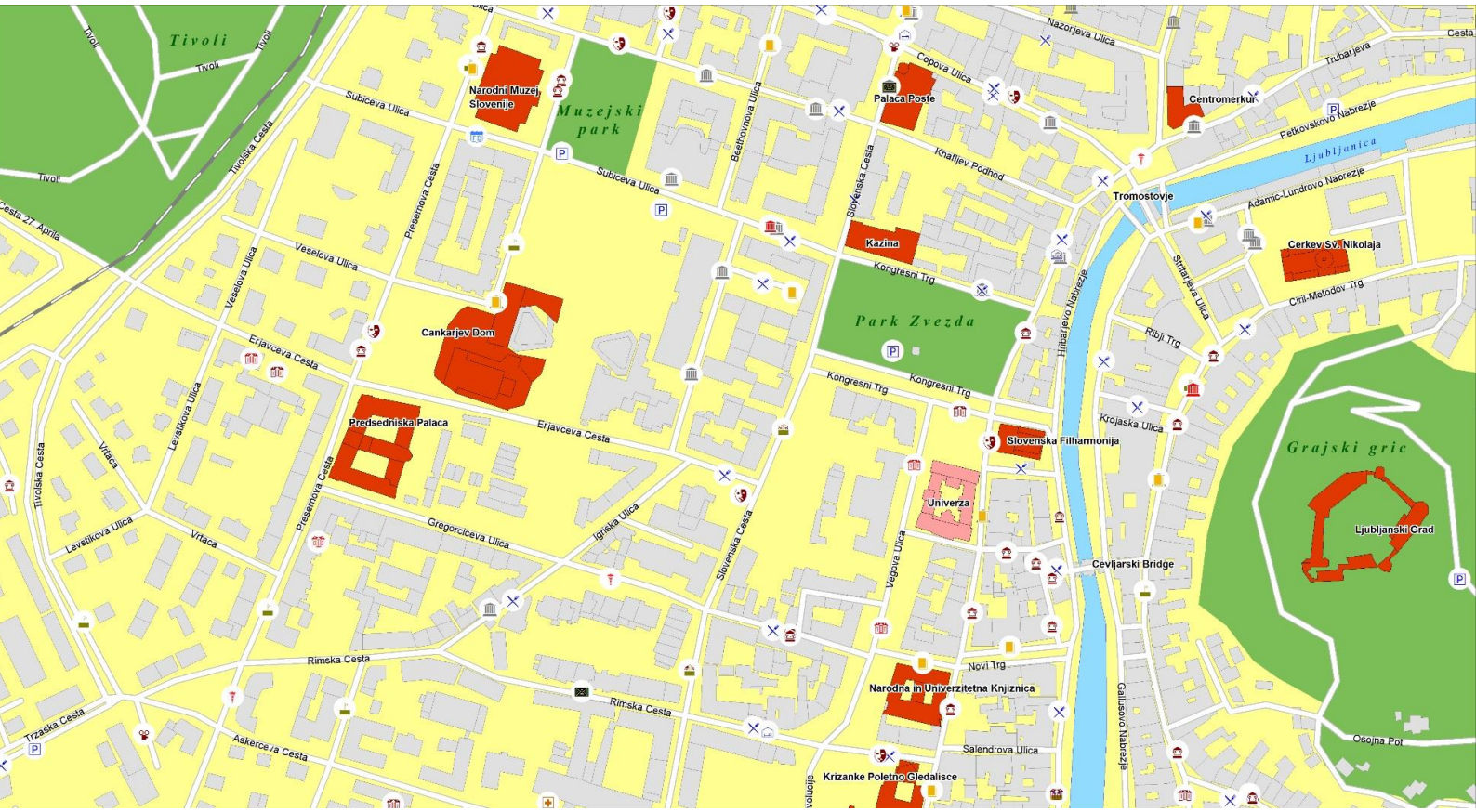
PTV Digital Data Streets

Release R2025_V1.0



Karlsruhe, 22.05.2025

Contents

1 Introduction

1.1 General information about the Digital Data Streets

The data records Digital Data Streets are ideal for all specialised digital geography applications. The data is based on the navigation data records from HERE (formerly NAVTEQ/NOKIA), which are used in leading vehicle navigation systems. Through joint projects between HERE and PTV these highly accurate data records have been optimised and extended for applications other than purely navigational applications.

Employees in 35 regional offices, spread over the whole of Europe ensure that the HERE databases are surveyed and continually maintained. The databases ensure the strict IS0 9000 quality regulations of 97% exactness and completeness in comparison to reality is fulfilled. The databases are recorded on the basis of maps with the scales from 1:2,000 to 1:25,000 and completed by extensive surveys. This provides a location exactness of 5 meters in inner-city areas and up to around 25 meters in rural areas.

The data records Digital Data Streets is available in the specifications ROUTE and GIS. The specification ROUTE is suitable for routing, navigation and fleet management, GIS has been especially developed for use in geographic information systems and geographic displays. Depending on the country house number ranges (specification HNB) are available for all or many cities.

The overland network includes motorways, national roads, important regional roads and, for Germany, additional B-roads both inner and outer-city. All motorway junctions and other multi-lane roads are displayed with all driving directions. The overland network is provided with the topographic layer containing inhabited areas. Since the beginning of 2001 a complete detailed network has been available for Germany.

The individual countries have different digitization stages. The current digitization status in the individual countries is available from PTV on request.

The Digital Data Streets are maintained regularly. However, data gaps or errors cannot be ruled out. Up to 2 updates per year are currently provided.

Formats/Coordinate systems:

Digital Data Streets are provided in MapInfo TAB, ESRI Shape or MIF/MID formats and with latitude and longitude (WGS84 or DHDN). Other formats and projections are available on request.

Extensions for the Digital Data Streets:

More data is available upon request. These include e. g. Layer with building areas and environmental areas, address points, detailed truck attributes, traffic frequencies and speeds.

1.2 Content Specification

Specification GIS – Detailed network

- Street network with the attributes street name, street category, display style and pedestrian zone
- Street directory
- Town points
- Topographic layer: inhabited areas, railway lines, airports, ferry lines, car-parks, industrial areas, waters, green areas, public institutions etc.
- Points of interest (POIs): Railway stations, hotels, shopping centres etc.
- House-number ranges in specification GIS + HNB

Specification GIS – Overland network

- Street network with the attributes: street name, street category and display style
- Town points
- Topographic layer: inhabited areas, railway lines, airports, parking areas, industrial areas, waters, green areas and public parks etc.
- Points of Interest (POIs): railroad stations, hotels, shopping centres, filling stations, restaurants etc.

