--- Top10Vector ---

V5.5 (2020)

PRODUCT SPECIFICATIONS

NATIONAAL GEOGRAFISCH INSTITUUT
INSTITUT GEOGRAPHIQUE NATIONAL

Top10Vector Product specifications
V5.5 (2020)

1. OVERVIEW

1.1. Information on the elaboration of the product specifications

Title: Top10Vector Product Specifications v5.5 (2020)
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Distribution format: PDF

1.2. Terminology and definitions

For the purposes of these product specifications, the following definitions apply.

Attribute

Characteristic of an object (type).
Note: In an object catalogue, an attribute of an object type is determined by a name, a definition, a data type, and the possible values that can be assigned to this attribute (attribute domain).
In a data set, an attribute of an object is determined by a name and the attribute value of the object.

Object catalogue

Catalogue containing the definition and description of object types, attributes, and object relationships that occur in one or more data sets. Where appropriate, an object catalogue also contains the operations that have been defined for the object types.

Object (type)

An object is an abstraction of an occurrence from the real world.
An object type is determined by a definition and can have several attributes. The behaviour of an object type can be determined by operations. The links between object types or between different objects of the same type can be determined by relationships.

1.3. Abbreviations used

CAD: Computer-Aided Design
DTM: Digital Terrain Model
IGN/NGI: Institut géographique national/National Geographic Institute
ITGI: Inventaire Topo-Géographique/Topo-Geografische Inventaris (Topo-Geographic Inventory)
DGPS: Differential GPS
GPS: Global Positioning System
GRB: Grootschalig Referentiebestand (GIS-Vlaanderen Large-scale reference file)

MET: Ministère wallon de l'Équipement et des Transports (Walloon Ministry for Equipment and Transport
PICC: Projet Informatique de Cartographie Continue (Continuous Mapping IT project)
RTK: Real Time Kinematic
UML: Unified Modeling Language

2. TABLE OF CONTENTS

3. PRODUCT IDENTIFICATION

3.1. Title

Top10Vector v5.5 (2020)

3.2. Brief description

Top10Vector is the vector data series that contains the most geometrically accurate and semantically detailed topographic vector data of the NGI. The data come from the Inventaire Topogéographique du Territoire Belge - ITGI (Topographical Inventory of the Belgian Territory), which is developed and updated by the National Geographical Institute. The data set comprises 35 classes of objects grouped into 8 topics: road network, rail network, hydrography, high tension network, constructions, land use and vegetation, local topography and particular zones. The geometry of the data for all these topics is described by X,Y and Z coordinates.
Top10Vector is available for the entire Belgian territory and can be supplied as an ESRI File Geodatabase, shapefiles, dwg (CAD format), and layers.

The CAD format is supplied with a QuickGuide, which indicates how the layer names are composed from the different attributes. A legend is also available.

3.3. Scope

Top10Vector contains the data used primarily to produce topographic maps of 1:10,000 and 1:20,000 scale. However, when producing vector data, data movements or any other form of generalisation for these mapping applications are avoided. In effect, these data constitute a geographical reference inventory of the Belgian territory and can consequently form the basis for a wide range of applications. Where possible, external thematic identification codes have been associated with Top10Vector to facilitate linking to other data sets.

3.4. Topics

- Basic mapping
- Inland waters
- Land cover
- Constructions
- Public utilities
- Transport
- Vegetation

3.5. Type of spatial representation

- Vector data with XYZ coordinates.

3.6. Spatial resolution

- Equivalent scale: 1:10,000

3.7. Geographical demarcation

Top10Vector is available for the entire Belgian territory
The coordinates below demarcate a rectangular area within which all data are located.

Expressed in decimal degrees ETRS89:

- degree of longitude west side: 2.2° W,
- degree of longitude east side: 6.45° W,
- degree of latitude south side: 49.45° N,
- degree of latitude north side: 51.9° N.

Expressed in Lambert 2008 coordinates:
- X coordinate west side: 500,000 m,
- X coordinate east side: 800,000 m,
- Y coordinate south side: 515,000 m,
- Y coordinate north sides: 790,000 m.

Expressed in Lambert 72 coordinates:
- X coordinate west side: 0 m,
- X coordinate east side: 300,000 m,
- Y coordinate south side: 15,000 m,
- Y coordinate north sides: 290,000 m.

4. DATA CONTENT AND STRUCTURE

4.1. Description of the content

NOTE
In the following paragraphs, the names of the object types and attributes are placed in square brackets ([NameTypeObject]) as they appear in the data. Attribute names are preceded by a full stop and possibly by the name of the object type to which they belong ([.NameAttribute] or[NameTypeObject.NameAttribute]).

4.1.1. Transport networks

The transport networks which are part of Top10Vector are all constructed in the same way. The basis of each network is made up of segments. These are interconnected linear elements that follow the axes of the transportation routes. These segments describe the basic connectivity of the network, i.e. they describe whether and where the network elements interconnect. Network segments start and end at a node (which can also be a terminal node) in the network or where one or more of their characteristics change. These characteristics are indicated by attributes. The amount and nature of these attributes varies from one network to another.

Finally, there are point elements that indicate certain important local phenomena in the transport networks. The meaning of these points obviously depends on the nature of the network. However, there is one type of point in each of the transport networks: the kilometre marker.

In Top10Vector, a distinction is made between three transport networks: the road network, the rail network and the navigable waterway network. The latter is a special case since it uses elements of hydrography. That is why the data related to hydrography are structured in Top10Vector in the same way as the data for the road network and the rail network. On the other hand, not only does hydrography contain waterways which are open to commercial navigation, but also other watercourses and water bodies.

4.1.1.1. Bridges and tunnels

The way in which the elements of a transport network or different transport networks intersect at tunnels and bridges is also important information for the transport networks. In order to indicate the relative position of networks, the transport segments are provided with an attribute [.Level] indicating the vertical level of the bridge on which, or the tunnel in which, they are located.
The vertical level of a bridge or tunnel indicates the relative position of the bridge or tunnel with respect to ground level and any other bridges or tunnels at the same location. The vertical level of bridges is always above zero, and the vertical level of tunnels is always below zero. In the case of an interchange where, e.g., two bridges are superimposed, the vertical level of the upper bridge is 2 and that of the lower bridge is 1. Similarly, when two tunnels intersect, the vertical level of the lower tunnel is -2 and that of the upper tunnel is -1.
Elements that are neither on a bridge nor in a tunnel always have a vertical level equal to zero.
Bridges and tunnels are also shown as objects in Top10Vector. The corresponding object type [CO_Brunnel] is part of the 'constructions' topic (see paragraph 4.1.4) and is defined in the objects catalogue, paragraph 4.2.6.1.

4.1.1.2. Road network

The road segments [RO_RoadSegment], dirt road segments [RO_DirtRoadSegment] and path segments [RO_PathSegment] form the basic skeleton of the road network. They are always (approximately) plotted in the middle of the carriageway (for roads with separate carriageways, Top10Vector therefore contains road segments in both carriageways) and have attributes that describe road characteristics.
Traffic obstacles [RO_Obstacle] are point elements on road segments. A distinction is made between local bottlenecks and obstacles to traffic.

The object types which are part of the road network are defined in the objects catalogue, paragraph 4.2.3.

4.1.1.3. Rail network

The rail segments [RA_RailSegment] make up the basis of the rail network. They are located in the middle (approximately) of each track and are provided with descriptive attributes. The railway stops [RA_RailwayStop] are indicated using point elements on the rail segments.

The object types which are part of the rail network are defined in the objects catalogue, paragraph 4.2.4.

4.1.1.4. Waterborne transport

The waterborne transport system consists of hydrographic components that are identified as being navigable [HY_WatercourseSegment.Navigability].
The elements of this transport network are discussed in the hydrography section.

4.1.2. Hydrography

The structure of the hydrography data in Top10Vector is similar to the structure of the road and rail network. The navigable part of the hydrography therefore constitutes a third transport network, namely a network intended for waterborne transport.
The basis of the network is once again formed by segments [HY_WatercourseSegment]. They follow the middle of the watercourse or waterway and have a number of attributes that describe its characteristics. The surface of larger watercourses (more than 3 metres wide) is represented by watercourse surfaces [HY_WatercourseSurface].

The water points [HY_WaterPoint] are point elements - often at the beginning or end of a watercourse segment - where the water reaches the land surface naturally or disappears into the subsoil. Water surfaces [HY_WaterSurface] such as lakes and ponds and water-rich zones [HY_Wetland] such as swamps and marshland are also included in the data.

The object types which are part of the hydrography are defined in the objects catalogue, paragraph 0.

4.1.3. High tension network

The high tension network consists of high tension line segments [HT_HighTensionLineSegment], which indicate the path of overhead high tension lines, and power pylons [HT_PowerPylon] which support these lines.

The object types which are part of the high tension network are defined in the objects catalogue, paragraph 4.2.5.

4.1.4. Constructions

In constructions, a distinction is made between buildings and other constructions.
Buildings [CO_Building] are always represented by a polygon and described according to their form and function. This makes it possible to distinguish between the characteristic form of a building and the current function of the building. The geometry of buildings can still be supplemented by additional point or surface elements [CO_TowerOnBuilding] and [CO_AdditionalPolygonGeometry] indicating the position of towers or superstructures on buildings.
Other constructions are polygonal [CO_ParticularPolyConstruction], linear [CO_ParticularLineConstruction] or point [CO_ParticularPointConstruction]. The nature of these constructions is indicated by a type attribute [.ConstructionType]. Bridges and tunnels are grouped together in a specific polygonal class [CO_Brunnel]. In addition to the geometry, there is an important characteristic of bridges and tunnels: their relative vertical level [CO_Brunnel. Level]. This attribute indicates the relative position of the bridge in relation to ground level and any other bridges at the same location. (see also paragraph 4.1.1.1).

The object types which are part of particular constructions and zones are defined in the objects catalogue, paragraph 4.2.5.2.1.

4.1.5. Land cover and vegetation

Each part of the land surface that is not covered by a road surface, railway surface, watercourse surface, water body or polygonal construction constitutes one or more land cover zone(s) [LC_LandcoverZone] in Top10Vector. The information regarding vegetation is further supplemented by linear vegetation elements [LC_LinearVegetation] such as rows of trees and hedges, and by point vegetation elements such as isolated trees and bushes [LC_IsolatedVegetation].

The object types which are part of land cover and vegetation are defined in the objects catalogue, paragraph 4.2.6.7.1.

4.1.6. Local topography

The local topography includes local morphologies that have an impact on the landscape, such as embankments and earth banks. The embankments [MR_Embankment], earth banks

[MR_EarthBank] and steeps [MR_Steep] are described by a linear element at the height of the ridge line. Other elements, such as cone-shaped slag heaps [MR_ConeshapedSlagheap], historic mounds [MR_HistoricMound] and cave entrances [MR_CaveEntrance] are represented by a full stop which indicates the peak.
For the embankments, earth banks and slag heaps with a sufficiently large horizontal projection, the additional slope surface [MR_AdditionalSlopeSurface] is also shown. Finally, dune zones [MR_DuneZone] are also indicated.

The object types which are part of land cover and vegetation are defined in the objects catalogue, paragraph 4.2.8.

4.1.7. Particular zones

Finally, Top10Vector also includes particular zones [ZO_ParticularZone]. These are zones with a particular status and/or purpose indicated by an attribute type [.ParticularZoneType].

The object types which are part of particular zones are defined in the objects catalogue, paragraph 4.2.9.

4.2. Object catalogue

4.2.1. General remarks:

PLEASE NOTE

The definitions of object types, attributes and attribute values in this object catalogue have, in most cases, been borrowed from the NGI TOC (Table Of Contents), a reference dictionary including, for a large number of geographical and mapping concepts, the definitions used at the NGI. The underlined words in these definitions refer to other concepts which are in turn part of the NGI TOC. For all questions regarding the definition of our objects, please contact: sales@ngi.be

PLEASE NOTE

In the following paragraphs, data types and domains are defined for all attributes. These specify which values can take object attributes from the data set. However, for various reasons, it may occur that the value of an attribute in the data set is unknown. In such cases, the attribute will receive the value -9 (unknown) by default.

4.2.2. Common properties in Top10Vector

There are three attributes which are common to all object types in Top10Vector:
- Modification date,
- Origin of XY geometry,
- Origin of Z geometry,
- Unique identifier of geometry

These attributes are defined in the object catalogue within an abstract object type called Top10VectorGenericType". All other object types in Top10Vector have been defined as sub-types of this generic object. This means that they inherit the properties of the latter (in this case the three attributes mentioned). This prevents the same attributes from having to be repeated for each object type in the object catalogue.

The object type "Top10VectorGenericType" itself is abstract. This means that this object type is not found as such in the data set. The data always take the form of one of the sub-types of the latter.

4.2.2.1. Object type: Top10VectorGenericType

Name:	(Top10VectorGenericType)
Sub-type of:	-
Abstract:	Yes
Definition:	This abstract object type includes the definition of common attributes inherited by all other object types from Top10Vector.

4.2.2.1.1. Attribute: Modification date

Name:	ModifDate
Definition:	Date on which the geometry or one or more attribute values of an object was (were) last modified in accordance with the technical specifications for the attribute 'Modification Date'. In the case where the geometry and attribute values of an object have not been modified since its creation in the ITGI database, then the modification date is effectively the date of the aerial photography used to survey the zone.
Datatype:	Date

4.2.2.1.2. Attribute: Origin of XY geometry

Name:	XYOrigin
Definition:	Indicates the method used to determine the position and geometry of an object in XY coordinates.
Attribute value:	NGI - geodetic reference network
	NGI - densified geodetic network
	NGI - GPS-RTK and/or total station
	NGI - determined by intersection
	NGI - determined by traverse
	IGN - dGPS(code)
	GRB - dGPS(code)
	MET - stereophotogrammetry
	MET-NGI - stereophotogrammetry
	NGI - stereophotogrammetry
	Outsourced - stereophotogrammetry
	NGI - edge generated on the basis of width
	NGI - stereophotogrammetry with shifted model
	NGI - GPS navigation
	NGI - photogrammetry – lack of visibility on the photograph
	NGI - in house orthophotograph digitizing
	NGI - field completion – orthophotograph digitizing
	NGI - field completion – lack of visibility on the photograph
	Outsourced - stereophotogrammetry with shifted model

	Outsourced - stereophotogrammetry – lack of visibility on the photograph
	Other source outside the NGI
	NGI - toponymic point
	NGI - digitization on cartographic map
	NGI - constructed geometry

4.2.2.1.2.1. Attribute value: NGI - geodetic reference network

Code:	100
Label:	NGI - geodetic reference network
Definition:	The XY geometry comes from the NGI and relates to the XY coordinates of a point in the reference network "BEREF". (The 'BEREF' reference network consists of 36 points, 4 of which are part of the European permanent GPS network (EPN). During the compensation, 7 EPN points were used to anchor this reference network; the accuracy of the coordinates is defined by a standard deviation of a few millimeters.

4.2.2.1.2.2. Attribute value: NGI - densified geodetic network

Code:	101
Label:	NGI - densified geodetic network
Definition:	The XY geometry comes from the NGI and relates to the XY coordinates of a point in the densified geodetic network. (The densified geodetic network comprises approximately 4000 points. Observations to these points were consolidated into a single network and compensated overall. During this compensation, the points of the BEREF reference network were considered as fixed. The standard deviation on the resulting coordinates is around one centimetre.)

4.2.2.1.2.3. Attribute value: NGI - GPS-RTK and/or total station

Code:	110
Label:	NGI - GPS-RTK or totalstation
Definition:	The XY geometry comes from the NGI and is obtained in the field by a GPS-RTK survey and/or total station survey.

4.2.2.1.2.4. Attribute value: NGI - determined by intersection

Code:	120
Label:	NGI - determined by intersection
Definition:	The XY geometry comes from the NGI and is obtained in the field by an intersection survey using a theodolite.

4.2.2.1.2.5. Attribute value: NGI - determined by traverse

Code:	130
Label:	NGI - determined by traverse
Definition:	The XY geometry comes from the NGI and is obtained in the field by a traverse survey with a total station.

4.2.2.1.2.6. Attribute value: NGI - dGPS(code)

Code:	150

Label:	NGI - dGPS(code)
Definition:	The XY geometry comes from the NGI and is obtained in the field by dGPS survey (differential measurements on the GPS code(s)).

4.2.2.1.2.7. Attribute value: GRB - dGPS(code)

Code:	251
Label:	GRB - dGPS(code)
Definition:	The XY geometry comes from the GIS-Vlaanderen large-scale reference database and is generally surveyed using total stations, whose position has been determined by dGPS (differential measurements on the GPS code(s)).

