PTV VISUM

the mind of movement

HOW CAN YOU CREATE PERFECT SERVICES ALL ALONG THE LINE?

A STRONG TOOL FOR PUBLIC TRANSPORT PLANNING

PTV Visum is the worldwide leading software for demand-driven and service-oriented public transport network and supply planning. The comprehensive tool PTV Visum offers detailed planning and analysis functions as well as comprehensible display functions that cover all strategic processes across public transport planning.

Numerous interfaces to Geographic Information Systems (GIS), timetable information systems such as DIVA, HAFAS, railML or Google Transit and the option of importing data from different sources, such as automatic passenger counting, vehicle tracking and ticketing systems or MS Office, ensure consistent data management and allow for valid scenario calculations without any loss of information. One of PTV Visum's major benefits is its excellent integration capability. The software cannot only be flexibly adapted to company's processes, but can also be used as a central platform for public transport authorities, transport associations or operators.

THE SOFTWARE IN OPERATION

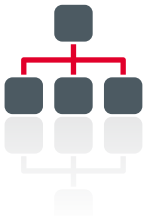
More than 1,000 customers worldwide are currently using PTV Visum for spatial and temporal planning of their public transport services. Rely on PTV Visum and develop sustainable and efficient mobility concepts for public transport.

5 GOOD REASONS FOR PTV VISUM

BENEFITS

COMPREHENSIVE PUBLIC TRANSPORT PLANNING TOOL

Use PTV Visum to tap the full potential of transport planning and state-of-the-art calculation methods which cover all strategic processes of traffic engineering and transport planning. While keeping an eye on transport demand, the software provides a wide range of planning and analysis functions. These include easy-to-interpret graphs and reports on partial or entire transport systems that support you in developing economically feasible, demand- and service-oriented public transport services.



INTEGRABILITY AND FLEXIBILITY

Opt for a planning tool that can be easily tailored to your needs. PTV Visum is characterised by the consistent combining of data of multiple sources (e.g. network, timetable, count and demand data), a comprehensive data structure and an open architecture. Its COM interface allows you to interact with external applications. User-defined attributes and add-ins expand its functionality and help you extend your public transport planning system whenever required.

EFFICIENCY

Create your public transport network model in only a few steps through data import. Equipped with extensive interfaces, consistent data management functions for highest data quality, performant editors and integrated scenario management, PTV Visum provides the perfect working environment for a sound analysis of your line network and services.

COMPELLING VISUALISATION OF PUBLIC TRANSPORT SUPPLY

Show the space-time structure of your public transport services in clear, comprehensible graphs or charts. The schematic line diagram, e.g., gives you an optimum overview of your services. A wide range of graphical parameters and labelling options provide information on arrival and departure times at stops and allow for depicting service frequencies, operators and other attributes as bars in different colours and line types.

