TeleNav UniDB Specification

# History

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Date | Revised By | Changes |
| V0.1 | 2016-12-16 | Wu Ligang | Initial version |
|  |  |  |  |
|  |  |  |  |

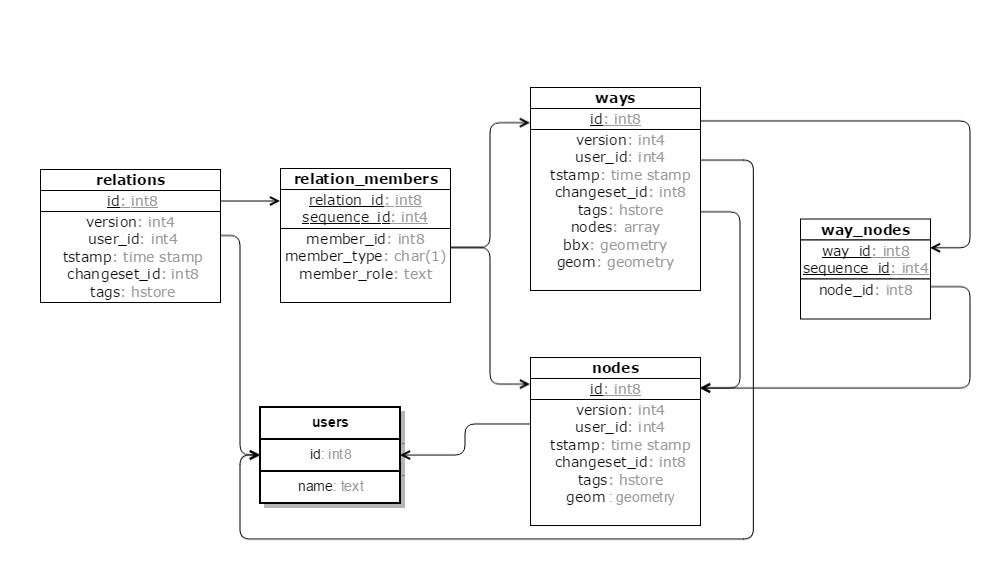
# Introduction

## UniDB

TeleNav UniDB is a Postgis based database. It is an extension of [pgsnapshot](http://wiki.openstreetmap.org/wiki/Databases_and_data_access_APIs%23pgsnapshot) schema, which is a modified and simplified version of the main [Open Street Map](http://wiki.openstreetmap.org/wiki/Main_Page)(OSM) DB schema which provides a number of useful geographic information system(GIS) data features, including generating geometries and storing tags in a single hstore column for easier use and indexing.

It’s used for TeleNav exchange data storage and management, and with powerful capability of spatial indexing and query.

Below is the schema of UniDB.



## PBF

PBF is just a simple dump and compression of UniDB by [Osmosis](http://wiki.openstreetmap.org/wiki/Osmosis). There is no business logic in this conversion.

PBF Format ("Protocolbuffer Binary Format") is primarily intended as an alternative to the XML format. It is about half of the size of a gzipped planet and about 30% smaller than a bzipped planet. It is also about 5x faster to write than a gzipped planet and 6x faster to read than a gzipped planet. The format was designed to support future extensibility and flexibility.

# Basic Concepts

TBD

# UniDB Tables

## nodes

|  |  |  |
| --- | --- | --- |
| **Field** | **Type** | **Description** |
| ***id*** | int 64 | Unique node id, primary key. |
| ***version*** | int 32 | Version number of the node |
| ***user\_id*** | int 32 | User id of the node, foreign key |
| ***tstamp*** | timestamp | Time stamp of creating the node |
| ***changeset\_id*** | int 64 | Changeset id of the node |
| ***tags*** | hstore | Key/value attributes of the node |
| ***geom*** | Geometry | Node geometry |