4.2.2.1.2.8. Attribute value: MET - stereophotogrammetry

Code:	271
Label:	MET - stereophotogrammetry
Definition:	The XY geometry comes from PICC data from the MET and is obtained by stereorestitution from large-scale aerial photography.

4.2.2.1.2.9. Attribute value: MET-NGI - stereophotogrammetry

Code:	380
Label:	MET-NGI - stereophotogrammetry
Definition:	The XY geometry has a mixed origin (NGI and MET) and is composed of data obtained by stereorestitution.

4.2.2.1.2.10. Attribute value: NGI - stereophotogrammetry

Code:	390
Label:	NGI - stereophotogrammetry
Definition:	The XY geometry comes from the NGI and is obtained by stereorestitution.

4.2.2.1.2.11. Attribute value: Outsourced - stereophotogrammetry

Code:	480
Label:	Outsourced - stereophotogrammetry
Definition:	The XY geometry comes from a subcontractor and is obtained by stereorestitution.

4.2.2.1.2.12. Attribute value NGI - edge generated on the basis of width

Code:	520
Label:	NGI - edge generated on the basis of the width
Definition:	The XY geometry comes from the NGI and refers to the XY coordinates of an ordinary road surface or a watercourse surface, generated respectively from the attribute carriageway width or watercourse width.

4.2.2.1.2.13. Attribute value: NGI - stereophotogrammetry with shifted model

Code:	530
Label:	NGI - stereophotogrammetry with shifted model
Definition:	The XY geometry comes from the NGI and is obtained by stereorestitution by temporarily shifting the stereoscopic model to

	maintain a good relative accuracy with respect to surrounding objects which are already present. (The objects themselves and/or the objects around them have a lower absolute accuracy.)

4.2.2.1.2.14. Attribute value: NGI - GPS navigation

Code:	540
Label:	NGI - GPS-navigation
Definition:	The XY geometry comes from the NGI and is surveyed in the field by GPS navigation and pen computer.

4.2.2.1.2.15. Attribute value: NGI - stereophotogrammetry - lack of visibility on the photograph

Code:	550
Label:	NGI - stereophotogrammetry - lack of visibility on the photograph
Definition:	This attribute value (code) is attributed by the NGI during systematic updating by photogrammetry (3D or 2D). The XY geometry is: - either obtained by evaluating in a stereoscopic image or on the orthophotograph the position of objects which are not visible, or barely visible, on the aerial photograph, - or taken from another source (indeterminate), since during the systematic updating, the photographic image does not allow a decision to be made on the presence or the shape of the object.

4.2.2.1.2.16. Attribute value: NGI - in house orthophotograph digitizing

Code:	560
Label:	NGI - in house orthophotograph digitizing
Definition:	The XY geometry comes from the NGI and is obtained in-house, and on a high-quality screen by digitizing from orthophotographs.

4.2.2.1.2.17. Attribute value: NGI - field completion - orthophotograph digitizing

Code:	570
Label:	NGI - field completion - orthophotograph digitizing
Definition:	The XY geometry comes from the NGI and is digitized in the field on the basis of orthophotographs (pen computer).

4.2.2.1.2.18. Attribute value: NGI – field completion - lack of visibility on the photograph

Code:	575
Label:	NGI - field completion - lack of visibility on the photograph
Definition:	This attribute value (code) is attributed by the NGI during the systematic updating in the field using orthophotographs. The presence of the object is observed on the ground and the XY geometry is: - either is obtained by scanning orthophotographs in the field, the object being not visible, or barely visible, on the orthophotograph, - or taken from another (indeterminate) source, since during the systematic updating in the field, the object is not visible on the orthophotograph.

4.2.2.1.2.19. Attribute value: Outsourced - stereophotogrammetry with shifted model

Code:	630

Label:	Outsourced - stereophotogrammetry with shifted model
Definition:	The XY geometry comes from a subcontractor and is obtained by stereorestitution by temporarily shifting the stereoscopic model to keep a good relative accuracy with respect to surrounding objects which are already present. (The objects themselves and/or the objects around them have a lower absolute accuracy.)

4.2.2.1.2.20. Attribute value: Outsourced - stereophotogrammetry - lack of visibility on the photograph

Code:	650
Label:	Outsourced - stereophotogrammetry - lack of visibility on the photograph
Definition:	This attribute value (code) is attributed by the subcontractor during systematic updating by stereophotogrammetry. The XY geometry is: - either obtained by evaluating in a stereoscopic image the position of objects that are not visible, or barely visible, on the aerial photograph, - or taken from another (indeterminate) source, since during the systematic updating, the stereoscopic image does not allow a decision to be made on the presence or the shape of the object.

4.2.2.1.2.21. Attribute value: Other source outside the NGI

Code:	690
Label:	Other source outside the NGI
Definition:	The XY geometry does not come from the NGI. (In the future, the attribute "Additional XY geometry information" will provide additional information on the external source.)

4.2.2.1.2.22. Attribute value: NGI - toponymic point

Code:	695
Label:	NGI - toponymic point
Definition:	The XY geometry comes from the NGI and refers to the XY coordinates of a point indicating where a toponym should approximately be located. The accuracy mainly depends on the nature and spatial definition of the toponymic object.

4.2.2.1.2.23. Attribute value: NGI - digitization on cartographic map

Code:	980
Label:	NGI - digitization on cartographic map
Definition:	The XY geometry comes from the NGI and is obtained by digitizing the altimetric points carried over to a cartographic map (accuracy about 25m).

4.2.2.1.2.24. Attribute value: NGI - constructed geometry

Code:	999
Label:	NGI - constructed geometry
Definition:	The XY geometry comes from the NGI and relates to the XY coordinates of a geometry constructed in a conventional and automatic way. (For example: the creation of the outline of a water tower on the basis of its cartographic symbol). Please note: In the event that the attribute value of code 520 also applies, it overrides the attribute value of code 999.

4.2.2.1.3. Attribute: Origin of Z geometry

Name:	ZOrigin
Definition:	Indicates the method used to determine the position and geometry of an object in XY coordinates.
Attribute value:	NGI - precision levelling network
	NGI - precision levelling
	NGI - topographic levelling network
	NGI - topographic levelling
	NGI - static GPS survey
	NGI - GPS-RTK and/or total station
	NGI - trigonometric levelling
	NGI - dGPS(code)
	GRB - dGPS(code)
	MET - stereophotogrammetry
	MET-NGI - stereophotogrammetry
	NGI - stereophotogrammetry
	Outsourced - stereophotogrammetry
	NGI - DTM10k
	Z geometry taken from the network segment
	NGI - stereophotogrammetry with shifted model
	NGI - GPS navigation
	NGI - stereophotogrammetry – lack of visibility on the photograph
	Outsourced - stereophotogrammetry with shifted model
	Outsourced - stereophotogrammetry – lack of visibility on the photograph
	Other source outside the NGI
	Unknown value
	No valid Z value

4.2.2.1.3.1. Attribute value: NGI - precision levelling network

Code:	100
Label:	NGI - precision levelling network
Definition:	The Z geometry comes from the NGI. These are levelling benchmarks belonging to the DNG network. DNG: Deuxième Nivellement Général (Second General Levelling)

4.2.2.1.3.2. Attribute value - precision levelling

Code:	101
Label:	NGI - precision levelling
Definition:	The Z geometry comes from the NGI and is obtained in the field by precision levelling.

4.2.2.1.3.3. Attribute value: NGI - topographic levelling network

Code:	102
Label:	NGI - topographic levelling network

Definition:	The Z geometry comes from the NGI. These are levelling benchmarks belonging to the topographic levelling network of the Brussels-Capital Region.

4.2.2.1.3.4. Attribute value: NGI - topographic levelling

Code:	103
Label:	NGI - topographic levelling
Definition:	The Z geometry comes from the NGI and is obtained in the field by topographic levelling.

4.2.2.1.3.5. Attribute value: NGI - static GPS survey

Code:	105
Label:	NGI - static GPS survey
Definition:	The Z geometry comes from the NGI and is obtained in the field by a static GPS survey. GPS: Global Positioning System

4.2.2.1.3.6. Attribute value: NGI - GPS-RTK and/or total station

Code:	110
Label:	NGI - GPS-RTK or totalstation
Definition:	The Z geometry comes from the NGI and is obtained in the field by a GPS-RTK survey or total station survey.

4.2.2.1.3.7. Attribute value: NGI - trigonometric levelling

Code:	120
Label:	NGI - trigonometric levelling
Definition:	The Z geometry comes from the NGI and is obtained in the field by trigonometric levelling with a total station.

4.2.2.1.3.8. Attribute value: NGI - dGPS(code)

Code:	150
Label:	NGI - dGPS(code)
Definition:	The Z geometry comes from the NGI and is obtained in the field by dGPS survey (differential measurements on the GPS code(s)).

4.2.2.1.3.9. Attribute value: GRB - dGPS(code)

Code:	251
Label:	GRB - dGPS(code)
Definition:	The Z geometry comes from the GIS-Vlaanderen large-scale reference database and is generally surveyed using total stations, whose position has been determined by dGPS (differential measurements on the GPS code(s)).

4.2.2.1.3.10. Attribute value: MET - stereophotogrammetry

Code:	271
Label:	MET - stereophotogrammetry
Definition:	The Z geometry comes from PICC data from the MET and is obtained by stereorestitution from large-scale aerial photography.

4.2.2.1.3.11. Attribute value: MET-NGI - stereophotogrammetry

Code:	380
Label:	MET-NGI - stereophotogrammetry
Definition:	The Z geometry has a mixed origin (NGI and MET) and is composed of data obtained by stereorestitution.

4.2.2.1.3.12. Attribute value: NGI - stereophotogrammetry

Code:	390
Label:	NGI - stereophotogrammetry
Definition:	The Z geometry comes from the NGI and is obtained by stereorestitution.

4.2.2.1.3.13. Attribute value: Outsourced - stereophotogrammetry

Code:	480
Label:	Outsourced - stereophotogrammetry
Definition:	The Z geometry comes from a subcontractor and is obtained by stereorestitution.

4.2.2.1.3.14. Attribute value: NGI - DTM10k

Code:	510
Label:	NGI - DTM10k
Definition:	The Z geometry comes from the standard Digital Terrain Model (DTM10k) of the NGI.

4.2.2.1.3.15. Attribute value: Z geometry taken over from the network segment

Code:	520
Label:	Z-geometry taken over from network segment
Definition:	The Z geometry is that of an ordinary road surface or a watercourse surface and is obtained by taking the Z values of the corresponding road segments or watercourse segments.

4.2.2.1.3.16. Attribute value: NGI - stereophotogrammetry with shifted model

Code:	530
Label:	NGI - stereophotogrammetry with shifted model
Definition:	The Z geometry comes from the NGI and is obtained by stereorestitution by temporarily shifting the stereoscopic model to maintain a good relative accuracy with respect to surrounding objects which are already present. (The objects themselves and/or the objects around them have a lower absolute accuracy.)

4.2.2.1.3.17. Attribute value: NGI - GPS navigation

Code:	540
Label:	NGI - GPS-navigation
Definition:	The Z geometry comes from the NGI and is surveyed in the field by GPS navigation and pen computer.

4.2.2.1.3.18. Attribute value: NGI - stereophotogrammetry - lack of visibility on the photograph

Code:	550

Label:	NGI - stereophotogrammetry - lack of visibility on the photograph
Definition:	This attribute value (code) is attributed by the NGI during systematic updating by stereophotogrammetry. The Z geometry is: - either obtained by evaluating in a stereoscopic image the position of objects that are not visible, or barely visible, on the aerial photograph, - or taken from another (indeterminate) source, since during the systematic updating, the stereoscopic image does not allow a decision to be made on the presence or the shape of the object.

4.2.2.1.3.19. Attribute value: Outsourced - stereophotogrammetry with shifted model

Code:	630
Label:	Outsourced - stereophotogrammetry with shifted model
Definition:	The Z geometry comes from a subcontractor and is obtained by stereorestitution by temporarily shifting the stereoscopic model to keep a good relative accuracy with respect to surrounding objects which are already present. (The objects themselves and/or the objects around them have a lower absolute accuracy.)

4.2.2.1.3.20. Attribute value: Outsourced - stereophotogrammetry - lack of visibility on the photograph

Code:	650
Label:	Outsourced - stereophotogrammetry - lack of visibility on the photograph
Definition:	This attribute value (code) is attributed by the subcontractor during systematic updating by stereophotogrammetry. The Z geometry is: - either obtained by evaluating in a stereoscopic image the position of objects that are not visible, or barely visible, on the aerial photograph, - or taken from another (indeterminate) source, since during the systematic updating, the stereoscopic image does not allow a decision to be made on the presence or the shape of the object.

4.2.2.1.3.21. Attribute value: Other source outside the NGI

Code:	690
Label:	Other source outside the NGI
Definition:	The Z geometry does not come from the NGI. (In the future, the attribute "Additional Z geometry information" will provide additional information on the external source.)

4.2.2.1.3.22. Attribute value: Unknown value

Code:	888
Label:	Unknown
Definition:	Attribute value indicating that the real attribute value of an ITGI object attribute is not known.

4.2.2.1.3.23. Attribute value: No valid Z value

Code:	999
Label:	No valid z-value
Definition:	The data do not contain a valid Z value. (The Z value is often temporarily attributed and replaced in the short term by a value from a more accurate source, such as the DTM10k.)

4.2.2.1.1. Attribute: Topogeographical identifier

Name:	tgid
Definition:	Unique code assigned to each database object and allowing to clearly identify all objects in the database.
Data type:	Character strings

4.2.3. Road network

4.2.3.1. Object type: Dirt road segment

Name:	RO_DirtRoadSegment
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A section of dirt road which has the same characteristics over its entire length. If two dirt roads are connected by a ford, the connection between the two banks is also considered as a dirt road segment. Please note: The characteristics (also called attributes) are those for which the NGI collects information. The dirt path segment has the same characteristics if the attribute values remain constant over its entire length.

4.2.3.1.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the dirt road
Data type:	Polyline

4.2.3.1.2. Attribute: Fictitious

Name:	Fictitious
Definition:	The dirt road segment is a fictitious network segment.
Data type:	Boolean

4.2.3.1.3. Attribute: Level

Name:	Level
Definition:	Vertical level of the bridge on which, or the tunnel in which, the object is located. The vertical level of a bridge or tunnel indicates the relative position of the bridge or tunnel with respect to ground level and any other bridges or tunnels at the same location. The vertical level of bridges is always above zero, and the vertical level of tunnels is always below zero. In an interchange where, e.g., there are two bridges one above the other, the vertical level of the upper bridge is 2 and that of the lower bridge is 1. Similarly, when two tunnels intersect, the vertical level of the lower tunnel is -2 and that of the upper tunnel is -1. The elements that are neither on a bridge nor in a tunnel always have a vertical level equal to zero.
Data type:	Integer

4.2.3.1.1. Attribute: Particular passage

Name:	Particpass
Definition:	Classification which indicates whether a dirt road segment is a passageway, a ford, a ferry or a dirt road without particular passage.
Attribute value:	Ford
	Ferry
	Underpass
	Dirt road without particular passage
	Not applicable

4.2.3.1.1.1. Attribute value: Ford

Code:	1
Label:	Ford
Definition:	A place where a road or dirt road segment crosses a watercourse whose water level is normally low enough to allow four-wheeled motor vehicles to cross it. There are developed fords where the bed of the watercourse is concreted and other fords without any particular development where the bed of the watercourse is in its natural state.

4.2.3.1.1.2. Attribute value: Ferry

Code:	2
Label:	Ferry
Definition:	A place along a watercourse where a ferry service crosses ***cars***, people and other vehicles from one bank to the other and where the banks are equipped with the necessary infrastructure for embarkation and disembarkation.

4.2.3.1.1.3. Attribute value: Passageway

Code:	3
Label:	Passageway
Definition:	Passage through a building, accessible to pedestrian and/or vehicle traffic

4.2.3.1.1.4. Attribute value: Dirt road segment without particular passage

Code:	4
Label:	No particular passage
Definition:	The dirt road segment is neither a ford nor a ferry nor a passageway.

4.2.3.1.1.5. Attribute value: Not applicable

Code:	999
Label:	Not applicable
Definition:	The attribute is not applicable.

