

Trip planning with PTV

Efficiency without compromise



Efficient transport planning

»More than ever before, transport and logistics companies are expected to confront the increasing cost pressures by planning transportations as efficiently as possible. This means recognising and making use of existing potential for optimisation, not only in operative trip and vehicle assignment planning, but also in the strategic evaluation of master trips and when planning new locations.

1500 companies from transport, trade and industry put their trust in PTV software when successfully optimising their transport planning. In many customer projects, more than 15 percent of transport costs and vehicles could be saved by optimising trip planning alone!

Sound interesting? Talk to us.«

*Dr. Joachim Schmidt
PTV AG Board of Directors*

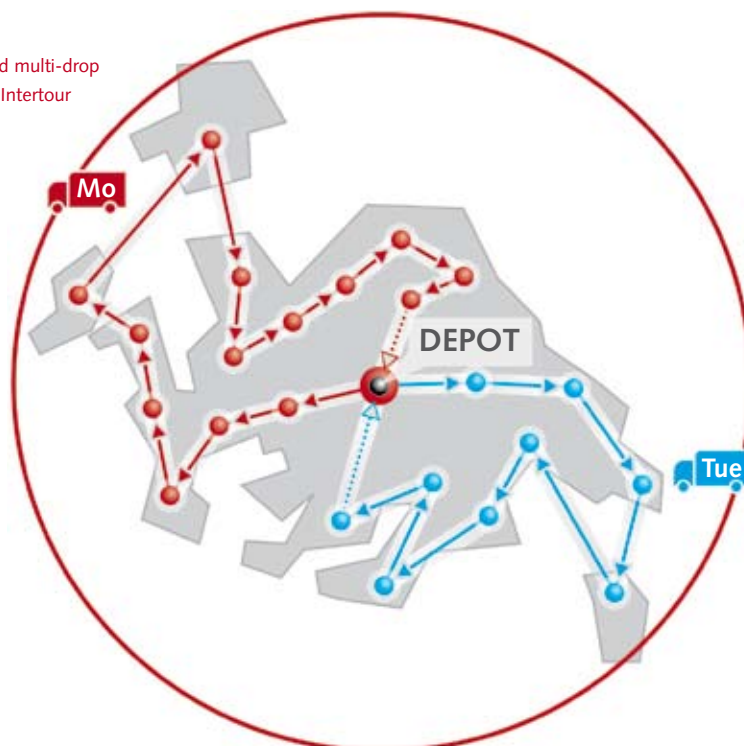
About PTV AG

For 30 years, PTV AG has been the leading provider of trip planning software. We understand the diversity of requirements and restrictions placed on transport planning and optimisation – and provide successful software solutions for them.

PTV's in-house R&D department is facing the challenge of the future. We design new technologies in national and international projects, in order to include future tasks in our products, such as in traffic planning or environmental protection, at an early stage.



Distribution and multi-drop services – PTV Intertour



Depot-related trip planning

PTV Intertour

PTV Intertour is the leading software solution for depot-related trip planning and optimisation in Germany and the Benelux. The software automatically plans your orders to optimum trips and takes the restrictions into account which are relevant to you and your customers. PTV Intertour provides a wide range of individual possibilities. The system can be extensively customised to your process requirements, system environment and also highly complex planning tasks.

Greater efficiency for trips and fleet

You define which parameters are taken into account in planning:

- Customer time limits/time slots
- Depot and warehouse opening hours
- Order availability times and prioritisation
- Master trips and area allocation
- Delivery requirements, handling times, load capacity
- Vehicle capacity and equipment
- Assignment times of human resources and vehicles
- Break and overnight stay regulations

PTV Intertour automatically creates a trip plan which takes all conditions into account, minimises transport costs and optimises fleet utilisation. After the first plan has been created, trips can be edited manually, stops and orders can be moved to other trips and selected vehicles can be switched. The planner is free to choose and has the possibility of planning alternative trip scenarios and comparing their costs.

Precise comparison of freight costs

PTV Intertour calculates the costs of your trips including toll calculation and provides a basis to precisely check profitability. The add-on module PTV Intertour/Cargo can do more: The software takes the planned trips from PTV Intertour and calculates the trip costs which can be expected for different forwarders or when using your own fleet. The tariffs, margins and special conditions arranged with subcontractors or service providers are included in the calculations.