## ways

|  |  |  |
| --- | --- | --- |
| **Field** | **Type** | **Description** |
| ***id*** | int 64 | Unique way id, primary key. |
| ***version*** | int 32 | Version number of the way |
| ***user\_id*** | int 32 | User id of the way, foreign key |
| ***tstamp*** | timestamp | Time stamp of creating the way |
| ***changeset\_id*** | int 64 | Changeset id of the way |
| ***tags*** | hstore | Key/value attributes of the way |
| ***nodes*** | int 64 array | The id list of endpoint and shape points of the way |
| ***bbox*** | Geometry | Bounding box of the way |
| ***linestring*** | Geometry | The geometry of the way |

## way\_nodes

|  |  |  |
| --- | --- | --- |
| **Field** | **Type** | **Description** |
| ***way\_id*** | int 64 | Way id, foreign key |
| ***node\_id*** | int 64 | Node id, foreign key |
| ***sequence\_id*** | int 32 | The sequence of node on the way, starting from 0 |

## relations

|  |  |  |
| --- | --- | --- |
| **Field** | **Type** | **Description** |
| ***id*** | int 64 | Unique node id, primary key. |
| ***version*** | int 32 | Version number of the relation |
| ***user\_id*** | int 32 | User id of the relation, foreign key |
| ***tstamp*** | timestamp | Time stamp of creating the relation |
| ***changeset\_id*** | int 64 | Changeset id of the relation |
| ***tags*** | hstore | Key/value attributes of the relation |

## relation\_members

|  |  |  |
| --- | --- | --- |
| **Field** | **Type** | **Description** |
| ***relation\_id*** | int 64 | Relation id, foreign key |
| ***member\_id*** | int 64 | Member id, foreign key |
| ***member\_type*** | char(1) | Member types, refer to 10.3 Relation Member Types |
| ***member\_role*** | text | Member roles, refer to 10.4 Relation Member Roles |
| ***sequence\_id*** | int 32 | The sequence of the member associated with the relation, starting from 0 |

## users

|  |  |  |
| --- | --- | --- |
| **Field** | **Type** | **Description** |
| ***id*** | int 32 | User id, primary key. |
| ***name*** | text | User name |

# UniDB Features

Map data features are in different UniDB tables, below table list the relations between UniDB features & UniDB tables.

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Features** | **UniDB Table** | **Description** |
| ***Point*** | ***Address Point*** | nodes |  |
| ***Annotation*** | nodes |  |
| ***Admin Center*** | nodes |  |
| ***City Center*** | nodes |  |
| ***Zip Center*** | nodes |  |
| ***Natural Guidance Node*** | nodes |  |
| ***Safety Camera Node*** | nodes |  |
| ***Line*** | ***Road and Ferry*** | ways |  |
| ***Cartographic Line*** | ways |  |
| ***Area*** | ***Area (Multi Polygon)*** | relations |  |
| ***Relations*** | ***3d Landmark*** | relations |  |
| ***Admin*** | relations |  |
| ***Zone*** | relations |  |
| ***Gate*** | relations |  |
| ***Toll Booth*** | relations |  |
| ***Bifurcation*** | relations |  |
| ***Construction*** | relations |  |
| ***Divided Junction*** | relations |  |
| ***GJV*** | relations |  |
| ***Go Straight*** | relations |  |
| ***Junction View*** | relations |  |
| ***One Way*** | relations |  |
| ***Restriction*** | relations |  |
| ***Safety Camera*** | relations |  |
| ***Signpost*** | relations |  |
| ***Traffic Sign*** | relations |  |
| ***Traffic Signal*** | relations |  |
| ***Truck Max Speed*** | relations |  |
| ***Grade Separation*** | relations |  |
| ***ADAS Node*** | relations |  |
| ***ADAS Max Speed*** | relations |  |
| ***Dir Slope*** | relations |  |

# Point Features

## Address Point

### Arrival Point

It’s also known as navigation point, which is the geometry column of UniDB table ***nodes***. If the arrival point is not available, the value of arrival point will be invalid value lat/lon **(90,180).**