Specification ROUTE – Detailed network

- Street network with the attributes: street name, street category, display style, street type (speed), street nodes and street length, one-way streets and turn-off regulations
- Street directory
- Town points
- Topographic layer: inhabited areas and railway lines
- Points of interest: for an additional charge
- House-number ranges in specification ROUTE + HNB

Specification ROUTE – Overland network

- Street network with the attributes: street name, street category, display style, street type (speed), street junctions and street length, one-way streets and turn-off regulations
- Town points
- Topographic layer: inhabited areas and railway lines
- Additional layers available for an additional charge

Specification HNB – House-number ranges for the detailed network

- House-number ranges for the detailed network in specification ROUTE or GIS

1.3 Changes in current or previous releases

You can find information about changes regarding the data structure, new layers etc. in the attachment.

1.4 File name structure

The file names such as *Strassen_DE251w.** include the following information:

Strassen	Specifies the contents of the particular file; streets are contained in this example
_DE	The two letters after the underscore stand for the data's country, which is Germany in this case.
251	The first two digits specify the year of the data, the third digit for the first or second update in that particular year. This example is the first update in the year 2025.
w	The last letter provides information on the projection, whereby b stands for Bessel (DHDN) and w for WGS 84.
.*	The file endings vary depending on the particular format: MapInfo TAB: .DAT, .ID, .MAP, .TAB, .IND ESRI Shape: .SHP, .DBF, .SHX, .PRJ MIF/MID: .MIF, .MID

From now on the individual files will be written for example as Strassen (without detailed information *DE251w*).

1.5 Data record links

In the data record Digital Data Streets several links exist between the individual layers.

- Column *ID* in the layer *Strassen* corresponds to the:

  Column *Segment_ID* in in the street directory *Hausnr*

  Column VonLink and NachLink in the file Abbieger_*.sbt

- Columns *Von* and *Nach* in the layer *Strassen* corresponds to the:

  Column ViaKnoten in the file Abbieger_*.sbt

  Column *ID* in the layer *Knoten*

  Column KN_Von or Column KN_Nach in the file Routingknoten_EU*.txt

- Column *City_ID* in the street directories *PLZ, Hausnr* and *Verlauf* corresponds to the:

  Column *Stat_nr* in the layer Ort

- By combination of columns *Country_ID, City_ID, Steet_ID* and *Range_ID* two street directories *PLZ* and *Hausnr* can be linked with each other.

Changes in links from release R2010_V1.0:

The columns IKONA_ID (street index PLZ) and ID (towns) do no longer exist. The link between those layers works like this:

- Column *Postcode* of the street index *PLZ* corresponds to:

  Column *PLZ* in the layer *Ort*

- Column *Town_ID* of the street index *PLZ* corresponds to:

  Column *Town_ID* in the layer *Ort*

Changes in links from release R2013_V2.0:

With the new column ID in street index PLZ and in layer Ort these layers can be explicitly linked to each other. To make this feature available, during the data preparation some town places are duplicated, so the town layer is artificially edited. See Notes below!

- Column ID of the street index PLZ corresponds to:

  Column *ID* in the layer *Ort*

Important note for connection of town places and street names:

The combination of *PLZ* and *Town_ID* is a unique key for every single record in the layer *Ort*. This combination is found in the street index layer *PLZ*. Using the columns *Postcode* and *Town_ID*, it is possible to attach the town information to the street index. Some records in the street index layer *PLZ* have a Postcode/Town_ID-combination which cannot be found in the original layer *Ort*. Those streets administratively belong to town A, but postally to town B. In these cases, the streets' town name can be found by the Town_ID only. Or - if the postcode town name is needed - via the PLZ.

<u>New as of release R2013_V2.0:</u>

A link is implemented between the place points and the postcode street directory; with this link a place can be uniquely assigned to each entry from the postcode street directory – in a manner similar to how it was possible in the older versions up to R2009_V2.0. The link is possible via the *ID* column that has been attached to the places and the postcode street directory, and which in each case is filled with the combination of country code, postcode and Town_ID. For street entries where the postcode/Town_ID combination is not found in the places layer, (as described above), in the preparation process a matching place is searched via the Town_ID, which is then duplicated and provided with the postcode of the street. These places are identified via the *ID_Ref* column, which refers to the original place. It should be noted that this procedure makes a unique street -

place assignment possible, however the place data is artificially extended for this purpose.

1.6 Data type description

Char (50):	Text with the maximum number of characters, here for example 50 letters
Integer:	Whole numbers up to 4 bytes long
Short Integer:	Whole numbers up to 2 bytes long
Boolean:	Truth value Yes/No (T/F)
Decimal:	Digital point

2 Data record description

This data description considers the specifications GIS and ROUTE as well as the house number ranges (HNB). Both specifications are identical on the most part. The text shows differences in the two specifications, e.g. “only ROUTE!”.

The data record Digital Data Streets is separated into 3 folders (ROUTE) or 4 folders (GIS) with the following contents:

- *Strassen* with the street network, street nodes, turn-off regulations and the street directory
- *Orte* contains the town file
- *Topo* with topographic information such as inhabited areas or waters (only GIS!)
- *POI* with the different points of interest (only GIS!)

2.1 Strassen folder (Streets)

The streets folder contains the subfolders Netz (network), StrVerz (street directory) and both Abbieger (turn-offs) and Knoten (nodes) which only appear in ROUTE.

2.1.1 Strassen\Netz (Streets\Network)

The layer Strassen contains the entire street network. The table shows which columns are provided with the specifications GIS and ROUTE and the house number ranges (HNB).

Specification	Column name	Contents	Description	Data type
GIS ROUTE and HNB	Prim_Name	Official street name	e.g. „Hauptstraße”	Char (120) For large datasets, the characters will be truncated to the maximum required length!
	Sek_Name	Alternative, additional name	e.g. „B31/E54“	Char (40) For large datasets, the characters will be truncated to the maximum required length!