PTV Intertour provides:

- ▶ Planning with combined distribution and multi-drop services
- ▶ Trip planning for daily transport tasks with varying order volumes and stop-off points
- ▶ Multi-day trip planning
- ▶ Master trip planning and multi-depot planning
- ▶ Planning with sub-depot trips
- ▶ Collections at reference depots
- ▶ Taking production capacities into account
- ▶ Avoiding delays at the loading ramp
- ▶ Putting down, hitching and picking up swap bodies
- ▶ Calculation of transport costs and toll calculation
- ▶ Freight contracting based on transport by external forwarders or by your own fleet



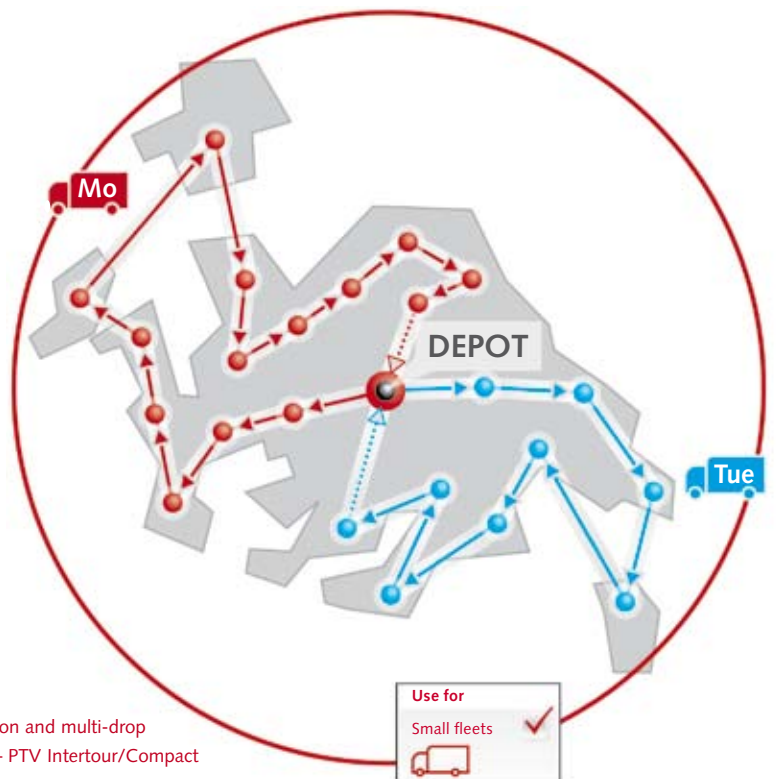
Little Brother – Big Results

PTV Intertour/Compact

PTV provides a transport planning solution for companies with smaller transport volumes, which fulfils all standard requirements, can be quickly installed and comes at an attractive price.

PTV Intertour/Compact is a "compact" version of PTV Intertour: The trip planning software contains all the functions from PTV Intertour required for depot-related trip planning, but deliberately leaves out the high degree of customisation possibilities provided by PTV Intertour.

The major advantage: PTV Intertour/Compact is quickly ready for use, as only a few days are required for installation, training and productive launch.



PTV Intertour/Compact:

- ▶ Contains the most important trip planning functions from PTV Intertour
- ▶ Plans up to 75 vehicles
- ▶ Provides quick and easy introduction and launch
- ▶ Enables a connection using standard interfaces
- ▶ Comes at an attractive price

Trips and vehicle planning for open transport

PTV Intertour/Dispatch

You are looking for planning software to support you in your full truck load (FTL) and less than truck load (LTL) planning? PTV Intertour/Dispatch has been specially developed for planning with changing loading and unloading points – and is ideal for trips with transport splits, international long-distance transportation and intermodal transport.

PTV Intertour/Dispatch provides:

- ▶ Operative planning of LTL and FTL transports
- ▶ Load optimisation
- ▶ Order planning for regularly changing loading and unloading points
- ▶ Automatic trip suggestions
- ▶ Management of order and vehicle data
- ▶ Calculation of transport costs and toll calculation
- ▶ Freight contracting based on transport by external forwarders or by your own fleet
- ▶ Telematics connection
- ▶ Effortless integration and adaptability to existing systems