4.2.3.2. Object type: road kilometre marker

Name:	RO_RoadKilometreMarker
Sub-type of:	Top10VectorGenericType
Abstract:	No

Definition:	A marker made of stone, concrete, metal or plastic, painted, engraved or fitted with a sign or plate indicating kilometres. Kilometre markers are placed at kilometre intervals along major roads and indicate kilometres.

4.2.3.2.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of the kilometre marker.
Data type:	Point

4.2.3.2.2. Attribute: Kilometre

Name:	Kilometre
Definition:	The kilometres of a kilometre marker.
Data type:	Integer

4.2.3.2.3. Attribute: cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.3.3. Object type: Path segment

Name:	RO_PathSegment
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A section of path which has the same characteristics over its entire length. Please note: The characteristics (also called attributes) are those for which the NGI collects information. The path segment has the same characteristics if the attribute values remain constant over its entire length.

4.2.3.3.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the path
Data type:	Polyline

4.2.3.3.2. Attribute: Fictitious

Name:	Fictitious
Definition:	The path segment is a fictitious network segment.
Data type:	Boolean

4.2.3.3.3. Attribute: Path type

Name:	Type

Definition:	Classification which indicates whether a path segment is a paved path, an unpaved path, a stairway, a passageway, an underpass, a wherry or a footbridge.
Attribute value:	Paved path
	Unpaved path
	Stairway
	Passageway
	Underpass
	Wherry
	Footbridge
	Not applicable

4.2.3.3.3.1. Attribute value: Paved path

Code:	1
Label:	Paved path
Definition:	Path which is paved with a maximum width of 3.5 m.

4.2.3.3.3.2. Attribute value: Unpaved path

Code:	2
Label:	Unpaved path
Definition:	Path without paving or stone surface.

4.2.3.3.3.3. Attribute value: Stairway

Code:	3
Label:	Stairway
Definition:	A public path or street in the form of a stairway In the case of a street, the steps extend over the entire width of the street, and the latter is intended only for pedestrians. In the case of a public path, it passes over a stairway made of stone or wood; or on steps carved or dug into the ground on the slope that the public path climbs.

4.2.3.3.3.4. Attribute value: Passageway

Code:	4
Label:	Passageway
Definition:	Passage **through** a building, accessible to pedestrian and/or vehicle traffic.

4.2.3.3.3.5. Attribute value: Underpass

Code:	5
Label:	Underpass
Definition:	Tunnel for pedestrians, cyclists or motorcyclists.

4.2.3.3.3.6. Attribute value: Wherry

Code:	6
Label:	Wherry
Definition:	A place along a watercourse where a ferry service crosses people (and possibly cyclists and motorcyclists) from one bank to the other and

	where the banks are equipped with the necessary infrastructure for embarkation and disembarkation.

4.2.3.3.3.7. Attribute value: Footbridge

Code:	7
Label:	Footbridge
Definition:	Bridge reserved for pedestrians and possibly also for cyclists and motorcyclists, whose deck is less than 3m wide and whose span is more than 2m wide. Due to their lightweight construction, certain footbridges do not have abutments and only pillars support their decks.

4.2.3.3.3.8. Attribute value: Not applicable

Code:	999
Label:	Not applicable
Definition:	The attribute is not applicable.

4.2.3.3.4. Attribute: Level

Name:	Level
Definition:	Vertical level of the bridge on which, or the tunnel in which, the object is located. The vertical level of a bridge or tunnel indicates the relative position of the bridge or tunnel with respect to ground level and any other bridges or tunnels at the same location. The vertical level of bridges is always above zero, and the vertical level of tunnels is always below zero. In an interchange where, e.g., there are two bridges one above the other, the vertical level of the upper bridge is 2 and that of the lower bridge is 1. Similarly, when two tunnels intersect, the vertical level of the lower tunnel is -2 and that of the upper tunnel is -1. The elements that are neither on a bridge nor in a tunnel always have a vertical level equal to zero.
Data type:	Integer

4.2.3.4. Object type: Road obstruction

Name:	RO_Obstruction
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Obstruction to vehicle traffic, consisting of a local bottleneck or a traffic obstacle.

4.2.3.4.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of the road obstruction.
Data type:	Point

4.2.3.4.2. Attribute: Road obstruction type

Name:	Type
Definition:	Classification which indicates whether it is a local bottleneck or a traffic obstacle.

Attribute value:	Local bottleneck
	Traffic obstacle

4.2.3.4.2.1. Attribute value: Local bottleneck

Code:	1
Label:	Narrow passage
Definition:	Narrowing of at least 1 m over a distance of less than 25 m, which is the consequence of a physical change in carriageway width.

4.2.3.4.2.2. Attribute value: Traffic obstacle

Code:	2
Label:	Barrier
Definition:	Construction (fence, barrier, gate, pickets, concrete wall, etc.) fixed across a road or dirt road to prevent (by its closure) the free movement of cars or construction (dips, speed bump, etc.) which allows the passage of specific vehicles (buses, tractors, etc.), but which prevents the passage of normal cars.

4.2.3.4.3. Attribute: Pass width

Name:	PassWidth
Definition:	The width of the carriageway at a traffic obstacle.
Data type:	Integer
Unit of measurement:	Metre

4.2.3.4.1. Attribute : cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.3.5. Object type: Road segment

Name:	RO_RoadSegment
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A section of road or, for roads with separate carriageways, a section of carriageway which has the same characteristics over its entire length. If two roads are connected by a ford or a ferry, the connection between the two banks is also considered as a road segment. Please note: The characteristics (also called attributes) are those for which the NGI collects information. The road segment has the same characteristics if the attribute values remain constant over its entire length.

4.2.3.5.1. Attribute: Geometry

Name:	Geometry

Definition:	The geometry of the axis of the traffic lane.
Data type:	Polyline

4.2.3.5.2. Attribute: Particular passage

Name:	ParticPass
Definition:	Classification which indicates whether a road segment is a passageway, a ford, a ferry or a road without particular passage.
Attribute value:	Ford
	Ferry
	Passageway
	Road without particular passage
	Not applicable

4.2.3.5.2.1. Attribute value: Ford

Code:	1
Label:	Ford
Definition:	A place where a road or dirt road crosses a watercourse whose water level is normally low enough to allow four-wheeled motor vehicles to cross it. There are developed fords where the bed of the watercourse is concreted and other fords without any particular development where the bed of the watercourse is in its natural state.

4.2.3.5.2.2. Attribute value: Ferry

Code:	2
Label:	Ferry
Definition:	A place along a watercourse where a ferry service crosses ***cars***, people and other vehicles from one bank to the other and where the banks are equipped with the necessary infrastructure for embarkation and disembarkation.

4.2.3.5.2.3. Attribute value: Passageway

Code:	3
Label:	Passageway
Definition:	Passage through a building, accessible to pedestrian and/or vehicle traffic.

4.2.3.5.2.4. Attribute value: Road without particular passage

Code:	4
Label:	No particular passage
Definition:	The road segment is neither a ford, nor a ferry, nor a passageway.

4.2.3.5.2.5. Attribute value: Not applicable

Code:	999
Label:	Not applicable
Definition:	The attribute is not applicable.

4.2.3.5.3. Attribute: Fictitious

Name:	Fictitious
Definition:	The road segment is a fictitious road segment.
Data type:	Boolean

4.2.3.5.4. Attribute: Operational state

Name:	OpState
Definition:	Classification which indicates whether the object is under construction, is use, or out of use.
Attribute value:	Operational road
	Road under construction
	Road out of use
	Not applicable

4.2.3.5.4.1. Attribute value: Operational road

Code:	1
Label:	Operational
Definition:	Road which is in use.

4.2.3.5.4.2. Attribute value: Road under construction

Code:	2
Label:	Under construction
Definition:	New road for which construction has started but has not yet finished.

4.2.3.5.4.3. Attribute value: Road out of use

Code:	3
Label:	Out of use
Definition:	Existing road which is not used, but still there.

4.2.3.5.4.4. Attribute value: Not applicable

Code:	999
Label:	Not applicable
Definition:	The attribute is not applicable.

4.2.3.5.5. Attribute: Carriageway width

Name:	Width
Definition:	Distance between the two edges of the roadway rounded up to the nearest metre.
Data type:	Integer; 999: not applicable
Unit of measurement:	Metre

4.2.3.5.6. Attribute: Type of road surface

Name:	SurfType

Definition:	Classification which indicates whether a road segment has a solid paved or gravel road surface.
Attribute value:	Solid paved road
	Gravel road
	Not applicable

4.2.3.5.6.1. Attribute value: Solid paved road

Code:	1
Label:	Solid
Definition:	Road with a surface that consists of a rigid layer of materials such as asphalt, concrete, klinkers, paving stones, etc.

4.2.3.5.6.2. Attribute value: Gravel road

Code:	2
Label:	Gravel
Definition:	Road with a road surface made up of disjointed material (e.g. gravel, pebbles, chippings, rubble, etc.).

4.2.3.5.6.3. Attribute value: Not applicable

Code:	999
Label:	Not applicable
Definition:	The attribute is not applicable.

4.2.3.5.7. Attribute: Road status

Name:	RoadStatus
Definition:	Classification which indicates the size, function and accessibility of a road segment.
Attribute value:	Motorway
	Access/exit
	Main road
	Secondary road
	Connecting road
	Local road
	Road with traffic restriction
	Not applicable

4.2.3.5.7.1. Attribute value: Motorway

Code:	1
Label:	Motorway
Definition:	Road demarcated with signs F5 (access to a motorway) and F7 (end of motorway). The access/exit roads are not considered as motorways, but as separate objects.

4.2.3.5.7.2. Attribute value: Access/exit

Code:	2
Label:	Access / exit

Definition:	All of the roads that make it possible (at a specific location) to join or leave a motorway from (or towards) a road that is not a motorway.

4.2.3.5.7.3. Attribute value: Main road

Code:	3
Label:	Main road
Definition:	Road which is not a motorway and which is identified by a national number of between 1 and 2 figures preceded with the letter N or R.

4.2.3.5.7.4. Attribute value: Secondary road

Code:	4
Label:	Secondary road
Definition:	Road which is not a motorway and which is identified by a national number of 3 figures preceded with the letter N, B or R.

4.2.3.5.7.5. Attribute value: Connecting road

Code:	5
Label:	Connecting road
Definition:	Road without a national number, which is a signposted route between two centres of inhabited places.

4.2.3.5.7.6. Attribute value: Local road

Code:	6
Label:	Local road
Definition:	Road which is neither a road with national numbering, nor an access/exit, nor a connecting road, nor a road with traffic restriction.

4.2.3.5.7.7. Attribute value: Road with traffic restriction

Code:	7
Label:	Road with traffic restriction
Definition:	Road located on a private estate or road where the free movement of cars is prohibited permanently or at certain periods. 1) road located on private property (to which access is free or otherwise) or a road located within a public domain and to which access is not free for cars. These are roads situated within: - industrial complexes, commercial complexes, camp sites, holiday villages, amusement parks, sports complexes, educational complexes, hospital complexes, cemeteries, airports, airfields, State domains, provincial domains, military domains, public parks, etc. - car parks which are part of the land and domains mentioned above. 2) road where the free movement of cars is prohibited or allowed only for limited periods and/or only for certain persons. Free access to these roads is prohibited by: 2.1 a F99c or F103 sign 2.2 a F99a or F99b sign, below which another sign indicates that access is permitted for certain vehicles. 2.3 a C3 or C5 sign, provided that the sign is at both ends of a road (except in the case of a dead-end) and is accompanied by a sign that: - either only authorises traffic of certain vehicles (tractors, service vehicles, etc.) on this road,

	- or prohibits access to any vehicle for at least 48 hours per week, between 6am and 8pm, 2.4 signs indicating that one is in a private domain, 2.5 gates, fence, barriers, pickets, etc. (whether open or closed and whether or not the pickets can be removed). 3) special crossing site for tram and/or bus (indicated by the F18 sign and demarcated by continuous white lines). Please note: - The roads on which the C3 or C5 signs bear the inscription 'excepté circulation locale' or 'desserte locale' ('except local traffic' or 'local service') (NL 'uitgezonderd plaatselijk verkeer'/'plaatselijke bediening') are not roads with traffic restrictions, but local roads. - The transportation roads with C3, C5, F99a or F99b signs **without sub-signs** allowing certain vehicles to pass at certain times are considered paths, unless these transportation roads have a road foundation **more than 3.5 m wide**. In the latter case, they are considered as roads with traffic restrictions. This is the case, for example, of old roads which are now completely closed to traffic. - Shopping centres that are continuously open and more than 3.5 metres wide are also considered as roads with restricted traffic, even if they are not open to vehicle traffic. - Roads where one or two traffic lanes are reserved for public transport buses (and indicated by the F17 sign as well as by white broken lines) are not roads with restricted traffic, unless the entire roadway is composed of these traffic lanes.

4.2.3.5.7.8. Attribute value: Not applicable

Code:	999
Label:	Not applicable
Definition:	The attribute is not applicable.

4.2.3.5.8. Attribute: Level

Name:	Level
Definition:	Vertical level of the bridge on which, or the tunnel in which, the object is located. The vertical level of a bridge or tunnel indicates the relative position of the bridge or tunnel with respect to ground level and any other bridges or tunnels at the same location. The vertical level of bridges is always above zero, and the vertical level of tunnels is always below zero. In an interchange where, e.g., there are two bridges one above the other, the vertical level of the upper bridge is 2 and that of the lower bridge is 1. Similarly, when two tunnels intersect, the vertical level of the lower tunnel is -2 and that of the upper tunnel is -1. The elements that are neither on a bridge nor in a tunnel always have a vertical level equal to zero.
Data type:	Integer

4.2.3.5.9. Attribute: Separate carriageway

Name:	SepCarrWay
Definition:	Road which has a separate carriageway for each direction of traffic. The carriageways are separated from each other by a central reservation.

Data type:	Boolean; 999: not applicable

4.2.3.5.10. Attribut : Numéro de bretelle d'accès

Nom (anglais):	exitnumber
Définition:	Identificateur attribué par l'autorité régionale compétente à une bretelle d'accès : les segments qui n'appartiennent pas à une bretelle ne sont pas concernés.
Type de données:	Chaîne de caractères (string); 999 : non applicable; 888 : numéro inconnu

4.2.3.5.11. Attribut : Nombre de bandes de circulation

Nom (anglais):	lanesnb
Définition:	Nombre de bandes de circulation dont un segment de route est pourvu.
Type de données:	Entier (integer)

4.2.3.5.12. Attribut : Numéro de route national du segment

Nom (anglais):	natroadnb
Définition:	Code attribué par l'autorité fédérale aux routes importantes gérées par une Région ou une province. Le code commence par une lettre (A, pour les autoroutes, à l'exception des rings, R pour les rings, N pour les routes nationales qui ne sont ni des autoroutes, ni des rings, et B pour les voies rapides bifurcant à partir des autoroutes).
Type de données:	Chaîne de caractères (string); 999 : non applicable.

4.2.3.5.13. Attribut : Numéro de route européen du segment

Nom (anglais):	euroadnb
Définition:	Code attribué par la Commission économique pour l'Europe des Nations Unies aux routes reliant les principaux centres européens. Le code commence par la lettre E. Il s'agit dans la plupart des cas d'autoroutes.
Type de données:	Chaîne de caractères (string); 999 : non applicable.

4.2.4. Rail network

4.2.4.1. Object type: rail network kilometre marker

Name:	RA_RailwayKilometreMarker
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A marker made of stone, concrete, metal or plastic, painted, engraved or fitted with a sign or plate indicating kilometres. Kilometre markers are placed at kilometre intervals along major railways and indicate kilometres.

4.2.4.1.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of the kilometre marker.
Data type:	Point

4.2.4.1.2. Attribute: Kilometre

Name:	Kilometre
Definition:	The kilometres of a kilometre marker.
Data type:	Integer

4.2.4.1.1. Attribute : cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.4.2. Object type: Railway stop

Name:	RA_RailwayStop
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	An area along an Infrabel railway line where a train stops to allow passengers to board and alight. The stations and stops are railway stops.

4.2.4.2.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of the railway stop.
Data type:	Point

4.2.4.2.1. Attribute: cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.4.3. Object type: Railway track segment

Name:	RA_RailwayTrackSegment
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A section of railway track which has the same characteristics over its entire length.

	Please note: The characteristics (also called attributes) are those for which the NGI collects information. The railway track segment has the same characteristics if the attribute values remain constant over its entire length.