Specification	Column name	Contents	Description	Data type
GIS ROUTE and HNB	Kat	The category specifies the meaning of the street. The smaller the number the more important the street. Following subsets of categories amount to closed network Kat 1-3 Kat 1-5 (the overland) Kat 1-8 (complete network) Since release R2010_V1.0: New classification	1 = Level 1 (most important roads such as motorways) 2 = Level 2 3 = Level 3 4 = Level 4 5 = Level 5 6 = Level 6 7 = Level 7 8 = Level 8 (lowermost importance)	Short Integer
Only ROUTE!	Von	Start/From node		Integer
	Nach	Destination/To node		Integer
	Laenge	Length of a segment in m-units	Since release R2022_V2.0: The length of ferry connections is now also given in meters (previously it was the estimated travel time in seconds).	Integer
	Richtung	Direction	0 Both directions 1 One-way from > to 2 One-way to > from 3 No direction	Short Integer
	Restriktion	Restriction	F No turn-off regulations T Turn-off regulations available Please see chapters 2.1.3 and 2.1.6 for further information.	Boolean
Only HNB!	FromLeft	House number left from	House number range left/right inclusive addition like e. g. 12a left/right corresponds to the segment direction From-Node to To-Node	Char (7)
	ToLeft	House number left to		Char (7)
	FromRight	House number right from		Char (7)
	ToRight	House number right to		Char (7)
GIS ROUTE and HNB	ID	Unique identification number for the object	Corresponds to column *Segment_ID* or *NaechsteSegmentID* in the street directories	Integer

Specification	Column name	Contents	Description	Data type
GIS ROUTE and HNB	Stil	The display style is for the cartographic display. In addition to the street type and the network category, the type of street, for example, or the „type of way“ (number of lanes, roundabout etc.) is taken into account. Since Release R2010_V1.0: New categorization! Since Release R2011_V2.0: Categorization was adjusted Since Release R2016_V1.0: New style 11, adjustment of style 9	0 = Unknown 1 = Major motorways/highways 2 = Minor motorways/highways 3 = Trunk roads 4 = B-roads 5 = Urban roads 6 = Other roads 7 = Ferries 8 = Walkways/pedestrian zones 9 = Paved forest tracks and other tracks 10 = Train ferries/car shuttle trains 11 = Unpaved tracks/roads	Short Integer
	Fussweg	Up to the release 1/2000 the footpaths were in the layer „Weg“ in the folder Topo.	0 = no footpath 1 = Footpath	Short Integer
	Fuss_zone	Pedestrian areas which are normally shopping areas in town centres Deliveries are only allowed at certain times. Cars are banned.	0 = No pedestrian zone 1 = Pedestrian zone	Short Integer
Only HNB!	HN_Info	Additional comments on the house number ranges (HNB)	0 = No house number ranges available 1 = House number range left and/or right 2 = For this section there are two or more entries for the left and/or right side in the street directory *HausNr*, for example if the street section has several names 3 = Exact side unknown, L/R are randomly filled	Short Integer
Only ROUTE!	SpurHin	Number of lanes in direction From-Node to To-Node	Exceptions: 0 = not applicable	Short Integer
Only ROUTE!	SpurRueck	Number of lanes in direction To-Node to From-Node	Exceptions: 0 = not applicable	Short Integer

Specification	Column name	Contents	Description	Data type
Only ROUTE!	TypHin	The type stands for the driving speed which can be reached on this particular road in direction From-Node to To-Node, it does not stand for the actual street type. There are 15 different types.	0 = no motorised traffic 1 = Motorway Fast 2 = Motorway Average 3 = Motorway Slow 4 = Trunk road Fast 5 = Trunk road Average 6 = Trunk road Slow 7 = B-road Fast 8 = B-road Average 9 = B-road Slow 10 = Urban roads Fast 11 = Urban roads Average 12 = Urban roads Slow 13 = Ferries/car shuttle trains 14 = Residential traffic (streets for local traffic only) 15 = Pedestrian zones, woodland paths, private roads (these roads are often not passable) Since release 1/2010: In comparison to previous releases the classification of a street segment may change. Since release R2022_V2.0: In comparison to previous releases the classification of a street segment may change. Mainly, private roads formerly found in class 12 are now more often classified with 15.	Short Integer
Only ROUTE!	TypRueck	The type stands for the driving speed which can be reached on this particular road in direction To-Node to From-Node, it does not stand for the actual street type. There are 15 different types.		Short Integer
Only ROUTE!	km_hHin	Speed limit in direction From- Node to To-Node	0 = not applicable The values 998 und 999 do not exist anymore (ramps, no speed limit).	Short Integer
Only ROUTE!	km_hRueck	Speed limit in direction To- Node to From-Node		Short Integer
GIS ROUTE and HNB	Level	The level is used for dividing the roads to various scale ranges. It is possible that e.g. level 3 is not assigned, but all other levels exist. Level and Kat_pre (see next data field) are often similar. They are different essentially in value 8 (available in Level, but not in Kat_pre) and in value -1 (available in Kat_pre, but not in Level).	0 = No information available 1 = Level 1 (Show in all scales) 2 = Level 2 3 = Level 3 4 = Level 4 5 = Level 5 6 = Level 6 7 = Level 7 8 = Level 8 (Show in large scales)	Short Integer

Specification	Column name	Contents	Description	Data type
GIS ROUTE and HNB	Kat_pre	Alternative Kategorie (category) which is based on releases before R2009_V2.0. The category describes the importance of a street. The smaller the value, the more important a street is. Kat_pre and Level (see data field above) are often similar. They are different essentially in value 8 (available in Level, but not in Kat_pre) and in value -1(available in Kat_pre, but not in Level).	-1 = Ferries (this category did not exist until R2009_V2.0) 1 = Category 1 (highest importance) 2 = Category 2 3 = Category 3 (not assigned) 4 = Category 4 5 = Category 5 6 = Category 6 (not assigned) 7 = Category 7 (lowest importance) Categories 3 and 6 are not assigned.	Short Integer

2.1.2 Strassen\Strassenverzeichnis (StrVerz) (Streets\Street index)

The folder StrVerz contains the three layers *PLZ* (postcode), *Hausnr* (building address number) and *Verlauf* (course). Index and gazetteer are particularly well-suited as reference data for geocoding.

Via the *postcode* and *Town_ID* the principle town names and suburb names from the gazetteer can be attached to the *PLZ* (postcode) layer (see chapter 1.4). Thus when geocoding, you can first approximately localize an address consisting of postcode/place name(s)/street name/building address number. If building number address ranges have been captured for a street, then via the *Hausnr* (Building address number) layer geocoding can be refined and assigned to the precise house number/street section.

Postcode street directory *PLZ* (1. level “Straßenbereiche” (street ranges))

The layer *PLZ* contains a street structure based on the postal system. For all streets with street names in digitised cities there is one entry per postcode street section which contains the corresponding coordinates. These coordinates are calculated and must not necessarily lie on a street section in the street network. If necessary the Straßenbereiche (Street ranges) refer to the second level with more precise address information and coordinates.