### Display Point

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***addr:display\_lat*** | N | [***-90,90***] | The latitude of display location |
| ***addr:display\_lon*** | N | [***-180,180***] | The longitude of display location |

### Arrival Link

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***addr:arrival\_link\_id*** | N |  | The id of drive-to link for the point address. |
| ***addr:arrival\_side*** | N | ***L/R*** | Arrival side indicates on which side of the arrival link the point address is located. It’s always associated with address link id  ***L***: left side of the arrival link  ***R***: right side of the arrival link |

### Address Link

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***link\_id*** | N |  | The id of addressable link for the point address.  It allows retrieval of destination input related information; it enables the retrieval of Street Name, Administrative coding, Postal Code, and Zone applicable to the Point Address. |
| ***addr:side*** | N | ***L/R*** | Side indicates which side of the address link is associated with the Point Address. It’s always associated with address link id.  ***L***: left side of the address link  ***R***: right side of the address link |

### House Number

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***addr:housenumber:<lang>*** | Y |  | The house number of the address point.  The house numbers for different language might be different. For example, No. 60 (English) vs 6号(Chinese). |

### Street Names

The street names of address link, refer to names of road and ferry in 6.1.8 Names.

### Admins

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***<lx>:name:<lang>*** | N | User defined | The admin name of certain level (***lx***) in specified language of the address point.  ***lx*** is the level of the admin, refer to 9.1 Admin Level.  **At present, it’s Korea new address point only attribute**. |

### Country Code

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***iso*** | Y |  | ISO 3166-1 alpha-3 country code, refer to [ISO\_3166-1\_alpha-3](https://en.wikipedia.org/wiki/ISO_3166-1_alpha-3) |

## Annotation

### Feature Type

### Names

### Admins

### Other Attributes

## City Center

### Feature Type

### Names

### Admins

### Country Code

### Capitals

### Population

### Admin Level

### Other Attributes

## Admin Center

### Feature Type

### Names

### Admins

### Country Code

### Capitals

### Population

### Admin Level

### Other Attributes

## Zip Center

### Feature Type

### Zip Code

### Admins

### Country Code

### Other Attributes

## Natural Guidance Node

### TBD

## Safety Camera Node

### Camera Type &ID

### Country Code

### Other Attributes

# Line Features

## Road & Ferry

### Functional Class

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***functional\_class*** | Y | [***1,5***] | ***functional\_class*** is the hierarchical classification of a road network. |
|  |  | ***1*** | **First Class Road**. These roads allow for high volume, maximum speed traffic movement between and through major metropolitan areas. There are very few, if any, speed changes. Access to the road is usually controlled. |
| ***2*** | **Second Class Roads**. These roads are used to channel traffic to Main Roads for travel between and through cities in the shortest amount of time. There are very few, if any, speed changes. |
| ***3*** | **Third Class Roads**. These roads interconnect First Class Roads and provide a high volume of traffic movement at a lower level of mobility than First Class Roads. |
| ***4*** | **Fourth Class Roads**. These roads provide for a high volume of traffic movement at moderate speeds between neighborhoods. These roads connect with higher Priority to collect and distribute traffic between neighborhoods. |
| ***5***  (Default) | **Fifth Class Roads**. These roads’ volume and traffic movements are below the level of any Functional Class |