4.2.4.3.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the railway track.
Data type:	Polyline

4.2.4.3.2. Attribute: Electrification

Name:	Electric
Definition:	Railway track equipped with overhead cables from which the electricity required to supply the electric train is supplied.
Data type:	Boolean

4.2.4.3.3. Attribute: Main track

Name:	MainTrack
Definition:	Railway track which is part of the continuity of an Infrabel railway track. The main tracks of the Infrabel railway tracks are those linking cities, ports and other large industrial areas.
Data type:	Boolean

4.2.4.3.4. Attribute: Operational state

Name:	OpState
Definition:	Classification which indicates whether the object is under construction, is use, or out of use
Data type:	Operational track
	Track under construction
	Track out of use

4.2.4.3.4.1. Attribute value: Operational track

Code:	1
Label:	Operational
Definition:	Railway track open to rail traffic.

4.2.4.3.4.2. Attribute value: Track under construction

Code:	2
Label:	Under construction
Definition:	Railway track which is part of a new railway line for which construction has started, but which is not yet finished.

4.2.4.3.4.3. Attribute value: Track out of use

Code:	3
Label:	Out of use
Definition:	Rail track which is still present, but is no longer used.

4.2.4.3.5. Attribute: Type of rail track

Name:	TrackType
Definition:	Classification which indicates whether a rail track segment is a narrow gauge track, a standard gauge track or a high speed railway track
Data type:	Narrow gauge track
	Standard gauge track
	High speed railway track

4.2.4.3.5.1. Attribute value: Narrow gauge track

Code:	1
Label:	Narrow gauge track
Definition:	Rail track for which the track gauge is narrower than the standard gauge of 1.435 m. In Belgium, most tram lines are narrow gauge, as well as certain tourist railway lines and industrial railway lines. In these cases, the track gauge is 1m or less.

4.2.4.3.5.2. Attribute value: Standard gauge track

Code:	2
Label:	Regular standard gauge track
Definition:	Standard gauge track which is not part of a high speed railway track.

4.2.4.3.5.3. Attribute value: High speed railway track

Code:	3
Label:	High speed railway track
Definition:	Standard gauge track which is part of a high speed railway track.

4.2.4.3.6. Attribute: Level

Name:	Level
Definition:	Vertical level of the bridge on which, or the tunnel in which, the object is located. The vertical level of a bridge or tunnel indicates the relative position of the bridge or tunnel with respect to ground level and any other bridges or tunnels at the same location. The vertical level of bridges is always above zero, and the vertical level of tunnels is always below zero. In an interchange where, e.g., there are two bridges one above the other, the vertical level of the upper bridge is 2 and that of the lower bridge is 1. Similarly, when two tunnels intersect, the vertical level of the lower tunnel is -2 and that of the upper tunnel is -1. The elements that are neither on a bridge nor in a tunnel always have a vertical level equal to zero.
Data type:	Integer

4.2.4.3.7. Attribute : Railway line number

Name :	railwaylinenumber
Definition:	The number which a railway network manager assigns to a tramway line, a railway line or a subway line. Sometimes, a line number is a combination of numbers and letters, e.g. Subway line 1A or railway line 27B/1.

Datatype:	String

4.2.4.3.8. Attribute : Line name

Name:	railwaylinename
Definition:	The name which a railway network manager assigns to a tramway line, a subway line or a railway line.
Datatype :	String

Hydrography

4.2.4.4. Object type: waterway kilometre marker

Name:	HY_WaterwayKilometreMarker
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A marker made of stone, concrete, metal or plastic, painted, engraved or fitted with a sign or plate indicating kilometres. Kilometre markers are placed at kilometre intervals along navigable waterways and indicate kilometres.

4.2.4.4.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of the kilometre marker.
Data type:	Point

4.2.4.4.2. Attribute: Kilometre

Name:	Kilometre
Definition:	The kilometres of a kilometre marker.
Data type:	Integer

4.2.4.4.3. Attribute: cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.4.5. Object type: Watercourse surface

Name:	HY_WatercourseSurface
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Watercourse surface belonging to (part of) a watercourse.

4.2.4.5.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the watercourse surface.
Data type:	Polygon

4.2.4.5.2. Attribute: Type of watercourse surface

Name:	Type
Definition:	Classification which indicates whether a watercourse surface is part of a shipping canal or another watercourse.
Attribute value:	Shipping canal

	Other watercourse

4.2.4.5.2.1. Attribute value: Shipping canal

Code:	1
Label:	Shipping canal
Definition:	A Shipping canal.

4.2.4.5.2.2. Attribute value: Other watercourse

Code:	2
Label:	Other watercourse
Definition:	Watercourse which is not a shipping canal.

4.2.4.5.3. Attribute: Level

Name:	Level
Definition:	Vertical level of the bridge on which, or the tunnel in which, the object is located. The vertical level of a bridge or tunnel indicates the relative position of the bridge or tunnel with respect to ground level and any other bridges or tunnels at the same location. The vertical level of bridges is always above zero, and the vertical level of tunnels is always below zero. In an interchange where, e.g., there are two bridges one above the other, the vertical level of the upper bridge is 2 and that of the lower bridge is 1. Similarly, when two tunnels intersect, the vertical level of the lower tunnel is -2 and that of the upper tunnel is -1. The elements that are neither on a bridge nor in a tunnel always have a vertical level equal to zero.
Data type:	Integer

4.2.4.6. Object type: Watercourse segment

Name:	HY_WatercourseSegment
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A section of watercourse which has the same characteristics over its entire length. Please note: The characteristics (also called attributes) are those for which the NGI collects information. The watercourse segment has the same characteristics if the attribute values remain constant over its entire length.

4.2.4.6.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the watercourse.
Data type:	Point

4.2.4.6.2. Attribute: Navigable

Name:	Navigable

Definition:	Watercourse or water body suitable for inland commercial vessels with a tonnage of at least 250 tonnes.
Data type:	Boolean

4.2.4.6.3. Attribute: Fictitious network segment

Name:	Fictitious
Definition:	The watercourse segment is a fictitious network segment.
Data type:	Boolean

4.2.4.6.4. Attribute: Hydrological regime

Name:	Regime
Definition:	Classification which indicates whether a watercourse segment or a water body is permanent or intermittent.
Attribute value:	Intermittent
	Permanent

4.2.4.6.4.1. Attribute value: Intermittent

Code:	1
Label:	Intermittent
Definition:	Watercourses only containing water intermittently. In Belgium, intermittent watercourses are those where water only flows in the event of heavy or persistent rainfall, or in the event of abundant snowmelt due to rapid thawing.

4.2.4.6.4.2. Attribute value: Permanent

Code:	2
Label:	Permanent
Definition:	Watercourses which contain water throughout the year and which only dry out in exceptional circumstances.

4.2.4.6.5. Attribute: Tonnage

Name:	Tonnage
Definition:	Indicates the maximum tonnage authorised in a navigable watercourse segment.
Attribute value:	250-400 tonnes
	400-650 tonnes
	1000-1500 tonnes
	1500-3000 tonnes
	3200-6000 tonnes
	6400-12000 tonnes
	Not applicable

4.2.4.6.5.1. Attribute value: 250-400 tonnes

Code:	1
Label:	250 - 400 t
Definition:	The maximum authorised tonnage is between 250 and 400 tonnes.

4.2.4.6.5.2. Attribute value: 400-650 tonnes

Code:	2
Label:	400 - 650 t
Definition:	The maximum authorised tonnage is between 400 and 650 tonnes.

4.2.4.6.5.3. Attribute value: 1000-1500 tonnes

Code:	3
Label:	1000 - 1500 t
Definition:	The maximum authorised tonnage is between 1000 and 1500 tonnes.

4.2.4.6.5.4. Attribute value: 1500-3000 tonnes

Code:	4
Label:	1500 - 3000 t
Definition:	The maximum authorised tonnage is between 1500 and 3000 tonnes.

4.2.4.6.5.5. Attribute value: 3200-6000 tonnes

Code:	5
Label:	3200 - 6000 t
Definition:	The maximum authorised tonnage is between 3200 and 6000 tonnes.

4.2.4.6.5.6. Attribute value: 6400-12000 tonnes

Code:	6
Label:	6400 - 12000 t
Definition:	The maximum authorised tonnage is between 6400 and 12000 tonnes.

4.2.4.6.5.7. Attribute value: Not applicable

Code:	999
Label:	Not applicable
Definition:	The watercourse segment is not accessible to commercial shipping.

4.2.4.6.6. Attribute: Level

Name:	Level
Definition:	Vertical level of the bridge on which, or the tunnel in which, the object is located. The vertical level of a bridge or tunnel indicates the relative position of the bridge or tunnel with respect to ground level and any other bridges or tunnels at the same location. The vertical level of bridges is always above zero, and the vertical level of tunnels is always below zero. In an interchange where, e.g., there are two bridges one above the other, the vertical level of the upper bridge is 2 and that of the lower bridge is 1. Similarly, when two tunnels intersect, the vertical level of the lower tunnel is -2 and that of the upper tunnel is -1. The elements that are neither on a bridge nor in a tunnel always have a vertical level equal to zero.
Data type:	Integer

4.2.4.6.7. Attribute: Watercourse width

Name:	Width

Definition:	The width of a watercourse.
Attribute value:	Less than 1 m
	1 to 2 m
	2 to 3 m
	3 to 4 m
	4 to 5 m
	5 to 6 m
	6 to 15 m
	15 to 25 m
	25 to 50m
	More than 50m
	Not applicable

4.2.4.6.7.1. Attribute value: less than 1m

Code:	1
Label:	Less than 1m
Definition:	The watercourse segment has a width less than 1 m.

4.2.4.6.7.2. Attribute value: 1 to 2 m

Code:	2
Label:	Between 1 and 2 m
Definition:	The watercourse segment has a width between 1 and 2 metres.

4.2.4.6.7.3. Attribute value: 2 to 3 m

Code:	3
Label:	Between 2 and 3 m
Definition:	The watercourse segment has a width between 2 and 3 metres.

4.2.4.6.7.4. Attribute value: 3 to 4 m

Code:	4
Label:	Between 3 and 4 m
Definition:	The watercourse segment has a width between 3 and 4 metres.

4.2.4.6.7.5. Attribute value: 4 to 5 m

Code:	5
Label:	Between 4 and 5 m
Definition:	The watercourse segment has a width between 4 and 5 metres.

4.2.4.6.7.6. Attribute value: 5 to 6 m

Code:	6
Label:	Between 5 and 6 m
Definition:	The watercourse segment has a width between 5 and 6 metres.

4.2.4.6.7.7. Attribute value: 6 to 15 m

Code:	7
Label:	Between 6 and 15 m

Definition:	The watercourse segment has a width between 6 and 15 metres.

4.2.4.6.7.8. Attribute value: 15 to 25 m

Code:	8
Label:	Between 15 and 25 m
Definition:	The watercourse segment has a width between 15 and 25 metres.

4.2.4.6.7.9. Attribute value: 25 to 50 m

Code:	9
Label:	Between 25 and 50 m
Definition:	The watercourse segment has a width between 25 and 50 metres.

4.2.4.6.7.10. Attribute value: more than 50m

Code:	10
Label:	More than 50m
Definition:	The watercourse segment has a width more than 50 m.

4.2.4.6.7.11. Attribute value: Not applicable

Code:	999
Label:	Not applicable
Definition:	Not applicable

4.2.4.7. Object type: Water point

Name:	HY_WaterPoint
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Point where the groundwater or watercourse arrives at the surface or disappears into the subsoil naturally. Springs, resurgences and losses are water points.

4.2.4.7.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of the water point.
Data type:	Point

4.2.4.7.2. Attribute: Type of water point

Name:	Type
Definition:	Classification which indicates whether a water point is either a loss, or a spring or a resurgence.
Attribute value:	Spring or resurgence
	Loss

4.2.4.7.2.1. Attribute value: Spring or resurgence

Code:	1
Label:	Spring or resurgence

Definition:	The water point is a spring or a resurgence

4.2.4.7.2.2. Attribute value: Loss

Code:	2
Label:	Sink hole
Definition:	A natural opening in the soil surface, through which a natural watercourse disappears underground and crosses caves like a groundwater river for a certain distance. These losses occur in chalky regions (e.g. Fagne and Famenne) where caves are formed by the dissolution of limestone.

4.2.4.7.3. Attribut : Angle de représentation cartographique

Nom (anglais):	cartoangle
Définition:	Angle, exprimé en degré, utilisé pour orienter un symbole ponctuel de manière à prévenir les conflits graphiques avec les autres entités graphiques présentes.
Type de données:	Entier (integer)

4.2.4.8. Object type: Wetland

Name:	HY_Wetland
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Zone which: - either is not flooded, but where the soil is permanently saturated (marshland); - or is periodically flooded due to tides (salting or salt meadow); - or is regularly or permanently flooded and is covered with plants rooted in the soil and growing above the water surface (swamps).

4.2.4.8.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the wetland
Data type:	Polygon

4.2.4.8.2. Attribute: Type of wetland

Name:	Type
Definition:	Classification which indicates whether a wetland is a swamp, marshland or a salting & salt meadow.
Attribute value:	Marshland
	Swamp
	Salting & salt meadow

4.2.4.8.2.1. Attribute value: Marshland

Code:	1
Label:	Marshland
Definition:	A zone which is almost permanently saturated with water (spongy soil) without changing the general physiognomy of the vegetation.

	Marshland can be found in various types of vegetation, for example in permanent grassland or a hayfield, in woods, in heathland, etc.

4.2.4.8.2.2. Attribute value: Swamp

Code:	2
Label:	Swamp
Definition:	A zone covered with shallow or muddy water that is regularly submerged and colonised by plants which protrude from the water surface and have roots. The vegetation may be made up of marsh plants and reeds, but also bushes and trees. Unlike salting and salt meadows, swamps are not affected by the tides.

4.2.4.8.2.3. Attribute value: Salting & salt meadow

Code:	3
Label:	Salting or salt-meadow
Definition:	Tidal zone made up of salting and/or salt meadows.

4.2.4.9. Object type: Water surface

Name:	HY_WaterSurface
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A natural depression, excavation or landscaped water basin, that is constantly filled with water and is not covered with plants rooted in the soil and growing above the water surface. Storm water catch basins, tailing ponds and treatment ponds that are only periodically filled with water are also considered water surfaces.

4.2.4.9.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the water surface.
Data type:	Polygon

4.2.4.9.2. Attribute: Hydrological regime

Name:	Regime
Definition:	Classification which indicates whether a watercourse or a water surface is permanent or intermittent.
Attribute value:	Intermittent
	Permanent

4.2.4.9.2.1. Attribute value: Intermittent

Code:	1
Label:	Intermittent
Definition:	Water surfaces only containing water intermittently. Tailing ponds and storm water catch basins are intermittent water surfaces.

4.2.4.9.2.2. Attribute value: Permanent

Code:	2

Label:	Permanent
Definition:	Water surfaces which contain water throughout the year and which only dry out in exceptional circumstances.

4.2.4.9.3. Attribute: Type of water surfaces

Name:	Type
Definition:	Classification which indicates whether a water surface is a dock, a water basin, the North Sea or an unspecified water surface.
Attribute value:	Dock
	Water basin
	North sea
	Unspecified water surface

4.2.4.9.3.1. Attribute value: Dock

Code:	1
Label:	Dock
Definition:	A dug-out water surface, equipped with wharves and/or landing stages where boats can dock. Some docks are open and others are closed. A closed dock is only accessible through locks, while an open dock has a direct connection to a navigable waterway or to the sea. Locks are used to protect boats in the dock from fluctuations in water levels caused by tides.

4.2.4.9.3.2. Attribute value: Water basin

Code:	2
Label:	Basin
Definition:	A tailing pond, a treatment basin, a water saving basin, a storm water catch basin or a flushing basin.

4.2.4.9.3.3. Attribute value: North Sea

Code:	3
Label:	North Sea
Definition:	The water surface is the North Sea.

4.2.4.9.3.4. Attribute value: Unspecified water surface

Code:	4
Label:	Unspecified water surface
Definition:	A water surface which is neither the North Sea, nor a dock nor a water basin. Dams, ponds and pools are examples of water surfaces which are unspecified in the SGISR.

4.2.5. High tension network

4.2.5.1. Object type: High tension line segment

Name:	HT_HighTensionLineSegment
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A section of high tension line which has the same characteristics over its entire length.

4.2.5.1.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the high tension line segment.
Data type:	Polyline

4.2.5.2. Object type: Power pylon

Name:	HT_PowerPylon
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Pylon which supports the cables of high tension lines (overhead lines).