If you have purchased the Digital Data Streets with address information, there might be more than just one entry per postcode. These additional entries are necessary to take the correct address number out of the raw data.

Column name	Contents	Data type	Description
Country_ID	Country code	Char (3)	Corresponds to international car codes
City_ID	Administration number	Char (9)	From 1/2010: Does no longer contain official municipality codes, but a simple unique ID representing the administrative unit. *City_ID* corresponds to the *Stat_nr* in the towns file.
Street_ID	Street ID field	Char (11)	Entries with the same street ID have the same name and make up a street
Range_ID	Street range ID field	Char (3)	ID to distinguish streets with different postcodes but the same street ID
Name	Street name	Char (80)	Street name
Postcode	Postcode	Char (9)	Postcode
Xcoord	Longitude * 100000	Integer	
Ycoord	Latitude * 100000	Integer	
HN_Flag	Flag house number	Short Integer	If HN_Flag = 1, there is at least one entry for this street in the *Hausnr* directory.
Town_ID	Town file ID, not unique	Integer	See chapter 1.4. This attribute corresponds to *Town_ID* in the towns file.
ID	Unique identification number for the town	Char (25)	The Unique identification is a combination of *Country_ID*, *Postcode* and *Town_ID*. ID in „town file“(see „Data record links“ in Chapter 1.4).

House number street directory *Hausnr* (2. level “Hausnummernbereiche” (house number ranges))

The street section structuring with details on house number ranges contains the layer *Hausnr* (house numbers) which is only provided when purchasing the HNB specification. One coordinate is included per street section for all cities in which house number ranges exist. This Structuring refer to the street ID in Strassen (Segment_ID) and also to the appropriate street side of the house numbers.

The house number segment can only be assigned to the first layer *PLZ* (Street ranges) by the combination of Country_ID, City_ID, Street_ID and Range_ID. Multiple instances of the same combinations with different house number ranges can exist.

Column name	Contents	Data type	Description
Country_ID	Country code	Char (3)	Corresponds to international car codes
City_ID	Administration number	Char (9)	From 1/2010: Does no longer contain official municipality codes, but a simple unique ID representing the administrative unit. *City_ID* corresponds to the *Stat_nr* in the towns file.
Street_ID	Street ID field	Char (11)	Entries with the same street ID have the same name and make up a street
Range_ID	Street range ID field	Char (3)	ID to distinguish streets with different postcodes but the same street ID
HN_From	House number from, incl. house number extension (normally a letter, e. g. 12a)	Char (20)	House number or 0 = start of street From 1/2010: House number extension is included in this column!
HN_To	House number to, incl. house number extension (normally a letter, e. g. 16e)	Char (20)	House number or 9.999 = end of street From 1/2010: Addition to house number also in this column!
HN_Ranges	House number range ID	Char (1)	U = uneven G = even F = consecutive Empty = unknown
Xcoord	Longitude * 100000	Integer	
Ycoord	Latitude * 100000	Integer	
Segment_ID	Section number (corresponds to the street *ID* in Strassen)	Integer	
Side	Street side where house number is positioned	Char (1)	L = left R = right U = unknown
Direction	Street side relating to the segment direction	Char (1)	F = direction From-Node to To-Node T = direction To-Node to From-Node B = both, direction unknown

Street chain directory *Verlauf* (3. level "Straßenverlauf" (street course))

This layer helps to combine multiple street segments with the same street ID to one segment. This data is only available on demand.

Column name	Contents	Data type	Description
Country_ID	Country code	Char (3)	Corresponds to international car codes
City_ID	Administration number	Char (9)	From 1/2010: Does no longer contain official municipality codes, but a simple unique ID representing the administrative unit. City_ID corresponds to the Stat_nr in the towns file.
Street_ID	Street ID field	Char (11)	Entries with the same street ID have the same name and make up a street
Segment_ID	Section number (corresponds to the street ID in Strassen)	Integer	

2.1.3 Strassen\Abbieger (Streets/Turn-off regulations) (only ROUTE!)

The file with the turn-off regulations (Abbieger_*.sbt) is part of the ROUTE specification delivery. The turn-off regulations are provided in ASCII-format. This text file with three columns is separated by a comma. The file contains all street segments which are identified in the column Restriktion in the layer Strassen with „T = turn-off regulations available".

The file Abbieger_*.sbt (turn-offs) has the following structure:

Column name	Contents	Data type	Description
VonLink	From-Link-ID, e. g.110489401	Integer	From link-ID. This column refers to the column *ID* in the street network *Strassen*.
ViaKnoten	Via node number, z.B. 697572	Integer	Via node number. This column refers to the column *ID* in the file *Knoten*.
NachLink	To-Link-ID, z.B. 110105291	Integer	This column refers to the column *ID* in the street network *Strassen*.
Typ	Type (always = 1)	Short Integer	The column states whether this is a turn-off regulation or turn-off ban. The column is currently filled with „1" and is meaningless (= always banned).

In this example a turn-off from the link-ID 110489401 on the node number 697572 to link-ID 110105291 is banned.

The turn-off regulations only apply to cars. But in real they are also often valid for trucks, busses and other vehicles. Aside from that, in the streets layer there are segments with Restriktion/restriction = T which are not listed in the turn-off regulations. With product extensions the turn-off regulations can be categorized and explained in more detail. **See more information in the notes for routing in chapter 2.1.6.**

2.1.4 Strassen\Knoten (Streets\Node) (only ROUTE!)

The file Knoten is supplied for the specification ROUTE.

Column name	Contents	Data type	Description
ID	Node identification number	Integer	
Typ	Node type	Short Integer	0 = Town node 1 = Network node 2 = Stop-off point node
Xcoord	Longitude	Integer	
Ycoord	Latitude	Integer	
Country_ID	Country code	Char (3)	Corresponds to international car codes

2.1.5 Route nodes for cross-border routing (only ROUTE!)

A look-aside table makes transnational routings possible. It stores all road border-crossings as well as international ferry connections. In addition, national ferry connections are also included in the look-aside table although they are already held in the street network.

The look-aside table is a simple text file and is named „Routingknoten_EU*.txt“ (for Europe).

Column name	Contents	Data type	Description
LK_Von	Country code from (origin)	Char (3)	Country code of the origin country where a route starts.
KN_Von	Node-ID from (origin)	Integer	Origin node-ID in the origin country. At this node a cross-country connection to the destination country is possible. The corresponding destination node-ID is shown in KN_Nach.
LK_Nach	Country code to (destination)	Char (3)	Country code of the destination country where a route ends.
KN_Nach	Node-ID to (destination)	Integer	Destination node-ID in the destination country. At this node a cross-country connection to the origin country is possible. The corresponding origin node-ID is shown in KN_Von.