### Road Type

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***rt*** | Y | [***0,15***] | ***rt*** presents the road type, identifies certain aspects of the physical form that a road takes. |
|  |  | ***0*** | Freeway class road (1)  i.e. Highway |
| ***1*** | Freeway class road (2)  i.e. Urban highway |
| ***2*** | Highway class road ( > 91KPH)  i.e. National road |
| ***3*** | Throughway class road (51-90 KPH)  I.e. Main district road |
| ***4*** | Local road class road (31-50 KPH)  i.e. Prefectural road |
|  |  | ***5*** | Frontage road |
|  |  | ***6*** | Very low speed road ( < 30 KPH) |
|  |  | ***7*** | Private road  This attribute identifies Road Elements and Ferry Connections which are both private and do not allow through traffic.  Ownership identifies roads not maintained by an organization responsible for maintenance of public roads. |
|  |  | ***8*** | Walkway  In Europe, this literally means pedestrians only. However, in North America, this may represent pedestrians and/or bicycles. |
|  |  | ***9***(Default) | Non-navigable road |
|  |  | ***10*** | Ship Ferry route |
|  |  | ***11*** | Train Ferry route |
|  |  | ***12*** | Public vehicle only road |
|  |  | ***13*** | Cycle way  Only available for bicycle, not for other vehicle and pedestrian |
|  |  | ***14*** | Layout (规划路线) |
|  |  | ***15*** | Road for Authorities |

### Road Sub Type

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***rst*** | Y | [***0,13***] | ***rst*** represents the road sub type. |
|  |  | ***0*** | Traffic Circle / Roundabout |
| ***1***(Default) | Main road  (no separation between two-way traffic) link  AND  One line per road |
| ***2*** | Main road  (separation between two-way traffic) link  Highway, toll road, vehicle-only road, and road with its two ways separated by a considerable distance (either horizontally or vertically)  Or  Multiple digitised with one line per direction of traffic instead of one line per road and |
| ***3*** | Connection road (line between main roads) link  Link connecting main roads of usually the same class at a junction of a highway, etc.  左右转，调头专用道(单线化道路)    Case1:路口RDCODE=10  Case2: 匝道上的调头专用道RDCODE=30 |
| ***4*** | Link within the intersection  Indicates that a road segment should not be viewed as an individual piece of road but as part of the intersection. A separate guidance manoeuvre should not exist for this segment. |
|  |  | ***5*** | Ramp  Link mutually connecting two-level crossing roads |
|  |  | ***6*** | Service road running alongside a main road.  Road that is usually parallel to the side of a main road |
|  |  | ***7*** | Road in undefined Traffic Square Internal  Undefined Traffic Square Internal refers to the Road Elements inside of an Unstructured Traffic Square which is a paved area where a car can travel, but there are no legally defined traffic paths. A car is not limited to driving on the Undefined Traffic Square Internal Road Elements. The car can drive in any pattern in the Unstructured Traffic Square. NAVTEQ includes generalized paths so that real road segments retain connectivity, but systems should recognize that if the GPS signal isn't matching to these Road Elements, it does not mean the car is off route. Instead it should wait until the car reaches a real Road Element again before determining its status as on/off route |
|  |  | ***8*** | Functional Special Road |
|  |  | ***9*** | Overbridge(vehicle)  即跨线桥或者立交 |
|  |  | ***10*** | Underpass(vehicle)  地下道（车） |
|  |  | ***11*** | Tunnel |
|  |  | ***12*** | Bridge |
|  |  | ***13*** | Entrance / Exit to / from a Car Park |

### Speed Category

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***speed\_cat*** | N | [***1,8***] | ***speed\_cat*** classifies the general speed trend of a road based on posted or legal speed and is provided to enhance route calculation and the timing of route guidance.  It’s not mandatory for ferry. |
|  |  | ***1*** | > 130 km/h |
| ***2*** | 101-130 km/h |
| ***3*** | 91-100 km/h |
| ***4*** | 71-90 km/h |
| ***5*** | 51-70 km/h |
| ***6*** | 31-50 km/h |
| ***7*** | 11-30 km/h |
| ***8*** | <11 km/h |
| ***sc*** | N | [***1,16***] | ***sc*** classifies the speed of a road based on TXD (TeleNav Exchange Data) format speed classification.  It’s not mandatory for ferry. |
|  |  | ***1*** | >130 km/h |
|  |  | ***2*** | 111-130 km/h |
|  |  | ***3*** | 91 - 110 km/h |
|  |  | ***4*** | 90 km/h |
|  |  | ***5*** | 80 km/h |
|  |  | ***6*** | 70 km/h |
|  |  | ***7*** | 60 km/h |
|  |  | ***8*** | 55 km/h |
|  |  | ***9*** | 50 km/h |
|  |  | ***10*** | 45 km/h |
|  |  | ***11*** | 40 km/h |
|  |  | ***12*** | 35 km/h |
|  |  | ***13*** | 30 km/h |
|  |  | ***14*** | 20 km/h |
|  |  | ***15*** | 10 km/h |
|  |  | ***16*** | 5 km/h |

