices of the charges will be treated to be geometrically consistent with the vertices of the parcel (see tax subdivision). | | | | | | | | | |
| Vectorisation recommendations : Loads are identified by an indicative letter starting from a. | | | | | | | | | |
| Relationships between objects : ➤ PLOT_LOAD | | | | | Place-name relationships : ➤ "has for toponym" (pointing to the TEX attribute) | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Letter of order | TEX | TEX_id | T | | YES | 1 | mandatory | | |

| | | | | | | | | | |
|---|------------------|-------------------------|--------|------|----------|--|-----------------------------|-------------------|-------------|
| SCD identifier | CNIG code | PROPERTY COMPLEX | | | | | | | |
| VOIEP_id | H_11_7_0 | | | | | | | | |
| Definitions, Comments : A one-off element used to manage the property complex to which its name is assigned. | | | | | | | | | |
| Geometry: Punctual, spaghetti (S1) | | | | | | | Attendance: optional | | |
| Constraints : <u>between identical objects:</u> <u>between different objects :</u> | | | | | | | | | |
| Vectorisation recommendations : Management of the property is limited to the (compulsory) positioning of its name. It has no footprint. Its outline is not described. | | | | | | | | | |
| Relationships between objects : | | | | | | Place-name relationships : ➤ "has for toponym" (pointing to the TEX attribute) | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Street name | TEX | TEX_id | T | | YES | 1 - 255 | Mandatory | | |

| | | | | | | | | | |
|--|------------------|--------------------|--------|------|----------|--|-------------------------------|--|-------------|
| SCD identifier | CNIG code | ROAD NUMBER | | | | | | | |
| ID_NUMBER | H_11_8_0 | | | | | | | | |
| Definitions, Comments : Number corresponding to the parcel address. | | | | | | | | | |
| Geometry: Punctual, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects:</u> <u>between different objects :</u> | | | | | | | | | |
| Vectorisation recommendations : It is positioned at a specific point outside the parcel. When a parcel has several road numbers, all of them must be included in the exchange. In the case of narrow streets and to avoid any ambiguity as to which parcel belongs to which number, it is recommended to vectorise the road numbers within the parcel. This graphic script is positioned using the parameters of the script-attribute object. In particular, a reference node and a base vector indicating the orientation of the text are determined. The road number needs to be oriented for good visibility when reading due north. | | | | | | | | | |
|  | | | | | | | | | |
| Correct vectoring of road numbers is mandatory for acceptance of lots. | | | | | | | | | |
| Relationships between objects : ➤ PLOT_NUMBER | | | | | | Place-name relationships : ➤ "has for toponym" (pointing to the TEX attribute) | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Number | TEX | TEX_id | T | | YES | 4 + 1 | mandatory | The last character corresponds to B (bis), T (ter), Q (quarter), C (cinquiès)... | |

| SCD identifier | CNIG code | LOCATION | | | | | | | |
|---|------------------|-----------------|--------|------|---|---------|-------------------------------|-------------------|-------------|
| LIEUDIT_id | H_1_7_0 | | | | | | | | |
| Definitions, Comments : A group of whole parcels of land with the same geographical name resulting from usage. | | | | | | | | | |
| Geometry: Surface, single-sided, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects :</u> <u>between different objects:</u> consistency between the parcel and the locality is ensured by compliance with the first general principle indicated in paragraph 7.2. | | | | | | | | | |
| Vectorisation recommendations : The boundary of the locality never intersects parcels. | | | | | | | | | |
| Relationships between objects : | | | | | Place-name relationships : <ul style="list-style-type: none"> ➤ "has as its toponym" (pointing to the TEX attribute); ➤ "has as its place name" (pointing to the TEX2 attribute); ➤ "has as its place name" (pointing to the TEX3 attribute); ➤ "has as its place name" (pointing to the TEX4 attribute); ➤ "has as its place name" (pointing to the TEX5 attribute); ➤ "has as its place name" (pointing to the TEX 6 attribute); ➤ "has as its place name" (pointing to the TEX7 attribute); ➤ "has as its place name" (pointing to the TEX8 attribute); ➤ "has as its place name" (pointing to the TEX9 attribute); ➤ "has toponym" (pointing to the TEX10 attribute) | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Wording | TEX | TEX_id | T | | YES | 1 - 255 | mandatory | | |
| Wording 2 | TEX2 | TEX2_id | T | | YES | 0 - 255 | optional | | |
| Wording 3 | TEX3 | TEX3_id | T | | YES | 0 - 255 | optional | | |
| Wording 4 | TEX4 | TEX4_id | T | | YES | 0 - 255 | optional | | |
| Wording 5 | TEX5 | TEX5_id | T | | YES | 0 - 255 | optional | | |
| Wording 6 | TEX6 | TEX6_id | T | | YES | 0 - 255 | optional | | |

| | | | | | | | | | |
|------------|-------|----------|---|--|-----|---------|----------|--|--|
| | | | | | | | | | |
| Wording 7 | TEX7 | TEX7_id | T | | YES | 0 - 255 | optional | | |
| Wording 8 | TEX8 | TEX8_id | T | | YES | 0 - 255 | optional | | |
| Wording 9 | TEX9 | TEX9_id | T | | YES | 0 - 255 | optional | | |
| Wording 10 | TEX10 | TEX10_id | T | | YES | 0 - 255 | optional | | |

| SCD identifier | | CNIG code | | BUILDING | | | | | |
|--|-----------|-----------|--------------|----------|----------|---|------------------------|--------------------------------|-------------|
| BUILDING_id | | E_2_1_0 | | | | | | | |
| Definitions, Comments : Building on one or more cadastral parcels. | | | | | | | | | |
| Geometry: Surface, multi-sided, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : | | | | | | | | | |
| <i>between identical objects:</i> a building may straddle several parcels. The building element is the part of the construction supported by a single parcel. The elements of the same building must be geometrically consistent with each other. Example: <div><div><div>Plot</div><div><div><div>10</div><div><div>B1B2B3B4</div></div><div><div>11</div><div><div>B5B6</div></div></div><div>Parcel</div></div><div>Building unique</div><div>Good</div></div><div><div><div>10</div><div><div>b1b2b3b4</div></div><div><div>11</div><div><div>b5b6b7</div></div></div><div>Element of building</div><div>resultBad result</div></div></div></div></div> | | | | | | | | | |
| <i>between different objects:</i> the boundaries of a building may be partly confused with those of the parcels. Any section subdivision or section boundary that passes inside a building must divide this object into two separate buildings. When two plots of land with two adjoining buildings are joined together, the buildings are not joined. | | | | | | | | | |
| Vectorisation recommendations : A building is linked to each of the plots on which it sits. | | | | | | | | | |
| Relationships between objects : ➤ BUILDING_PLOT | | | | | | Place-name relationships : ➤ "has for toponym" (pointing to the TEX attribute) | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Type of building | DUR | DUR_id | A, pre-coded | | NO | 2 | mandatory | 01: hard frame 02: light frame | |
| Building text | TEX | TEX_id | T | | YES | 0 - 255 | optional | | |

| SCD identifier | | CNIG code | | OBJECT OF THE ROAD NETWORK - SECTION OF ROAD | | | | | |
|--|-----------|-----------|--------|--|--|--------|-------------------------------|------------------|-------------|
| TRONROUTE_id | | A_1_0_0 | | | | | | | |
| Definitions, Comments : Surface element (closed) used to manage the right-of-way of roads located on the cadastral estate. This is normally the case for private roads located within housing estates and shown as dashed lines. | | | | | | | | | |
| Geometry: Surface, single-sided, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects :</u> <u>between different objects:</u> geometric consistency between parcels and the road network object is ensured by compliance with the first general principle presented in paragraph 7.2. | | | | | | | | | |
| Vectorisation recommendations : Road network objects are surface elements used exclusively for all the roads in the cadastral domain. This object may straddle parcels and not correspond strictly to entire parcels. The road name is associated with this object (the text is displayed on one or more support vectors). For road labels made up of several texts, the same number of text attributes are implemented during the vectorisation process, up to the specified limit, in order to improve the legibility of the map. Vectorisation of a place name is carried out by positioning the text using the parameters of the writing-attribute object. This involves determining a reference node and a base vector indicating the orientation of each word in the text. See paragraph 6. It is recommended to vectorise track sections by section subdivision. | | | | | | | | | |
| Relationships between objects : | | | | | Place-name relationships : <ul style="list-style-type: none">➤ "has as its toponym" (pointing to the TEX attribute);➤ "has as its place name" (pointing to the TEX2 attribute);➤ "has as its place name" (pointing to the TEX3 attribute);➤ "has as its place name" (pointing to the TEX4 attribute);➤ "has as its place name" (pointing to the TEX5 attribute);➤ "has as its toponym" (pointing to the TEX6 attribute);➤ "has as its place name" (pointing to the TEX7 attribute);➤ "has as its place name" (pointing to the TEX8 attribute);➤ "has as its place name" (pointing to the TEX9 attribute);➤ "has toponym" (pointing to the TEX10 attribute) | | | | |
| | | | | | | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values: Examples | Constraints |
| Cadastral estate | RCAD | RCAD_id | T | | NO | 1 - 10 | mandatory | | |

| | | | | | | | | |
|-------------|-------|----------|---|--|-----|---------|-----------|--|
| Street name | TEX | TEX_id | T | | YES | 1 - 255 | mandatory | Ban on two characters "space consecutive" |
| Wording 2 | TEX2 | TEX2_id | T | | YES | 0 - 255 | optional | |
| Wording 3 | TEX3 | TEX3_id | T | | YES | 0 - 255 | optional | |
| Wording 4 | TEX4 | TEX4_id | T | | YES | 0 - 255 | optional | |
| Wording 5 | TEX5 | TEX5_id | T | | YES | 0 - 255 | optional | |
| Wording 6 | TEX6 | TEX6_id | T | | YES | 0 - 255 | optional | |
| Wording 7 | TEX7 | TEX7_id | T | | YES | 0 - 255 | optional | |
| Wording 8 | TEX8 | TEX8_id | T | | YES | 0 - 255 | optional | |
| Wording 9 | TEX9 | TEX9_id | T | | YES | 0 - 255 | optional | |
| Wording 10 | TEX10 | TEX10_id | T | | YES | 0 - 255 | optional | |

| SCD identifier | | CNIG code | | COMMUNICATION ZONE | | | | | | |
|--|-----------|-----------|--------|--------------------|----------|---|-------------------------------|------------------|--|-------------|
| ZONCOMMUNI_id | | A_1_0_5 | | | | | | | | |
| Definitions, Comments : An unregistered road (or one passing over plots not shown on the plan) represented by a linear element corresponding to its axis. | | | | | | | | | | |
| Geometry: Linear, spaghetti (S1) | | | | | | | Attendance: compulsory | | | |
| Constraints : <u>between identical objects :</u> <u>between different objects:</u> a communication zone may be confused with the boundary of a locality, a subdivision of a section, a section, a commune, a department or a State when these have parts in common. Geometric consistency between these objects and the communication zones is ensured by compliance with the first general principle presented in paragraph 7.2. | | | | | | | | | | |
| Vectorisation recommendations : The "COMMUNICATION ZONE" object is a linear element (centre line of a road) which must be marked out in advance on the graphic plans when the work is being prepared. Each "COMMUNICATION ZONE" object is associated with the name of the road concerned (the text is displayed on one or more support vectors). For road labels made up of several texts, the same number of text attributes are implemented during the vectorisation process, up to the specified limit, in order to improve the legibility of the map. Vectorisation of a place name is carried out by positioning the text using the parameters of the writing-attribute object. This involves determining a reference node and a base vector indicating the orientation of each word in the text. See paragraph 6. In accordance with the first general principle presented in paragraph 7.2, a segment common to several cadastral entities has a unique geometric definition (the points of the common segment have unique coordinates. A communication zone must be confused with a boundary of a locality, section subdivision, section, commune, department or state when these have common parts. | | | | | | | | | | |
| Relationships between objects : | | | | | | Place-name relationships : <ul style="list-style-type: none">➤ "has as its toponym" (pointing to the TEX attribute);➤ "has as its place name" (pointing to the TEX2 attribute);➤ "has as its place name" (pointing to the TEX3 attribute);➤ "has as its place name" (pointing to the TEX4 attribute);➤ "has as its place name" (pointing to the TEX5 attribute);➤ "has as its place name" (pointing to the TEX6 attribute);➤ "has as its place name" (pointing to the TEX7 attribute);➤ "has as its place name" (pointing to the TEX8 attribute);➤ "has as its place name" (pointing to the TEX9 attribute);➤ "has toponym" (pointing to the TEX10 attribute) | | | | |
| Attributes | | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / | Values: Examples | | Constraints |

| | | | | | | | | | |
|-------------|-------|----------|---|--|-----|---------|-----------|--|---|
| | | | | | | | Optional | | |
| Street name | TEX | TEX_id | T | | YES | 1 - 255 | mandatory | | Ban on two characters "consecutive spaces" |
| Wording 2 | TEX2 | TEX2_id | T | | YES | 0 - 255 | optional | | |
| Wording 3 | TEX3 | TEX3_id | T | | YES | 0 - 255 | optional | | |
| Wording 4 | TEX4 | TEX4_id | T | | YES | 0 - 255 | optional | | |
| Wording 5 | TEX5 | TEX5_id | T | | YES | 0 - 255 | optional | | |
| Wording 6 | TEX6 | TEX6_id | T | | YES | 0 - 255 | optional | | |
| Wording 7 | TEX7 | TEX7_id | T | | YES | 0 - 255 | optional | | |
| Wording 8 | TEX8 | TEX8_id | T | | YES | 0 - 255 | optional | | |
| Wording 9 | TEX9 | TEX9_id | T | | YES | 0 - 255 | optional | | |
| Wording 10 | TEX10 | TEX10_id | T | | YES | 0 - 255 | optional | | |

| SCD identifier | | CNIG code | | SECTION OF WATERCOURSE | | | | | | |
|---|-----------|-----------|--------|------------------------|---|--------|-------------------------------|-------------------|--|-------------|
| TRONFLUV_id | | D_1_0_8 | | | | | | | | |
| Definitions, Comments : Surface element (closed) used for all watercourses and seashores. A label is associated with it. | | | | | | | | | | |
| Geometry: Surface, single-sided, spaghetti (S1) | | | | | | | Attendance: compulsory | | | |
| Constraints : <u>between identical objects :</u> <u>between different objects:</u> geometric consistency between plots and sections of watercourse is ensured by compliance with the first general principle presented in paragraph 7.2. | | | | | | | | | | |
| Vectorisation recommendations : The "WATERCOURSE SECTION" object is associated with the name of the road: the text is displayed on one or more support vectors. See paragraph 6. It is recommended to vectorise watercourse sections by section subdivision. In accordance with the first general principle presented in paragraph 7.2, a segment common to several cadastral entities has a unique geometric definition (the points of the common segment have unique coordinates. A watercourse segment must be confused with a boundary of a lieu-dit, section subdivision, commune, department or state when these have common parts | | | | | | | | | | |
| Relationships between objects : | | | | | Place-name relationships : <ul style="list-style-type: none">➤ "has as its toponym" (pointing to the TEX attribute);➤ "has as its place name" (pointing to the TEX2 attribute);➤ "has as its place name" (pointing to the TEX3 attribute);➤ "has as its place name" (pointing to the TEX4 attribute);➤ "has as its place name" (pointing to the TEX5 attribute);➤ "has as its place name" (pointing to the TEX6 attribute);➤ "has as its place name" (pointing to the TEX7 attribute);➤ "has as its place name" (pointing to the TEX8 attribute);➤ "has as its place name" (pointing to the TEX9 attribute);➤ "has toponym" (pointing to the TEX10 attribute) | | | | | |
| Attributes | | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | | Constraints |