Dauer	Travel time in seconds (only for ferries)	Integer	Only for ferries
Entfernung	Distance in meters (only for ferries)	Integer	Only for ferries
Fahrzeug	Vehicle motor-driven/not motor-driven	Short Integer	1 = motor-driven traffic 0 = non motor-driven traffic

Example:

```
LK_Von,KN_Von,LK_Nach,KN_Nach,Dauer,Entfernung,Fahrzeug
FL,2000000335,A,2000000219,0,0,1
FL,2000000333,A,2000000247,0,0,1
FL,2000000334,A,2000000242,0,0,1
A,2000000219,FL,2000000335,0,0,1
A,2000000247,FL,2000000333,0,0,1
A,2000000242,FL,2000000334,0,0,1
```

Let's assume a route from Liechtenstein (FL) to Austria (A) which has the origin node-ID 2000000335 (KN_Von). Thus, the corresponding destination node-ID is 2000000219 (KN_Nach). The same information is found the other way around from Austria (A) to Liechtenstein (FL).

2.1.6 Notes on routing

In the ROUTE specification many attributes are available that enable routing on the road network. Basically, the road network topology is mapped via the From and To nodes of the road network. While the Von (From) and Nach (To) columns define the digitalization direction, the direction of travel that is actually allowed is only resolved through the Richtung (Direction) column. Thus, blocked roads can be excluded for the routing, and one-way streets and two-way streets are identified.

Important: In addition, the turning restrictions that are in the separate file must be taken into account. They supplement the road network topology with important information, e.g., when two-way streets intersect, where the topology permits turning via the Von/Nach/Richtung (From/To/Direction) columns, and this however in reality is prohibited through a turning restriction.

The turning restrictions only apply to cars. But in real they are also often valid for trucks, busses and other vehicles. Aside from that, in the streets layer there are segments with Restriktion/restriction = T which are not listed in the turning restrictions and thus, are not explained in detail. These segments may often be set as closed (Richtung/direction = 3), but they also contain explicit regulations for trucks, busses and other vehicles.

With product extensions the turn-off regulations can be categorized and explained in more detail. For example, an extension called "Truck Attributes" is available.

The node points are in the Knoten (node) layer. For routing itself this is not required, however it can be used for cartographic presentation of the node points or for read-out of their coordinates. Attention: The situation can occur that multiple node points are precisely superimposed geometrically! This is why for routing you should avoid a pure geometric assignment of the nodes to the road network. Instead, the node IDs that are specified in the From and To columns must always be taken into account, in order to correctly depict a road situation for routing.

In order to use special speed or vehicle profiles, when routing, the attributes TypHin, TypRueck or km_hHin and km_hRueck (TypeTo, TypeBack or km_hTo and km_hBack) can be used. Moreover, via the Kat (Road Category) or Level columns the significance of roads is noted and the distance traveled is determined by the length. For example, if needed, the number of lanes (SpurHin (LaneTo), SpurRueck (LaneBack)) and pedestrian segments (Fussweg (footpath) and Fuss_zone (Pedestrian_zone)) can be interesting for routing.

The length column Laenge shows the geometric, digitized object length in meters, not the length in reality. The digitized object length differs more or less from the real length because of the digitization/generalization process of courses of roads and streets. Please note the exception that with ferry connections the length column holds the estimated travel time in seconds instead of the length in meters.

The so-called explicit maximum speeds are specified with km_hHin (km_hTo) and km_hRueck (km_hBack). This information is derived from a street sign, for example. In addition, there are the so-called implicit maximum speeds that are not included in Digital Data Streets. Implicit maximum speeds always apply, such as 50 km/h in villages or 100 km/h on highways. It should be noted that 30 km/h zones do not need to be declared as such, but rather they can be driven through as normal village roads at 50 km/h.

Cross-country routing is described in the previous chapter.

2.2 Orte folder (Towns)

The towns file *Ort* is an addition to the NAVTEQ-Street Network.

Column name	**Contents**	**Data type**	**Description**
Land	Country code	Char (3)	
Name1	Official postal name	Char (50)	
Name2	District name	Char (50)	It can be an urban district or an archive name. Also it can be a municipality name if this is not equal to the official postal name (= Name 1).
PLZ	Postcode	Char (9)	If available From 1/2010: Some towns now have postcode values such as 81***. These are representative postcode information and thus representative towns.
Stat_nr	Administration number Is not available in every country and in every City. In Germany the 8-digit municipality code is specified.	Char (9)	From 1/2010: Does no longer contain official municipality codes, but a simple unique ID representing the administrative unit. *Stat_nr* corresponds to the *City_ID* in the street index files.

Column name	Contents	Data type	Description
Ortsgr_kl	Towns size class The town size class does not refer to the actual number of inhabitants, but to a location's or a town's relative importance. Important: The districts are assigned the same town size class as the town itself. Since R2022_V2.0: Class 0 is assigned less. Instead, class 1 is used more often, to some extent also other classes.	Short Integer	0 unknown 1 x < 100 2 100 <= x < 200 3 200 <= x < 500 4 500 <= x < 1.000 5 1.000 <= x < 2.000 6 2.000 <= x < 3.000 7 3.000 <= x < 5.000 8 5.000 <= x < 10.000 9 10.000 <= x < 20.000 10 20.000 <= x < 50.000 11 50.000 <= x < 100.000 12 100.000 <= x <250.000 13 250.000 <= x <500.000 14 x >= 500.000
Xcoord	Longitude * 100000	Integer	
Ycoord	Latitude * 100000	Integer	
Level	Display style for towns. The level of a town does not depend on the number of inhabitants, but on its importance. The smaller the level, the more important is the town. The main town has a different level than its districts. Since R2022_V2.0: Level 16 is assigned less. Instead, level 15 is used more often, to some extent also other levels.	Short Integer	Values from 1-15 are given. The levels are not strictly distinguished and are assigned by the data provider. E. g. 1 = Capital city 16 = Farm / small place From 1/2010: Values range from 1 to 16 instead from 1 to 15
Town_ID	Town ID, it is not an unique ID	Integer	See „Data record link“ in Chapter1.4. The combination of *Town_ID* and *PLZ* provides an unique ID (per country).
ID	Unique identification number for town	Char (25)	Unique identification number is a combination of *Land, Town_ID* and *PLZ*. Corresponds to column *ID* in Street directory PLZ. (see „Data record links“ in Chapter 1.4).
ID_Ref	Corresponds to column ID	Char (25)	If the *ID_Ref* is filled in, the place has been artificially generated. The *ID_Ref* refers to the original place that has been duplicated for this purpose. See Data record link“ in Chapter 1.4.