### Direction of Traffic (Oneway)

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***oneway*** | N | ***yes/no/-1*** | ***oneway*** indicate the travel direction of traffic flow |
|  |  | ***yes*** | Open in positive direction |
| ***no*** | Open in both direction |
| ***-1*** | Open in negative direction |

### Highway

### Vehicle Access

### Names

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***name*** | N | User defined | Default name, usually it’s the primary name of the feature |
| ***name:<lang>*** | N | User defined | The official name for the specified language <***lang***>. |
| ***alt\_name:<lang>*** | N | User defined |  |
| ***ref:<lang>*** | N | User defined |  |
| ***exit\_ref:<lang>*** | N | User defined |  |
| ***short\_name:<lang>*** | N | User defined |  |
|  |  |  |  |

### Admins

### Lane Information

### TMC

### Traffic Pattern/History Speed

### Speed Limit

### Time Zone

### Other Simple Attributes

## Cartographic Line Feature

### Feature Type

### Names

### Admins

### Other Attributes

# Area Features

### Feature Type

### Admins

### Names

### Other Attributes

# Relation Features

## 3d Landmark

### Names

### Files

### Anchor point

### Other Attributes

## Admin

### Admin Level

### Admin Type

### Admin Order

### Country Code

### Names

### Other Attributes

## Zone

### Names

### Zone Type

### Country Code

### Other Attribute

### Members

## Gate

### Gate Type

### Vehicles

### Other Attribute

### Members

## Toll Booth

### Payment Type

### Structure Type

### Toll Gate Types

### Vehicles

### Other Attribute

### Members

## Bifurcation

### Vehicles

### Other Attribute

### Members

## Construction

### Vehicles

### Other Attribute

### Members

## Divided Junction

### TBD

### Other Attribute

### Members

## GJV

### TBD

### Other Attribute

### Members

## Go Straight

### TBD

### Other Attribute

### Members

## Junction View

### Files

### Anchor point

### Other Attributes

### Members

## One Way

### TBD

### Other Attribute

### Members

## Restriction

### RDM Type

### Restriction Type

### Vehicles

### Other Attributes

### Members

## Safety Camera

### Camera Type &ID

### Country Code

### Other Attributes

### Members

## Signpost

### Sign Names

### Other Attributes

### Members

## Traffic Sign

### Sign Type

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***traffic\_sign*** | Y | <traffic sign values below> | ***traffic\_sign*** identifies the type of warning sign. |
|  |  | ***begin\_overtaking*** | Start of No Overtaking |
| ***end\_overtaking*** | End of No Overtaking |
| ***protected\_overtaking\_extra\_lane*** | Protected Overtaking – extra lane |
| ***protected\_overtaking\_extra\_lane\_right\_side*** | Protected Overtake – extra lane right side |
| ***protected\_overtaking\_extra\_lane\_left\_side*** | Protected Overtake – extra lane left side |
| ***lane\_merge\_right*** | Lane Merging From The Right |
| ***lane\_merge\_left*** | Lane Merging From The Left |
| ***lane\_merge\_center*** | Lane Merge Center |
| ***railway\_crossing\_protected*** | Railway Crossing Protected |
| ***railway\_crossing\_unprotected*** | Railway Crossing Unprotected |
| ***road\_narrows*** | Road Narrows |