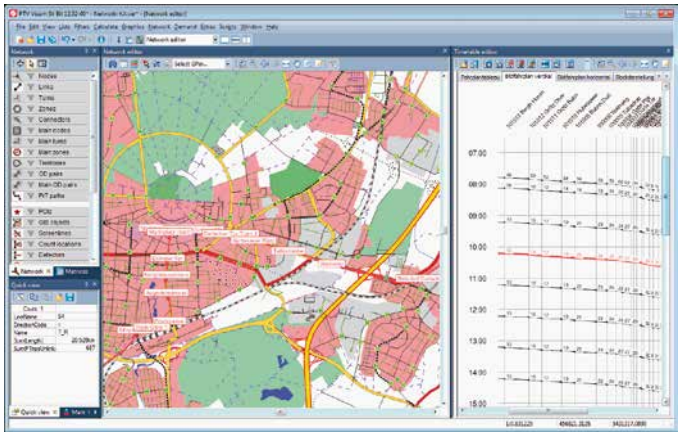
STRONG SERVICE

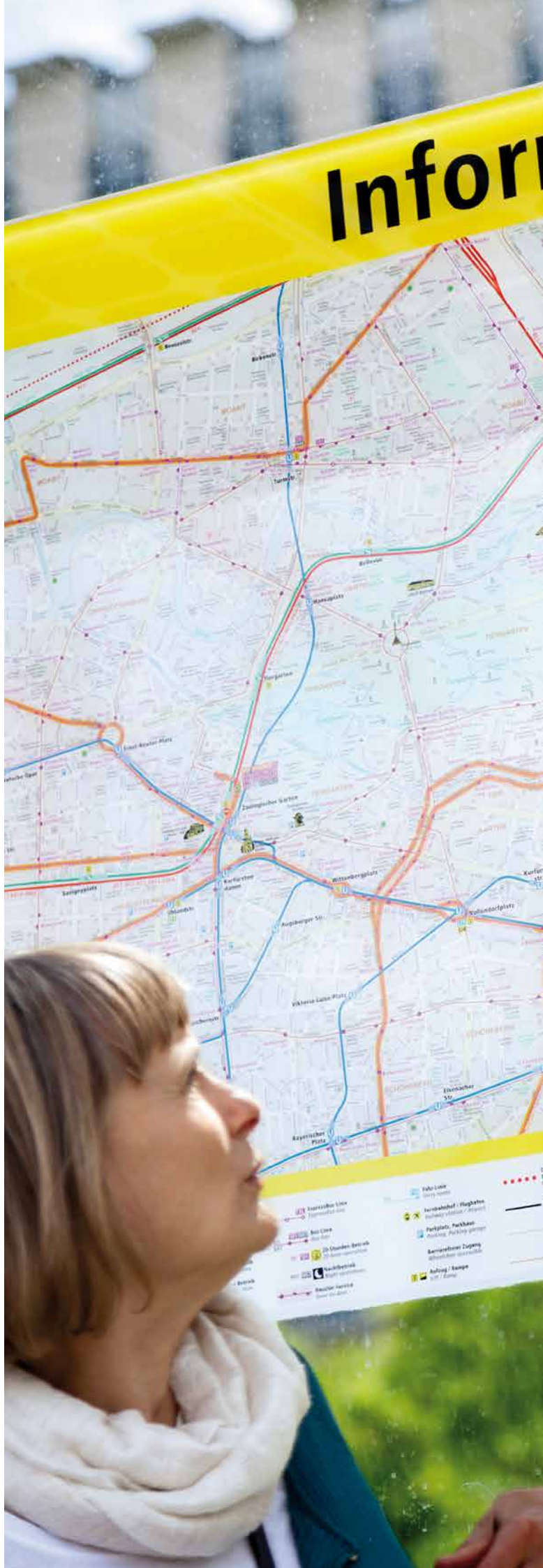
Become a member of our large international user community and benefit from our skilled and dedicated support team, our professional services, detailed documentation and tutorials, extensive training programmes and user group meetings ensuring intensive knowledge exchange.