2.3 Topo folder (only GIS!)

The Topo folder is only provided for the GIS specification. The ROUTE specification only contains the topographic layers Bebauung and Eisenbahn (Built-up areas and Railways). The area and lineal elements in the Topo folder are only gained according to certain criteria are not systematically collected. For this reason they are not complete. The Topo elements are most complete in areas where the detail network is available.

The Topo folder contains a maximum of 23 layers. Only the layers are provided wich contain at least one data record. For this reason the number of layers provided can be lower an may vary depending on the particular countries. Some layers contain only one type of topography, others with similar content are combined an contain several types. The individual contents can be selected using the type number. Area an lineal elements are seperated in the layers.

Lineal elements

Layer	Type	Contents
Admin1	29	District borders, sometimes incomplete
Admin2	32	State borders, sometimes incomplete
Bruecken	137	Bridges
Eisenbahn	34	Railway lines
Flusslauf see also topo area element *Fluss*	36 33	Course of smaller rivers Course of major rivers
Tunnel	138	Tunnel

Structure of the lineal elements

Column name	Data type	Description
Name	Char (80)	Name of lineal element
ID	Integer	ID/Internal number
Typ	Short Integer	Form

Area elements

Layer	Type	Contents
Admin4	22	Administrative borders, sometimes incomplete
Admin3	23	District borders, sometimes incomplete
Bebauung	16	Built-up areas
Div_Flaeche	5 11 8 167 168	Traffic islands Pedestrian zones Shopping centres Amusement park zoos & animal parks

Layer	Type	Contents
Flughafen	9	Airports
	10	Runways
Fluss	3	Major rivers
	18	Bays, harbours
	20	Canals, also harbours
Gebaeude Only available on request!	110	Culture, e. g. museum, theatre
	111	University, college
	112	Fire department or similar
	113	Exhibition
	114	Government
	115	Historical building
	116	Leisure
	117	Medical facility
	118	Retail store
	119	Sight
	120	Transportation (e. g. train station)
	122	Business centre
	123	Spor facility, stadium
	128	Residential building
	151	Housing estate
	171	School/education establishment (also included in *Oeffentl_Einr*)
	172	Industrial building
Gruenflaeche	21	Cemeteries
	24	Golf-courses
	28	Parks
Industrie	26	Major industrial areas
Insel	27	Islands
Meer	14	Seas
Nat_Park	15	National parks
	6	Natural parks
Oeffentl_Einr	17	School (if exists)
	170	University
	171	School/ educational establishment
	7	Sports complexes
	25	Clinics
Parkplatzflaeche	13	Multi-storey car-parks
	12	Parking spaces
See	19	Lakes
Strand	148	Beaches
Wald	4	Woodlands, Nature reserves

Structure of the area elements

Column name	Data type	Description
Name1	Char (50)	ID/Internal number
Name2	Char (50)	Name of area element
Typ	Short Integer	Form

2.4 POI folder (only GIS!)

The points of interest are only provided for the GIS specification. The POIs are only gathered by NAVTEQ according to certain criteria and are not systematically collected. For this reason, the POIs are not complete. The POIs are most complete in areas where the detail network is available. Information on the data can be found in chapter 3.

Only the layers are provided which contain at least one data record. For this reason, the number of layers provided may vary from country to country. Some layers only contain one POI type, POIs with similar content are combined in one layer. The individual contents can be selected using the type number.

Layer	Type	Contents
Anlegestelle	94 175	Moorings Port facilities, dock
Apotheke	134	Pharmacies
Auto	62 103 63 67 109 136 155	Automobile clubs Car traders Garages Car rentals Motor-bike traders Used cars dealer Truck dealer
Bahnhof	58	Railway station
Bank	102 104	Banks Cash dispensers
Busbahnhof	65	Bus terminals
Camping	156	Camping site
Einkauf	52 144 149 150	Shopping centres Home improvement stores Furniture store Department store
Erholungseinrichtung	92	Recreation centres (parks, lakes, gardens)

Layer	Type	Contents
Faehre	74	Ferries
	179	Car shuttle trains
Flugplatz	78	Airfields
	49	Airstrips
Freizeit	79	Casinos
	40	Leisure park (former characterization “Leisure”)
	64	Bowling
	70	Ice-skating
	43	Nightlife
	174	Other bars/pubs
Gaestehaus	133	Guest house
Geschaeftszentrum	66	Business centre
	177	Supplier entrance/delivery access
	181	Loading zones
Grenzuebergang	96	Border crossing
Hotel	51	Hotel
Industriegebiet	145	Industrial zones
Kultur	42	Museum2
	48	Theatres
	69	Cinema
Laden	97	General store
	130	Book store
	131	Coffee shops
	143	Special store
	146	Convenience store
	147	Consumer electronics store
	152	Clothing store
	153	Office supply & service store
	154	Sporting goods store
Messe	68	Exhibition centre
Oeffentl_Geb	71	Town halls
	72	Civic halls
	73	Colleges
	77	Hospitals
	91	School buildings
	93	Police
	95	Libraries
	100	Courts
	126	Embassy
	132	Council building
	142	Other medical facilities
	159	Government office

Layer	Type	Contents
Parkplatz	44 46 47	Park & Ride Multi-storey car-park Car-park
Pendler	101 176 178	Public transportation stop Other public transportation stop Public transit access
Post	135	Post offices
Rastanlage	50	Service area
Religioese_Einr	140 141	Cemetery Church, Synagogue, Mosque or similar
Restaurant	41	Restaurants
Sport	53 54 55 75 182	Ski areas Sports fields Sport centres Golf clubs Ski lift, ropeway or similar
Tankstelle	59	Petrol station
Taxistand	173	Taxi stand
Tourismus	56 76 127	Tourist information Sights (former characterization “Sights2”) Historical sights
Weingut	61	Vineyards

Data structure of all POI

Column name	Data type	Description
Name	Char (80)	Name of POI
PLZ	Char (9)	Postcode
Ort	Char (50)	Town
Strasse	Char (100)	Street with house number if available
Kennung	Integer	Original NAVTEQ description
Typ	Short Integer	Type of each POI

Appendix A: Contents of each layer

Following are all file names in alphabetical order, a translation of the name and some notes on the criteria used to survey the data. The name of the folder is given in brackets. Not every layer is available for every country.