Complete overview of complex plans

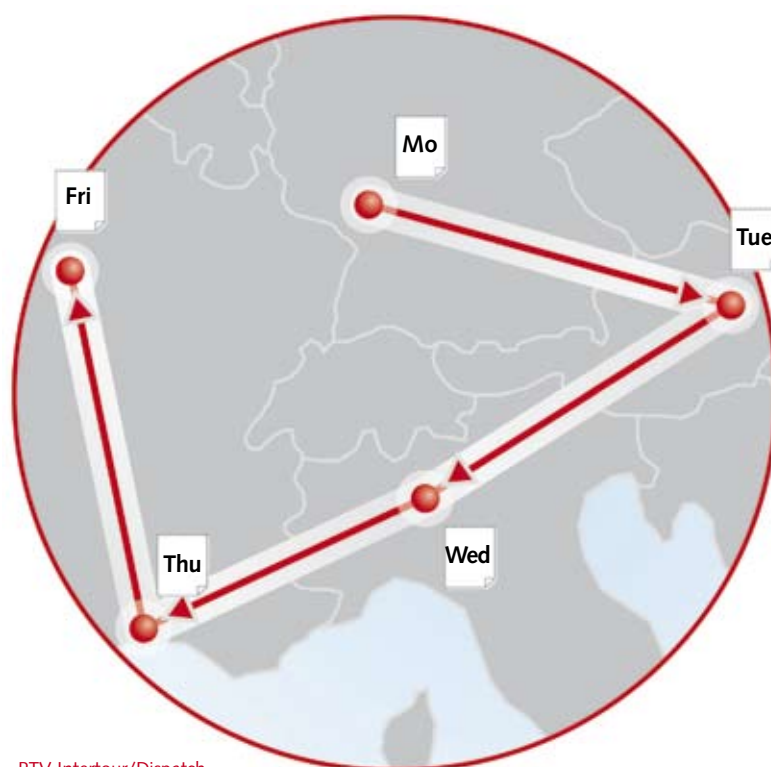
Using PTV Intertour/Dispatch, transportations with complex and dynamic structures can be planned quickly and easily. The software is ideal for loaders and logistics service providers with fleets of over 50 vehicles. Automatic suggestion functions support your planners in compiling optimum loads and return loads as well as when planning orders. All important conditions are taken into account by the system:

- Customer opening hours
- Vehicle capacities
- Vehicle assignment times
- Driving times and break times
- Vehicle equipment
- Vehicle availability

Telematics integration

PTV Intertour/Dispatch provides easy integration of telematics systems to trip planning. Using a dynamic interface, the planner can directly transfer the trips from the software GUI to the driver. The driver receives the trips and corresponding

information on a mobile end device. In the same way, the planner automatically sees the vehicle feedback reports from the vehicle on the computer – for example the vehicle position and the trip status. He is then able to update the current trip and the connecting trips with PTV Intertour/Dispatch.



Open Transports – PTV Intertour/Dispatch

Master trip planning and area optimisation

PTV Intertour/Strategy

PTV Intertour/Strategy is the software solution for strategic trip planning. It comes into use when strong daily fluctuations in fleet utilisation need to be levelled out, when weekly master plans need to be created with balanced fleet utilisation or when compact delivery areas need to be formed.

Weekly master plans

Instead of driving to each delivery or service area every day, PTV Intertour/Strategy can be used to create weekly master plans, which evenly share customer trips throughout the planning horizon and produce fully utilised fleets. The basis of the master trip plan is your customer data in a planning period of up to 12 weeks. Delivery quantities, individual call frequencies, fixed driver-customer relations, fixed delivery days, exception days as well as many other restrictions are all included in the master trip plan.

Compact delivery areas

Compact delivery areas minimise your vehicles' mileage, ease drivers' working hours and therefore reduce costs. Make use of these possible savings! PTV Intertour/Strategy provides reliable area optimisation, giving you the transparency you need as basis for decision-making.