4.2.5.2.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of the high tension pylon.
Data type:	Point

4.2.5.2.2. Attribute: High tension pylon number

Name:	PylonNr
Definition:	External identification number of a high tension pylon, given by Elia.
Data type:	String

4.2.5.2.1. Attribute: Height

Name:	height
Definition:	The vertical distance between the highest point of a construction and the ground.
Data type:	Integer

4.2.6. Constructions

4.2.6.1. Object type: Brunnel

Name:	CO_Brunnel
Sub-type of:	Top10VectorGenericType
Abstract:	No

Definition:	Construction implemented with the aim of providing a passage (generally for an element of a network) above, below or through an obstacle and which allows a crossing at various levels of elements of one or more networks. Bridges and tunnels are considered as constructions, as are all intermediate forms.

4.2.6.1.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of a brunnel.
Data type:	Polygon

4.2.6.1.2. Attribute: Type of brunnel

Name:	Type
Definition:	Classification indicating whether a brunnel is a tunnel, a fixed bridge or a movable bridge.
Attribute value:	Tunnel
	Fixed bridge
	Movable bridge

4.2.6.1.2.1. Attribute value: Tunnel

Code:	1
Label:	Tunnel
Definition:	Passage for a road, a railway, a dirt road or a path; situated underground, underwater or along a covered excavation.

4.2.6.1.2.2. Attribute value: Fixed bridge

Code:	2
Label:	Fixed bridge
Definition:	Bridge for which the deck is fixed.

4.2.6.1.2.3. Attribute value: Movable bridge

Code:	3
Label:	Movable bridge
Definition:	Bridge with a movable deck (e.g. lift bridge, swing bridge). Most movable bridges are found along navigable waterways, where the deck is raised or swivelled to allow boats to pass.

4.2.6.1.3. Attribute: Level

Name:	Level
Definition:	Level of the brunnel. The vertical level of a bridge or tunnel indicates the relative position of the bridge or tunnel with respect to ground level and any other bridges or tunnels at the same location. The vertical level of bridges is always above zero, and the vertical level of tunnels is always below zero. In an interchange where, e.g., there are two bridges one above the other, the vertical level of the upper bridge is 2 and that of the lower bridge is 1. Similarly, when two tunnels intersect, the vertical level of the lower tunnel is -2 and that of the upper tunnel is -1.

Data type:	Integer

4.2.6.2. Object type: Building

Name:	CO_Building
Sub-type of:	Top10VectorGenericType
Abstract:	no
Definition:	Construction with foundations and walls (roof, walls, windows, etc.), which completely enclose a space which is usable and accessible by people via doors or gates.

4.2.6.2.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the building.
Data type:	Polygon

4.2.6.2.2. Attribute: Building form

Name:	Form
Definition:	Classification which indicates the type of building based on its external characteristics. Explanation: Although certain names appear to indicate an activity, this attribute only refers to the exterior features of the building. Its actual function is not taken into account.
Attribute value:	Fortified building
	Castle
	Abbey
	Church building
	Small chapel
	Windmill
	Company building
	Inflatable structure
	Greenhouse
	Water tower
	Other tower
	Building with unspecified form

4.2.6.2.2.1. Attribute value: Fortified building

Code:	1
Label:	Fortified building
Definition:	A building, generally insulated, with thick walls and which originally had a defensive military function. Forts, fortresses and bunkers are fortified buildings.

4.2.6.2.2.2. Attribute value: Castle

Code:	2
Label:	Castle

Definition:	a) Mediaeval complex which once had a defensive function and which consists of one or more buildings and usually also castle walls. Unlike subsequent fortifications (e.g. forts) which have earth banks to withstand artillery fire, the high and thick walls were sufficient as a defence for fortified castles. Many Belgian castles have been transformed over the centuries, in such a way that their former defensive function is no longer visible, or barely. b) Complex dating from previous centuries (16th-19th), consisting of a large manor house, possibly with annexes and generally also a park. These buildings did not have a defensive function, but were places of residence for the nobility and later also for wealthy people.

4.2.6.2.2.3. Attribute value: Abbey

Code:	3
Label:	Abbey
Definition:	Complex where an autonomous religious community resides or used to reside under the leadership of an abbot or abbess and which consists of a central courtyard with a cloister around which the abbey church and the other buildings of the abbey are situated.

4.2.6.2.2.4. Attribute value: Church building

Code:	4
Label:	Church – large chapel
Definition:	A large building, generally with a bell tower, Christian symbols, stained glass windows, rosettes and one or more large entrance doors. The building was originally built and furnished for worship. The churches or large chapels, disused or not, which correspond to this architecture are church buildings.

4.2.6.2.2.5. Attribute value: Small chapel

Code:	5
Label:	Small chapel
Definition:	Small building, consisting of a small space which is accessible through a single entrance door and built as a place of prayer. These chapels often have a cross on the roof. Inside the building, there is sometimes a small altar and/or some prie-Dieus.

4.2.6.2.2.6. Attribute value: Windmill

Code:	6
Label:	Windmill
Definition:	A high building, made of stone or wood, with wings, and originally built to grind grains or seeds or drain a polder. The wings moved by the wind started the mechanics of the windmill.

4.2.6.2.2.7. Attribute value: Industrial architecture building

Code:	7
Label:	Industrial architecture building
Definition:	A large building, generally with uniform facades, with few or no windows (with the exception of the parts where the offices, the entrance or, in the case of commercial buildings, the windows are located). The building has one or more large doors, allowing the

	passage or loading and unloading of vehicles. This type of building was mainly built with a purely functional purpose: industrial activity, storage, breeding. Old industrial buildings from the 19th or early 20th century, where assembly halls and/or workshops were equipped with windows, are also considered industrial buildings.

4.2.6.2.2.8. Attribute value: Inflatable structure

Code:	8
Label:	Inflatable structure
Definition:	A construction with synthetic walls which are held upright by overpressure and which surround an accessible and usable space for people. Many inflatable structures are used as multi-sport halls (e.g. tennis halls).

4.2.6.2.2.9. Attribute value: Greenhouse

Code:	9
Label:	Greenhouse
Definition:	A construction whose roof and at least three sides are made of glass or rigid plastic and which has been built for growing plants.

4.2.6.2.2.10. Attribute value: Water tower

Code:	10
Label:	Water tower
Definition:	A tower of which the upper part has a water tank. The high position of the water tank makes it possible to achieve sufficient pressure in the water distribution system. Most water towers are intended for drinking water distribution, but some have an industrial use for which untreated water is stored.

4.2.6.2.2.11. Attribute value: Other tower

Code:	11
Label:	Other tower
Definition:	The building is an isolated building or a tower on a building which has the function of a lighthouse, telecommunications tower or control tower. The building does not take the form of a water tower.

4.2.6.2.2.12. Attribute value: Building of unspecified form

Code:	12
Label:	Unspecified form
Definition:	A building for which the ITGI database does not provide information about its ***form*** (except for the perimeter).

4.2.6.2.3. Attribute: Building function

Name:	Use
Definition:	Classification which indicates the type of building based on its current function (i.e. the activities that take place in the building).
Attribute value:	Incinerator
	Drinking water building
	Wholesale market

	Commercial building
	Post office
	Train station
	Telecommunications tower
	Lighthouse
	Control tower
	Fire station
	Civil protection center
	Police station
	Penitentiary
	Town hall
	Parliament
	Royal residence
	School
	Observatory
	Hospital
	Crematorium
	Catholic church
	Protestant church
	Anglican church
	Orthodox church
	Synagogue
	Mosque
	Commemorative building
	Building with unspecified function
	Sports building
	Indoor swimming pool

4.2.6.2.3.1. Attribute value: Incinerator

Code:	2
Label:	Incinerator
Definition:	Complex, made up of buildings and installations, intended to incinerate household and industrial waste. Most incinerators in Belgium are managed by an intermunicipal association or by some form of private/public cooperation.

4.2.6.2.3.2. Attribute value: Drinking water building

Code:	3
Label:	Drinking-water building
Definition:	Building with installations for the collection, treatment, storage and distribution of drinking water or water intended for the production of drinking water. The following buildings are buildings for drinking water: buildings belonging to a drinking water production plant, water towers, pumping stations and buildings that contain a drinking water tank.

4.2.6.2.3.3. Attribute value: Wholesale market

Code:	4
Label:	Wholesale market
Definition:	An auction for horticultural products or a fish auction.

4.2.6.2.3.4. Attribute value: Commercial building

Code:	5
Label:	Commercial building
Definition:	Building where material products are sold to private individuals (retailers). E.g.: supermarkets, hypermarkets, branches of department stores and shopping centres.

4.2.6.2.3.5. Attribute value: Post office

Code:	6
Label:	Post office
Definition:	Building of La Poste (Post office) which is accessible to the public and within which La Poste offers its products

4.2.6.2.3.6. Attribute value: Train station

Code:	7
Label:	Train station
Definition:	Building situated along an Infrabel railway line at a point where passenger trains stop to allow passengers to get on or off the train and where tickets are sold.

4.2.6.2.3.7. Attribute value: Telecommunications tower

Code:	8
Label:	Telecommunications tower
Definition:	Tower for carrying antennas through which radio, television and/or telephone signals are broadcast, transmitted or received. Unlike a telecommunications pylon, it is a closed building where one climbs inside (stairs, lift, ladder).

4.2.6.2.3.8. Attribute value: Lighthouse

Code:	9
Label:	Lighthouse
Definition:	Tower along the coast, which is equipped at its top with a light (rotating), which serves to orient boats sailing at sea at night.

4.2.6.2.3.9. Attribute value: Control tower

Code:	10
Label:	Control tower
Definition:	Lower tower or building in an airfield from which air traffic controllers direct the landing or take-off of aircraft and/or helicopters

4.2.6.2.3.10. Attribute value: Fire station

Code:	11
Label:	Fire station

Definition:	Building of a fire brigade where on-duty firemen take their service and where fire trucks are parked.

4.2.6.2.3.11. Attribute value: Civil protection center

Code:	12
Label:	Civil protection center
Definition:	Complex of buildings and installations belonging to the civil protection. The center serves as a depot for the equipment and vehicles of the civil protection. In addition, it houses maintenance services, administrative staff and a permanent standby service. This permanent standby service comes into action when the authorities request assistance in cases of natural disasters, serious accidents, cases of serious pollution and humanitarian interventions. There are civil protection centers at Jabbeke, Liedekerke, Brasschaat, Ghlin, Chrisnée and Neufchâteau.

4.2.6.2.3.12. Attribute value: Police station

Code:	13
Label:	Police station
Definition:	Local police office or station, accessible to the public, or federal highway police station along a motorway. In every municipality, there is at least one local police station.

4.2.6.2.3.13. Attribute value: Penitentiary

Code:	14
Label:	Penitentiary
Definition:	A prison or closed youth protection institution.

4.2.6.2.3.14. Attribute value: Town hall

Code:	15
Label:	Town hall
Definition:	Building where the municipal council sits and where the mayor, the municipal secretary and the aldermen generally have their office.

4.2.6.2.3.15. Attribute value: Parliament

Code:	16
Label:	Parliament
Definition:	Building which houses a federal, regional or community parliament. The Belgian system consists of the following parliaments: the Federal Parliament (composed of the Chamber of Representatives and the Senate), the Flemish Parliament (Vlaams parlement), the Parliament of the French Community, the Walloon Parliament, the Parliament of the Brussels-Capital Region (Parliament van het Brussels Hoofdstedelijk Gewest) and the Council of the German-speaking Community (Rat der Deutschsprachigen Gemeinschaft)

4.2.6.2.3.16. Attribute value: Royal residence

Code:	17
Label:	Royal residence

Definition:	Building which is the property of the State and made available to the sovereign. The royal residences are: the Royal Palace of Brussels, the château de Laeken, the château Stuyvenbergh, the château de Ciergnon, the château de Fenffe, Belvédère villa and Clémentine villa.

4.2.6.2.3.17. Attribute value: School

Code:	18
Label:	School
Definition:	Building or complex where a complete daytime education programme, recognised by the authorities, is provided.

4.2.6.2.3.18. Attribute value: Observatory

Code:	19
Label:	Observatory
Definition:	Building or complex intended and adapted for astronomical observations.

4.2.6.2.3.19. Attribute value: Hospital

Code:	22
Label:	Hospital
Definition:	Building or complex for medical examinations and treatment and care of the sick, where they can be accommodated for several days if necessary.

4.2.6.2.3.20. Attribute value: Crematorium

Code:	23
Label:	Crematorium
Definition:	Complex arranged for and intended for the cremation of the dead, generally provided with one or more spaces where a farewell ceremony can be organised for the deceased

4.2.6.2.3.21. Attribute value: Catholic church

Code:	24
Label:	Catholic church
Definition:	Church or large chapel furnished and used for Catholic worship.

4.2.6.2.3.22. Attribute value: Protestant church

Code:	25
Label:	Protestant church
Definition:	Church furnished and used for Protestant worship

4.2.6.2.3.23. Attribute value: Anglican church

Code:	26
Label:	Anglican church
Definition:	Church furnished and used for Anglican worship

4.2.6.2.3.24. Attribute value: Orthodox church

Code:	27

Label:	Orthodox church
Definition:	Church furnished and used for Orthodox worship

4.2.6.2.3.25. Attribute value: Synagogue

Code:	28
Label:	Synagogue
Definition:	Building furnished and used for Jewish worship.

4.2.6.2.3.26. Attribute value: Mosque

Code:	29
Label:	Mosque
Definition:	Building furnished and used for Muslim worship.

4.2.6.2.3.27. Attribute value: Commemorative building

Code:	30
Label:	Commemorative building
Definition:	A building (such as a monument) erected to mark or commemorate an event or person (e.g., Atomium, Yser tower).

4.2.6.2.3.28. Attribute value: Building of unspecified use

Code:	31
Label:	Unspecified use
Definition:	A building for which the ITGI database does not provide information about its ***current*** function.

4.2.6.2.3.29. Attribute value: Sports building

Code:	32
Label:	Sports building
Definition:	Building which is fitted out and used for the practice of sports or for sporting events inside the building, or building which forms part of a sports complex. Examples of sports buildings are: sports halls, equestrian centres, climbing halls, bowling centres etc.

4.2.6.2.3.30. Attribute value: Indoor swimming pool

Code:	33
Label:	Indoor swimming pool
Definition:	Building in which there is one or more swimming pools.

4.2.6.2.4. Attribut : Hauteur

Nom (anglais):	height
Définition:	La distance verticale entre le point le plus élevé d'une construction et le sol.

4.2.6.3. Object type: particular line construction

Name:	CO_ParticularLineConstruction
Sub-type of:	Top10VectorGenericType
Abstract:	No

Definition:	Particular construction with linear geometry.

4.2.6.3.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the particular line construction.
Data type:	Polyline

4.2.6.3.2. Attribute: Type of particular line construction

Name:	Type
Definition:	Classification which indicates the type of particular line construction.
Attribute value:	Culvert entrance
	Syphon culvert entrance
	Weir – Sluice gate
	Construction on pillars
	Breakwater
	Wall
	Retaining wall
	Cable transport
	Pipeline
	Ruins

4.2.6.3.2.1. Attribute value: Culvert entrance

Code:	5
Label:	Culvert entrance
Definition:	A culvert entrance to a watercourse

4.2.6.3.2.2. Attribute value: Syphon culvert entrance

Code:	6
Label:	Syphon culvert entrance
Definition:	A syphon entrance.

4.2.6.3.2.3. Attribute value: Weir - Sluice gate

Code:	7
Label:	Weir – Sluice gate
Definition:	Construction designed to retain water, but unlike a retention dam, the construction is limited to the width of the watercourse and the water is not retained to create a dam lake, but for other reasons: to regulate the water level, make a watercourse navigable, divert the water via a diversion channel, etc. This construction consists of: - a structure placed across a watercourse, with one or more spans that can be closed with sliding or tilting flaps. Depending on their shape, a distinction is made between lift gates, sector gates, dam valves or dam needles; - or a (small) wall in stone or concrete, which has a movable part, placed across a stream or a small river. Excess water flows over the weir.

4.2.6.3.2.4. Attribute value: Construction on pillars

Code:	9
Label:	Construction on pillars
Definition:	Construction erected in water or in flood-prone areas and consisting of one or more wooden, metal or concrete pillars connected (or not) and carrying (or not) a platform or holding it (or not) in place. Examples of constructions on pillars: mooring dolphins, booms, promenade jetties, as well as landing stages and tailings dams which rest on pillars.

4.2.6.3.2.5. Attribute value: Breakwater

Code:	10
Label:	Breakwater
Definition:	Construction consisting of a long levee of stones built perpendicular to the coast and intended to break the force of the waves. A breakwater is almost entirely submerged by the sea at high tide.

