

PTV Validate France

Release R2019_V1.0



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1 Introduction

The Traffic Volume Model France is based on the nationwide traffic model Validate developed by PTV France and can be linked to the road network of the product PTV Digital Data Streets. The data is based on model calculations in which traffic demand (journeys with origin and destination of cars) is derived from structural data in the first step. In a second step, this traffic is distributed ("rerouted") to the road network using proven algorithms. Procedures of this type are common in the transport industry worldwide and are widely used for transport planning in federal, state and local governments. The availability of powerful computers, high-resolution digital traffic networks and the know-how gained by PTV in this field over the last 18 years make applications of this kind possible today.

The average daily traffic volume is available directionally for all routes of the PTV Digital Data Streets' interurban road network.

The traffic volume data are not based on traffic counts, but were calculated with special algorithms and are therefore to be understood as model values. The model calculation also includes data such as population figures, workplace data by sector or commuter movements. Due to the modelling, implausibilities may occur in individual cases. In exceptional cases, there are segments for which a classification could not be carried out.

The model values have been validated with the help of numerous counting points. This was done with

- Count values from more than 4500 official permanent counting stations of the Ministère de la Transition écologique from 2019.
- Data from numerous traffic operators (cities, départements, etc.) have been collected and harmonized.

Data status:

The Traffic Volume Model R2019_V1.0 refers to PTV Digital Data Streets' road network Version R2018_V1.0 and Validate Version 19.V1.

2 Determination of the data

2.1 Traffic cells and traffic demand

In order to achieve a meaningful mapping of traffic flows in France, the study area must be divided into so-called traffic cells. A total of about 50,100 traffic cells are used, with about 300 additional external zones to cover exchange flows with abroad. The traffic cells in France represent an average of about 1,300 inhabitants.

From a variety of data sources, such as the officially available structural data of the municipalities and market cells as well as population group-specific traffic behaviour data, the traffic flows are calculated as a model with the help of a PTV traffic model. This takes into account typical travel distance distributions for the different trip purposes. Empirical data such as the commuter data of the public national Data and Documentation, which contains the commuter relations between all municipalities in France, calibrates and improves the matrix of transport relations.

2.2 Road network

The basis for the network creation is the deep-digitised navigation network from the PTV Digital Data Streets, which are based on the street data from TomTom N.V. From this, the superordinate roads are selected which absorb the main traffic volumes (road categories 1-5). The secondary roads of the subordinate traffic network, which have a purely developmental character (categories higher than 5) are not taken into account. This results in a network with approx. 7.7 million directed routes. It contains all routes on which significant traffic flows occur.

The network is digitised nationwide at the same depth, but can be refined for regional applications by adding further levels.

2.3 Attribution of the routes

In order to be able to carry out a model calculation on the network, the routes must be enriched with traffic data. For this purpose, each route is typified on the basis of a series of characteristic features (e.g. speed limit, connection function, construction type) and attributed accordingly.

2.4 Consideration of European through traffic

In order to be able to map through traffic, the French network is connected to external zones at the French border of the main roads of the European network (300 external zones).

2.5 Connection of the traffic cells

In order for demand to be distributed on the network, a connection between the traffic cells and the network must be established. These so-called connections are generated, among other things, with the help of the market cells. The known traffic volume of a traffic cell is thus fed proportionally into the subordinate network based on the population figures and jobs of the individual market cells. This achieves a finer distribution of traffic that corresponds to the origins and destinations.

3 Content and field description

Column	Content	Description	Data type
ID	Unique identification number for the object	Corresponds to the ID from the "Strassen" layer of the Digital Data Streets	Integer
TypHin	Road type in direction From → To regarding the nodes. The type stands for the driving speed that can be achieved on the respective road, not for the actual road type. The type is differentiated according to 15 characteristics.	1 = Highway fast 2 = Highway medium 3 = Highway slow 4 = Federal Highway fast 5 = Federal Highway medium 6 = Federal Highway slow 7 = Country Road fast 8 = Country Road medium 9 = Country Road slow 10 = City Road fast 11 = City Road medium 12 = City Road slow 13 = Ferry 14 = is not assigned 15 = Special cases such as zone 30, zone 10, pedestrian zones, forest roads (often these roads are not passable)	Short Integer
TypRueck	Road type in direction To → From regarding the nodes. See column TypHin.	See column TypHin.	Short Integer
Kat	The category reflects the importance of the street. The smaller the number, the more important the street. Traffic data is available for categories 1 to 5, in some cases also for other categories.	1 = Category 1 (highest importance) 2 = Category 2 3 = Category 3 4 = Category 4 5 = Category 5	Short Integer
Von	Initial node	Corresponds to the From-node from the "Strassen" layer of the Digital Data Streets	Integer
Nach	End node	Corresponds to the To-node from the "Strassen" layer of the Digital Data Streets	Integer
pkw_hin	Absolute traffic volume of cars per day. Direction From → To	Annual Average Daily Traffic for Cars (Monday-Sunday)	Integer
pkw_rueck	Absolute traffic volume of cars per day. Direction To → From	Annual Average Daily Traffic for Cars (Monday-Sunday)	Integer