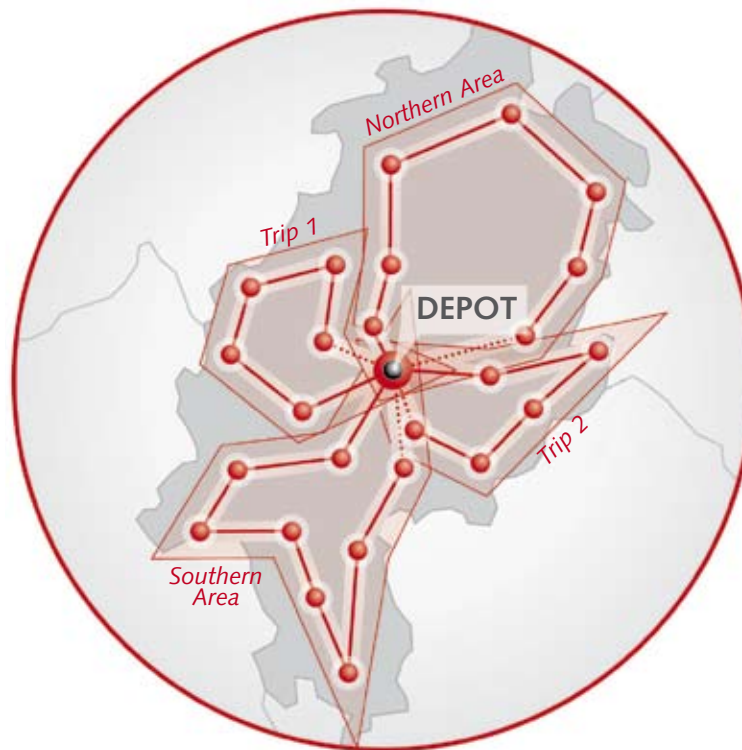
Alternative planning scenarios

Your master trip plans have grown over the years and need to be revised. PTV Intertour/Strategy creates optimum master trip plans for different situations so that the efficiency of different planning scenarios can be evaluated. You are provided with reliable answers to the following questions:

What if

- All customers with a turnover less than x Euro were only driven to y times a week?
- Customers ordered 20 percent more or less?
- Customers would accept time slots (8 am to 12 pm) instead of fixed appointments?

PTV Intertour/Strategy provides answers to these questions in what-if simulations.



Strategic planning –
PTV Intertour/Strategy

PTV Intertour/Strategy provides:

- ▶ Strategic master trip optimisation and simulation
- ▶ Planning of delivery rhythms and frequencies
- ▶ Levelling of fleet utilisation
- ▶ Optimisation of seasonal fluctuations
- ▶ Optimisation of trip areas
- ▶ Depot planning and depot allocation
- ▶ Optimisation of weekly delivery days and quantities

The component solution

PTV xServer

If you wish to integrate geographic or logistic functions in your system environment, our developer components are the right choice for you. The PTV xServers allow you to integrate the efficient modules in your application, which have been successfully established in many PTV and partner solutions – this enables you to save time and resources for your core business.

Geocoding The PTV xLocate Server geocodes postal addresses, provides reverse geocoding and address validation.

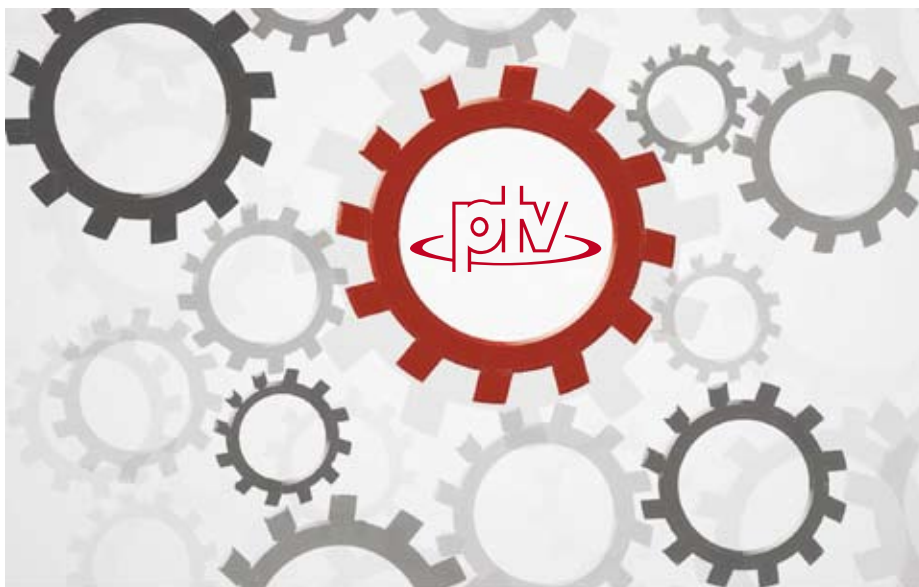
Map Display The PTV xMap Server ensures the display of maps, routes, POIs and objects – and includes many zooming and shifting functions.

Route, distance and toll calculation

The PTV xRoute Server calculates the quickest or shortest route between two or more points and calculates the distance, travelling time and toll costs. Additional functions are the "search-for-next" and the calculation of availability zones (isochrones) – based on travelling time or route.

Optimisation of sequence of stops with time slots The PTV xSequence Server optimises the sequence of stops within a trip and takes time slots and transport orders into account.