4.2.6.3.2.6. Attribute value: Wall

Code:	12
Label:	Wall
Definition:	Construction consisting of an upright, insulated wall made of brick, poured concrete or concrete slab.

4.2.6.3.2.7. Attribute value: Retaining wall

Code:	13
Label:	Retaining wall
Definition:	Brick or concrete wall that is installed during earthworks (excavation, backfilling) to prevent the ground from slipping through lateral pressure or through the erosive action of water. A retaining wall has a slope of 80° to 90° to the horizontal. Quay walls are also retaining walls.

4.2.6.3.2.8. Attribute value: Cable transport

Code:	26
Label:	Cable transport
Definition:	Construction consisting of a cable car or a ski lift.

4.2.6.3.2.9. Attribute value: Pipeline

Code:	29
Label:	Pipeline
Definition:	Construction consisting of consecutive pipes with a relatively large diameter, used to transport gases, liquids or powdered or granulated solids. There are underground and overground pipelines.

4.2.6.3.2.10. Attribute value: Ruins

Code:	39
Label:	Ruins
Definition:	The remaining foundations or the remains of buildings or walls which have completely or partially collapsed.

4.2.6.4. Object type: particular polygonal construction

Name:	CO_ParticularPolyConstruction
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Particular construction with polygonal geometry.

4.2.6.4.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the particular polygonal construction.
Data type:	Polygon

4.2.6.4.2. Attribute: Type of particular polygonal construction

Name:	Type
Definition:	Classification which indicates the type of particular polygonal construction.
Attribute value:	Dry dock
	Shiplift
	Lock
	Weir – Sluice gate
	Dam
	Construction on pillars
	Cooling tower
	Winding tower
	Silo - Storage tank
	Roofed open construction
	Covered stands
	Stands
	Open-air swimming pool
	Drinking water facility
	Monumental stairs
	Non-religious monument
	Ruins
	Unspecified construction

4.2.6.4.2.1. Attribute value: Dry dock

Code:	2
Label:	Dry Dock
Definition:	A dock intended to dry ships. A dry dock has gates on one side so that the dock can be closed and drained.

4.2.6.4.2.2. Attribute value: Shiplift

Code:	3
Label:	Shiplift
Definition:	A construction on a navigable canal, which consists of two metal containers accessible to boats, which move vertically or on an inclined

	plane to allow boats to be raised and lowered over a difference in water level and join a part of the navigable canal situated higher or lower.

4.2.6.4.2.3. Attribute value: Lock

Code:	4
Label:	Lock
Definition:	Construction on a navigable waterway or at the entrance to a dock that allows ships to move from a higher navigable waterway or water body to a lower water level or vice versa. A lock consists of a lock chamber for one or more boats and lock gates that close the lock chamber.

4.2.6.4.2.4. Attribute value: Weir - Sluice gate

Code:	7
Label:	Weir – Sluice gate
Definition:	Construction designed to retain water, but unlike a retention dam, the construction is limited to the width of the watercourse and the water is not retained to create a dam lake, but for other reasons: to regulate the water level, make a watercourse navigable, divert the water via a diversion channel, etc. This construction consists of: - a structure placed across a watercourse, with one or more spans that can be closed with sliding or tilting flaps. Depending on their shape, a distinction is made between lift gates, sector gates, dam valves or dam needles; - or a (small) wall in stone or concrete, which has a movable part, placed across a stream or a small river. Excess water flows over the weir.

4.2.6.4.2.5. Attribute value: Dam

Code:	8
Label:	Dam
Definition:	A construction consisting of a high wall of stone or concrete that closes a ***valley*** and is intended to retain water so that a water reservoir (dam lake) forms. This water reservoir is used for water supply or for electricity generation (hydroelectric power plant). There are also retaining dams formed by an earth bank.

4.2.6.4.2.6. Attribute value: Construction on pillars

Code:	9
Label:	Construction on pillars
Definition:	Construction erected in water or in flood-prone areas and consisting of one or more wooden, metal or concrete pillars connected (or not) and carrying (or not) a platform or holding it (or not) in place. Examples of constructions on pillars: mooring dolphins, booms, promenade jetties, as well as landing stages and tailings dams which rest on pillars.

4.2.6.4.2.7. Attribute value: Cooling tower

Code:	22
Label:	Cooling tower
Definition:	High construction, more or less cylindrical with a large diameter, designed to cool cooling water. This is done by contact with the air in

	the cooling tower. The steam partially condenses and is recovered as water. The rest of the steam escapes into the atmosphere through the upper opening of the tower.

4.2.6.4.2.8. Attribute value: Winding tower

Code:	23
Label:	Winding tower
Definition:	Tower above a vertical mine shaft that supports a pulley at the top from which the elevator cable is suspended

4.2.6.4.2.9. Attribute value: Silo - Storage tank

Code:	30
Label:	Silo – Storage tank
Definition:	Construction which is a silo or a storage tank.

4.2.6.4.2.10. Attribute value: Roofed open construction

Code:	31
Label:	Roofed open construction
Definition:	Construction which is permanently open on at least one side and which has a roof under which there is a space accessible to people (e.g. canopy, open hangar). These buildings are often used to store goods, park vehicles or shelter people and animals from the rain.

4.2.6.4.2.11. Attribute value: Covered stands

Code:	32
Label:	Covered stands
Definition:	A stand with a cover.

4.2.6.4.2.12. Attribute value: Stands

Code:	33
Label:	Stands
Definition:	A stand without a cover.

4.2.6.4.2.13. Attribute value: Open-air swimming pool

Code:	34
Label:	Open-air swimming pool
Definition:	Open-air swimming pool

4.2.6.4.2.14. Attribute value: Drinking water facility

Code:	35
Label:	Drinking water facility
Definition:	A particular construction intended for the catchment, treatment, storage and distribution of drinking water (e.g. collection wells, sunken drinking water tank).

4.2.6.4.2.15. Attribute value: Monumental stairs

Code:	36
Label:	Monumental stairs

Definition:	Wide staircase that leads to a large building or monument, or that is the link between two levels (e.g. on a square, in a park, etc.).

4.2.6.4.2.16. Attribute value: Non-religious monument

Code:	38
Label:	Non-religious monument
Definition:	Monument which is not a building and which does not have a religious character

4.2.6.4.2.17. Attribute value: Ruins

Code:	39
Label:	Ruins
Definition:	The remaining foundations or the remains of buildings or walls which have completely or partially collapsed.

4.2.6.4.2.18. Attribute value: Unspecified construction

Code:	40
Label:	Unspecified construction
Definition:	A particular construction for which the ITGI database does not provide information on its form (except its perimeter) or function. As such, in ITGI, blast furnaces, refining towers and amusement park facilities are considered as particular unspecified constructions.

4.2.6.4.1. Attribute: Height

Name:	height
Definition:	The vertical distance between the highest point of a construction and the ground.
Data type:	Integer

4.2.6.5. Object type: particular point construction

Name:	CO_ParticularPointConstruction
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Particular construction with point geometry.

4.2.6.5.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of the particular point construction.
Data type:	Point

4.2.6.5.2. Attribute: Type of particular point construction

Name:	Type
Definition:	Classification which indicates the type of particular point construction.
Attribute value:	Water wheel
	Culvert entrance

	Syphon culvert entrance
	Weir – Sluice gate
	Construction on pillars
	Signal light
	Telecommunications pylon
	Unspecified pylon
	Radar – parabolic antenna
	Wind turbine
	Flare stack
	High chimney
	Observation tower
	Drinking water facility
	Religious monument
	Non-religious monument

4.2.6.5.2.1. Attribute value: Water wheel

Code:	1
Label:	Water wheel
Definition:	A pin-wheel that can be propelled by water from a watercourse and is located outside a water mill or other building. Originally, water wheels were used for the mechanical propulsion of grinding wheels. Certain water wheels are currently used for electricity generation.

4.2.6.5.2.2. Attribute value: Culvert entrance

Code:	5
Label:	Culvert entrance
Definition:	Culvert entrance

4.2.6.5.2.3. Attribute value: Syphon culvert entrance

Code:	6
Label:	Syphon culvert entrance
Definition:	Syphon culvert entrance

4.2.6.5.2.4. Attribute value: Weir - Sluice gate

Code:	7
Label:	Weir – Sluice gate
Definition:	Construction designed to retain water, but unlike a retention dam, the construction is limited to the width of the watercourse and the water is not retained to create a dam lake, but for other reasons: to regulate the water level, make a watercourse navigable, divert the water via a diversion channel, etc. This construction consists of: - a structure placed across a watercourse, with one or more spans that can be closed with sliding or tilting flaps. Depending on their shape, a distinction is made between lift gates, sector gates, dam valves or dam needles;

	- or a (small) wall in stone or concrete, which has a movable part, placed across a stream or a small river. Excess water flows over the weir.

4.2.6.5.2.5. Attribute value: Construction on pillars

Code:	9
Label:	Construction on pillars
Definition:	Construction erected in water or in flood-prone areas and consisting of one or more wooden, metal or concrete pillars connected (or not) and carrying (or not) a platform or holding it (or not) in place. Examples of constructions on pillars: mooring dolphins, booms, promenade jetties, as well as landing stages and tailings dams which rest on pillars.

4.2.6.5.2.6. Attribute value: Signal light

Code:	11
Label:	Signal light
Definition:	Tower, pole or light construction (perforated) surmounted by a lamp that indicates the navigable waters, or the entrance of a port or lock, to ships. In Belgium, signal lights are found on booms, on piers and along the Scheldt estuary (in the water or on the banks).

4.2.6.5.2.7. Attribute value: Telecommunications pylon

Code:	15
Label:	Telecommunications pylon
Definition:	A pylon that carries antennas to receive, broadcast or transmit radio, television and/or telephone signals. Unlike a telecommunications tower, a telecommunications pylon is not a building but a construction made up of a metallic structure which is perforated, or a high pillar in metal or concrete. The installations to ascend a pylon (generally a ladder, sometimes a staircase) are on the outside.

4.2.6.5.2.8. Attribute value: Unspecified pylon

Code:	16
Label:	Unspecified pylon
Definition:	A pylon for which the ITGI database does not provide any information as to its form and function.

4.2.6.5.2.9. Attribute value: Radar – parabolic antenna

Code:	17
Label:	Radar – parabolic antenna
Definition:	A radar is an antenna, generally pivoting, which emits electromagnetic waves of a very short wavelength and captures reflected waves, so that the position of ships or aircraft can be determined. A parabolic antenna is an antenna in parabolic form.

4.2.6.5.2.10. Attribute value: Wind turbine

Code:	19
Label:	Wind turbine
Definition:	Pylon equipped at its top with an aerodynamic propeller and intended for the generation of electricity from wind energy.

4.2.6.5.2.11. Attribute value: Flare stack

Code:	20
Label:	Flare stack
Definition:	Large vertical metal conduit through which residual gases from an industrial process escape to be burned at the top.

4.2.6.5.2.12. Attribute value: High chimney

Code:	21
Label:	High chimney
Definition:	Chimney which is at least 30 m high and which is much higher than the surrounding buildings.

4.2.6.5.2.13. Attribute value: Observation tower

Code:	24
Label:	Observation tower
Definition:	Tower made up of an open construction in metal, wood or brick (not a building) which affords a view of the surroundings and which is intended for tourists.

4.2.6.5.2.14. Attribute value: Drinking water facility

Code:	35
Label:	Drinking water facility
Definition:	A particular construction intended for the catchment, treatment, storage and distribution of drinking water (e.g. collection wells, sunken drinking water tank).

4.2.6.5.2.15. Attribute value: Religious monument

Code:	37
Label:	Religious monument
Definition:	Monument relating to the Catholic religion. These include the statues of the Sacred Heart, the grottos of Notre Dame de Lourdes, statues of the Virgin Mary, individual crosses and small chapels which are not buildings.

4.2.6.5.2.16. Attribute value: Non-religious monument

Code:	38
Label:	Non-religious monument
Definition:	Monument which is not a building and which does not have a religious character

4.2.6.5.3. Attribute: cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.6.6. Object type: Tower on building

Name:	CO_TowerOnBuilding
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Tower situated on a building and which does not meet the criteria to be identified as a water tower, lighthouse, telecommunications tower or control tower.

4.2.6.6.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of a tower on a building.
Data type:	Point

4.2.6.6.2. Attribute: Topogeographic identifier of associated geometry

Name:	tgid_basicgeometry
Definition:	Unique identifier in the ITGI for the basic geometry with which the tower on building is associated.
Data type:	Character string

4.2.6.6.1. Attribute: Type of additional geometry

Name:	type
Definition:	Classification indicating whether the tower is a top of a tower on a building or another top of a building or of a particular construction.
Attribute value:	Top
	Top tower on building

4.2.6.6.1.1. Attribute value: Top

Code:	1
Label:	Top
Definition:	Highest point of a building or of a particular construction. (This top is not necessarily the highest point of the construction itself, but it can also be the highest point of an object fixed op the construction (e.g. an antenna on a building).

4.2.6.6.1.2. Attribute value: Top tower on building

Code:	2
Label:	Top tower on building
Definition:	Top of a tower on a building.

4.2.6.6.2. Attribute: cartographic representation angle

Name:	cartoangle

Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.6.7. Object type: Additional polygon geometry

Name:	CO_AdditionalPolygonGeometry
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Outline of a building or a particular construction (or part of one), represented by a polygon. This polygonal geometry is different from the basic geometry of the construction and it supplements the latter.

4.2.6.7.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the particular polygonal construction.
Data type:	Polygon

4.2.6.7.2. Attribute: Type of additional geometry

Name:	Geomtype
Definition:	The geometry of the particular polygonal construction.
Attribute value:	Outline building with protruding part
	Outline high building
	Outline high particular construction

4.2.6.7.2.1. Attribute value: Outline building with protruding part

Code:	3
Label:	Outline building with protruding part
Definition:	Larger contour of a building in the event of an above-ground enlargement.

4.2.6.7.2.2. Attribute value: Outline high building

Code:	5
Label:	Outline high building
Definition:	The largest contour of the part (or parts) of a high building that is at least 60m high and at least 20m in diameter.

4.2.6.7.2.3. Attribute value: Outline high particular construction

Code:	6
Label:	Outline high particular construction
Definition:	The largest contour of the part (or parts) of a particular polygonal construction that is at least 60m high and at least 20m in diameter.

4.2.6.7.1. Attribut : Identifiant topogéographique de la géométrie associée

Nom (anglais):	tgid_basicgeometry

Définition:	Identifiant unique dans l'ITGI de la géométrie de base à laquelle la géométrie polygonale supplémentaire est associée.
Type de données:	Chaîne de caractères (string)

4.2.7. Land cover

4.2.7.1. Object type: Land cover zone

Name:	LC_LandcoverZone
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Land cover zone which represents the land cover at the soil level.

4.2.7.1.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the land cover zone.
Data type:	Polygon

4.2.7.1.2. Attribute: Land cover

Name:	Landcover
Definition:	Classification which indicates the land cover found in a land cover zone.
Attribute value:	Mixed woodland
	Tree nursery - osier bed
	Orchard
	Brushwood
	Permanent grassland or hay meadow
	Lawn
	Sand
	Rocks
	Coniferous woodland or predominantly coniferous mixed woodland
	Broad-leaved woodland, poplar plantation or predominantly broad-leaved woodland
	Heathland or heathland with another vegetation

4.2.7.1.2.1. Attribute value: Mixed woodland

Code:	3
Label:	Mixed woodland
Definition:	Mixed woodland

4.2.7.1.2.2. Attribute value: Tree nursery - osier bed

Code:	7
Label:	Tree nursery – Osier bed
Definition:	Tree nursery or osier bed.

4.2.7.1.2.3. Attribute value: Orchard

Code:	8
Label:	Orchard
Definition:	Zone planted with fruit trees with high stems or low stems.

4.2.7.1.2.4. Attribute value: Brushwood

Code:	9
Label:	Brushwood
Definition:	Zone with dense woody vegetation essentially made up of bushes. Brushwood has been planted or formed naturally. Hawthorn, wild plum, sea buckthorn, broom, rhododendron, bay cherry, etc. are species often found in brushwood.

4.2.7.1.2.5. Attribute value: Permanent grassland or hay meadow

Code:	17
Label:	Permanent grassland or hay meadow
Definition:	Permanent grassy land, grazed or intended for hay production. After being cut and dried, the hay is used as animal feed.