Abbieger (Abbiegevorschriften) / Turn-off regulations

C.f. Chapter 2.1.3

Admin1 (TOPO)

The layer contains administration borders which correspond to the Federal State borders. Not always complete. Area status unknown. They do not correspond to the official borders and serve only for orientation purposes.

Admin2 (TOPO) / Administration2

The layer contains administration borders which correspond to the German Federal State borders (or regions, districts). Not always complete. Area status unknown. They do not correspond to the official borders and serve only orientation purposes.

Admin3 (TOPO) / Administration3

The layer contains administration borders which correspond to the German district borders (or counties, provinces). Not always complete. Area status unknown. They do not correspond to the official borders and serve only orientation purposes.

Admin4 (TOPO) / Administration4

The layer contains administration borders which correspond to the German council borders (or municipalities, communes). Not always complete. Area status unknown. They do not correspond to the official borders and serve only orientation purposes.

Anlegestelle (POI) / Mooring

Yacht harbours are included and public moorings.

Apotheke (POI) / Pharmacies

The layer contains pharmacies.

Auto (POI) / Car

Car rentals are contained which include collection and return possibilities, automobile clubs and garages as well as used car dealers, motor-bike traders and truck dealers.

Bahnhof (POI) / Railway stations

Railway stations are contained for passenger trains and goods trains along the railway network.

Bank (POI) / Bank

Banks and cash dispensers are included.

Bebauung (TOPO) / Built-up areas

The layer contains the built-up areas in each of the areas.

Bruecken (TOPO) / Bridges

The layer contains bridges, symbolically shown as lines.

Busbahnhof (POI) / Bus terminal

These work as bus-service-network, whereby park-ride possibilities are also included. Stations which provide regional and long-distance bus services are also included.

Camping (POI)

The layer contains camping sites.

Div_Flaeche (TOPO) / Various areas

The layer contains individual traffic islands, shopping centres and pedestrian zones.

Einkauf (POI) / Shopping

The layer contains inner-city and out of town shopping centres, home improvement stores, furniture stores and department stores.

Eisenbahn (TOPO) / Railway

The layer contains railway lines.

Erholungseinrichtungen (POI) / Recreation

This layer contains public areas which are reserved for recreation purposes, e. g. parks, lakes, gardens.

Faehre (POI) / Ferry

Ferry harbours on the coasts and in major inland waters are included, also car shuttle trains (if available).

Flughafen (TOPO) / Airports

The layer contains glider airfields and major commercial airfields as polygon.

Flugplatz (POI) / Airfields

All known glider airfields and sports airfields are included, together with the national and public airports with more than 300,000 passengers per year.

Fluss (TOPO) / Rivers

The layer displays parts of rivers, estuaries and the Wadden Sea as polygon. Major rivers, docks and smaller rivers are included.

Flusslauf (TOPO) / River flows

The layer contains major rivers, canals, small rivers and lakes.

Freizeit (POI) / Leisure

This layer contains all locally known amusement parks (based on a central theme), discos, music clubs, bars and pubs, skittle allies, bowling centres (which are regionally known and which have more than 6 bowling allies), indoor and outdoor skating rinks and licensed casinos.

Gaestehaus (POI) / Guest houses

This layer contains accommodation facilities, without room service.

Gebaeude (Topo) / Buildings

This layer contains buildings.

Geschaeftszentrum (POI) / Business centres

Major company locations are contained here (e. g. automobile industry areas) and, in some cases, supplier entrances/delivery access roads or loading zones.

Grenzuebergang (POI) / Border crossings

This layer includes the border crossings to neighbouring countries which were active at the time of survey.

Gruenflaeche (TOPO) / Green areas

The layer contains public parks, cemeteries and golf courses.

Hausnr (Strassen/StrVerz) / House numbers

C.f. Chapter 2.1.2

Hotel (POI)

Locally known hotels and guest houses are included here.

Industrie (TOPO) / Industry

The layer contains the major industrial areas.

Industriegebiete (POI) / Industrial parks

The layer contains industrial/business parks,

Insel (TOPO) / Islands

All islands in the digitised area are included. The islands are displayed as polygons.

Knoten (Strassen/Knoten) / Street nodes

C.f. Chapter 2.1.4

Kultur (POI) / Culture

Museums which are open to the public, private theatres, state theatres, private culture centres and cinemas (incl. Multiplex cinemas).

Laden (POI) / shops

General stores are included as well as book stores, coffee shops, clothing stores and other.

Meer (TOPO) / Seas

The layer contains major areas of the seas, e. g. Baltic Sea or Mediterranean Sea.

Messe (POI) / Exhibition centres

Exhibition centres and conference centres are included.

Nat_Park (TOPO) / national parks

The layer contains the nature reserve areas and major woodland areas.

Oeffentl_Einr (TOPO) / Public institutions

The layer contains public institutions such as schools, sport centres, stadiums and clinics.

Oeffentl_Geb (POI) / Public areas

Town halls, public culture centres, collages, private and public clinics and other medical facilities, libraries and embassies are included.

Ort (Orte) / Towns

C.f. Chapter 2.2.

Parkplatz (POI) / Car-parks

Parking slots, multi-storey car-parks and park&ride car-parks are included.

Parkplatzflaeche (TOPO) / Parking areas

The layer contains parking slots and car-parks.

Pendler (POI) / Communters

This layer contains important public transport stations and access points (mostly in major cities).

PLZ (Strassen/StrVerz) / Postal codes

C.f. Chapter 2.1.2

Post (POI) / Post offices

Post offices are included.

Rastanlage (POI) / Service area

Motorway service areas are included in which the slip-roads only lead to the service area.

Religioese_Einr (POI) / Religious sites

Cemeteries, churches, synagogues, mosques or similar are included.

Restaurant (POI)

Restaurants and public houses are included.

See (TOPO) / Lakes

The layer contains ponds and lakes.

Sport (POI)

This layer contains all multi-functional sport centres and public sport complexes (e. g. sports stadiums) with a capacity of over 1,000 visitors and race tracks. Sports centres such as halls and swimming baths, tennis and squash arenas are also included as well as national and regional ski areas and ski lifts/ropeways.

Strand (TOPO) / Beach

The layer contains beaches.

Strassen (Strassen/Netz) / Streets

C.f. Chapter 2.1.1

Tankstelle (POI) / Petrol stations

Private petrol stations as well as petrol stations which are part of a chain are included here.