Calculation of distance matrices The PTV xDima Server calculates distance matrices between a number of locations. It provides these other applications and accounts for the requested routes and journey times to be restored quickly.



Route optimisation The PTV xTour Server optimises trips, i.e. many orders are assigned to several vehicles. In doing so the PTV xTour Server takes several parameters into account, such as vehicle capacities, opening hours, etc. The orders are distributed amongst the fleet so that they are delivered by as few vehicles as possible. Alternatively, it is possible to utilise all existing vehicles and drivers evenly.

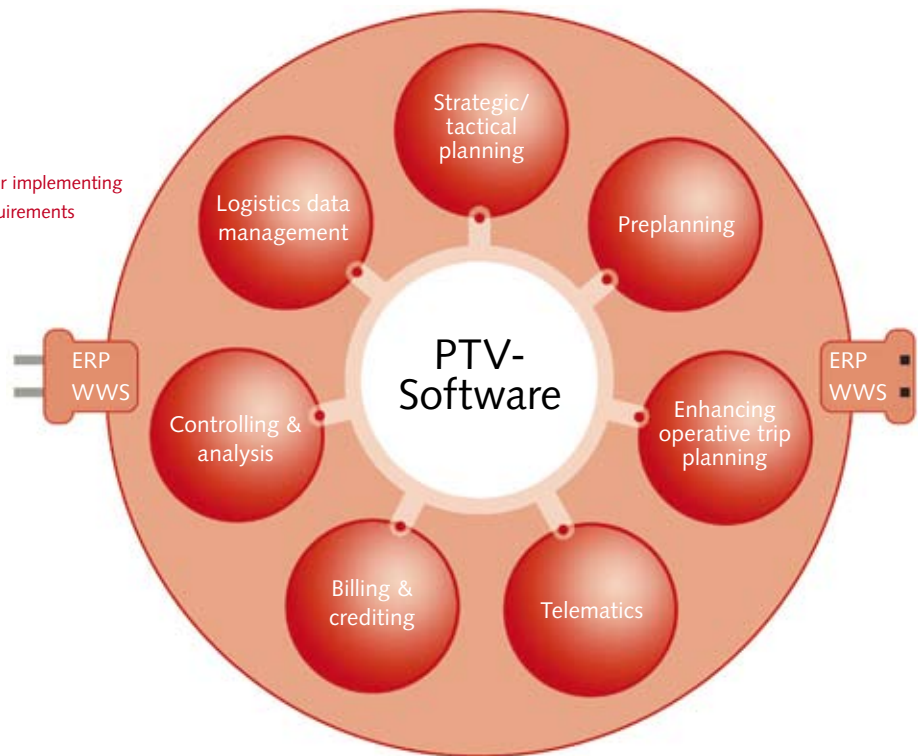
Clustering customers/customer calls

The PTV xCluster Server composes a number of customers or customer calls to homogeneous groups. The groups are composed by means of geographical position and other criteria such as visiting frequency in such a way, that an optimum fleet workload is achieved at an optimum customer care.

Your advantages with PTV xServers:

- ▶ Safety in standard technologies
 - ▶ Modularity of components for upgrading applications as required
 - ▶ High investment security
 - ▶ Simple integration using XML-/SOAP standard interface
 - ▶ Scalability and high performance
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PTV project solutions for implementing individual customer requirements



Individual project solution

A major part of the demands which companies from trade and industry, as well as from transport logistics place on trip planning and optimisation, can be fulfilled using the PTV Intertour family optimisation solutions.

In addition, as part of customer development projects, PTV also performs individual customisations and upgrades of our products, which go beyond basic product introduction. Of course, integration into different environments is also possible. This kind of individual project solution ensures that your specific requirements or processes are included and solved.

We provide services for all project phases such as preliminary planning, execution, implementation, testing, implementation support and professional project management.

The advantages of an individual PTV project solution for you:

- ▶ Individual and, at the same time, solution-orientated realisation of customer requirements
- ▶ Quick introduction and implementation
- ▶ Straightforward and predictable project costs, as implementation is based on an existing, established product.
- ▶ Knowledge gain and low project risk because our PTV consultants have many years of field-proved knowledge of user requirements.
- ▶ Transfer of customer's existing competitive advantages using customisation of total solution

Standard solution or individual project?

Use the opportunity of a consultation at your company, to help you decide if a standard solution or individually developed project solution is the right choice for you. Transitions are often small, so that only small alterations need to be made to find an optimum solution.