| | | | | | | | | | |
|---------------------|-------|----------|---|--|-----|---------|-----------|--|---|
| Name of watercourse | TEX | TEX_id | T | | YES | 1 - 255 | mandatory | | Ban on two characters "consecutive spaces" |
| Wording 2 | TEX2 | TEX2_id | T | | YES | 0 - 255 | optional | | |
| Wording 3 | TEX3 | TEX3_id | T | | YES | 0 - 255 | optional | | |
| Wording 4 | TEX4 | TEX4_id | T | | YES | 0 - 255 | optional | | |
| Wording 5 | TEX5 | TEX5_id | T | | YES | 0 - 255 | optional | | |
| Wording 6 | TEX6 | TEX6_id | T | | YES | 0 - 255 | optional | | |
| Wording 7 | TEX7 | TEX7_id | T | | YES | 0 - 255 | optional | | |
| Wording 8 | TEX8 | TEX8_id | T | | YES | 0 - 255 | optional | | |
| Wording 9 | TEX9 | TEX9_id | T | | YES | 0 - 255 | optional | | |
| Wording 10 | TEX10 | TEX10_id | T | | YES | 0 - 255 | optional | | |

| SCD identifier | | CNIG code | | CANVAS POINT | | | | | |
|---|-----------|-----------|--------------|--------------|-----------------------------------|--------|-------------------------------|--|--------------------------------|
| PTCANV_id | | I_1_0_0 | | | | | | | |
| Definitions, Comments : A one-off object used to support surveying operations. | | | | | | | | | |
| Geometry: Punctual, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects:</u> <u>between different objects :</u> | | | | | | | | | |
| Vectorisation recommendations: canvas points should be numbered by the municipality. | | | | | | | | | |
| Relationships between objects : ➤ PTCANVS_COMMUNE | | | | | Place-name relationships : | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Identifier | IDU | IDU_id | T | | NO | 8 | mandatory | Example: 64300102 | |
| Orientation | ORI | ORI_id | R | degree | NO | 9 | mandatory | | in the trigonometric direction |
| Point origin | CAN | CAN_id | A, pre-coded | | NO | 2 | optional | 00 Unknown 01 IGN 02 Land registry 03 Municipality 04 : Equipment 05 Department 06 : SNCF 07 RATP 08 : EDF 09 : GDF 10: Local authority 98 : Various project owners | |
| Planimetric accuracy | PPLN | PPLN_id | A, pre-coded | | NO | 2 | optional | 00 : unknown 01: 1st order geodetic grid 02: 2nd order geodetic grid 03: 3rd order geodetic grid 04: 4th order geodetic grid 05: complementary framework (5th order) 06: precision ensemble or stereopreparation framework | |

| | | | | | | | | |
|--------------------------------|------|---------|--------------|--|----|---|--|--|
| | | | | | | | 07: ordinary set or stereopreparation canvas, including triangulation < 1980 08: Precision polygonal grid 09: Ordinary or pre-1980 polygonal grid 10 aerocanavas or photogrammetric framework 11 Frame point 12 planimetric location of a levelling point 20 permanent or precision canvas (since 2001) 21 Ordinary or preliminary AFAF or stereopreparation canvas for a PdV of less than 1/4000 (since 2001) 22 Stereopreparation canvas for a 1:2500 scale PdV (since 2001) 23 support framework for georeferencing (since 2001) 24 RGF93-RRF geodetic grid 25 RGF93-RBF geodetic grid 26 RGF93-RDF geodetic grid 27 WGS84-UTM North geodetic grid, zone 20 (Guadeloupe and Martinique) 28 RGF95-UTM North geodetic grid, zone 22 (French Guiana) 29: RGR92-UTM South geodetic grid, zone 40 (Réunion) 30: RGM04-UTM South geodetic grid, zone 38 (Mayotte) 98: cadastral survey point | |
| Altimetric accuracy | PALT | PALT_id | A, pre-coded | | NO | 2 | optional 00 unknown 01 high-precision direct levelling grid 02 precision direct levelling framework 03 04 : geodetic indirect levelling grid 05 indirect trigonometric levelling grid 06 elevation obtained by photogrammetry 98 : other levelling template | |
| Stable support materialization | MAP | MAP_id | A, pre-coded | | NO | 2 | optional 00 : unknown 01: not marked 02: marked 03: rivet or bolt 04: engraved cross | |

| | | | | | | | | | |
|---------------|-----|--------|--------------|--|----|---|-----------|--|--|
| | | | | | | | | 06 pylon 07 : terminal 98: other clear, stable point, natural or artificial | |
| Type of point | SYM | SYM_id | A, pre-coded | | NO | 2 | mandatory | 71 bounded geodesic point 72 unbounded geodesic point 73 bounded point of the ordinary cadastral survey or one prior to AFAF or as a support for a photographic survey enabling a plan of accuracy class [20 cm] to be drawn up. 74 bounded point on a permanent or precision canvas 75 boundary point of the support canvas for a shot enabling a plan to be produced with an accuracy class of [10 cm]. 76 Bounded georeferencing support point 77 NGF benchmark 78 NGF marker 79 Levelling MRL 80 another levelling marker 81 boundary marker | |

| | | | | | | | | | |
|---|------------------|---------------------------------|--------|------|----------|-----------------------------------|-------------------------------|-------------------|-------------|
| SCD identifier | CNIG code | PROPERTY BOUNDARY MARKER | | | | | | | |
| BORNE_id | I_2_4_0 | | | | | | | | |
| Definitions, Comments : Bollard located on a property boundary and represented by a point symbol. | | | | | | | | | |
| Geometry: Punctual, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects :</u> <u>between different objects:</u> this object is linked to all the parcels where a boundary passes through the boundary marker. | | | | | | | | | |
| Vectorisation recommendations : | | | | | | | | | |
| Relationships between objects : | | | | | | Place-name relationships : | | | |
| ➤ PARCEL_STATION | | | | | | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| | | | | | | | | | |

| SCD identifier | | CNIG code | | SEALED BOLT | | | | | |
|---|-----------|-----------|--------|-------------|----------|-----------------------------------|-------------------------------|-------------------|--------------------------------|
| BOLT_id | | I_2_4_1 | | | | | | | |
| Definitions, Comments : Bollard located on a property boundary and represented by a point symbol. This feature only applies to the departments of Alsace and Moselle. | | | | | | | | | |
| Geometry: Punctual, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects :</u> <u>between different objects:</u> this object is linked to all the parcels where a boundary passes through the boundary marker. | | | | | | | | | |
| Vectorisation recommendations : | | | | | | | | | |
| Relationships between objects : ➤ PLOT_BOLT | | | | | | Place-name relationships : | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Orientation | ORI | ORI_id | R | degree | NO | 9 | mandatory | Example: +90 | in the trigonometric direction |

| | | | | | | | | | |
|---|------------------|-----------------------|--------|------|----------|-----------------------------------|-------------------------------|-------------------|-------------|
| SCD identifier | CNIG code | ENGRAVED CROSS | | | | | | | |
| CROIX_id | I_2_4_2 | | | | | | | | |
| Definitions, Comments : Bollard located on a property boundary and represented by a point symbol. This feature only applies to the departments of Alsace and Moselle. | | | | | | | | | |
| Geometry: Punctual, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects :</u> <u>between different objects:</u> this object is linked to all the parcels where a boundary passes through the boundary marker. | | | | | | | | | |
| Vectorisation recommendations : | | | | | | | | | |
| Relationships between objects : | | | | | | Place-name relationships : | | | |
| ➤ CROSS_PARCEL | | | | | | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| | | | | | | | | | |

| SCD identifier | CNIG code | SYMBOL OF JOINT OWNERSHIP |
|----------------|-----------|---------------------------|
| SYMBLIM_id | Z_1_0_1 | |

Definitions, Comments :

Property boundary symbol represented by a conventional point-type sign used to document the cadastral map and improve its legibility.

| | |
|------------------------------------|------------------------|
| Geometry: Punctual, spaghetti (S1) | Attendance: compulsory |
|------------------------------------|------------------------|

Constraints :

between identical objects:

between different objects :

Vectorisation recommendations :

These signs are positioned using a reference node whose orientation is the same as that of the boundary that supports them. It is imperative that the reference node is on the boundary of the parcel concerned.

Example: representation of a party line

Noeud de référence (un seul pour l'ensemble du symbole)

Mur mitoyen

Clôture mitoyenne

Hale mitoyenne

Fossé mitoyen

Example: representation of non-citizenship

Noeud de référence (un seul pour l'ensemble du symbole)

Mur non mitoyen

Clôture non mitoyenne

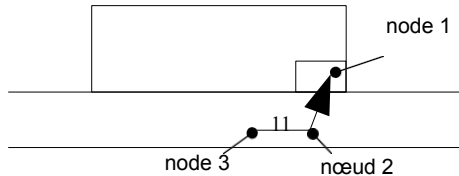
Hale non mitoyenne

Fossé non mitoyen

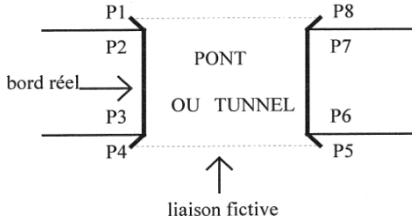
A unique reference node and orientation are defined for the representation of the ditch symbol. As a result, this symbol is positioned as far as possible on the straight portions of the boundary supporting it.

| | | | | | | | | | |
|---------------------------------|-----------|--------|--------------|--------|----------|---|----------------------|---|--------------------------------|
| Relationships between objects : | | | | | | Place-name relationships : | | | |
| ➤ SYMBLIM_PLOT | | | | | | ➤ "has for toponym" (pointing to the TEX attribute) | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Orientation | ORI | ORI_id | R | degree | NO | 2 - 9 | mandatory | | in the trigonometric direction |
| Type | SYM | SYM_id | A, pre-coded | | NO | 2 | mandatory | 39 party wall 40 non-party wall 41 adjoining ditch 42 non-party ditch 43 : common fence 44 : non-partitioned fence 45 : Dividing hedge 46 non-dividing hedge | |

| SCD identifier | | CNIG code | | MISCELLANEOUS ONE-OFF ITEM | | | | | |
|--|-----------|-----------|--------------|----------------------------|--|---------|-------------------------------|---|--------------------------------|
| TPOINT_id | | Z_1_0_1 | | | | | | | |
| Definitions, Comments : Topographical detail represented by a conventional point-type sign used to document the cadastral map and improve its legibility. | | | | | | | | | |
| Geometry: Punctual, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <i><u>between identical objects:</u></i> <i><u>between different objects :</u></i> | | | | | | | | | |
| Vectorisation recommendations : Special case: the watercourse arrow The watercourse arrow is considered to be a topographical detail with the "SYM" attribute occurrence code 30. This arrow is positioned as far as possible within the watercourse. | | | | | | | | | |
| Relationships between objects : ➤ DETOPO_COMMUNE | | | | | Place-name relationships : ➤ "has for toponym" (pointing to the TEX attribute) | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Orientation | ORI | ORI_id | R | degree | NO | 2 - 9 | mandatory | | in the trigonometric direction |
| Detail text | TEX | TEX_id | T | | YES | 0 - 255 | optional | | |
| Type | SYM | SYM_id | A, pre-coded | | NO | 2 | mandatory | 12: calvary 30: River arrow 47: halt 48: stop 49: station 50: pylon 63: well 98: miscellaneous single object | |

| SCD identifier | | CNIG code | | MISCELLANEOUS LINEAR OBJECT | | | | | |
|--|-----------|-----------|--------------|-----------------------------|----------|--|-------------------------------|---|-------------|
| TLINE_id | | Z_1_0_2 | | | | | | | |
| Definitions, Comments : Linear topographical detail represented by a conventional linear sign used to document the cadastral map and improve its legibility. | | | | | | | | | |
| Geometry: Linear, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects:</u> <u>between different objects :</u> | | | | | | | | | |
| Vectorisation recommendations : <u>Special case: the connecting arrow</u> The connecting arrow of a parcel number is considered to be a linear topographic detail with the "SYM" attribute occurrence code 31. This arrow is located as close as possible to the plot on which it depends. Nodes 1, 2 and 3 must be entered. Node 1 must be entered inside the parcel. This arrow must also be entered for buildings on unregistered land. | | | | | | | | | |
|  | | | | | | | | | |
| <u>Special case: the path</u> Occurrence 21 of the "SYM" attribute is used for both the conventional representation of a shared road and that of a road without a parcel. | | | | | | | | | |
| Relationships between objects : ➤ DETOPO_COMMUNE | | | | | | Place-name relationships : ➤ "has for toponym" (pointing to the TEX attribute) | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Text | TEX | TEX_id | T | | YES | 0 - 255 | optional | | |
| Type | SYM | SYM_id | A, pre-coded | | NO | 2 | mandatory | 13 transparent texture 14 church symbol 15 mosque symbol 16 synagogue symbol 17 State limit 18 Departmental boundary 19 : the start of a municipal boundary 21 : path 22 : start of the track | |

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | 23: pavements and paths 24: gas or oil pipeline 25: aqueduct 26: cable car 27: power transmission line 29: railway track 31: arrow for attaching a parcel number or building reference to the non-cadastral domain 62: sports ground, small streams 64: car park, terrace, overhang 98: miscellaneous linear object | |
|--|--|--|--|--|--|--|--|--|--|

| SCD identifier | | CNIG code | | MISCELLANEOUS SURFACE OBJECT | | | | | |
|--|-----------|-----------|--------------|------------------------------|--|---------|-------------------------------|---|-------------|
| TSURF_id | | Z_1_0_3 | | | | | | | |
| Definitions, Comments : Surface topographical detail represented by a conventional surface sign used to document the cadastral map and improve its legibility. | | | | | | | | | |
| Geometry: Surface, single-sided, spaghetti (S1) | | | | | | | Attendance: compulsory | | |
| Constraints : <i><u>between identical objects:</u></i> <i><u>between different objects :</u></i> | | | | | | | | | |
| Vectorisation recommendations : Special case: bridges and tunnels | | | | | | | | | |
| <div></div> <p>A bridge and a tunnel are surface objects defined by several nodes (P1 to P8 in the example above). For the exchange, the contour of these objects is transmitted in a uniform manner without distinguishing between the real edge and the fictitious links. It is therefore up to the user to process the object if they wish to separate these elements. Bridges and tunnels have codes 33 and 37 respectively for the "SYM" attribute.</p> | | | | | | | | | |
| Relationships : ➤ DETOPO_COMMUNE | | | | | Place-name relationships : ➤ "has for toponym" (pointing to the TEX attribute) | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Detail text | TEX | TEX_id | T | | YES | 0 - 255 | optional | | |
| Type | SYM | SYM_id | A, pre-coded | | NO | 2 | mandatory | 32 surface boundary that does not form a parcel 33 bridge parapet 34 37: tunnel 51 Christian cemetery 52 Jewish cemetery 53 65 : swimming pool | |

| SCD identifier | | CNIG code | | WRITING-ATTRIBUTE | | | | | |
|--|-----------|-----------|--------------|-------------------|-----------------------------------|---------|-------------------------------|-------------------|--|
| | | Z_1_2_2 | | | | | | | |
| Definitions, Comments : Object in the standard used for the graphic positioning of a label or other type of writing. | | | | | | | | | |
| Geometry : | | | | | | | Attendance: compulsory | | |
| Constraints : <u>between identical objects:</u> <u>between different objects :</u> | | | | | | | | | |
| Vectorisation recommendations : | | | | | | | | | |
| Relationships between objects : | | | | | Place-name relationships : | | | | |
| Attributes | | | | | | | | | |
| Name | Attribute | SCD Id | Format | Unit | Graphics | Length | Mandatory / Optional | Values / Examples | Constraints |
| Typeface name in plain text | FON | | T | | | 1 - 255 | mandatory | Times New Roman | |
| Character height | HEI | | R | | | 3 - 5 | mandatory | Example: +4. | format ⁵ : [+-][0-9][.][0-9]* |
| Type of unit used | TYU | | A, pre-coded | | | 1 -2 | mandatory | Example: 1 | |
| Magnification factor | CEF | | R | | | 3 - 9 | mandatory | Example: +1. | |
| Inter-character spacing | CSP | | R | | | 3 - 9 | mandatory | Example: +0.35 | |
| Orientation of the X component of the height vector | DI1 | | R | | | 3 - 9 | mandatory | Example: -0. | |
| Y component orientation of the height vector | DI2 | | R | | | 3 - 9 | mandatory | Example: +1. | |
| Orientation of the X component of the base vector | DI3 | | R | | | 3 - 9 | mandatory | Example: +1. | |
| Orientation | DI4 | | R | | | 3 - 9 | mandatory | Example: +0. | |