4.2.7.1.2.6. Attribute value: Lawn

Code:	18
Label:	Lawn
Definition:	Grassy land which is periodically mown (often at long intervals) to keep the grass short. Lawns are found, for example, on sports fields, on hard shoulders and road embankments and in parks.

4.2.7.1.2.7. Attribute value: Sand

Code:	21
Label:	Sand
Definition:	Zone with virgin soil composed of sand. There are naturally sandy terrains such as beaches and virgin dunes, and there are also artificial sandy terrains such as sand quarries

4.2.7.1.2.8. Attribute value: Rocks

Code:	22
Label:	Rocks
Definition:	Virgin or sparse area where the soil surface consists of compacted rock (e.g. limestone, sandstone, etc.). In Belgium, rocks are found mainly on steep slopes (rocky walls) where, due to erosion, no fertile soil can form and plant growth is almost impossible.

4.2.7.1.2.9. Attribute values: Coniferous woodland or predominantly coniferous mixed woodland

Code:	51
Label:	Coniferous woodland or predominantly coniferous mixed woodland
Definition:	A dense woody vegetation of trees where coniferous trees take up at least 70% of the surface.

4.2.7.1.2.10. Attribute value: Broad-leaved woodland, poplar plantation or predominantly broad-leaved woodland

Code:	52
Label:	Broad-leaved woodland, poplar plantation or predominantly broad-leaved woodland
Definition:	A dense woody vegetation of trees where broad-leaved trees take up at least 70% of the surface.

4.2.7.1.2.11. Attribute value: Heathland or heathland with another vegetation

Code:	53
Label:	Heathland or heathland with another vegetation
Definition:	Vegetation found on sandy or peaty, acidic and poor soils and consisting of real heathland, grassy heathland or fen, heathland with sparse vegetation of broad-leaved trees, coniferous trees or bushes.

4.2.7.2. Object type: Isolated vegetation

Name:	LC_IsolatedVegetation
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A bush is a woody plant with or without a trunk that divides into woody branches from the ground or low above the ground Note: The different kinds of heather, for example the common heather (Calluna vulgaris), are never considered as bushes, but always as herbaceous vegetation, although they have woody stems. A tree is a woody plant with one or more trunks that branch at a certain height above the ground and whose cross-section is significantly larger than the branch cross-section. Exception: Woody plants that branch low above (or from) the ground and taller than 4m are also considered trees and not bushes.

4.2.7.2.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of isolated vegetation.
Data type:	Point

4.2.7.2.2. Attribute: Type of isolated vegetation

Name:	Type
Definition:	Classification which indicates whether 'isolated vegetation' refers to an isolated tree, a remarkable broad-leaved tree, a remarkable coniferous tree or an isolated bush.
Attribute value:	Isolated tree
	Remarkable broad-leaved tree
	Remarkable coniferous tree
	Isolated bush

4.2.7.2.2.1. Attribute value: Isolated tree

Code:	1
Label:	Isolated tree

Definition:	A woody plant with one or more trunks that branch at a certain height above the ground and whose cross-section is significantly larger than the branch cross-section. Exception: Woody plants that branch low above (or from) the ground and taller than 4m are also considered trees and not bushes.

4.2.7.2.2.2. Attribute value: Remarkable broad-leaved tree

Code:	2
Label:	Remarkable broad-leaved tree
Definition:	A broad-leaved tree which is a remarkable tree.

4.2.7.2.2.3. Attribute value: Remarkable coniferous tree

Code:	3
Label:	Remarkable coniferous tree
Definition:	A coniferous tree which is a remarkable tree.

4.2.7.2.2.4. Attribute value: Isolated bush

Code:	4
Label:	Isolated bush
Definition:	A woody plant with or without a trunk that divides into woody branches from the ground or low above the ground Note: The different kinds of heather, for example the common heather (Calluna vulgaris), are never considered as bushes, but always as herbaceous vegetation, although they have woody stems.

4.2.7.2.3. Attribute: cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.7.3. Object type: Linear vegetation

Name:	LC_LinearVegetation
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A ride, a hedge, a hedge with trees, a quickset hedge or a row of trees.

4.2.7.3.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the linear vegetation.
Data type:	Polyline

4.2.7.3.2. Attribute: Type of linear vegetation

Name:	Type
Definition:	Classification which indicates whether the 'linear vegetation' is a row of trees, a hedge, a hedge with trees, a quickset hedge or a ride.

Attribute value:	Row of trees
	Hedge
	Hedge with trees
	Quickset hedge
	Ride

4.2.7.3.2.1. Attribute value: Row of trees

Code:	1
Label:	Row of trees
Definition:	A row of trees planted at equal distance from each other (e.g. an alley) or a strip of land less than 3m wide whose vegetation consists mainly of trees and possibly also bushes. Note: The width of the strip of land refers to the width of the zone where trees and bushes are rooted.

4.2.7.3.2.2. Attribute value: Hedge

Code:	2
Label:	Hedge
Definition:	A row of bushes or trees cut short and evenly, the whole of which is less than 3m wide. Most hedges have been planted by people and form a separation or fence. Exception: A row of trees planted very close together (e.g. cypress trees) is also considered a 'hedge', if at eye level there is no space between the trees, and the trees are less than 4m high.

4.2.7.3.2.3. Attribute value: Hedge with trees

Code:	3
Label:	Hedge with trees
Definition:	A hedge in which or next to which have been planted trees, at regular intervals, which are or could be 10m high.

4.2.7.3.2.4. Attribute value: Quickset hedge

Code:	4
Label:	Quickset hedge
Definition:	A strip of land between 3 and 10 m wide, covered with dense vegetation made up of bushes and/or trees. Note: The width of the strip of land refers to the width of the zone where trees and bushes are rooted.

4.2.7.3.2.5. Attribute value: Ride

Code:	5
Label:	Ride
Definition:	Straight cut-out in a wood, without trees and serving as a separation between wooded plots, as a firebreak and possibly also as a passage for hunting and/or for skidding/transporting felled trees. Unlike a dirt road, a ride is entirely covered with herbaceous vegetation.

4.2.8. Local topography

4.2.8.1. Object type: Earth bank

Name:	LR_EarthBank
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	An elongated earth embankment, erected by people, whose two slopes form an angle of 30° to 80° to the horizontal.

4.2.8.1.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the earth bank.
Data type:	Polyline

4.2.8.2. Object type: Additional geometry of the slope surface

Name:	LR_AdditionalSlopeSurface
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Slope surface. This object supplements the basic geometry of the object to which it is associated.

4.2.8.2.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the slope surface.
Data type:	Polygon

4.2.8.3. Object type: Dune zone

Name:	LR_DuneZone
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Zone in which there are dunes.

4.2.8.3.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the dune zone.
Data type:	Polygon

4.2.8.4. Object type: Historic mound

Name:	LR_HistoricMound
Sub-type of:	Top10VectorGenericType
Abstract:	No

Definition:	An embankment which is known as a tumulus or a mound.

4.2.8.4.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of a historic mound.
Data type:	Point

Type de données:	Point

4.2.8.4.2. Attribute: cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.8.5. Object type: Cave entrance

Name:	LR_CaveEntrance
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A place on the soil surface where an opening gives access to a cave.

4.2.8.5.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of a cave entrance.
Data type:	Point

Type de données:	Point

4.2.8.5.1. Attribute: cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.8.6. Object type: Cone-shaped slag heap

Name:	LR_ConeShapedSlagheap
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	Slag heap in the shape of a cone which does not have a flattened top. In other words, the top is not a more or less flat part with a slope break (ridge line) with the slope surface of the slag heap.

4.2.8.6.1. Attribute: Geometry

Name:	Geometry
Definition:	The location of the top of a cone-shaped slag heap.
Data type:	Point

Type de données:	Point

4.2.8.6.1. Attribute: cartographic representation angle

Name:	cartoangle
Definition:	Angle in degrees used in order to orientate a point symbol so as to prevent graphical conflicts with other present graphical entities from occurring.
Data type:	Integer

4.2.8.7. Object type: Steep

Name:	LR_Steep
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A vertical or almost vertical drop in the soil surface. The vertical wall and the horizontal plane form an angle of 80° to 90°.

4.2.8.7.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the steep.
Data type:	Polyline

4.2.8.8. Object type: Embankment

Name:	LR_Embankment
Sub-type of:	Top10VectorGenericType
Abstract:	No
Definition:	A more or less steep slope, which at its top, and generally also at its foot, shows a slope break with the surrounding terrain. The slope of embankments slopes from 30° to 80° (and along roads and railway lines from 20° to 80°) to the horizontal. Most embankments are the result of human action, such as infilling and backfilling of the soil along roads, railways, navigable waterways, etc.

4.2.8.8.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the axis of the embankment.
Data type:	Polyline

4.2.9. Particular zones

4.2.9.1. Object type: Particular zone

Name:	ZO_ParticularZone
Sub-type of:	Top10VectorGenericType
Abstract:	no
Definition:	zone with a particular status and/or particular purpose.

4.2.9.1.1. Attribute: Geometry

Name:	Geometry
Definition:	The geometry of the particular zone.
Data type:	Polygon

4.2.9.1.2. Attribute: Type of particular zone

Name:	Type
Definition:	Classification which indicates the status and/or purpose of the particular zone.
Attribute value:	Motorway carpark with filling station
	Motorway carpark without filling station
	Thermal power station
	Hydroelectric power station
	Nuclear power station
	Transformer station
	Gas station
	Drinking water collection area
	Water purification facility
	Container park
	Garbage dump
	Quarry
	Former quarry
	Nature reserve
	Airfield
	Airport
	Aircraft traffic zone
	Helicopter landing platform
	Civil cemetery
	Military cemetery
	Racetrack
	Horse racetrack
	Sport complex
	Sport field
	Golf course
	Provincial domain

	Amusement park
	Animal park
	Camping ground
	Zone "under construction"
	Soccer field
	Other sport field

4.2.9.1.2.1. Attribute value: Motorway carpark with filling station

Code:	1
Label:	Motorway car park with filling station
Definition:	Car park with a filling station situated along a motorway.

4.2.9.1.2.2. Attribute value: Motorway carpark without filling station

Code:	2
Label:	Motorway car park without filling station
Definition:	Car park without a filling station situated along a motorway.

4.2.9.1.2.3. Attribute value: Thermal power station

Code:	3
Label:	Thermal power station
Definition:	Power plant that generates electricity from the production of thermal energy from the combustion of gas, oil, coal, etc.

4.2.9.1.2.4. Attribute value: Hydroelectric power station

Code:	4
Label:	Hydroelectric power station
Definition:	Power plant which generates electricity from hydroelectric energy.

4.2.9.1.2.5. Attribute value: Nuclear power station

Code:	5
Label:	Nuclear power station
Definition:	Power plant that generates electricity from the energy released by the fission of atomic nuclei (nuclear energy).

4.2.9.1.2.6. Attribute value: Transformer station

Code:	6
Label:	Transformer station
Definition:	Complex comprising technical installations and possibly buildings, where the electricity supplied under high voltage is converted by means of transformers into an electrical current of lower voltage. This is then redistributed from the transformer station to the electricity grid.

4.2.9.1.2.7. Attribute value: Gas station

Code:	7
Label:	Gas station
Definition:	Technical installation along a natural gas pipeline, where: - either the natural gas pressure is changed (compression station, expansion station),

	- or the composition of the natural gas is changed (mixing station), - or measurements are taken (measuring station), - or natural gas is stored on the surface or in the ground (e.g. the LNG terminal in Zeebrugge or the underground natural gas storage facility in Loenhout) - or a pipeline branches off (node).

4.2.9.1.2.8. Attribute value: Drinking water collection area

Code:	8
Label:	Drinking water collection area
Definition:	An area in which catchment wells, galleries or springs are located that enable the water company that owns the area to collect groundwater for drinking water distribution.

4.2.9.1.2.9. Attribute value: Water purification facility

Code:	9
Label:	Water purification facility
Definition:	Complex intended to purify household or industrial water. There are large and small purification facilities. The large purification facilities have buildings and purification basins. Small capacity treatment plants consist only of a few reed beds, possibly accompanied by a limited technical installation (biorotor, circulator, sludge tank).

4.2.9.1.2.10. Attribute value: Container park

Code:	10
Label:	Container park
Definition:	Enclosed site which is managed by an intermunicipal association and where private individuals and/or SMEs can deposit sorted waste in containers intended for this purpose.

4.2.9.1.2.11. Attribute value: Garbage dump

Code:	11
Label:	Garbage dump
Definition:	Zone officially intended for and used for dumping household or industrial waste.

4.2.9.1.2.12. Attribute value: Quarry

Code:	12
Label:	Quarry
Definition:	Zone where minerals are extracted for commercial purposes (e.g. quarry, sand quarry, clay quarry, gravel quarry, etc.)

4.2.9.1.2.13. Attribute value: Former quarry

Code:	13
Label:	Former Quarry
Definition:	Quarry which is no longer exploited.

4.2.9.1.2.14. Attribute value: Nature reserve

Code:	14

Label:	Nature reserve
Definition:	Zone where fauna and flora are protected and public access conditions are set according to nature protection. There are nature reserves that are managed by public authorities and others that are managed by private organisations.

4.2.9.1.2.15. Attribute value: Airfield

Code:	15
Label:	Airfield
Definition:	Complex made up of one or more runways, intended for the take-off and/or landing of aeroplanes. Most airfields have a control tower, hangars and other technical buildings and constructions.

4.2.9.1.2.16. Attribute value: Airport

Code:	16
Label:	Airport
Definition:	Airfield from where commercial airlines (with passengers or goods) depart and which therefore have a terminal (arrival hall, departure hall and/or a loading area for goods, etc.).

4.2.9.1.2.17. Attribute value: Aircraft traffic zone

Code:	17
Label:	Aircraft traffic zone
Definition:	The paved part of an airfield, intended for the ground movements of aeroplanes (runways, taxi strips and parking areas).

4.2.9.1.2.18. Attribute value: Helicopter landing platform

Code:	18
Label:	Helicopter landing platform
Definition:	Zone reserved for the landing and take-off of helicopters, indicated by a letter H painted white in a white circle (or square).

4.2.9.1.2.19. Attribute value: Civil cemetery

Code:	19
Label:	Civil cemetery
Definition:	Cemetery where mainly civilians are buried.

4.2.9.1.2.20. Attribute value: Military cemetery

Code:	20
Label:	Military cemetery
Definition:	Cemetery in which only soldiers who died during the First or Second World War are buried.

4.2.9.1.2.21. Attribute value: Racetrack

Code:	21
Label:	Racetrack
Definition:	Track reserved for car and motorcycle races, which constitutes a closed circuit and which has a covering.

4.2.9.1.2.22. Attribute value: Horse racetrack

Code:	22
Label:	Horse racetrack
Definition:	Track that forms a closed circuit and is intended for horse racing.

4.2.9.1.2.23. Attribute value: Sport complex

Code:	23
Label:	Sport Complex
Definition:	Complex where various sports can be played and which is made up of sports fields and possibly buildings. These buildings may be buildings for playing sports and/or other buildings (cafeteria, showers, etc.)

4.2.9.1.2.24. Attribute value: Sports field

Code:	24
Label:	Sport field
Definition:	An outdoor zone, intended for and fitted out for sports (e.g. football field, tennis court).

4.2.9.1.2.25. Attribute value: Golf course

Code:	25
Label:	Golf course
Definition:	Sport field fitted out in accordance with golf regulations.

4.2.9.1.2.26. Attribute value: Provincial domain

Code:	26
Label:	Provincial domain
Definition:	Zone managed by the province and including a green area (woods, parkways, leisure park, castle park, nature reserve) open to the public or in some cases a nature reserve to which access is not free.

4.2.9.1.2.27. Attribute value: Amusement park

Code:	27
Label:	Amusement park
Definition:	Complex, operated by private individuals, consisting of buildings and/or permanent open-air installations (carousels, roller coasters, fairy tale parks, etc.) intended for public entertainment.

4.2.9.1.2.28. Attribute value: Animal park

Code:	28
Label:	Animal park
Definition:	Zone where animals are kept in captivity and which is accessible to the public for a fee. Animal parks also include, in addition to zoological gardens, ornithological parks, game parks, butterfly gardens, etc.

4.2.9.1.2.29. Attribute value: Camping ground

Code:	29
Label:	Camping ground

Definition:	Zone fitted out for and intended for camping with tent, caravan or motorhome.

4.2.9.1.2.30. Attribute value: Zone "under construction"

Code:	30
Label:	Zone "under construction"
Definition:	Site where earthworks and/or construction works are in progress.