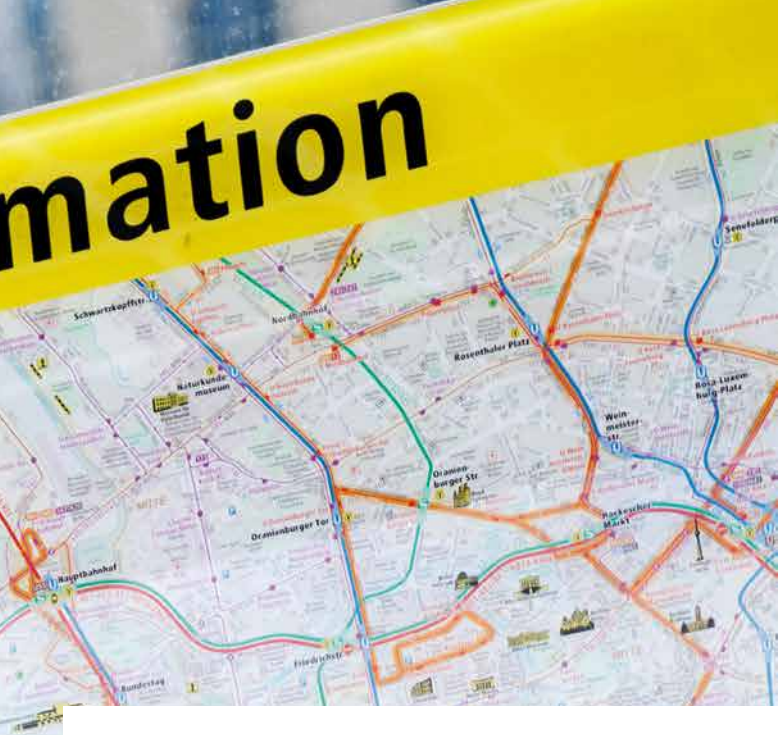
USE CASES AT A GLANCE

PUBLIC TRANSPORT NETWORK AND SUPPLY PLANNING

One of the classic tasks of network and supply planning is to provide passengers with an attractive service that at the same time is efficient from an operative perspective. PTV Visum is the ideal tool for spatial and temporal planning of public transport supply. The software allows users to import data from the most common systems via interfaces. This includes road and public transport network or timetable data. Based on this data, the world's leading traffic planning software models the current transport supply and links it to transport demand. A quantitative analysis of the network and services in PTV Visum includes accounting for statistical data of area usage, e.g. the number of residents and jobs in the traffic zones examined and comparing them with the data of locally relevant destinations. Land use data, passenger counts, survey data, ticket sales and smart card data are combined with public transport supply in order to obtain an objective analysis of the public transport services provided. With the help of PTV Visum's comprehensive analysis and planning functions and various display options, weak spots can be identified and rectified. Even forecast scenarios can be analysed before any measures are implemented.



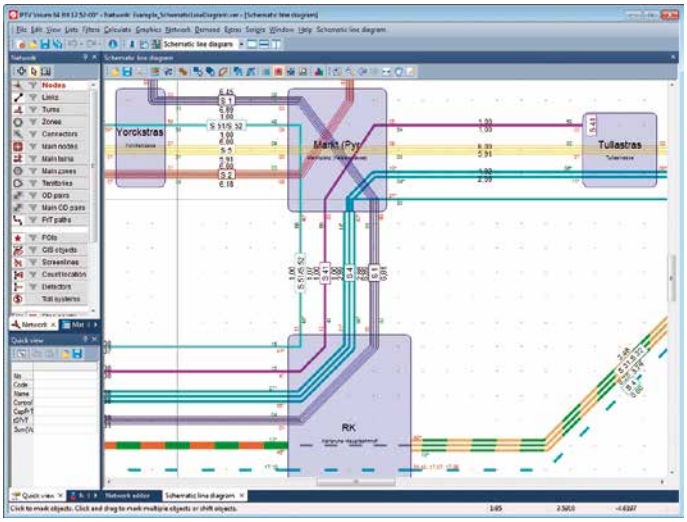




SCHEMATIC LINE DIAGRAM

A clear overall view of the line network is essential in public transport planning. Using PTV Visum's schematic line diagram, planners can abstract the network according to their or passenger's needs. The schematic line diagram (also refers to as spider web) visualizes network relationships and gives users an ideal overview of line routes and transfer stops. A wide range of graphical parameters and labelling options provide the information required. Users may add arrival and departure times to stops and display service frequencies, operators and other attributes as bars in different colours or line types.

A unique feature of PTV Visum is its ability to visualize the volumes of individual lines. This means users can immediately see how changes made to individual lines affect the performance of multiple lines of the network. The option of accounting for timetable details further enables users to identify important transfer relations. This allows planners to improve coordination and smooth passenger transfers.



ASSIGNMENT METHODS

Demand-based public transport planning forms the basis for a service-oriented network. The assignment methods available in PTV Visum show planners the service lines passengers actually use. This allows planners to realistically analyse how a new line, higher service frequencies or different fares affect public transport demand.

- **Headway-based assignment**
  Headway-based assignment is used to analyse scenarios that employ a headway-based approach rather than a detailed timetable. It allows users to account for fare prices. The fare prices of the fare model are used as part of the deterrent data. This type of assignment allows users e.g. to determine whether passengers prefer the less expensive, slow train or the more expensive, fast train. Moreover, headway-based assignment is used for impact analyses of long-term planning scenarios, e.g. of transport development plans.

- **Timetable-based assignment**
  Timetable-based assignment allows for fine-tuned planning and analyses including complex transfers and connections. It enables planners to realistically model various effects, such as initial and transfer waiting times, and to analyse measures for optimizing individual transfer points or hubs. Fare prices can be used as deterrent data in both headway-based and timetable-based assignment.