⁵ See Appendix D of the EDIGÉO standard on page 302 for regular expression specifications.

| | | | | | | | | | |
|---|-----|--|--------------|--|--|----------|-----------|---------------------------------|--|
| Y component of the base vector | | | | | | | | | |
| Sense of writing | TPA | | A, pre-coded | | | 2 | mandatory | Example: 01 | |
| Horizontal text alignment | HTA | | A, pre-coded | | | 2 | mandatory | Example: 01 | |
| Vertical text alignment | VTA | | A, pre-coded | | | 2 | mandatory | Example: 01 | |
| Identifier of the attribute to be written | ATR | | P | | | 13 - 255 | mandatory | Example: EDAC01;SeSD;ATT;TEX_id | |

8.2. Description of relationships

8.2.1. Building relationships

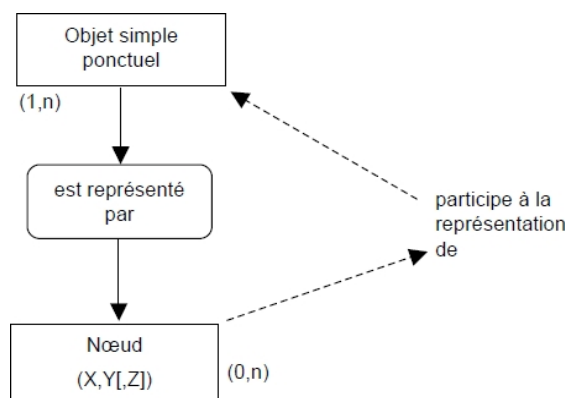
8.2.1.1. Between objects and primitives

The geometric representation of objects is based on primitives. A geometric representation that requires the use of primitives of different natures (arc and node, for example) will require the definition of a complex object made up of several simple objects, depending on the types of primitives used. Two relationships are used to link simple objects with primitives.

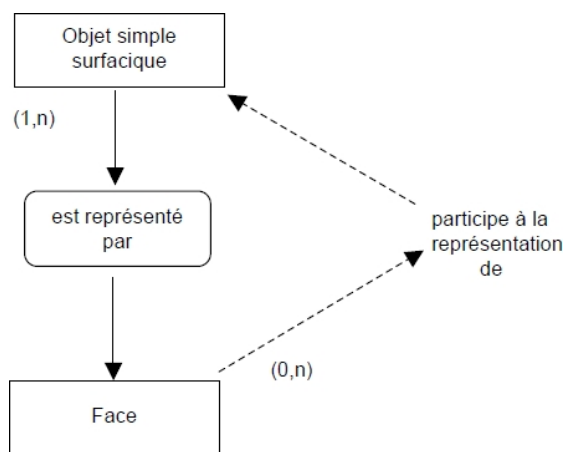
8.2.1.1.1. "is represented by "

This relationship links simple surface or point objects to surface or point primitives respectively. Each simple object is associated with one or more primitives of the same type (node for a point object, face for a surface object).

A simple point object is represented by 1 to n nodes (1,n). The inverse relationship expresses that a node or an isolated node participates in the representation of 0 to n simple point objects (0,n).



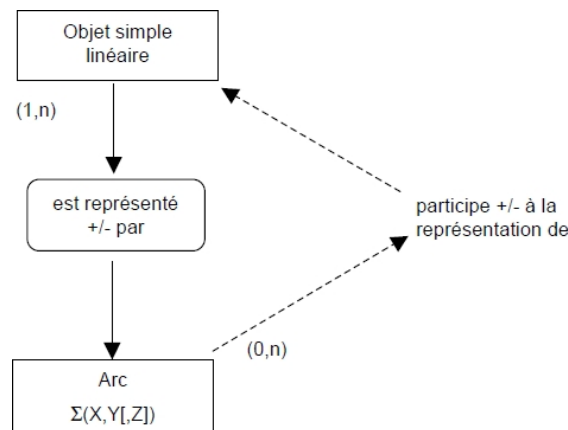
A simple surface object is represented by 1 to n faces (1,n). The inverse relationship expresses that a face participates in the representation of 0 to n simple surface objects (0,n).



8.2.1.1.2. "is represented positively/negatively (+/-) by "

This relationship links simple linear objects to arcs. From a logical point of view, it is identical to the previous one. The link is said to be positive if the arc is taken in the direction defined by the order of the points making it up. The link is negative if the arc is taken in the opposite direction.

A simple linear object is represented by 1 to n arcs, using for each arc either the direction corresponding to the orientation of the arc, or the inverse direction. The inverse relationship expresses that an arc participates, either in the direction corresponding to its orientation, or in the opposite direction, in the representation of 0 to n simple linear objects.



8.2.1.2. Between primitives

The relationships between primitives are used to express the relative position of objects in relation to each other. In the topological vector MCD, there are the following 4 relationships:

- > "has an initial node": an arc has one and only one (1,1) node as its initial node;
- > "has an end node": an arc has one and only one (1,1) node as its end node;
- > "has for face on the left": every bow has one and only one face on its left (1,1) ;
- > "has for face on right": every arc has one and only one face on its right (1,1). In

the spaghetti MCD, there are the following 4 relations:

- > "has for initial node": an arc has 0 or 1 initial node (0,1) ;
- > "has an end node": an arc has 0 or 1 end node (0,1) ;
- > "has for face on the left": an arc has 0 to n faces (0,n) on its left;
- > "has for face on the right": an arc has 0 to n faces (0,n) on its right.

8.2.2. Semantic relationships

These are the logical relationships that enable specific simple objects to be associated, excluding other relationships between objects. A semantic relationship links 2 to n geographical objects in the model (simple surface, linear or point objects). These relationships can be :

- > (for example, the relationship between the parcel and the section subdivision);
- > non-geographic (for example, the relationship between the road number and the plot).

| EDIGéO code | | CNIG code | | HAS AS INITIAL NODE |
|---|---------------------|------------------------|-------------------------------|---------------------|
| IND | | | | |
| Definitions, Comments : Relationship between an arc and its initial node. | | | | |
| Type: construction (REL descriptor block) | | | Attendance: compulsory | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | Descript or type | Minimum cardinality | Maximum cardinality | Comments |
| Node | PNO | 0 | n | spaghetti |
| Arc | BY | 0 | 1 | |
| Node | PNO | 1 | n | topological |
| Arc | BY | 1 | 1 | |

| EDIGéO code | CNIG code | HAS THE END NODE | | |
|---|---------------------|-------------------------------|------------------------|-------------|
| FND | | | | |
| Definitions, Comments : Relationship between an arc and its end node. | | | | |
| Type: construction (REL descriptor block) | | Attendance: compulsory | | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | Descript or type | Minimum cardinalit y | Maximum cardinality | Comments |
| Node | PNO | 0 | n | spaghetti |
| Arc | BY | 0 | 1 | |
| Node | PNO | 1 | n | topological |
| Arc | BY | 1 | 1 | |

| EDIGéO code | CNIG code | FACES LEFT | | |
|--|---------------------|-------------------------------|------------------------|-------------|
| LPO | | | | |
| Definitions, Comments : Relationship between an arc and the face or faces to its left. | | | | |
| Type: construction (REL descriptor block) | | Attendance: compulsory | | |
| Constraints: the face must be linked to at least one arc on the right or left (interrelation constraint). | | | | |
| Related objects | | | | |
| Object | Descript or type | Minimum cardinality | Maximum cardinality | Comments |
| Arc | BY | 0 | n | spaghetti |
| Face | PFE | 0 | n | |
| Arc | BY | 1 | 1 | topological |
| Face | PFE | 0 | n | |

| EDIGéO code | CNIG code | FACES RIGHT | | |
|--|---------------------|-------------------------------|------------------------|-------------|
| RPO | | | | |
| Definitions, Comments : Relationship between an arc and the face or faces to its right. | | | | |
| Type: construction (REL descriptor block) | | Attendance: compulsory | | |
| Constraints: the face must be linked to at least one arc on the right or left (interrelation constraint). | | | | |
| Related objects | | | | |
| Object | Descript or type | Minimum cardinality | Maximum cardinality | Comments |
| Arc | BY | 0 | n | spaghetti |
| Face | PFE | 0 | n | |
| Arc | BY | 1 | 1 | topological |
| Face | PFE | 0 | n | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (COMMUNE - FACE) | | |
|---|--------------------------------|------------------------------------|--|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a municipality. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if there are COMMUNE_id | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| COMMUNE_id | H_1_6_0 | 1 | n | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (SECTION - FACE) | | |
|---|--------------------------------|------------------------------------|---|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a section. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if SECTION_id exists | |
| Constraints: faces that are not linked to any object (cardinality = 0) represent faces from the outside, in order to achieve topology. | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| SECTION_id | H_11_1_0 | 1 | n | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (SECTION SUBDIVISION - FACE) | | |
|--|--------------------------------|--|---|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a section subdivision. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if SUBDSECT_id exists | |
| Constraints: faces that are not linked to any object (cardinality = 0) represent faces from the outside, in order to achieve topology. | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| SUBDSECT_id | H_11_2_0 | 1 | n | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (PLOT - FACE) | | |
|--|--------------------------------|---------------------------------|---|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a plot. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if PARCEL_id exists | |
| Constraints: faces that are not linked to any object (cardinality = 0) represent faces from the outside, in order to achieve topology. | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| PARCEL_id | H_11_4_0 | 1 | 1 | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (TAX SUBDIVISION - FACE) | | |
|--|--------------------------------|--|--|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a tax subdivision. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if SUBDFISC_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| SUBDFISC_id | H_11_5_0 | 1 | n | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (LOAD - FACE) | | |
|--|--------------------------------|---------------------------------|--|----------|
| IDB | | | | |
| Definitions, Comments : Load geometry. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if CHARGE_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| LOAD_id | H_11_6_0 | 1 | n | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (PROPERTY SET - NODE ISOLATED) | | |
|---|-----------------------------|--|---|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a property complex. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if VOIEP_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| VOIEP_id | H_11_7_0 | 1 | 1 | |
| NOEUD | PNO | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (ROAD NUMBER - ISOLATED NODE) | | |
|--|--------------------------------|---|--|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a road number. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if any ID_NUMBERS exist | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| ID_NUMBER | H_11_8_0 | 1 | 1 | |
| NOEUD | PNO | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (LOCALITY - FACE) | | |
|---|--------------------------------|-------------------------------------|--|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a locality. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if there are LIEUDIT_id | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| LIEUDIT_id | H_1_7_0 | 1 | 1 | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (BUILDING - FACE) | | |
|--|--------------------------------|-------------------------------------|--|----------|
| IDB | | | | |
| Definitions, Comments : Building geometry. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if BATIMENT_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| BUILDING_id | E_2_1_0 | 1 | 1 | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (ROAD NETWORK OBJECT - FACE) | | |
|---|--------------------------------|--|--|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a road network object. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if TRONROUTE_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| TRONROUTE_id | A_1_0_0 | 1 | 1 | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (RIVER SECTION - FACE) | | |
|---|--------------------------------|--|--|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a section of watercourse. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if TRONFLUV_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| TRONFLUV | D_1_0_8 | 1 | 1 | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (CANVAS POINT - ISOLATED NODE) | | |
|---|--------------------------------|--|--|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a canvas point. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if PTCANV_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| PTCANV_id | I_1_0_0 | 1 | 1 | |
| NOEUD | PNO | 0 | 1 | |

| | | | | |
|--|-----------------------------|---|--|----------|
| EDIGéO code | CNIG code | IS REPRESENTED BY (PROPERTY LIMIT BOUNDARY - ISOLATED NOSE) | | |
| IDB | | | | |
| Definitions, Comments : Bollard geometry. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if BORNE_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| BORNE_id | I_2_4_0 | 1 | 1 | |
| NOEUD | PNO | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (SEALED BOLT - ISOLATED NODE) | | |
|---|--------------------------------|---|---|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a sealed bolt. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if any BOLT_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| BOLT_id | I_2_4_1 | 1 | 1 | |
| NOEUD | PNO | 0 | 1 | |

| | | | | |
|---|-----------|--|--|----------|
| EDIGéO code | CNIG code | IS REPRESENTED BY (ENGRAVED CROSS - ISOLATED KNOT) | | |
| IDB | | | | |
| Definitions, Comments : Geometry of an engraved cross. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if CROIX_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| CROIX_id | I_2_4_2 | 1 | 1 | |
| NOEUD | PNO | 0 | 1 | |

| | | | | |
|--|-----------|--|---|----------|
| EDIGéO code | CNIG code | IS REPRESENTED BY (JOINTNESS SYMBOL - NODE ISOLATED) | | |
| IDB | | | | |
| Definitions, Comments : Geometry of a party line symbol. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if SYMBLIM_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| SYMBLIM_id | Z_1_0_1 | 1 | 1 | |
| NOEUD | PNO | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY A TOPOGRAPHIC DETAIL - ISOLATED NOSE) | | |
|---|--------------------------------|--|--|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a topographic detail. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if TPOINT_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| TPOINT_id | Z_1_0_1 | 1 | 1 | |
| NOEUD | PNO | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY (TOPOGRAPHICAL DETAIL SURFACE - FACE) | | |
|---|--------------------------------|--|---|----------|
| IDB | | | | |
| Definitions, Comments : Geometry of a surface topographic detail. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if TSURF_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| TSURF_id | Z_1_0_3 | 1 | 1 | |
| FACE | PFE | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY +/- (COMMUNICATION ZONE - ARC) | | |
|---|--------------------------------|--|---|----------|
| IDR | | | | |
| Definitions, Comments : Geometry of a communication zone. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if ZONECOMMUNI_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| ZONECOMMUNI_id | A_1_0_5 | 1 | n | |
| ARC | BY | 0 | 1 | |

| EDIGéO code | CNIG code | IS REPRESENTED BY +/- (TOPOGRAPHICAL DETAIL LINEAR - ARC) | | |
|--|--------------------------------|--|---|----------|
| IDR | | | | |
| Definitions, Comments : Geometry of a linear topographic detail. | | | | |
| Type: construction (REL descriptor block) | | | Presence: mandatory if TLINE_id exists | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code / Descriptor type | Minimum cardinality | Maximum cardinality | Comments |
| TLINE_id | Z_1_0_2 | 1 | n | |
| ARC | BY | 0 | 1 | |

| EDIGéO code | CNIG code | SECTION_COMMUNE | | |
|--|-----------|---------------------|--|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the section and the municipality to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: optional because geographical | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| SECTION_id | H_11_1_0 | 1 | 1 | |
| COMMUNE_id | H_1_6_0 | 1 | n | |

| | | | | |
|--|------------------|-------------------------|-------------------------------|----------|
| EDIGéO code | CNIG code | SUBDSECT_SECTION | | |
| | APP | | | |
| Definitions, Comments : Relationship linking the section subdivision to the section to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: compulsory | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| SUBDSECT_id | H_11_2_0 | 1 | 1 | |
| SECTION_id | H_11_1_0 | 1 | n | |