| ***sharp\_curve\_left*** | Sharp Curve Left |
| ***sharp\_curve\_right*** | Sharp Curve Right |
| ***winding\_road\_starting\_left*** | Winding Road starting Left |
| ***winding\_road\_starting\_right*** | Winding Road starting Right |
| ***begin\_overtaking\_trucks*** | Start of No Overtaking Trucks |
| ***end\_overtaking\_trucks*** | End of No Overtaking Trucks |
| ***steep\_hill\_upwards*** | Steep Hill Upwards |
| ***steep\_hill\_downwards*** | Steep Hill Downwards |
| ***stop*** | Stop Sign |
| ***lateral\_wind*** | Lateral Wind |
| ***general\_warning\_sign*** | General Warning |
| ***risk\_of\_grounding*** | Risk of Grounding |
| ***general\_curve*** | General Curve |
| ***end\_of\_all\_restrictions*** | End of all Restrictions |
| ***general\_hill*** | General Hill |
| ***animal\_crossing*** | Animal Crossing |
| ***icy\_conditions*** | Icy Conditions |
| ***slippery\_road*** | Slippery Road |
| ***falling\_rocks*** | Falling Rocks |
| ***school\_zone*** | School Zone |
| ***tramway\_crossing*** | Tramway Crossing |
| ***congestion\_hazard*** | Congestion Hazard |
| ***accident\_hazard*** | Accident Hazard |
| ***priority\_over\_oncoming\_traffic*** | Priority over oncoming traffic |
| ***yield\_to\_oncoming\_traffic*** | Yield to oncoming traffic |
| ***crossing\_with\_priority\_from\_right*** | Crossing with Priority from the Right |
| ***pedestrian\_crossing*** | Pedestrian Crossing |
| ***yield*** | Yield |
| ***double\_hairpin*** | Double Hairpin  (43…52, China specific ) |
| ***triple\_hairpin*** | Triple Hairpin |
| ***embankment*** | Embankment |
| ***two\_way\_traffic*** | Two-way Traffic |
| ***urban\_area*** | Urban Area |
| ***hump\_bridge*** | Hump Bridge |
| ***uneven\_road*** | Uneven Road |
| ***flood\_area*** | Flood Area |
| ***obstacle*** | Obstacle |
| ***horn\_sign*** | Horn Sign |
| ***begin\_no\_engine\_brake*** | No Engine Break |
| ***end\_no\_engine\_brake*** | End of No Engine Break |
| ***no\_idling*** | No Idling |
| ***truck\_roll\_over*** | Truck Rollover |
| ***begin\_low\_gear*** | Low Gear |
| ***end\_low\_gear*** | End of Low Gear |
| ***bicycle\_crossing*** | Bicycle Crossing |
| ***yield\_to\_bicycles*** | Yield to Bicycles |
| ***traffic\_sign:type*** | N | ***regulatory/informative/warning*** | ***traffic\_sign:type*** is traffic sign category, which identifies the main sign category to which the sign belongs. |
|  |  | ***regulatory*** | Regulatory Sign is applied when the Traffic Sign indicates a regulation. |
| ***informative*** | Informative Sign is applied when the Traffic Sign indicates information to alert the driver. |
| ***warning*** | Warning Sign is applied when the Traffic Sign indicates a warning. |
| ***traffic\_sign:*** ***priority*** | N | ***yes/no*** | ***traffic\_sign:*** ***priority*** identifies the priority sign, it can be used to group Traffic Signs related to Priority |

### Location

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***location*** | N | ***Left/Right/Overhead/Uncaptured*** | identifies the location of a given Traffic Light/Sign |
|  |  | ***Left*** | Left side |
| ***Right*** | Right side |
| ***Overhead*** | Overhead |
| ***Uncaptured*** | It’s not captured by vendor. |