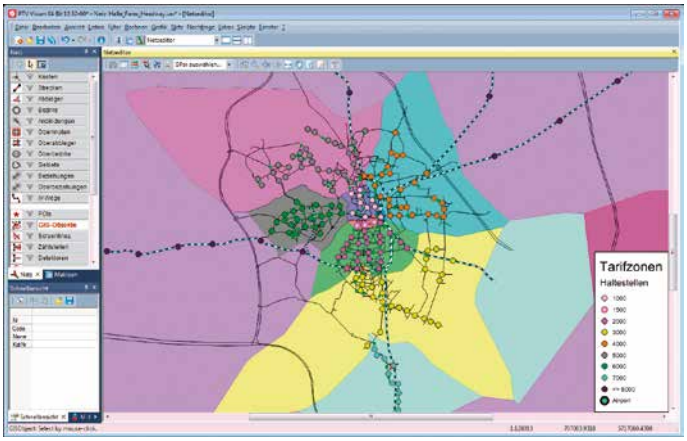
- **Transport system-based assignment**
  Based on demand matrices and excluding line route and timetable data, this assignment method models the desired line network from the passengers' perspective. It represents the so-called "what-if" scenario that shows which public transport links passengers would choose, if they were not limited in their options.

FARE MODELLING

PTV Visum may be used to model any type of fares – short-distance, zone based, distance based, from-to fare zone or combinations of these. It further allows users to display fare models in all their facets including dependencies. This, e.g., means multiply-counted zones for a city centre can be combined with short-distance fares or transitory fares for different transport operators or systems.

Fare modelling in PTV Visum also provides the ideal basis for estimating future revenues. If fare prices have been modelled in detail, the impact of fare changes on revenue can be analysed. Planners can check how profitable it is to change a fare or introduce a new ticket type.

With PTV Visum revenue may be analysed distinctly. In other words, it can be broken down into different aggregations, such as operators, areas or lines. The add-on module "Line costing and revenue calculation" allows for a comprehensive analysis of profitability and cost coverage of a public transport network or its service units and also provides information on the profitability of individual lines.



LINE BLOCKING

A primary task of strategic public transport planning is to determine the number of vehicles required to cost-effectively implement a specified timetable. PTV Visum allows users to take into account hourly, mileage and depreciation costs. Extensive analyses in graphical and tabular formats, breaking down the results by operators, lines, territories (created in PTV Visum based on two different methods) allow planners to identify optimisation potentials and implement measures for increased network performance.

- Basic line blocking
  Estimating the number of required vehicles is an essential basis for cost calculation. With basic line blocking, the user himself defines the vehicle types per service trip of his choice. The automatic line blocking procedures complete the process and the number of required vehicles and several marginal factors are estimated for use in profitability analyses. Basic line blocking in PTV Visum is part of the add-on module "Line costing and revenue calculation". This module allows users to perform an extensive revenue and cost coverage analysis for a public transport system, its service units or individual service lines. The results can be differentiated between operators, service lines, line bundles or areas.

- Detailed line blocking
  The add-on module "Detailed line blocking" extends the basic line blocking functionality provided by the Line costing module. The optimisation procedure allows for alternative vehicle types and chooses the type that ensures a minimum deployment of vehicles. Vehicle choice may also be based on passenger volumes calculated during assignment, on survey data and the vehicle's capacity in order to permit demand-optimised vehicle deployment.

LINE BUNDLING

With the strengthening of the conditions for competition, the European Union has reorganized the procedure for awarding line licences by introducing a tendering process for line bundling. The bundling of lines to partial networks, which can be serviced by several operators, serves economic operation and the pooling of services.

When planning line bundling, PTV Visum allows users to analyse the economic aspects of all lines of a partial network. During line blocking, e.g., the number of vehicles required for operating the line bundle can be optimised to reduce costs. PTV Visum further enables users to account for fares and passenger volumes in order to achieve a balance between profitable and less profitable lines of a partial network.

USAGE OF E-TICKETING DATA

Passenger surveys often do not include all details of passengers' complete trip within the public transport network. This is especially true for passengers who transfer several times or who walk from one stop to another to transfer.

PTV Visum allows users to complete missing survey-based information or to process smart card information. The knowledge gained of passenger volumes and origin-destination relations enables operators to make their services even more efficient. Using the Passenger module in PTV Visum, users can check route-related passenger data for plausibility and complete partial data. Checking and completing the survey data is primarily based on computer-aided modelling of the survey-relevant public transport supply and on parameters for reconstructing incomplete or correcting wrong trip data.

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