| EDIGéO code | CNIG code | PARCEL_SUBDSECT | | |
|--|-----------|---------------------|-------------------------------|--|
| | APP | | | |
| Definitions, Comments : Relationship between the parcel and the section subdivision to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: compulsory | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| PARCEL_id | H_11_4_0 | 1 | 1 | |
| SUBDSECT_id | H_11_2_0 | 0 | n | There are section subdivisions without parcels |

| EDIGéO code | CNIG code | SUBDFISC_PARCELLE | | |
|--|-----------|---------------------|-------------------------------|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the tax subdivision and the parcel to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: compulsory | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| SUBDFISC_id | H_11_5_0 | 1 | 1 | |
| PARCEL_id | H_11_4_0 | 0 | n | |

| EDIGéO code | CNIG code | PLOT_LOAD | | |
|---|-----------|---------------------|-------------------------------|----------|
| | APP | | | |
| Definitions, Comments : The relationship between the charge and the parcel to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: compulsory | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| LOAD_id | H_11_6_0 | 1 | 1 | |
| PARCEL_id | H_11_4_0 | 0 | n | |

| EDIGéO code | CNIG code | BUILDING_PLOT | | |
|---|-----------|---------------------|-------------------------------|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the building and the plot of land to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: compulsory | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| BUILDING_id | E_2_1_0 | 0 | n | |
| PARCEL_id | H_11_4_0 | 0 | n | |

| EDIGéO code | CNIG code | PARCEL_STATION | | |
|--|-----------|---------------------|--|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the milestone and the parcel to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: optional because geographical | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| BORNE_id | I_2_4_0 | 1 | n | |
| PARCEL_id | H_11_4_0 | 0 | n | |

| EDIGéO code | CNIG code | PLOT_BOLT | | |
|---|-----------|---------------------|--|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the bolt and the parcel to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: optional because geographical | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| BOLT_id | I_2_4_1 | 1 | n | |
| PARCEL_id | H_11_4_0 | 0 | n | |

| EDIGéO code | CNIG code | CROSS_PARCEL | | |
|---|-----------|---------------------|--|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the engraved cross and the parcel to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: optional because geographical | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| CROIX_id | I_2_4_2 | 1 | n | |
| PARCEL_id | H_11_4_0 | 0 | n | |

| EDIGéO code | CNIG code | SYMBLIM_PLOT | | |
|--|-----------|---------------------|--|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the party line symbol and the parcel to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: optional because geographical | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| SYMBLIM_id | Z_1_0_1 | 1 | n | |
| PARCEL_id | H_11_4_0 | 0 | n | |

| EDIGéO code | CNIG code | PLOT_NUMBER | | |
|--|-----------|---------------------|-------------------------------|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the road number and the parcel to which it belongs. | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Attendance: compulsory | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| ID_NUMBER | H_11_8_0 | 1 | n | |
| PARCEL_id | H_11_4_0 | 0 | n | |

| EDIGéO code | CNIG code | PTCANVS_COMMUNE | | |
|---|-----------|---------------------|--|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the canvas point and the municipality to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: optional because geographical | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| PTCANV_id | I_1_0_0 | 1 | 1 | |
| COMMUNE_id | H_1_6_0 | 0 | n | |

| EDIGéO code | CNIG code | DETOPO_COMMUNE | | |
|--|-----------|---------------------|--|----------|
| | APP | | | |
| Definitions, Comments : The relationship between a specific topographical detail and the municipality to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: optional because geographical | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| TPOINT_id | Z_1_0_1 | 1 | 1 | |
| COMMUNE_id | H_1_6_0 | 0 | n | |

| EDIGéO code | CNIG code | DETOPO_COMMUNE | | |
|--|-----------|---------------------|--|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the linear topographic detail and the municipality to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: optional because geographical | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| TLINE_id | Z_1_0_2 | 1 | 1 | |
| COMMUNE_id | H_1_6_0 | 0 | n | |

| EDIGéO code | CNIG code | DETOPO_COMMUNE | | |
|---|-----------|---------------------|--|----------|
| | APP | | | |
| Definitions, Comments : Relationship between the surface topographic detail and the municipality to which it belongs. | | | | |
| Type: geographical semantics (ASS descriptor block) | | | Attendance: optional because geographical | |
| Constraints : | | | | |
| Related objects | | | | |
| Object | CNIG code | Minimum cardinality | Maximum cardinality | Comments |
| TSURF_id | Z_1_0_3 | 1 | 1 | |
| COMMUNE_id | H_1_6_0 | 0 | n | |

| | | |
|-------------|-----------|---|
| EDIGéO code | CNIG code | HAS AS ITS PLACE NAME (SCRIPT-ATTRIBUTE - COMMUNE) |
| | IWW | |

| | | | | | |
|--|--|--|--|--|--|
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of COMMUNE_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this attribute text and the COMMUNE_id which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |

| | | | | | |
|----------------------|--|--|--|--|--|
| Constraints : | | | | | |
|----------------------|--|--|--|--|--|

| | | | | | |
|------------------------|-----------|-------------------|---------------------|---------------------|---|
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| COMMUNE_id | H_1_6_0 | TEX2 | 1 | 1 | |

| EDIGéO code | CNIG code | HAS FOR TOPONYM (WRITING-ATTRIBUTE - SECTION) | | | |
|--|-----------|---|--|---------------------|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of SECTION_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this script-attribute and SECTION_id, which has the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| SECTION_id | H_11_1_0 | TEX | 1 | 1 | |

| EDIGéO code | CNIG code | HAS FOR TOPONYM (WRITING-ATTRIBUTE - PARCEL) | | | |
|---|-----------|--|---------------------|--|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of PARCELLE_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this writing-attribute and PARCELLE_id, which has the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| PARCEL_id | H_11_4_0 | TEX | 1 | 1 | |

| EDIGéO code | CNIG code | HAS FOR TOPONYM (WRITING-ATTRIBUTE - SUBDIVISION FISCAL) | | | |
|--|-----------|--|--|---------------------|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphical attributes" of SUBDFISC_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this writing-attribute and SUBDFISC_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| SUBDFISC_id | H_11_5_0 | TEX | 1 | 1 | |

| EDIGéO code | CNIG code | HAS AS ITS PLACE NAME (WRITING-ATTRIBUTE - CHARGE) | | | |
|-------------|-----------|--|--|--|--|
| | IWWW | | | | |

| | | | | | |
|--|--|--|--|--|--|
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of CHARGE_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this writing-attribute and CHARGE_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |

| | | | | | |
|----------------------|--|--|--|--|--|
| Constraints : | | | | | |
|----------------------|--|--|--|--|--|

| Related objects | | | | | |
|-------------------|-----------|-------------------|---------------------|---------------------|---|
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| LOAD_id | H_11_6_0 | TEX | 1 | 1 | |

| EDIGéO code | CNIG code | HAS FOR TOPONYM (WRITING-ATTRIBUTE - SET REAL ESTATE) | | | |
|---|-----------|--|--|---------------------|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphical attributes" of VOIEP_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this script-attribute and VOIEP_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| VOIEP_id | H_11_7_0 | TEX | 1 | 1 | |

| EDIGéO code | CNIG code | HAS FOR TOPONYM (WRITING-ATTRIBUTE - NUMBER OF ROADS) | | | |
|--|-----------|---|--|---------------------|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of NUMVOIE_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this writing-attribute and NUMVOIE_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| ID_NUMBER | H_11_8_0 | TEX | 1 | 1 | |

| EDIGéO code | | CNIG code | | HAS FOR TOPONYM (WRITING-ATTRIBUTE - LOCALITY) | |
|--|-----------|-------------------|---------------------|--|---|
| | | IWW | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of LIEUDIT_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this writing-attribute and LIEUDIT_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| LIEUDIT_id | H_1_7_0 | TEX | 1 | 1 | There is one relationship occurrence for each of the attributes entered |
| | | TEX2 | 1 | 1 | |
| | | TEX3 | 1 | 1 | |
| | | TEX4 | 1 | 1 | |
| | | TEX5 | 1 | 1 | |
| | | TEX6 | 1 | 1 | |
| | | TEX7 | 1 | 1 | |
| | | TEX8 | 1 | 1 | |
| | | TEX9 | 1 | 1 | |
| | | TEX10 | 1 | 1 | |

| EDIGéO code | CNIG code | HAS FOR TOPONYM (WRITING-ATTRIBUTE - BUILDING) | | | |
|--|-----------|--|--|---------------------|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of BATIMENT_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this attribute script and BATIMENT_id, which has the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| BUILDING_id | E_2_1_0 | TEX | 1 | 1 | |

| EDIGéO code | CNIG code | HAS AS ITS PLACE NAME (WRITING-ATTRIBUTE - SECTION OF WAY) | | | |
|---|-----------|--|--|---------------------|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of TRONROUTE_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this script-attribute and TRONROUTE_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| TRONROUTE_id | A_1_0_0 | TEX | 1 | 1 | There is one relationship occurrence for each of the attributes entered |
| | | TEX2 | 1 | 1 | |
| | | TEX3 | 1 | 1 | |
| | | TEX4 | 1 | 1 | |
| | | TEX5 | 1 | 1 | |
| | | TEX6 | 1 | 1 | |
| | | TEX7 | 1 | 1 | |
| | | TEX8 | 1 | 1 | |
| | | TEX9 | 1 | 1 | |
| | | TEX10 | 1 | 1 | |

| EDIGéO code | | CNIG code | | HAS AS ITS PLACE NAME (WRITING-ATTRIBUTE - AREA OF COMMUNICATION) | |
|---|-----------|-------------------|---------------------|--|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of ZONECOMMUNI_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this writing-attribute and ZONECOMMUNI_id, which has the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| ZONECOMMUNI_id | A_1_0_5 | TEX | 1 | 1 | There is one relationship occurrence for each of the attributes entered |
| | | TEX2 | 1 | 1 | |
| | | TEX3 | 1 | 1 | |
| | | TEX4 | 1 | 1 | |
| | | TEX5 | 1 | 1 | |
| | | TEX6 | 1 | 1 | |
| | | TEX7 | 1 | 1 | |
| | | TEX8 | 1 | 1 | |
| | | TEX9 | 1 | 1 | |
| | | TEX10 | 1 | 1 | |

| EDIGéO code | CNIG code | HAS AS ITS PLACE NAME (WRITING-ATTRIBUTE - SECTION OF WATERCOURSES) | | | |
|---|-----------|---|--|---------------------|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of TRONFLUV_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this script-attribute and TRONFLUV_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| TRONFLUV_id | D_1_0_8 | TEX | 1 | 1 | There is one relationship occurrence for each of the attributes entered |
| | | TEX2 | 1 | 1 | |
| | | TEX3 | 1 | 1 | |
| | | TEX4 | 1 | 1 | |
| | | TEX5 | 1 | 1 | |
| | | TEX6 | 1 | 1 | |
| | | TEX7 | 1 | 1 | |
| | | TEX8 | 1 | 1 | |
| | | TEX9 | 1 | 1 | |
| | | TEX10 | 1 | 1 | |

| EDIGéO code | CNIG code | HAS FOR TOPONYM (WRITING-ATTRIBUTE - PUNCTUAL OBJECT) MISCELLANEOUS) | | | |
|---|-----------|---|--|---------------------|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of TPOINT_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this script-attribute and TPOINT_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| TPOINT_id | Z_1_0_1 | TEX | 1 | 1 | |

| EDIGéO code | CNIG code | HAS FOR TOPONYM (WRITING-ATTRIBUTE - LINEAR OBJECT) | | | |
|--|-----------|---|--|---------------------|---|
| | IWW | MISCELLANEOUS) | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of TLINE_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this writing-attribute and TLINE_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| TLINE_id | Z_1_0_2 | TEX | 1 | 1 | |

| EDIGéO code | CNIG code | HAS FOR TOPONYM (WRITING-ATTRIBUTE - OBJECT VARIOUS SURFACE AREAS) | | | |
|---|-----------|---|--|---------------------|---|
| | IWW | | | | |
| Definitions, Comments : Relationship used to position and display the "graphic attributes" of TSURF_id. The writing attribute defines the writing style. It is linked to a node used to position the script. It references the name of the attribute to be displayed. This relationship establishes the link between this script-attribute and TSURF_id, which owns the graphical attribute to be displayed. | | | | | |
| Type: non-geographic semantic (ASS descriptor block) | | | Presence: mandatory if the graphics attribute is set, absent otherwise. | | |
| Constraints : | | | | | |
| Related objects | | | | | |
| Object | CNIG code | Graphic attribute | Minimum cardinality | Maximum cardinality | Comments |
| WRITING_ATTRIBUTE | Z_1_2_2 | | 1 | 1 | The "ATR" attribute of the WRITE-ATTRIBUTE designates the graphic attribute to be displayed |
| TSURF_id | Z_1_0_3 | TEX | 1 | 1 | |

APPENDICES

APPENDIX 1 - EDIGÉO GRAMMAR

Analysis of the THF file: general transmission data

| Wording | Name | Nature | Format | Sub-field | Value | Constraints |
|---|--------------------------|--|---|-----------|--------------------------------------|---|
| THF metafile header (§6.3-105 / §7.3-235) | | | | | | |
| Start of metafile Character play | BOM ESC | T-booked T-booked | [reserved [reserved | | THF name in the list ¹ | - Mandatory - Mandatory |
| Support descriptor (§6.3.3-105 / §7.3.1-236) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | GTS non-empty | - Mandatory - Mandatory |
| Author Recipient | AUT ADR | S-Simple S-Simple | T-Text T-Text | | non-empty non-empty | - Mandatory - Mandatory |
| No. of geographical lots | LOC | S-Simple | N-Nb $\in \mathbb{N}$ | | Val > 0 | - Mandatory |
| No. of volumes Volume label | VOC VOL | S-Simple S-Simple | N-Nb $\in \mathbb{N}$ A-Chain | | Nil if absent | - Optional - As much as indicated (VOC) |
| Safety classification | SEC | S-Simple | N-Nb $\in \mathbb{N}$ | | Val $\in [1, 7]$ 7 if absent | - Optional $\geq \max$ (ind collateral) |
| Distribution restrictions EDIGÉO version EDIGÉO version date | RDI VER VDA | S-Simple S-Simple S-Simple | T-Text T-Text D-Date | | 1.0 | - Optional - Mandatory - Optional, valid |
| Transmission name Transmission issue no. Transmission date Transmission info | TRL EDN TDA INF | S-Simple S-Simple S-Simple S-Simple | T-Text N-Nb $\in \mathbb{N}$ D-Date T-Text | | Val > 0 | - Mandatory - Mandatory - Optional, valid - Optional |
| n Batch descriptors (see THF LOC). (§6.3.4-109 / §7.3.2-237) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | GTL non-empty | - Mandatory - Mandatory, unique |
| Batch name Lot information | LON INF | S-Simple S-Simple | A-Chain T-Text | | [A-Z]([A-Z0-9]) ⁵ | - Mandatory - Optional |
| Name ssE data GEN Id ssE data GEN | GNN GNI | S-Simple S-Simple | A-Chain A-Chain | | ([A-Z0-9]) ² | - Mandatory - Mandatory, unique |
| Name ssE GEO data Id ssE GEO data | GON GOI | S-Simple S-Simple | A-Chain A-Chain | | ([A-Z0-9]) ² | - Mandatory - Mandatory, unique |
| Name ssE QAL data Id ssE QAL data | QAN IAQ | S-Simple S-Simple | A-Chain A-Chain | | ([A-Z0-9]) ² | - Optional - idem QAN ² single |
| Name ssE DIC data Id ssE DIC data | DIN DII | S-Simple S-Simple | A-Chain A-Chain | | ([A-Z0-9]) ² | - idem VEC ³ - idem VEC ³ |
| Name ssE SCD data Id ssE SCD data | SCN SCI | S-Simple S-Simple | A-Chain A-Chain | | ([A-Z0-9]) ² | - idem VEC ³ - idem VEC ³ |
| No. of ssE MAT+VEC Name ssE MAT+VEC Id ssE MAT+VEC | GDC GDN GDI | S-Simple S-Simple S-Simple | N-Nb $\in \mathbb{N}$ A-Chain A-Chain | | Val > 0 ([A-Z0-9]) ² | - Mandatory - As far as indicated (GDC) - As far as indicated (GDC), unique |
| End of THF metafile | | | | | | |
| End of metafile | EOM | T-booked | [reserved | | empty (ZL=0) | - Mandatory |

¹ The character set must be one of the values (IRV, 646-FRANCE, 8859-1, 8859-2, 8859-3, 8859-4, 8859-5, 8859-6, 8859-7, 8859-8, 8859-9, JEC).