4.2.9.1.2.31. Attribute value: Soccer field

Code:	31
Label:	Soccer field
Definition:	A sport field fitted out for football.

4.2.9.1.2.32. Attribute value: Other sports field

Code:	32
Label:	Other sport field
Definition:	A sport field which is neither a football field, nor a golf course, nor a horse racetrack nor a racetrack.

5. PRODUCTION METADATA

5.1. Data origin

5.1.1. Initial creation of vector data

The initial creation of topographic vector data by the NGI at a conceptual scale of 1:10,000 lasted from 1988 to 2007.

Two distinct methods were used for data collection. The first - conventional - method consisted in tracing, in the field, the required attribute data on matte-pale reproductions of aerial photographs. This is called field completion. Then, the geometry (with XYZ coordinates) of the data was established in a CAD file by photogrammetric stereorestitution. Finally, these data were introduced into a 2D GIS environment, after which they were identified and the topological structure of the dataset was determined.
At the same time, another method was also increasingly used. This involved carrying out a photogrammetric stereorestitution of the geometry. The CAD files created were then supplemented in the field with the attribute data. These data were also introduced into the 2D GIS environment to develop the topological structure of the dataset.

In 2007 and 2008, data from the original SIG files were loaded into a new geographic database. The content was then converted into a new database structure with XYZ coordinates in Lambert 2008. The Z coordinate was recovered from the CAD files of the photogrammetric restitution or calculated using a digital terrain model.

5.1.2. Update process

INFORMATION ON VERSION V3.0

This version of Top10Vector is based on V2.1. Compared to V2.1, it includes updates for constructions, roads, hydrography, railways, and particular zones.

The update in this version was carried out by photogrammetric restitution and supplementing in the field. The geometry of the data was adapted in stereoscopy (3D) on the basis of recent aerial colour photographs. In addition, some topological rules applicable to the data set were checked.

5.1.2.1. Information on previous versions

The railway network and the high-tension electricity network were updated mainly on the basis of external sources. For the rail network, this source is Infrabel, the railway network operator in Belgium. For the high-tension network, it is Elia, the electricity transmission system operator.

In version 1.1 (2011), the buildings were updated using photogrammetric restitution. The geometry of the data was adapted in stereoscopy (3D) on the basis of recent aerial colour photographs. In addition, some topological rules applicable to the data set were checked.
Only the geometry of the buildings was updated. Existing attributes were included in the updated geometry wherever possible.
In version 2.0 and 2.1, the network was updated by photogrammetric restitution and supplementing in the field. The geometry of the data was adapted in stereoscopy (3D) on the basis of recent aerial colour photographs. In addition, some topological rules applicable to the data set were checked.

5.2. Aerial photographs

A large part of the information in Top10Vector comes directly from aerial photographs. The maps below give an overview of the years of aerial photos used for data production.

The map below indicates for each sheet, the year of the aerial photographs on the basis of which the various updates, linked to the various topics, were carried out by photogrammetric restitution.

The category 'Other topics' includes data from the initial creation of the NGI reference vectors, of which only some objects have been updated.

Dates of the photos utilised for the vectorial updates

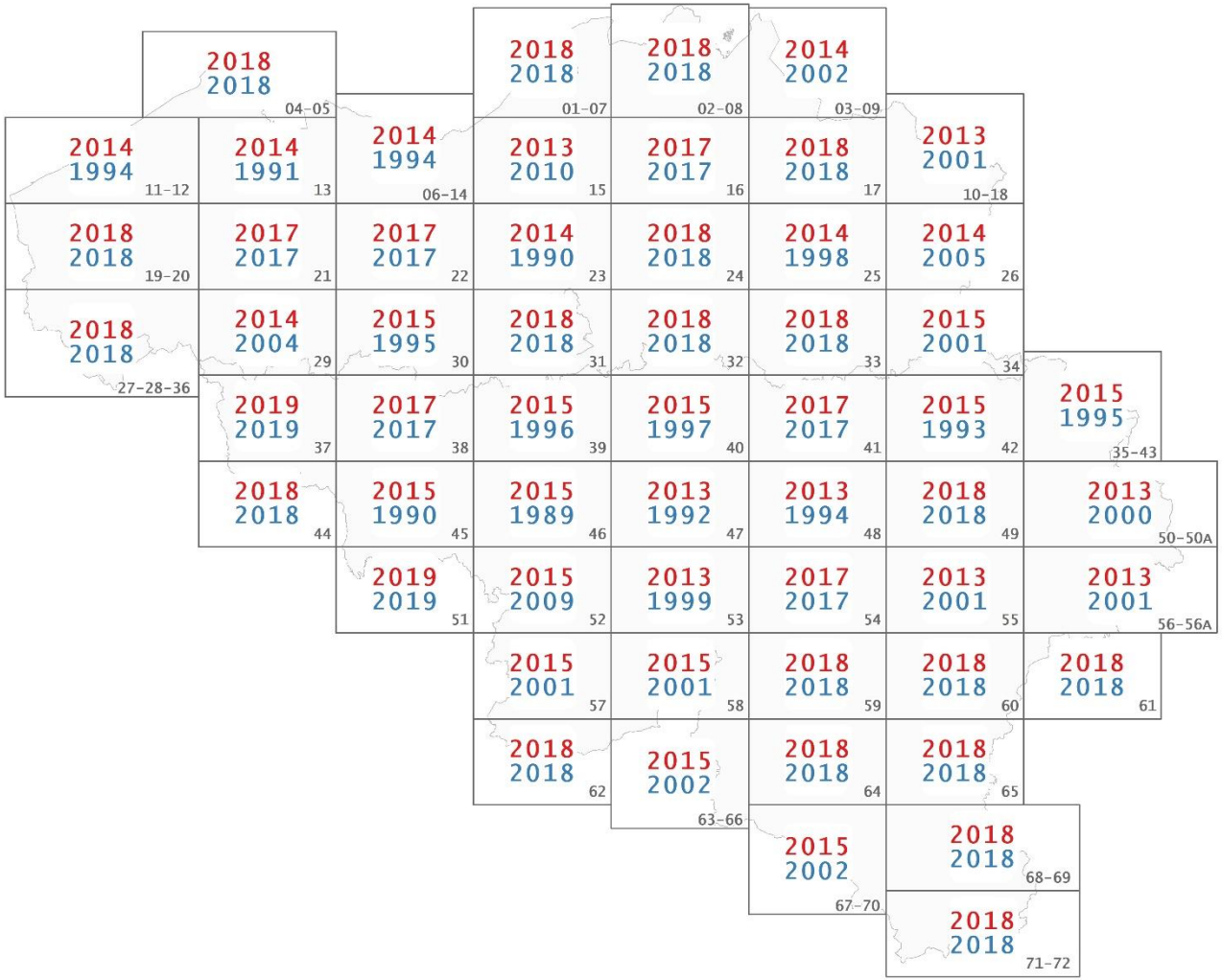
Latest updates for each sheet:

YYYY
YYYY

Constructions, Roads, Hydrography
Land use

Global updates:

- Railway network: 2018
- Administrative data: 2019
- High tension network: 2019



NGI Nationaal Geografisch Instituut
IGN Institut Géographique National

6. REFERENCE SYSTEMS

6.1. Geographic reference systems

6.1.1. Available coordinate systems

Top10Vector is available in the following projected or geographic coordinate systems:
- Belgian Lambert 72 (Cartesian coordinates),
- Belgian Lambert 2008 (Cartesian coordinates),
- UTM31 (Cartesian coordinates),
- UTM32 (Cartesian coordinates),
- ETRS89 (geographic coordinates).

All Cartesian coordinates in the plane are derived from geographic coordinates to which a given map projection has been applied. The values of the geographical coordinates of the same point are different according to the reference geodetic system used.

6.1.1.1. Geodetic reference systems

In the context of this product, the following reference geodetic systems are important:
- **WGS84** (World Geodetic system 1984)
  The "default" reference system used by GPS devices.
- **ETRS89** (European Terrestrial Reference System 1989)
  The official international exchange format in Europe.
  This is the basis of the Belgian Lambert 2008 projection.
  It is also the basis for the UTM coordinates provided by the NGI.
- **BD72** (Belgian Datum 1972)
  This is the basis of the Belgian Lambert 72 projection.

Each of these reference geodetic systems is described in detail, including the associated ellipsoid and its parameters, on the following web page:

http://www.ign.be/FR/FR2-1-5.shtm

PLEASE NOTE: difference between WGS84 and ETRS89

WGS84 is a reference geodetic system which has the disadvantage of being dynamic. Due to plate tectonics, the coordinates of all points on the Earth's surface change over time. Europe is almost entirely on the same tectonic plate, the Eurasian plate. This means that all points on the continent move together in relation to WGS84, but not in relation to each other. It was therefore decided to continue to use, as if frozen, the WGS84 coordinates that were valid on 1 January 1989 for each point. This is the source of the ETRS1989 reference system. The difference between WGS84 and ETRS89 is increasing at a rate of 1.5 to 2 cm/year (for both the northern and eastern components).

6.1.1.2. Map projection systems

In the context of this product, the following map projection systems are applicable:
- **Lambert 2008**: throughout Belgium,
- **Lambert 72**: throughout Belgium,
- **UTM31**: throughout Belgium,
- **UTM32**: to the east of 5°30’ E.

Full details of these projection systems are available on the following web pages:

http://www.ign.be/FR/FR2-1-4.shtm
http://www.ign.be/FR/FR2-1-7.shtm

PLEASE NOTE: important remark concerning UTM coordinates

The above web page refers to UTM coordinates derived from the ED50 reference geodetic system (European Datum 1950). These coordinates are no longer provided; only UTM coordinates based on ETRS89 are available.

7. DELIVERY INFORMATION

7.1. Available data formats

Name	ESRI file geodatabase
Version	10.2
Specifications	-
Language	eng

Name	ESRI Shapefile
Version	Not applicable
Specifications	ESRI Shapefile Technical Description, an ESRI White Paper, July 1998
Language	eng

7.2. Delivery units and distribution supports

7.2.1. Delivery units

7.2.1.1. Delivery units according to content

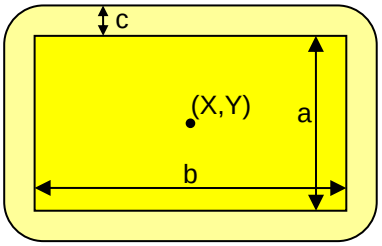
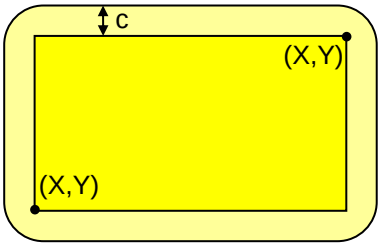
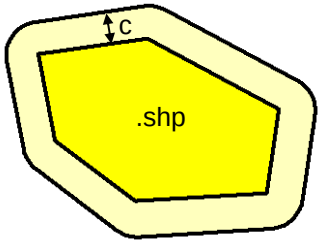
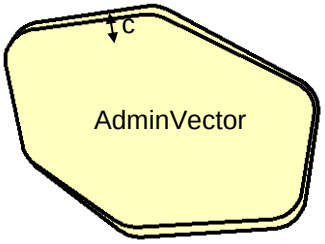
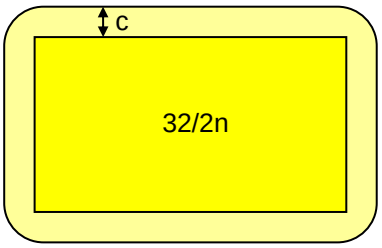
As regards the delivery of Top10Vector, it is possible to select one or more available topics. These are:

- Road network (for the content, see paragraph 4.1.1.2),
- Rail network (for the content, see paragraph 4.1.1.3),
- Hydrography (for the content, see paragraph 4.1.2),
- High tension network (for the content, see paragraph **Erreur ! Source du renvoi introuvable.**),
- Constructions and zones (for the content, see paragraph 4.1.4),
- Land cover and vegetation, (for the content, see paragraph 4.1.5),
- Local topography (for the content, see paragraph 4.1.6),

7.2.1.2. Delivery units according to geographic zone

Top10Vector is a continuous data network existing for the entire Belgian territory. Data can be provided for an area of at least 2 km².

The area to be provided can be defined in various ways, as described in the table below.

Demarcation of a rectangular area using the XY coordinates of the centre, width (a) and height (b) of the rectangle, possibly supplemented by an additional width buffer (c).	
Demarcation of a rectangular area using the XY coordinates of two opposite corners of the rectangle, possibly completed by an additional run buffer of width (c).	
Demarcation of a polygonal zone using a shapefile, possibly completed by an additional width buffer (c).	
Demarcation of a polygonal zone using an AdminVector administrative unit, possibly completed by an additional run buffer of width (c).	
Demarcation of a rectangular area using a unit resulting from the standard cutting of the NGI cartographic products, possibly completed by an additional width buffer (c).	

When demarcating the area to be provided using coordinates or shapefiles, always use one of the supported coordinate systems for this product (see 6.1 Geographic Reference Systems).

7.2.2. Distribution supports

The following supports are available for the distribution of Top10Vector:

- File transfer system

ANNEX A: USING LAYERS FOR VISUALISATION IN ARCGIS 10.2.

A.1. Visualisation of Top10Vector in ArcGIS 10.2

ArcGIS Desktop 10.2 users can access a standard view of Top10Vector as an ArcGIS layer group file. This file contains 34 layers containing the definition of the symbols for each type of object from Top10Vector. In some cases, several object types have been grouped together in a single layer.

A.1.1. Variations and using the layer file in ArcGIS Desktop

A.1.1.1. Variations for shp and fgdb

There are 2 variations of the layer file for Top10Vector, one for use with shapefiles and the other for use with a geodatabase file.

Shapefiles: Top10Vector_v3.0_ArcGISLayers_shp.lyr
This version automatically represents in ArcGIS Desktop the Top10Vector-shapefiles that are in the same folder as the layer file.

File geodatabase: Top10Vector_v3.0_ArcGISLayers_gdb.lyr
This version automatically represents in ArcGIS Desktop the Top10Vector data of a geodatabase file that is in the same folder as the layer file.

A.1.1.2. Reference scale

By configuring a reference scale in ArcMap, symbols can be represented at a size dependent on the visualisation scale. These symbols have been designed for use with a reference scale of 1:10,000.

A.1.1.3. Order of layers

The layer file names all begin with a number indicating a logical order in which the layers can be used in ArcMap (01 represents the lowest layer, 34 the upper layer)

A.1.2. Overview of ArcGIS layers

Layer\	Top10Vector object type
01_LC_LandcoverZone	LC_LandcoverZone
02_HY_Wetland	HY_Wetland
03_HY_WaterSurface	HY_WaterSurface
04_HY_WatercourseSurface	HY_WatercourseSurface
05_LR_AdditionalSlopeSurface	LR_AdditionalSlopeSurface
06_CO_Building	CO_Building
07_CO_AdditionalPolygonGeometry	CO_AdditionalPolygonGeometry
08_CO_ParticularPolyConstruction	CO_ParticularPolyConstruction
09_LC_LinearVegetation	LC_LinearVegetation
10_CO_ParticularLineConstruction	CO_ParticularLineConstruction
11_LR_LineElements	LR_EarthBank
	LR_Embankment

	LR_Steep
12_LR_DuneZone	LR_DuneZone
13_CO_Brunnel	CO_Brunnel
14_HY_WatercourseSegment	HY_WatercourseSegment
15_RA_RailwayTrackSegment	RA_RailwayTrackSegment
16_RO_RoadSegment	RO_RoadSegment
17_RO_DirtRoadSegment	RO_DirtRoadSegment
18_RO_PathSegment	RO_PathSegment
19_LC_IsolatedVegetation	LC_IsolatedVegetation
20_HY_WaterPoint	HY_WaterPoint
21_LR_PointElements	LR_CaveEntrance
	LR_ConeshapedSlagheap
	LR_HistoricMound
22_HY_WaterwayKilometreMarker	HY_WaterwayKilometreMarker
23_RA_RailwayKilometreMarker	RA_RailwayKilometreMarker
24_RA_RailwayStop	RA_RailwayStop
25_RO_RoadKilometreMarker	RO_RoadKilometreMarker
26_RO_Obstruction	RO_Obstruction
27_CO_ParticularPointConstruction	CO_ParticularPointConstruction
28_CO_TowerOnBuilding	CO_TowerOnBuilding
29_HT_HighTensionLineSegment	HT_HighTensionLineSegment
30_HT_PowerPylon	HT_PowerPylon
31_ZO_ParticularZone	ZO_ParticularZone