Factors for an individual project solution could be:

- Your business processes require special restrictions/specifications in trip planning
- In addition to logistics planning, the focus lies on upstream and downstream tasks along the transport chain, such as key data management, preplanning, main planning, follow-up planning, analyses and invoicing.
- An extensive connection to shared, complex systems is required.

Master trip planning as a service

Master trip planning has mostly developed over years and often requires optimisation. However previously optimised trip structures often have to be newly planned: When customer and delivery areas are added or removed, or if fleet structures, locations and order volumes change.

PTV can take over your master trip planning:

- with the knowledge of our experienced PTV consultants
- with the established planning software PTV Intertour or PTV Intertour/Strategy
- with your data for your company
- without having to purchase a software licence
- without having to train your own employees
- without installation expense

Your advantages for master trip consulting:

- ▶ Cost saving due to improved, immediately realisable master trips
- ▶ Consistent fleet utilisation, quantity fluctuations are balanced
- ▶ Alternative planning scenarios as a basis for strategic decisions
- ▶ No investment in software licences, no internal personnel resources and no installation expense

Concrete planning, not just talk

PTV consultants don't just come to your company to talk and leave the work up to you. PTV consultants completely replan your master trips using your data, observe all necessary restrictions and, if necessary, develop alternative planning scenarios.

When our consultants have left your company, you are provided with a master trip plan, which can be used as a fixed trip plan or which you can base your operative trip planning on.

Location planning as a service

PTV is not only market-leader in the trip planning industry. With PTV Map&Market we provide one of the most high-end solutions for location planning. Take advantage of this unique joint expertise in location optimisation and trip planning, without having to purchase software and with only one competent contact person.

Confident decision-making

Your PTV consultant plans optimised location structures according to your requirements and evaluates the effect on costs. In doing so, several scenarios are compared with each other so that, for example when moving locations or intending to expand,

the planning alternatives and all factors are transparent. If required, we also calculate optimised trip plans and occurring transport costs to complement the location planning.

Evaluation of automatic trip planning

Before introducing a new trip planning system, it is better to know the potential savings it could bring and whether or not an automatic trip planning system is necessary for that particular company with its requirements.

As part of an evaluation, PTV consultants perform an automatic trip plan with you, based on your data. After this example plan, the introduction of an automatic trip planning software can be exactly evaluated.

The evaluation provides:

- ▶ Display of all commercial factors (cost-benefit analysis) and technical factors (customer, order and trip information to be maintained) as a basis for decision-making
 - ▶ Analysis of your current situation (as-is analysis)
 - ▶ Display of potential savings
 - ▶ Display of optimisation opportunities concerning size of fleet, locations and type of vehicles
 - ▶ Establishment of acceptance in management and by planners
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Training and Support

For us at PTV, service means providing you with our expertise, not only in products, but also in our consulting, project solutions, training and support. We want you to make the most of our products and will support you with any questions you may have.

Training

Our training will help you to fully master our products so you can make the best use of them. Choose from our range of standard training and courses especially customised for your needs.

Customer Support

We provide reliable and competent support on technical and user questions on our products and system solutions. Our experts will keep your applications running smoothly with phone assistance, e-mail support and remote maintenance.

Implementation and update services

When introducing our products, our team of consultants assist you in task analysis, writing of specifications, performing studies, system configuration, installation, training and maintenance.



References

Many well-known customers from trade, industry and transport logistics put their trust in PTV products. For example:

AIR LIQUIDE
Auchandirect
Bakker Logistiek
Brenntag
Butagaz

Coop Schweiz

DANONE

Davigel

DB Schenker

De Rooy Distributie

De Rooy Logistics

DHL

FedEx

G4S - Group 4 Securicor

Gebrüder Weiss Transport und Logistik

Groep H. Essers

Internationale Spedition Willi Betz

Kraft Foods Deutschland

Kühne + Nagel

Lekkerland

LR Services

McDonald's

Norbert Dentressangle Logistics

Pepsi Cola

Piet Klerkx

Rhenus Logistics

Rockwool International

Samskip

Schneider Logistics

Tielbeke Transport

TNT-Group

Wallenius Wilhelmsen Logistics

Warsteiner Brauerei Haus Cramer

Wincanton

Traffic Software
▶ Logistics Software
Transport Consulting

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Optimise trips.
Reduce transport costs.
Balance fleet utilisation.
Plan delivery areas.

With software and consulting from PTV. Contact us!