² Depending on the presence of the subset name, the identifier must be present or absent

³ Present if vector data exists, absent otherwise.

Analysis of the GEN file: subset of general data

| Wording | Name | Nature | Format | Sub-field | Value | Constraints |
|--|------|--|---|-------------------|--------------------------|---|
| GEN metafile header (§6.4.3-115 / §7.4.1-313) | | | | | | |
| Start of metafile | BOM | T-booked | [reserved | | GEN name | - Mandatory |
| Character play | ESC | T-booked | [reserved | | in the list ⁴ | - Mandatory |
| Geographical extent descriptor (§6.4.3.1-115 / §7.4.1.1-239) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | DEG | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| Minimum coordinates <i>Minimum abscissa</i> <i>Minimum ordinate</i> <i>Minimum altitude</i> | CM1 | C-Complex <i>S-Simple</i> | C-Coord. R <i>signed</i> | COX COY COZ | | - Mandatory - Mandatory - Mandatory |
| Maximum coordinates <i>Maximum abscissa</i> <i>Maximum ordinate</i> <i>Maximum altitude</i> | CM2 | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | <i>signed</i> R <i>signed</i> <i>R signed</i> <i>R signed</i> <i>R signed</i> | COX COY COZ | | - Optional if GÉO.ALS= 2 - Mandatory - Mandatory - Mandatory - Optional if GÉO.ALS= 2 |
| n Geographic data subset descriptors (cf THF GDC) (§6.4.3.2-117 / §7.4.1.2-240) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | GSE | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| Information about ssE | INF | S-Simple | T-Text | | | - Optional |
| Data structure | STR | S-Simple | N-Nb $\in \mathbb{N}$ | | 1 to 5 (EDIGÉO) | - Mandatory, 1 or 3 (CAD) |
| Id of the calibration descriptor | REG | S-Simple | A-Chain | | | - Optional, Absent or null (CAD) |
| End of metafile GEN | | | | | | |
| End of metafile | EOM | T-booked | [reserved | | empty (ZL=0) | - Mandatory |

⁴ The character set must be one of the values (IRV, 646-FRANCE, 8859-1, 8859-2, 8859-3, 8859-4, 8859-5, 8859-6, 8859-7, 8859-8, 8859-9, JEC).

Analysis of the GEO file: subset of the coordinate reference

| Wording | Name | Nature | Format | Sub-field | Value | Constraints |
|--|----------------------------------|--|--|--|--|---|
| GEO metafile header (§6.4.4-119 / §7.4.2-241) | | | | | | |
| Start of metafile Character play | BOM ESC | T-booked T-booked | [reserved] [reserved] | | GEO name in the list ⁵ | - Mandatory - Mandatory |
| Coordinate reference descriptor (§6.4.4.1-119 / §7.4.2.1-241) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | GEO non-empty | - Mandatory - Mandatory |
| Type of coord. ref. Name of coord. ref. Coord ref code Dim coordinates | RET REN REL SUN | S-Simple S-Simple S-Simple S-Simple | A-Chain T-Text A-Chain N-Nb $\in \mathbb{N}$ | | MAP (CAD) list ⁶ list ⁷ 2 or 3 | - Mandatory - Optional - Mandatory - Mandatory |
| Use of a Z-system Type of altitude system Name of altitude system Altitude system code | ALS ALT ALN ALL | S-Simple S-Simple S-Simple S-Simple | N-Nb $\in \mathbb{N}$ N-Nb $\in \mathbb{N}$ T-Text A-Chain | | 1 or 2 1 (CAD) | - Mandatory - Mandatory if ALS=1, absent otherwise - Mandatory if ALS=1, absent otherwise - Mandatory if ALS=1, absent otherwise |
| Planimetric unit Altimetric unit | UNH UNV | S-Simple S-Simple | T-Text T-Text | | [m M] (CAD) [m M] (CAD) | - Mandatory - Mandatory if DIM=3, absent otherwise |
| n Calibration descriptors (as defined in GEN.REG) (§6.4.4.2-124 / §7.4.2.2-242) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | RPR non-empty | - Mandatory if GEN.REG entered - Mandatory if GEN.REG entered |
| No. of set points Id of set point XYZ of the pt in the input reference <i>Abcissa (input reference) Ordinate (input reference) Altitude (input reference)</i> XYZ of pt in known ref <i>Abcissa (known rep) Ordinate (known rep) Altitude (known rep)</i> | RPC RPI RP1 RP2 | S-Simple S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbb{N}$ A-Chain C-Coord. <i>R</i> <i>signed</i> <i>R</i> <i>signed</i> <i>R</i> <i>signed</i> C-Coord. <i>R signed</i> <i>R signed</i> <i>R signed</i> | COX COY COZ COX COY COZ | CPP > 0 | - Mandatory if GEN.REG entered - Mandatory if GEN.REG entered - As far as indicated (RPC) - Mandatory if GEN.REG entered - Mandatory if GEN.REG entered - Mandatory if GEN.REG entered - Optional - Mandatory if GEN.REG entered - Mandatory if GEN.REG entered - Mandatory if GEN.REG entered - Optional |
| No. of control points Id of control point XYZ of point in ref entry <i>Abcissa (rep entered) Ordinate (rep entered) Altitude (rep entered)</i> XYZ of pt in known ref <i>Abcissa (known rep) Ordinate (known rep) Altitude (known rep)</i> | CPC CPI CP1 CP2 | S-Simple S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbb{N}$ A-Chain C-Coord. <i>R</i> <i>signed</i> <i>R</i> <i>signed</i> <i>R</i> <i>signed</i> C-Coord. <i>R signed</i> <i>R signed</i> <i>R signed</i> | COX COY COZ COX COY COZ | CPC ≥ 0 | - Mandatory if GEN.REG entered - As far as indicated (CPC) - As far as indicated (CPC) - As far as indicated (CPC) - As far as indicated (CPC) - As far as indicated (CPC) - As far as indicated (CPC) - As far as indicated (CPC) - As far as indicated (CPC) - As far as indicated (CPC) - Optional |
| End of GEO metafile | | | | | | |
| End of metafile | EOM | T-booked | [reserved] | | empty (ZL=0) | - Mandatory |

⁵ The character set must be one of the values (IRV, 646-FRANCE, 8859-1, 8859-2, 8859-3, 8859-4, 8859-5, 8859-6, 8859-7, 8859-8, 8859-9, JEC).

⁶ For the land register, choose a value from the list (Lambert 93, Conformal Conic 42, 43, 44, 45, 46, 47, 48, 49 and 50 for mainland France, and GUAD48UTM20 for Guadeloupe, MART38UTM20 for Martinique, RGF95UTM22 for French Guiana, RGR92UTM40 for Réunion).

⁷ For the land registry, choose a value from the list (LAMB93, RGF93CC42, RGF93CC43, RGF93CC44, RGF93CC45, RGF93CC46, RGF93CC47, RGF93CC48, RGF93CC49, RGF93CC50, and GUAD48UTM20, MART38UTM20, RGF95UTM22, RGR92UTM), modify REN if present.

Analysis of the QAL file: quality description subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|--|--|---|---|--------------------------|---------------------------------------|---|
| QAL metafile header (§6.4.5-130 / §7.4.3-244) | | | | | | |
| Start of metafile Character play | BOM ESC | T-booked T-booked | [reserved] [reserved] | | QAL name in the list ⁸ | - Mandatory - Mandatory |
| Genealogy descriptor (§6.4.5.1-133 / §7.4.3.1-245) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | QLI non-empty | - Mandatory - Mandatory |
| Producer & source ID Nature of collection Nature of processing History | SOU COL TRA HIS | S-Simple S-Simple S-Simple S-Simple | T-Text T-Text T-Text T-Text | | | - Optional - Optional - Optional - Optional |
| Number of elements MCD element ref <i>Batch</i> <i>descriptor id ssE id SCD</i> <i>definition Descriptor</i> <i>type</i> <i>Descriptor id</i> | COC COP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb ∈ N P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | COC ≥ 0 | - Mandatory - As far as indicated (COC) Existence of descriptors designated |
| Topicality descriptor (§6.4.5.2-136 / §7.4.3.2-245) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | QUP non-empty | - Mandatory - Mandatory |
| Observation date Type of update Durability of update Date of update Annual rate of change Expiry date | ODA UTY ULO UDA RAT EDA | S-Simple S-Simple S-Simple S-Simple S-Simple S-Simple | D-Date N-Nb ∈ N N-Nb ∈ N D-Date R-Nb ∈ R D-Date | | Val ∈ [0, 3] Val ∈ [1, 2] % ≥ 0 | - Optional - Mandatory - Mandatory - Optional - Optional - Optional |
| Number of elements MCD element ref <i>Batch</i> <i>descriptor id ssE id SCD</i> <i>definition Descriptor</i> <i>type</i> <i>Descriptor id</i> | COC COP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb ∈ N P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | COC ≥ 0 | - Mandatory - As far as indicated (COC) Existence of descriptors designated |
| Planimetric accuracy descriptor (§6.4.5.3-140 / §7.4.3.3-246) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | QPA non-empty | - Mandatory - Mandatory |
| Absolute plani accuracy Accuracy unit Confidence level No. of average measurements | ACC UNI REC NUM | S-Simple S-Simple S-Simple S-Simple | R-Nb ∈ R T-Text R-Nb ∈ R N-Nb ∈ N | | ACC ≥ 0 % ∈ [0, 100] NUM > 0 | - Mandatory - Mandatory - Mandatory - Optional |
| Nb pts validity polygon Point of validity polygon <i>Abcissa</i> <i>Ordinate</i> <i>Altitude</i> | PTC COR | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb ∈ N C-Coord. <i>R signed</i> <i>R signed</i> <i>R signed</i> | COX COY COZ | PTC ≥ 0 | - Mandatory - As far as indicated (PTC) |
| Number of elements MCD element ref <i>Batch</i> <i>descriptor id ssE id</i> <i>SCD definition</i> <i>Descriptor type</i> <i>Descriptor id</i> | COC COP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb ∈ N P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | COC ≥ 0 | - Mandatory - As far as indicated (COC) Existence of descriptors designated |

⁸ The character set must be one of the values (IRV, 646-FRANCE, 8859-1, 8859-2, 8859-3, 8859-4, 8859-5, 8859-6, 8859-7, 8859-8, 8859-9, JEC).

Analysis of the QAL file: quality description subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|--|--------------------------|---|--|--------------------------------------|---|---|
| Altimeter accuracy descriptor (§6.4.5.4-143 / §7.4.3.4-248) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | QAA non-empty | - Mandatory - Mandatory |
| Absolute alti precision Precision unit Confidence level No. of average measurements | ACC UNI REC NUM | S-Simple S-Simple S-Simple S-Simple | R-Nb $\in \mathbf{R}$ T-Text R-Nb $\in \mathbf{R}$ N-Nb $\in \mathbf{N}$ | | ACC ≥ 0 % $\in [0, 100]$ NUM > 0 | - Mandatory - Mandatory - Mandatory - Optional |
| Nb pts validity polygon Point of validity polygon <i>Abscissa</i> <i>Ordinate</i> <i>Altitude</i> | PTC COR | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbf{N}$ C-Coord. <i>R signed</i> <i>R signed</i> <i>R signed</i> | COX COY COZ | PTC ≥ 0 | - Mandatory - As far as indicated (PTC) |
| Number of elements MCD element ref <i>Batch</i> <i>descriptor id ssE id SCD</i> <i>definition Descriptor</i> <i>type</i> <i>Descriptor id</i> | COC COP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbf{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | COC ≥ 0 | - Mandatory - As far as indicated (COC) Existence of descriptors designated |
| Metric precision descriptor (§6.4.5.5-146 / §7.4.3.5-248) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | QMA non-empty | - Mandatory - Mandatory |
| Description of the measure | DEF | S-Simple | T-Text | | | - Mandatory |
| Absolute metric precision Precision unit Confidence level No. of average measurements | ACC UNI REC NUM | S-Simple S-Simple S-Simple S-Simple | R-Nb $\in \mathbf{R}$ T-Text R-Nb $\in \mathbf{R}$ N-Nb $\in \mathbf{N}$ | | ACC ≥ 0 % $\in [0, 100]$ NUM > 0 | - Mandatory - Mandatory - Mandatory - Optional |
| Nb pts validity polygon Point of validity polygon <i>Abscissa</i> <i>Ordinate</i> <i>Altitude</i> | PTC COR | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbf{N}$ C-Coord. <i>R signed</i> <i>R signed</i> <i>R signed</i> | COX COY COZ | PTC ≥ 0 | - Mandatory - As far as indicated (PTC) |
| Number of elements MCD element ref <i>Batch</i> <i>descriptor id ssE id</i> <i>SCD definition</i> <i>Descriptor type</i> <i>Descriptor id</i> | COC COP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbf{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | COC ≥ 0 | - Mandatory - As far as indicated (COC) Existence of descriptors designated |
| Exhaustiveness descriptor (§6.4.5.6-149 / §7.4.3.6-250) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | QCO non-empty | - Mandatory - Mandatory |
| Number of correct elements Sample size Margin of error Confidence level | NUM SIZ ERR REC | S-Simple S-Simple S-Simple S-Simple | N-Nb $\in \mathbf{N}$ N-Nb $\in \mathbf{N}$ N-Nb $\in \mathbf{N}$ R-Nb $\in \mathbf{R}$ | | NUM > 0 SIZ > 0 % $\in [0, 100]$ | - Mandatory - Mandatory - Optional - Present if ERR present, absent otherwise |
| Number of elements MCD element ref <i>Batch</i> <i>descriptor id ssE id</i> <i>SCD definition</i> <i>Descriptor type</i> <i>Descriptor id</i> | COC COP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbf{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | COC ≥ 0 | - Mandatory - As far as indicated (COC) Existence of descriptors designated |

Analysis of the QAL file: quality description subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|--|------|---|---|--------------------------|------------------|--|
| Semantic precision descriptor (§6.4.5.7-152 / §7.4.3.7-251) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | QSA | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| No. of well-coded items | NUM | S-Simple | N-Nb $\in \mathbf{N}$ | | NUM > 0 | - Mandatory |
| Sample size Margin of error | SIZ | S-Simple | N-Nb $\in \mathbf{N}$ | | SIZ > 0 | - Mandatory |
| Confidence level | ERR | S-Simple | N-Nb $\in \mathbf{N}$ | | | - Optional |
| | REC | S-Simple | R-Nb $\in \mathbf{R}$ | | % $\in [0, 100]$ | - Present if ERR present, absent otherwise |
| Number of elements | COC | S-Simple | N-Nb $\in \mathbf{N}$ | | COC ≥ 0 | - Mandatory |
| MCD element ref <i>Batch descriptor id ssE id SCD definition Descriptor type Descriptor id</i> | COP | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | | - As far as indicated (COC) Existence of descriptors designated |
| Logical consistency descriptor (§6.4.5.8-155 / §7.4.3.8-252) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | QLC | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| Rule | DEF | S-Simple | T-Text | | | - Mandatory |
| No. of elts conforming to rule | NUM | S-Simple | N-Nb $\in \mathbf{N}$ | | NUM > 0 | - Mandatory |
| Sample size Margin of error | SIZ | S-Simple | N-Nb $\in \mathbf{N}$ | | SIZ > 0 | - Mandatory |
| Confidence level | ERR | S-Simple | N-Nb $\in \mathbf{N}$ | | | - Optional |
| | REC | S-Simple | R-Nb $\in \mathbf{R}$ | | % $\in [0, 100]$ | - Present if ERR present, absent otherwise |
| Number of elements | COC | S-Simple | N-Nb $\in \mathbf{N}$ | | COC ≥ 0 | - Mandatory |
| MCD element ref <i>Batch descriptor id ssE id SCD definition Descriptor type Descriptor id</i> | COP | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | | - As far as indicated (COC) Existence of descriptors designated |
| Specific quality descriptor (§6.4.5.9-158 / §7.4.3.9-253) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | QSP | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| Description of the quality | DEF | S-Simple | T-Text | | | - Mandatory |
| No. of compliant items | NUM | S-Simple | N-Nb $\in \mathbf{N}$ | | NUM > 0 | - Mandatory |
| Sample size Margin of error | SIZ | S-Simple | N-Nb $\in \mathbf{N}$ | | SIZ > 0 | - Mandatory |
| Confidence level | ERR | S-Simple | N-Nb $\in \mathbf{N}$ | | | - Optional |
| | REC | S-Simple | R-Nb $\in \mathbf{R}$ | | % $\in [0, 100]$ | - Present if ERR present, absent otherwise |
| Number of elements | COC | S-Simple | N-Nb $\in \mathbf{N}$ | | COC ≥ 0 | - Mandatory |
| MCD element ref <i>Batch descriptor id ssE id SCD definition Descriptor type Descriptor id</i> | COP | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | | - As far as indicated (COC) Existence of descriptors designated |
| End of QAL metafile | | | | | | |
| End of metafile | EOM | T-booked | [reserved] | | empty (ZL=0) | - Mandatory |

Analysis of the DIC file: Nomenclature definition subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|---------|------|--------|--------|----------|-------|-------------|
|---------|------|--------|--------|----------|-------|-------------|

The nomenclature metafile includes one or more definition descriptors. The grammar is as follows:

<DIC metafile> ::= <metafile header> <DIC metafile body> <metafile end>.