Taxistand (POI)

The Layer contains taxi stands.

Tourismus (POI) / Tourism

All tourist information centres are included which provide services such as room reservations, general information and information on events as well as tourist attractions which do not fall into a certain category (e. g. historical monuments, castles, zoological gardens) and recreation and leisure institutions.

Tunnel (TOPO) / Tunnel

Tunnels are shown as lines in this layer.

Verlauf (Strassen/StrVerz) / Street chain

C.f. Chapter 2.1.2

Wald (TOPO) / Woodlands

The layer contains woodlands and forests.

Weingut (POI) / Vineyards

Wine makers who provide tours and wine-tasting are included.

Appendix B: Changes in releases

Changes in release R2025_V1.0

- No changes regarding the general product and data structure. See below last changes in the previous releases.
- Minor deviations from the general data structure are listed separately in the file “hinweis.txt”. This applies, for example, to the data for Germany and France.
- Data basis: HERE data version 2025/Q1.

Changes in release R2024_V2.0

- No changes regarding the general product and data structure. See below last changes in the previous releases.
- Minor deviations from the general data structure are listed separately in the file “hinweis.txt”. This applies, for example, to the data for Germany and France.
- Similar to the version change in release R2023_V2.0, the data basis this time also originates from the 3rd quarter of the current year (i. e. HERE data version 2024/Q3).

Changes in release R2024_V1.0

- No changes regarding the general product and data structure. See below last changes in the previous releases.
- Minor deviations from the general data structure are listed separately in the file “hinweis.txt”. This applies, for example, to the data for Germany and France.
- Similar to the version change in release R2023_V1.0, the data basis this time also originates from the 1st quarter of the current year (i. e. HERE data version 2024/Q1).

Changes in release R2023_V2.0

- In recent years, the V2.0 release of Digital Data Streets was usually based on the HERE data version Q2 (quarter 2) of the current year. This time, however, the release R2023_V2.0 is based on the more recent, up-to-date data from Q3. A similar change took place with the V1.0 release: from Q4 of the previous year to Q1 of the current year.
- In the road network, the column “Laenge” (length) now shows the segment length in meters also for ferry lines and no longer the estimated travel time in seconds. This change has been in place since release R2022_V2.0, but unfortunately it had not yet been documented.
- See below also the changes in the previous release R2023_V1.0.

Changes in release R2023_V1.0

- In recent years, the V1.0 release of Digital Data Streets was usually based on the HERE data version Q4 (quarter 4) of the previous year. This time, however, the release R2023_V1.0 is based on the more recent, up-to-date data from Q1 of this year.
- The POI layer "Pendler" was extended by the new type 178 for public transit access (still very rarely filled).
- The POI layer "Geschaeftszentrum" was extended with the new type 181 for loading zones.
- The POI layer "Sport" was extended with the new type 182 for ski lifts/cable cars.

- See below also the changes in the previous release R2022_V2.0.

Changes in release R2022_V2.0

- The filling of the columns „Ortsgr_kl“ (town size class) and „Level“ in the towns file has changed. The level 16 and/or the size class 0 are assigned less. Instead, the level 15 and the size class 1 are assigned more frequently, partly also other levels and size classes.
- The filling of the columns „TypHin“ and „TypRueck“ for the speed classes in the streets network has also changed. Mainly, private roads formerly found in class 12 are now more often classified with 15. The class 13 still represents ferries and also some car shuttle trains.
- In „Changes in release R2020_V1.0“ the type 206 was inadvertently stated for car shuttle trains in the POI layer „Faehre“. The correct type is 179. Up to now, car shuttle trains were seldom stored like that in the POIs. In the current release they are again generally assigned to ferries (type 74).
- See revised notes for routing concerning turn-off regulations in chapter 2.1.6.

Changes in release R2022_V1.0

- See revised notes for routing concerning turn-off regulations in chapter 2.1.6.
- No changes regarding the data structure, new layers etc. See last changes in R2020_V2.0.

Changes in release R2021_V2.0

- None. See last changes in R2020_V2.0.

Changes in release R2021_V1.0

- None. See last changes in R2020_V2.0.

Changes in Release R2020_V2.0

- The Topo layer „Div_Flaeche“ has been expanded by zoos & animal parks (type 168).

Changes in Release R2020_V1.0

- In the POI layer „Faehre“ there is a new type 179 (not type 206). This type includes car shuttle trains (still rarely filled).

Changes in Release R2019_V2.0

- In the POI layer „Geschaeftszentrum“ there is a new type 177. This type includes delivery entries and delivery accesses (still rarely filled).

Changes in Release R2019_V1.0

- The POI layer „Anlegestelle“ has been expanded with type 175 for port facilities/dock (still rarely filled).
- The POI layer „Pendler“ has been expaneded with type 176 for more local public transport stations (still rarely filled).

Changes in release R2018_V2.0

- None. See last changes in R2017_V2.0.

Changes in release R2018_V1.0

- None. See last changes in R2017_V2.0.

Changes in release R2017_V2.0

- The POI layer „Taxistand“ is new (type 173).
- The POI layer „Freizeit“ has been expanded with type 174 for more bars and pubs (that occurs only in very few countries).
- The street index “PLZ” can be extended with the street segment ID in order to create a link to the street network layer. This extension is available on demand.

Changes in release R2017_V1.0

- None. See last changes in R2016_V1.0.

Changes in release R2016_V2.0

- None. See last changes in R2016_V1.0.

Changes in release R2016_V1.0

- In the road network field ”Stil” (Style) a new value 11 was added. Style 11 stands for an unpaved road or unpaved road higher-order categories, while style 9 from now on means a paved path, forest way or company road.
- The layer “Gebaeude“ (for an additional charge) has been extended by industrial buildings (type 172).

Changes in release R2015_V2.0

- None. See last changes in R2015_V1.0.

Changes in release R2015_V1.0

- The topography layer “Div_Flaeche“ has been extended with amusement parks (type 167).
- In several earlier deliveries, particularly for map details, in the node layer the coordinate columns for geodecimal values were defined as floating point and not as whole numbers, as intended in the standard (see chapter 2.1.4).
- In section 2.1.6 important general information concerning routing is summarized.
- The colors of the topography layers “Flusslauf“ (River Course), “Fluss“ (River), ”Meer“ (Ocean) and “See“ (Lake) have been set to a uniform blue (affects the data in the MapInfo TAB and MIF/MID format).

Changes in other earlier releases

- See older data descriptions; information available on request.