### Vehicles

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***applicable\_to*** | N | Refer to *10.2 Vehicles Types* | Indicates the vehicles involved with the traffic sign. |

### Other Attributes

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***length:<lang>*** | N |  |  |
| ***prewarning:<lang>*** | N |  |  |
| ***validity:<lang>*** | N |  |  |
| ***incline*** | N | User defined | provides values visible on the sign related to specific Sign Types |

### Members

|  |  |  |  |
| --- | --- | --- | --- |
| **Sequence No.** | **Member Type** | **Member Role** | **Description** |
| ***0*** | ***W*** | ***from*** | The link associated with the traffic sign |
| ***1*** | ***N*** | ***via*** | The destination point of the traffic sign. The traffic sign only take effect on the direction when driving along the link ***from*** to the point ***via*** if traffic sign ***location*** is not available. |

## Traffic Signal

### Location

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **Mandatory** | **Value** | **Description** |
| ***location*** | N | ***Left/Right/Overhead/Uncaptured*** | identifies the location of a given Traffic Light/Sign |
|  |  | ***Left*** | Left side |
| ***Right*** | Right side |
| ***Overhead*** | Overhead |
| ***Uncaptured*** | It’s not captured by vendor. |

### Vehicles

### Other Attribute

### Members

## Truck Max Speed

### Other Attribute

### Members

## Grade Separation

### TBD

### Other Attribute

### Members

## ADAS Node

### CHS

### Other Attribute

### Members

## ADAS Max Speed

### Max Speed

### Other Attribute

### Members

## Dir Slope

### Dir Slope

### Other Attribute

### Members

## Virtual Connection

### TBD

### Other Attribute

### Members

## Natural Guidance

### TBD

### Other Attribute

### Members

# Appendix

## TeleNav Admin Level

|  |  |  |
| --- | --- | --- |
| **Admin Level** | **Description** | **Comments** |
| ***L1*** | Country |  |
| ***L2*** | Second level administrative |  |
| ***L3*** | Third Level administrative |  |
| ***L4*** | Forth level administrative |  |
| ***L5*** | Fifth level administrative |  |
| ***L6*** | Sixth level administrative |  |
| ***L7*** | Neighborhood |  |

## Vehicles Types

|  |  |  |
| --- | --- | --- |
| **Vehicle Type** | **Description** | **Comments** |
| ***motorcar*** |  |  |
| ***bus*** |  |  |
| ***taxi*** |  |  |
| ***hov*** |  |  |
| ***foot*** |  |  |
| ***truck*** |  |  |
| ***delivery*** |  |  |
| ***emergency*** |  |  |
| ***motorcycle*** |  |  |
| ***access\_through\_traffic*** | indicates if through traffic (residents only) is involved |  |
|  |  |  |

## Relation Member Types

|  |  |  |
| --- | --- | --- |
| **Admin Level** | **Description** | **Comments** |
| ***W*** | Way member |  |
| ***N*** | Node member |  |
| ***R*** | Relation member |  |

## Relation Member Roles

|  |  |  |
| --- | --- | --- |
| **Member Role** | **Description** | **Comments** |
| ***from*** | The from link or associated link for the relation |  |
| ***via*** | The via node or link for the relation |  |
| ***to*** |  |  |
| ***PART*** |  |  |
| ***country*** |  |  |
| ***order1*** |  |  |
| ***order2*** |  |  |
| ***order3*** |  |  |
| ***order4*** |  |  |
| ***order5*** |  |  |
| ***order6*** |  |  |
| ***order7*** |  |  |
| ***order8*** |  |  |
| ***inner*** |  |  |
| ***outer*** |  |  |
| ***backward*** |  |  |
| ***forward*** |  |  |
| ***gate*** |  |  |
| ***SC*** |  |  |
| ***on*** |  |  |
| ***variable\_speed\_sign*** |  |  |
| ***TS*** |  |  |
| ***toll\_booth*** |  |  |
|  |  |  |