<DIC metafile body> ::= [<Object definition> | <Attribute definition> | <Semantic relationship definition>]⁺

| | | | | | | |
|--|-----|----------|-----------|--|--------------------------|--|
| DIC metafile header (§6.4.6-161 / §7.4.4-254) | | | | | | |
| Start of metafile | BOM | T-booked | [reserved | | DIC name | - Mandatory |
| Character play | ESC | T-booked | [reserved | | in the list ⁹ | - Mandatory |
| Object definition descriptor (§6.4.6.1-161 / §7.4.4.1-254) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | DID | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| Object code | LAB | S-Simple | A-Chain | | | - Mandatory, unique, rule §6.2.2 ¹⁰ |
| Object definition | DEF | S-Simple | T-Text | | | - Mandatory or optional ¹¹ If |
| Source of this definition | ORI | S-Simple | T-Text | | (CNIG Other) | CNIG, absent or "CNIG". |
| Attribute definition descriptor (§6.4.6.2-163 / §7.4.4.2-254) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | DIA | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| Attribute code | LAB | S-Simple | A-Chain | | | - Mandatory, unique, |
| Attribute definition | DEF | S-Simple | T-Text | | | - Mandatory or optional ³ If |
| Source of this definition | ORI | S-Simple | T-Text | | (CNIG Other) | CNIG, absent or "CNIG". |
| Attribute category | CAT | S-Simple | A-Chain | | (G P) | - Mandatory |
| Attribute type | TYP | S-Simple | A-Chain | | N,I,R,E,A,T,P,C,D | - Mandatory, A if pre-coded ¹² |
| Default unit | UNI | S-Simple | T-Text | | | - Optional |
| No. of pre-coded values | AVC | S-Simple | N-Nb ∈ N | | ≥ 0, null if type A | - Mandatory |
| Pre-coded value | AVL | S-Simple | A-Chain | | choice or value | - As far as indicated (stroke) |
| Description of this value | AVD | S-Simple | T-Text | | of the nomen. CNIG | - As far as indicated (stroke) |
| Semantic relationship definition descriptor (§6.4.6.3-169 / §7.4.4.3-256) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | DIR | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| Relationship code | LAB | S-Simple | A-Chain | | DIA | - Mandatory, unique, |
| Definition of the relationship | DEF | S-Simple | T-Text | | | - Mandatory |
| Source of this definition | ORI | S-Simple | T-Text | | (CNIG Other) | If CNIG, absent or "CNIG". |
| Relationship category | CAT | S-Simple | A-Chain | | (G P) | - Mandatory |
| End of DIC metafile | | | | | | |
| End of metafile | EOM | T-booked | [reserved | | empty (ZL=0) | - Mandatory |

⁹ The character set must be one of the values (IRV, 646-FRANCE, 8859-1, 8859-2, 8859-3, 8859-4, 8859-5, 8859-6, 8859-7, 8859-8, 8859-9, JEC).

¹⁰ Domain (1 letter A-Z), Class (2 digits max), Generic object (3 digits max), Object (4 digits max), separator " _ "...

¹¹ If it is an object in the CNIG nomenclature, optional (identical definition if present). Mandatory otherwise

¹² International system units e.g. "cm2", "GON".

Analysis of the SCD file: SCD definition subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|---------|------|--------|--------|----------|-------|-------------|
|---------|------|--------|--------|----------|-------|-------------|

The SCD metafile includes one or more definition descriptors. The grammar is as follows:

<SCD metafile> ::= <metafile header> <SCD metafile body> <metafile end>.

<SCD metafile body> ::= [<Object> | <Primitive> | <Attribute> | <Construction relationship> | <Semantic relationship>]¹³

| SCD metafile header (§6.4.7-172/ §7.4.5-257) | | | | | | |
|--|----------------|--|--|--------------------------|--|--|
| Start of metafile Character play | BOM ESC | T-booked T-booked | [reserved [reserved | | SCD name in the list ¹³ | - Mandatory - Mandatory |
| Descriptor for defining an object-type element (§6.4.7.1-173 / §7.4.5.1-257) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | OBJ non-empty | - Mandatory - Mandatory, unique |
| BOM reference <i>Batch descriptor id ssE id DIC definition Descriptor type Descriptor id</i> Nature of the element | DIP KND | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> S-Simple | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> A-Chain | SID GID RTY RID | DID CPX,PCT,LIN,AR E ¹⁴ | - Mandatory Existence of designated descriptors - Mandatory |
| Number of attributes SCD reference for attribute element <i>Batch descriptor id Id ssE DIC definition Descriptor type Descriptor id</i> | AAC AAP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb ∈ N P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | AAC ≥ 0 ATT | - Mandatory - As many as indicated (AAC) Existence of descriptors designated |
| No. of quality indications Quality indication <i>Batch descriptor id Id ssE definition QAL Descriptor type Descriptor id</i> | QAC QAP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb ∈ N P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | QAC ≥ 0 | - Mandatory - As many as indicated (QAC) Existence of descriptors designated |
| Primitive type element definition descriptor (§6.4.7.2-176 / §7.4.5.2-259) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | PGE non-empty | - Mandatory - Mandatory, unique |
| Nature of the element | KND | S-Simple | A-Chain | | NOD, ARC, FAC ¹⁵ | - Mandatory |
| Number of attributes <i>Batch descriptor Id ssE Id SCD definition Descriptor type Descriptor id</i> | AAC AAP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb ∈ N P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | AAC ≥ 0 | - Mandatory - As many as indicated (AAC) Existence of descriptors designated |
| No. of quality indications Quality indication <i>Batch descriptor id Id ssE definition QAL Descriptor type Descriptor id</i> | QAC QAP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb ∈ N P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | QAC ≥ 0 | - Mandatory - As many as indicated (QAC) Existence of descriptors designated |

¹³ The character set must be one of the values (IRV, 646-FRANCE, 8859-1, 8859-2, 8859-3, 8859-4, 8859-5, 8859-6, 8859-7, 8859-8, 8859-9, JEC).

¹⁴ CPX: Complex object, PCT: Point object, LIN: Linear object, ARE: Area object

¹⁵ NOD: Node, ARC: Arc, FAC: Face

Analysis of the SCD file: SCD definition subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|--|---|---|--|--------------------------|--|--|
| Descriptor for defining an attribute-type element (§6.4.7.3-179 / §7.4.5.3-261) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | ATT non-empty | - Mandatory - Mandatory, unique |
| BOM reference <i>Batch descriptor id ssE id DIC definition Descriptor type Descriptor id</i> Maximum number of characters Max. decimal length Max. superscript length Unit other than default Minimum value of the attribute Maximum value of the attribute | DIP CAN CAD CAE UNI AV1 AV2 | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> S-Simple S-Simple S-Simple S-Simple S-Simple | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> N-Nb $\in \mathbb{N}$ N-Nb $\in \mathbb{N}$ N-Nb $\in \mathbb{N}$ T-Text NIREATD NIREATD | SID GID RTY RID | DIA For E or R format For E format N, I, R and E format AV2 > AV1 | - Mandatory Existence of designated descriptors - Mandatory - Mandatory if E or R format - Mandatory if E format - Optional - Optional - Optional |
| Descriptor for defining a semantic relationship type element (§6.4.7.4-182 / §7.4.5.4-262) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | ASS non-empty | - Mandatory - Mandatory |
| Nomenclature reference <i>Batch descriptor id ssE id DIC definition Descriptor type Descriptor id</i> Minimum cardinality Maximum cardinality | DIP CA1 CA2 | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> S-Simple S-Simple S-Simple | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> N-Nb $\in \mathbb{N}$ N-Nb $\in \mathbb{N}$ | SID GID RTY RID | DIR CA2 \geq CA1 (n=0) | - Mandatory Existence of designated descriptors - Mandatory - Mandatory |
| Number of object types SCD ref. of object type <i>Batch descriptor id ssE id SCD definition Descriptor type Descriptor id</i> No. of occurrences of object type | SCC SCP OCC | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> S-Simple | N-Nb $\in \mathbb{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> N-Nb $\square \mathbb{N}$ | SID GID RTY RID | SCC ≥ 0 OBJ 0: unknown, variable | - Mandatory - As far as indicated (SCC) Existence of designated descriptors - As far as indicated (SCC) |
| Number of attributes SCD ref of the attribute element <i>Batch descriptor id ssE id SCD definition Descriptor type Descriptor id</i> | AAC AAP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbb{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | AAC ≥ 0 ATT | - Mandatory - As far as indicated (AAC) Existence of designated descriptors |
| No. of quality indications Quality indication <i>Batch descriptor id Id ssE definition QAL Descriptor type Descriptor id</i> | QAC QAP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbb{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | QAC ≥ 0 | - Mandatory - As much as indicated (QAC) Existence of designated descriptors |

Analysis of the SCD file: SCD definition subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|--|------|-----------|-----------------------|----------|-----------------------|------------------------------|
| Descriptor for defining a construction relationship type element (§6.4.7.5-186 / §7.4.5.5-265) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | REL | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| Nature of the relationship | KND | S-Simple | A-Chain | | in list ¹⁶ | - Mandatory |
| Minimum cardinality | CA1 | S-Simple | N-Nb $\in \mathbf{N}$ | | | - Mandatory |
| Maximum cardinality | CA2 | S-Simple | N-Nb $\in \mathbf{N}$ | | CA2 \geq CA1 (n=0) | - Mandatory |
| Number of element types | SCC | S-Simple | N-Nb $\in \mathbf{N}$ | | SCC ≥ 0 | - Mandatory |
| SCD ref. of element type | SCP | C-Complex | P-Referenc. | | | - As far as indicated (SCC) |
| Batch descriptor id | | S-Simple | A-Chain | SID | | Existence of |
| Id ssE DIC definition | | S-Simple | A-Chain | GID | | designated |
| Descriptor type | | S-Simple | A-Chain | RTY | OBJ | descriptors |
| Descriptor Id | | S-Simple | A-Chain | RID | | - As far as indicated (SCC) |
| No. of occurrences of the element | OCC | S-Simple | N-Nb $\in \mathbf{N}$ | | 0: unknown, variable | |
| Number of attributes | AAC | S-Simple | N-Nb $\in \mathbf{N}$ | | AAC ≥ 0 | - Mandatory |
| SCD ref of the attribute element | AAP | C-Complex | P-Referenc. | | | - As far as indicated (AAC) |
| Batch descriptor id ssE | | S-Simple | A-Chain | SID | | Existence of |
| id SCD definition | | S-Simple | A-Chain | GID | | descriptors |
| Descriptor type | | S-Simple | A-Chain | RTY | ATT | designated |
| Descriptor id | | S-Simple | A-Chain | RID | | |
| No. of quality indications | QAC | S-Simple | N-Nb $\in \mathbf{N}$ | | QAC ≥ 0 | - Mandatory |
| Quality indication | QAP | C-Complex | P-Referenc. | | | - As much as indicated (QAC) |
| Batch descriptor id ssE | | S-Simple | A-Chain | SID | | Existence of |
| id QAL definition | | S-Simple | A-Chain | GID | | descriptors |
| Descriptor type | | S-Simple | A-Chain | RTY | | designated |
| Descriptor id | | S-Simple | A-Chain | RID | | |
| End of SCD metafile | | | | | | |
| End of metafile | EOM | T-booked | [reserved | | empty (ZL=0) | - Mandatory |

¹⁶ ICO is composed of, IDB is represented by, IDR is represented +/- by, IND has for initial node, FND has for final node, LPO has for left face, RPO has for right face, ILI is included in, BET belongs to

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|---------|------|--------|--------|----------|-------|-------------|
|---------|------|--------|--------|----------|-------|-------------|

$$\begin{aligned} \langle \text{VEC metafile} \rangle &::= \langle \text{metafile header} \rangle \langle \text{VEC metafile body} \rangle \langle \text{metafile end} \rangle. \\ \langle \text{VEC metafile body} \rangle &::= [\langle \text{Arc} \rangle \mid \langle \text{Node} \rangle \mid \langle \text{Face} \rangle \mid \langle \text{Object} \rangle \mid \langle \text{Relation} \rangle]^+ \end{aligned}$$
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¹⁷ The character set must be one of the values (IRV, 646-FRANCE, 8859-1, 8859-2, 8859-3, 8859-4, 8859-5, 8859-6, 8859-7, 8859-8, 8859-9, JEC).

¹⁸ 1: Broken line

¹⁹ TYP=1 \Rightarrow **PTC** \geq 2, TYP=2 \Rightarrow PTC=3, **TYP=3** \Rightarrow PTC \geq 3

Analysis of the VEC file: geographic vector data subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|---------|------|--------|--------|----------|-------|-------------|
|---------|------|--------|--------|----------|-------|-------------|

| Node descriptor (§6.5.2.1.2-195 / §7.5.1.2-269) | | | | | | |
|---|---------------------------------------|--|--|--|---------------------------------|--|
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | PNO non-empty | - Mandatory - Mandatory |
| Reference to the SCD <i>Batch descriptor id ssE</i> <i>id SCD definition</i> <i>Descriptor type</i> <i>Descriptor id</i> Node type Node coordinates <i>Abscissa</i> <i>Ordinate</i> <i>Altitude</i> | SCP TYP COR | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> N-Nb $\in \mathbb{N}$ C-Coord. <i>R signed</i> <i>R signed</i> <i>R signed</i> | SID GID RTY RID COX COY COZ | PGE 1 or 2 ²⁰ | - Mandatory Existence of designated descriptors - Mandatory - Mandatory |
| Number of attributes Attribute SCD reference <i>Batch descriptor id</i> <i>Id ssE SCD definition</i> <i>Descriptor type</i> <i>Descriptor Id</i> Attribute value | ATC ATP ATV | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> S-Simple | N-Nb $\in \mathbb{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> NIREATDPC | SID GID RTY RID | ATT User id | - Mandatory As far as indicated (ATC) Existence of designated descriptors As far as indicated (ATC) |
| No. of quality indications Quality indication <i>Lot descriptor Id Id ssE</i> <i>description Qualit.</i> <i>Descriptor type</i> <i>Descriptor id</i> | QAC QAP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbb{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | | - Mandatory As much as indicated (QAC) Existence of descriptors designated |
| Face descriptor (§6.5.2.1.3-198 / §7.5.1.3-270) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | PFE non-empty | - Mandatory - Mandatory |
| Reference to the SCD <i>Batch descriptor id ssE</i> <i>id SCD definition</i> <i>Descriptor type</i> <i>Descriptor id</i> Minimum coordinates <i>Minimum</i> <i>abscissa</i> <i>Minimum ordinate</i> <i>Minimum altitude</i> Maximum coordinates <i>Maximum abscissa</i> <i>Maximum ordinate</i> <i>Maximum altitude</i> | SCP CM1 CM2 | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> C-Complex <i>S-Simple</i> <i>S-Simple</i> C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> C-Coord. <i>R</i> <i>signed</i> <i>R</i> <i>signed</i> C-Coord. <i>R signed</i> <i>R signed</i> <i>R signed</i> | SID GID RTY RID COX COY COZ COX COY COZ | PGE | - Mandatory Existence of designated descriptors - Optional - Optional |
| Number of attributes Attribute SCD reference <i>Batch descriptor id ssE</i> <i>id SCD definition</i> <i>Descriptor type</i> <i>Descriptor id</i> Attribute value | ATC ATP ATV | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> S-Simple | N-Nb $\in \mathbb{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> NIREATDPC | SID GID RTY RID | ATT User id | - Mandatory As far as indicated (ATC) Existence of designated descriptors As far as indicated (ATC) |
| No. of quality indications Quality indication <i>Batch descriptor id</i> <i>Id ssE description Qualit.</i> <i>Descriptor type</i> <i>Descriptor id</i> | QAC QAP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbb{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | | - Mandatory As much as indicated (QAC) Existence of descriptors designated |

²⁰ 1: Initial or final node of an arc, 2: Isolated node.

Analysis of the VEC file: geographic vector data subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|--|------|--|---|--------------------------|-----------|---|
| Geographic object descriptor (§6.5.2.1.4-201 / §7.5.1.4-272) | | | | | | |
| Descriptor type | RTY | S-Simple | A-Chain | | FEA | - Mandatory |
| Descriptor id | RID | S-Simple | A-Chain | | non-empty | - Mandatory |
| Reference to the SCD <i>Batch descriptor id ssE</i> <i>id SCD definition</i> <i>Descriptor type</i> <i>Descriptor id</i> Minimum coordinates <i>Minimum</i> <i>abscissa</i> <i>Minimum</i> <i>ordinate</i> <i>Minimum</i> <i>altitude</i> Maximum coordinates <i>Maximum</i> <i>abscissa</i> <i>Maximum</i> <i>ordinate</i> <i>Maximum</i> <i>altitude</i> | SCP | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | OBJ | - Mandatory Existence of designated descriptors - Optional |
| <i>abscissa</i> <i>Minimum</i> <i>ordinate</i> <i>Minimum</i> <i>altitude</i> Maximum coordinates <i>Maximum</i> <i>abscissa</i> <i>Maximum</i> <i>ordinate</i> <i>Maximum</i> <i>altitude</i> | CM1 | C-Complex <i>S-Simple</i> <i>S-Simple</i> | C-Coord. R <i>signed</i> | COX COY COZ | | - Optional |
| Reference point <i>Abscissa</i> <i>Ordinate</i> <i>Altitude</i> | CM2 | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | R <i>signed</i> R <i>signed</i> R <i>signed</i> R <i>signed</i> R <i>signed</i> R <i>signed</i> | COX COY COZ | | - Optional |
| | REF | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | C-Coord. R <i>signed</i> R <i>signed</i> R <i>signed</i> R <i>signed</i> R <i>signed</i> R <i>signed</i> R <i>signed</i> | COX COY COZ | | - Optional |
| Number of attributes | ATC | S-Simple | N-Nb $\in \mathbb{N}$ | | | - Mandatory |
| Attribute SCD reference <i>Batch descriptor id</i> <i>Id ssE SCD definition</i> <i>Descriptor type</i> <i>Descriptor Id</i> | ATP | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | ATT | As far as indicated (ATC) Existence of designated descriptors As far as indicated (ATC) |
| Attribute value | ATV | S-Simple | NIREATDPC | | | |
| No. of quality indications | QAC | S-Simple | N-Nb $\in \mathbb{N}$ | | | - Mandatory |
| Quality indication <i>Lot descriptor Id</i> <i>Id ssE</i> <i>description</i> <i>Qualit.</i> <i>Descriptor type</i> <i>Descriptor id</i> | QAP | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | | As much as indicated (QAC) Existence of descriptors designated |

Analysis of the VEC file: geographic vector data subset

| Wording | Name | Nature | Format | Subfield | Value | Constraints |
|---|-------------------------------|---|---|--------------------------|---|--|
| Relationship descriptor (§6.5.2.1.5-204 / §7.5.1.5-275) | | | | | | |
| Descriptor type Descriptor id | RTY RID | S-Simple S-Simple | A-Chain A-Chain | | LNK non-empty | - Mandatory - Mandatory |
| Reference to the SCD <i>Batch descriptor id ssE</i> <i>id SCD definition</i> <i>Descriptor type</i> <i>Descriptor id</i> | SCP | C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | | - Mandatory Existence of descriptors designated |
| Number of elements in the MCD Related element <i>Batch descriptor id</i> <i>Id ssE VEC definition</i> <i>Descriptor type</i> <i>Object descriptor id</i> Direction of composition | FTC FTP SNS | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> S-Simple | N-Nb $\in \mathbf{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> A-Chain | SID GID RTY RID | ≥ 2 Father then Son ²¹ P or M ²² | - Mandatory As indicated (FTC) Existence of descriptors - Mandatory if construction with a bow. |
| Number of attributes Attribute SCD reference <i>Batch descriptor id</i> <i>Id ssE SCD definition</i> <i>Descriptor type</i> <i>Descriptor Id</i> Attribute value | ATC ATP ATV | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> S-Simple | N-Nb $\in \mathbf{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> NIREATDPC | SID GID RTY RID | ATT | - Mandatory As far as indicated (ATC) Existence of descriptors As far as indicated (ATC) |
| No. of quality indications Quality indication <i>Lot descriptor Id Id ssE</i> <i>description Qualit.</i> <i>Descriptor type</i> <i>Descriptor id</i> | QAC QAP | S-Simple C-Complex <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> <i>S-Simple</i> | N-Nb $\in \mathbf{N}$ P-Referenc. <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> <i>A-Chain</i> | SID GID RTY RID | | - Mandatory As much as indicated (QAC) Existence of descriptors designated |
| End of VEC metafile | | | | | | |
| End of metafile | EOM | T-booked | [reserved | | empty (ZL=0) | - Mandatory |

²¹ The first element is the father, the next are the sons.

²² P: relationship *is represented* + *by*, M: relationship *is represented* - *by*

APPENDIX 2 - ERRORS IDENTIFIED BY THE DGFIP CERTIFIER

| Error | | Definition |
|-------------|---------------|---|
| Code | Type | |
| C001 | Land registry | A cadastral lot must have the 4 geographical data subsets (S1, T1, T2 and T3) |
| C002 | | Names of incorrect vector subsets |
| C003 | | The structure of sub-assembly S1 must be spaghetti-shaped |
| C004 | | The structure of subsets T1, T2 and T3 must be topological |
| C005 | | A cadastre sub-assembly must not define setting information |
| C006 | | Projection system not managed by the land registry |
| C007 | | Dimension code not managed by the land registry |
| C008 | | Planimetric system not managed by the land registry |
| C009 | | Altimetric system not managed by the land registry |
| C010 | | Unit not conforming to the land register |
| C011 | | Definition (DIC) of a prohibited object in the land register nomenclature |
| C012 | | Definition (DIC) of an attribute prohibited in the land register nomenclature |
| C013 | | Definition (DIC) of a prohibited relationship in the land register nomenclature |
| C014 | | Object not compliant with the PCI exchange standard (SCD) |
| C015 | | Nature of an object that does not comply with the PCI Exchange Standard (SCD) |
| C016 | | SCD object prohibited in the PCI exchange standard |
| C017 | | Object of the PCI exchange standard absent from the SCD |
| C018 | | Attribute of an SCD object is not referenced in the PCI exchange standard |
| C019 | | Writing-CNIG code attribute Z_1_2_2 absent from the SCD |
| C020 | | Attribute of an exchange standard object missing from the SCD |
| C021 | | Format of an attribute that does not conform to the exchange standard. |
| C022 | | Maximum length of an attribute that does not comply with the exchange standard |
| C023 | | Related objects that do not comply with the exchange standard. |
| C024 | | Absence of an object from the exchange standard in a relationship |
| C025 | | Type of bow prohibited |

| Error | | Definition |
|-------------|---------|---|
| Code | Type | |
| E001 | General | Inconsistent THF metafile |
| E002 | | Problem creating batches |
| E003 | | Failed descriptor analysis |
| E004 | | File analysis failed |
| E005 | | Non-compliance with the sequence of descriptors |
| E006 | | Too many mistakes, abandonment |
| E007 | | Incorrect descriptor, therefore ignored |

| Error | | Definition |
|-------|---------|---|
| Code | Type | |
| G001 | Grammar | Unexpected end of metafile in a name |
| G002 | | Impromptu end of metafile before format |
| G003 | | Impromptu end of metafile before length |
| G004 | | Impromptu end of metafile before nature takes over |
| G005 | | Unexpected end of metafile in the value |
| G006 | | Misplaced descriptor |
| G007 | | No-lot exchange |
| G008 | | Exchange with 0 or more media |
| G009 | | Incorrect security |
| G010 | | Incorrect edition no. |
| G011 | | Number of lots announced different from actual number of lots |
| G012 | | Incorrect batch name |
| G013 | | Incorrect subset name |
| G014 | | Batch without geographic data subset |
| G015 | | A metafile described in the THF is missing |
| G016 | | Multiple subset identifier |
| G017 | | EDIGéO metafile referenced several times |
| G018 | | Descriptor already referenced |
| G019 | | Record read not as expected |
| G020 | | Incorrect geographical coverage |
| G021 | | Several rights of way in one lot. |
| G022 | | Subset of geographic data defined but not described |
| G023 | | Subset of geographic data described but not defined |
| G024 | | Coordinate reference incompatible with dimension 3 |
| G025 | | Coordinate reference incompatible with dimension 2 |
| G026 | | Coordinate reference unknown to CNIG |
| G027 | | Inconsistent coordinate dimensions |
| G028 | | Incorrect use of an altimeter system |
| G029 | | Type of altimeter system incorrect |
| G030 | | Height reference unknown to the CNIG |
| G031 | | Incorrect altimeter system name |
| G032 | | Setting defined but not described |
| G033 | | Setting described but not defined |
| G034 | | Multiple object code in the DIC |
| G035 | | Different DIC and CNIG object definitions |
| G036 | | Unknown object code in the CNIG object nomenclature |
| G037 | | Multiple attribute code in the DIC |

| Error | | Definition |
|-------|------|--|
| Code | Type | |
| G038 | | Unknown attribute code in the CNIG attribute nomenclature |
| G039 | | Different DIC and CNIG attribute definitions |
| G040 | | Incorrect attribute category |
| G041 | | Incorrect attribute type |
| G042 | | Incorrect pre-coded attribute type |
| G043 | | Pre-coded value of an attribute not referenced in the DIC |
| G044 | | Different DIC and CNIG definitions of pre-coded value |
| G045 | | Pre-coded value of an attribute not referenced by the CNIG |
| G046 | | Multiple relationship code in the DIC |
| G047 | | DIC and CNIG definitions of a different relationship |
| G048 | | Category of an incorrect relationship |
| G049 | | Unknown relationship code in the CNIG nomenclature |
| G050 | | Unknown reference in the CNIG nomenclature |
| G051 | | Incompatible model and BOM references |
| G052 | | Incorrect definition of the geometric primitive of an object |
| G053 | | Write-Attribute is incomplete in the SCD |
| G054 | | An object in the model refers to an attribute not present in the model |
| G055 | | An object in the model refers to a quality not present in the model |
| G056 | | A model object references an unknown quality type |
| G057 | | The nature of a primitive is unknown |
| G058 | | A real number attribute should define the maximum length of the decimal part |
| G059 | | A number attribute with exponent should define the maximum length of the exponent |
| G060 | | An attribute other than a number defines a unit (inconsistent) |
| G061 | | Format of a minimum value different from the format of the attribute |
| G062 | | Format of a maximum value different from the format of the attribute |
| G063 | | Minimum value of an attribute greater than or equal to the maximum value |
| G064 | | Minimum cardinality of a semantic relation greater than maximum cardinality |
| G065 | | Reference used in the model not in the SCD |
| G066 | | Incorrect model reference type |
| G067 | | Node-arc construction relationship designating something other than a node |
| G068 | | Node-arc construction relationship designating something other than an arc |
| G069 | | objectComplex-objectQuelconque construction relationship designating something other than a complex object |
| G070 | | Construction relation objectComplex-objectQuelconque designating an object of unknown nature |
| G071 | | Construction relationship between incompatible object and primitive |
| G072 | | Construction relationship between non-linear object and arc |
| G073 | | Construction relationship between a linear object and something other than an arc |

| Error | | Definition |
|-------|------|---|
| Code | Type | |
| G074 | | Node-face construction relationship designating something other than a node |
| G075 | | Node-face construction relationship designating something other than a face |
| G076 | | Arc-node construction relationship designating something other than an arc |
| G077 | | Arc-node construction relationship designating something other than a node |
| G078 | | Arc-node construction relation designating an incompatible element |
| G079 | | Arc-face construction relationship designating something other than an arc |
| G080 | | Arc-face construction relationship designating something other than a face |
| G081 | | Incorrect arc type |
| G082 | | Number of points in an arc incompatible with its type |
| G083 | | The description of an arc primitive is incorrect |
| G084 | | Attribute of an arc not referenced as such in the model |
| G085 | | Type of an attribute that does not conform to the model |
| G086 | | Attribute of an object not referenced as such in the model |
| G087 | | Attribute of a face not referenced as such in the model |
| G088 | | Face and its primitive incompatibility |
| G089 | | Node and its incompatible primitive |
| G090 | | Incorrect node type |
| G091 | | Attribute of a relationship not referenced as such in the model |
| G092 | | Absence of an element referenced by a relationship |
| G093 | | Relation referencing an incorrect type of element |
| G094 | | Related element not conforming to the data model |

| Error | | Definition |
|-------|--------|---|
| Code | Type | |
| S001 | Syntax | Incorrect registration name |
| S002 | | The length of a record must be numeric |
| S003 | | Incorrect nature of a record |
| S004 | | Incorrect value for a record |
| S005 | | Incorrect record format |
| S006 | | Inconsistency between the format and nature of a record |
| S007 | | Incorrect format for a C record |
| S008 | | Name-nature inconsistency of a record |
| S009 | | Incorrect nature of a record |
| S010 | | Incorrect record format |

| Error | | Definition |
|-------|-----------------------|---|
| Code | Type | |
| T001 | Topology and geometry | Incorrect cardinality in a construction relationship |
| T002 | | Absence of an object in a relationship (construction or semantic) |
| T003 | | Isolated node of a topological structure incorrectly linked |
| T004 | | Arc end node of a topological structure incorrectly linked |
| T005 | | Arc end node of a topological structure incorrectly related to face |
| T006 | | Isolated node of a topological structure incorrectly linked to arc or face |
| T007 | | Invalid initial-arc-node cardinality |
| T008 | | Invalid arc-nodeFinal cardinality |
| T009 | | Invalid left-arc-face cardinality |
| T010 | | Invalid right-arc cardinality |
| T011 | | Abnormally secant topological arcs |
| T012 | | Different arc end and terminal node positions |
| T013 | | Overlap or gap between series of topological arcs |
| T014 | | Open face |
| T015 | | Face composed of intersecting arc circuits |
| T016 | | The geometry of a face is not a face |
| T017 | | Face of 2 sides of a closed contour |
| T018 | | Wrong side of a contour |
| T019 | | Face without geometry |
| T020 | | Zero surface loop in a face |
| T021 | | Arc with several successive points superimposed |
| T022 | | At least one object is in an incorrect structure (spaghetti or topological) |
| T023 | | Incorrect loops on one side |
| T024 | | Incorrect cardinality in a semantic relation |
| T025 | | Two loops on the same side intertwine |
| T026 | | Face too complex |

APPENDIX 3 - CORRESPONDENCE TABLE - DEPARTMENT / 9-ZONE CONFORMAL CONES

| GEOGRAPHICAL AND PLANIMETRIC REFERENCE SYSTEMS | | | |
|--|------------------|------------------------------|--------------------------------------|
| ZONE | GEODESIC SYSTEM | ASSOCIATED ELLIPSOID | PROJECTION |
| Mainland France | RGF93 | IAG GRS 1980 | Lambert 93 Conformal cone 9 zones |
| Guadeloupe | Saint-Anne | International (Hayford 1909) | UTM North 20 |
| Martinique | Fort-Desaix 1952 | International (Hayford 1909) | UTM North 20 |
| French Guiana | RGFG95 | IAG GRS 1980 | UTM North zone 22 |
| Meeting | RGR92 | IAG GRS 1980 | UTM South 40 |
| Mayotte | RGM04 | IAG GRS 1980 | UTM South 38 |
| HEIGHT REFERENCE SYSTEMS | | | |
| ZONE | ALTIMETRY SYSTEM | | |
| Mainland France excluding Corsica | IGN 1969 | | |
| Corsica | IGN 1978 | | |
| Guadeloupe | IGN 1988 | | |
| Martinique | IGN 1987 | | |
| French Guiana | NGG 1977 | | |
| Meeting | IGN 1989 | | |
| Mayotte | SHOM 1953 | | |

| | | CC42 | CC43 | CC44 | CC45 | CC46 | CC47 | CC48 | CC49 | CC50 |
|----|-------------------------|------|------|------|------|------|------|------|------|------|
| 1 | AIN | | | | | X | | | | |
| 2 | AISNE | | | | | | | | X | |
| 3 | ALLIER | | | | | X | | | | |
| 4 | ALPES DE HAUTE PROVENCE | | | X | | | | | | |
| 5 | HAUTES ALPES | | | | X | | | | | |
| 6 | MARITIME ALPES | | | X | | | | | | |
| 7 | ARDECHE | | | | X | | | | | |
| 8 | ARDENNES | | | | | | | | | X |
| 9 | ARIEGE | | X | | | | | | | |
| 10 | AUBE | | | | | | | X | | |
| 11 | AUDE | | X | | | | | | | |
| 12 | AVEYRON | | | X | | | | | | |
| 13 | BOUCHES DU RHONE | | | X | | | | | | |
| 14 | CALVADOS | | | | | | | | X | |
| 15 | CANTAL | | | | X | | | | | |
| 16 | CHARENTE | | | | | X | | | | |
| 17 | CHARENTE MARITIME | | | | | X | | | | |
| 18 | CHER | | | | | | X | | | |
| 19 | CORREZE | | | | X | | | | | |
| 2A | SOUTH CORSICA | X | | | | | | | | |
| 2B | HIGH CORSICA | X | | | | | | | | |
| 21 | GOLDEN COAST | | | | | | X | | | |
| 22 | COTES D'ARMOR | | | | | | | X | | |
| 23 | CREUSE | | | | | X | | | | |
| 24 | DORDOGNE | | | | X | | | | | |
| 25 | DOUBS | | | | | | X | | | |
| 26 | DROME | | | | X | | | | | |

| | | CC42 | CC43 | CC44 | CC45 | CC46 | CC47 | CC48 | CC49 | CC50 |
|----|--------------------|------|------|------|------|------|------|------|------|------|
| 27 | EURE | | | | | | | | X | |
| 28 | EURE ET LOIR | | | | | | | X | | |
| 29 | FINISTERE | | | | | | | X | | |
| 30 | GARD | | | X | | | | | | |
| 31 | HAUTE GARONNE | | X | | | | | | | |
| 32 | GERS | | | X | | | | | | |
| 33 | GIRONDE | | | | X | | | | | |
| 34 | HERAULT | | X | | | | | | | |
| 35 | ILLE ET VILAINE | | | | | | | X | | |
| 36 | INDRE | | | | | | X | | | |
| 37 | INDRE ET LOIRE | | | | | | X | | | |
| 38 | ISERE | | | | X | | | | | |
| 39 | JURA | | | | | | X | | | |
| 40 | LANDES | | | X | | | | | | |
| 41 | LOIR ET CHER | | | | | | | X | | |
| 42 | LOIRE | | | | | X | | | | |
| 43 | HAUTE LOIRE | | | | X | | | | | |
| 44 | LOIRE ATLANTIQUE | | | | | | X | | | |
| 45 | LOIRET | | | | | | | X | | |
| 46 | LOT | | | | X | | | | | |
| 47 | LOT ET GARONNE | | | X | | | | | | |
| 48 | LOZERE | | | X | | | | | | |
| 49 | MAINE ET LOIRE | | | | | | X | | | |
| 50 | MANCHE | | | | | | | | X | |
| 51 | MARNE | | | | | | | | X | |
| 52 | HAUTE MARNE | | | | | | | X | | |
| 53 | MAYENNE | | | | | | | X | | |
| 54 | MEURTHE ET MOSELLE | | | | | | | | X | |

| | | CC42 | CC43 | CC44 | CC45 | CC46 | CC47 | CC48 | CC49 | CC50 |
|----|----------------------|------|------|------|------|------|------|------|------|------|
| 55 | MEUSE | | | | | | | | X | |
| 56 | MORBIHAN | | | | | | | X | | |
| 57 | MOSELLE | | | | | | | | X | |
| 58 | NIEVRE | | | | | | X | | | |
| 59 | NORTH | | | | | | | | | X |
| 60 | OISE | | | | | | | | X | |
| 61 | ORNE | | | | | | | | X | |
| 62 | PAS DE CALAIS | | | | | | | | | X |
| 63 | PUY DE DOME | | | | | X | | | | |
| 64 | PYRENEES ATLANTIQUES | | X | | | | | | | |
| 65 | HIGH PYRENEES | | X | | | | | | | |
| 66 | EASTERN PYRENEES | | X | | | | | | | |
| 67 | BAS RHIN | | | | | | | | X | |
| 68 | HAUT RHIN | | | | | | | X | | |
| 69 | RHONE | | | | | X | | | | |
| 70 | HAUTE SAONE | | | | | | | X | | |
| 71 | SAONE ET LOIRE | | | | | | X | | | |
| 72 | SARTHE | | | | | | | X | | |
| 73 | SAVOIE | | | | X | | | | | |
| 74 | HAUTE SAVOIE | | | | | X | | | | |
| 75 | PARIS | | | | | | | | X | |
| 76 | SEINE MARITIME | | | | | | | | | X |
| 77 | SEINE ET MARNE | | | | | | | | X | |
| 78 | YVELINES | | | | | | | | X | |
| 79 | DEUX SEVRES | | | | | | X | | | |
| 80 | SOMME | | | | | | | | | X |
| 81 | TARN | | | X | | | | | | |

| | | CC42 | CC43 | CC44 | CC45 | CC46 | CC47 | CC48 | CC49 | CC50 |
|----|-------------------|------|------|------|------|------|------|------|------|------|
| 82 | TARN ET GARONNE | | | X | | | | | | |
| 83 | VAR | | X | | | | | | | |
| 84 | VAUCLUSE | | | X | | | | | | |
| 85 | VENDEE | | | | | | X | | | |
| 86 | VIENNA | | | | | | X | | | |
| 87 | HAUTE VIENNE | | | | | X | | | | |
| 88 | VOSGES | | | | | | | X | | |
| 89 | YONNE | | | | | | | X | | |
| 90 | BELFORT REGION | | | | | | | X | | |
| 91 | ESSONNE | | | | | | | | X | |
| 92 | HAUTS DE SEINE | | | | | | | | X | |
| 93 | SEINE SAINT DENIS | | | | | | | | X | |
| 94 | VAL DE MARNE | | | | | | | | X | |
| 95 | VAL D'OISE | | | | | | | | X | |

APPENDIX 4 - TECHNICAL NOTICE - SHEET CONNECTOR

TECHNICAL NOTICE⁶
PRACTICAL PROCEDURES FOR DEALING WITH DISCREPANCIES

1 - Technical principle of assembly

Boundary representations can only be modified if the discrepancies observed between adjacent leaves remain below a certain threshold. This threshold takes into account not only the linear deviation of a boundary displacement caused by the resolution of the mismatch on each affected leaf, but also the resulting deviation on the parcel content.

When the tolerance thresholds are exceeded, rectifying the boundary representation involves a new survey of the disputed area and the implementation of a realignment procedure. The sizes of the rectified parcels are then recalculated.

2 - Implementation

The processing of a municipality's sheet connections can be undertaken at the request of the partners in a vectorisation agreement. The operation is carried out after the label has been awarded and preferably before PCI-Vecteur is ramped up.

As long as the discrepancies remain below a certain threshold in terms of the linear and surface discrepancies generated by their correction, the modification can be made by the partners to the agreements and only concerns the parcel boundaries of the digitised map. The service provider must be able to provide the information needed to check that the correction is appropriate.

Where the resulting discrepancies exceed the tolerances set out below, the service provider will submit the discrepancies to the department, which will undertake a new survey if necessary. In all cases, this will be carried out as part of the reworking procedures.

Localised reshaping will be preferred except in cases where the quality of the plan is particularly degraded.

2. 1 - Linear deviation tolerance

Linear deviations from the displacement of a sheet boundary will be subject to the tolerance :

$$T = 0.07 E$$

where E represents the original scale factor of the plan and T is expressed in centimetres. For plans renovated by updating, this tolerance is increased to :

$$T = 0.10 E$$

A - Points represented on two sheets only

For two neighbouring sheets, the distances taken into account are the distances in position of the characteristic points of the boundary. They are given by the formula :

$$e = \sqrt{(X_1 - X_2)^2 + (Y_1 - Y_2)^2}$$

where (X_1, Y_1) and (X_2, Y_2) represent the Lambert coordinates of a point on the boundary, calculated from each of the sheets to which it belongs.

A 1 - Sheets established by homogeneous topographic procedures (all by regular surveys or all by updating)

$$- \text{ If } e \leq k \times (E_1 + E_2)$$

with : - e expressed in centimetres ;

⁶ This technical note cancels and replaces that in Annex 5 of Office III A 1 note no. /34-20/505 of 10 October 1990.

- E_1 and E_2 scale factors for the two sheets concerned ;
- k being either 0.07 or 0.10 depending on whether the associated planes are regular or not.

The coordinates of the points on the resulting boundary are given by the formulae :

$$X = \frac{p_1 X_1 + p_2 X_2}{p_1 + p_2}$$

$$Y = \frac{p_1 Y_1 + p_2 Y_2}{p_1 + p_2}$$

where the weights p_1 and p_2 represent the scales of the leaves under consideration.

- If $e > k \times (E_1 + E_2)$

the two conflicting routes are kept as they are.

A 2 - Sheets drawn up using different topographic methods (one for each regular survey and one for each update)

- If $e \leq 0.10 \times E$

with : - e expressed in centimetres ;

- E scale factor of the updated plan; the limit used is that of

the regular plan.

- If $e > 0.10 \times E$

the two conflicting routes are kept as they are.

B - Points represented on three or more sheets.

If a point is represented on n sheets, n pairs of coordinates are associated with it. B 1

- Sheets established by homogeneous topographic procedures

In this case, the barycentric coordinates resulting from these n determinations are determined using the formulae :

$$X = \frac{\sum_{i=1}^n p_i X_i}{\sum_{i=1}^n p_i}; \quad Y = \frac{\sum_{i=1}^n p_i Y_i}{\sum_{i=1}^n p_i};$$

where the weights p_i represent the scales of the sheets under consideration.

We then calculate the deviations $\sqrt{(X - X_i)^2 + (Y - Y_i)^2}$ for i ranging from 1 to n .

Each deviation is compared with the tolerance $\tau_i = k \times E_i$ where k and E_i are the quantities defined above.

If all the deviations are less than or equal to the tolerance, the barycentric coordinates previously determined are taken as the coordinates of the final point.

If this is not the case, the pair of coordinates corresponding to the largest of the out-of-tolerance deviations is eliminated, then the previous operations are repeated (calculation of the barycentric coordinates and application of the tolerances). This process is repeated until a set of deviations satisfying the tolerances is obtained for all the sheets selected.

The points corresponding to the eliminated coordinate pairs are not merged with the definitive point that may have been determined.

However, the possibility of merging eliminated points must also be examined.

B 2 - Sheets drawn up using different methods

The various determinations of the point under consideration are divided into two groups: one for regular plans, the other for plans renovated by updating.

Depending on the number of sheets involved, the group of regular plans is processed according to the procedure described above.

The resulting coordinates from the previous processing must be reconciled with each determination of the group of non-regular planes.

2. 2 - Leaf boundaries formed by elements of the unregistered domain.

This situation arises quite frequently, since the perimeter of sheets or sections is generally based on features that are sufficiently fixed, such as roads and watercourses, most of which are part of the unregistered domain. These features are usually defined by their axes.

If there are any discrepancies between boundaries of this type, they can be corrected by modifying the right-of-way of the unregistered area. This procedure makes it possible to connect leaves without changing parcel boundaries.

However, it is still necessary to check the value of the deformations suffered by the non-cadastral estate. When this procedure leads to excessive narrowing or widening, a more in-depth analysis of the origin of the discrepancies should be carried out, particularly when the discrepancies observed reach twice the above-mentioned tolerances (i.e. in centimetres $0.14xE$ for a regular plan and $0.20xE$ for a plan renovated by updating).

In addition, where the representation of the non-cadastral area is consistent between sheets or sections and only the perimeter located in this non-cadastral area (generally the centre line of the road) is affected by discrepancies, the consistency should be re-established regardless of the discrepancy encountered.

2. 3 - Tolerance on surface deviations

When a leaf boundary is modified, the impact of this modification on the size of the parcels bordered by this boundary must be checked.

The variation in the size of a parcel must not exceed the tolerance T given by the formula :

$$T = A + \sqrt{BS + S^2} \cdot 10^{-6}$$

with S = plot size expressed in m^2 $A = 0$ for regular plans

$$A = \frac{2S}{100} \text{ for updated plans}$$

$$B = \frac{E^2}{1.543.210} \text{ where } E \text{ is the scaling factor.}$$

2 - 4 Changes to parcel boundaries

As a general rule, leaf edge boundaries are only modified on a plot-by-plot basis.

This constraint assumes that all the points on a plot located on the edge of the leaf can be shifted within the tolerances defined above.

More specifically, if a parcel boundary is partially discordant and the discordance observed is outside tolerance, the situation is maintained as it is.

In cases where it is impossible to make connections without exceeding the tolerances, a new survey will be carried out in accordance with the legal and regulatory requirements governing work of this nature (reshaping procedure in all cases).