



PTV SMARTOUR: THE TRIP OPTIMISER

PTV Smartour automatically plans your orders into optimized trips, taking into account all restrictions that are relevant to you and your customers. This makes the software as individual as you are - it can be customised to your workflow requirements, system environment and complex planning tasks.

PTV SMARTOUR

SERVICES AT A GLANCE

ALL PTV SMARTOUR SERVICES AT A GLANCE

- ▶ Automatic planning and optimisation of combined consolidated and distribution transport and mixed transport
- ▶ Optimisation based on precombined trips or free planning
- ▶ Manual scheduling and suggestion functions
- ▶ Optimised trip plans even with quantities and journey points that vary daily
- ▶ Configurable preplanning with task field allocation, group order mapping and routes and quantity splitting
- ▶ Resource assignment planning with reassignments
- ▶ Multiple depots and alternative depot scheduling
- ▶ Inclusion of different vehicle profiles
- ▶ Calculation of transport costs, toll charges and CO2 emissions
- ▶ Central administration and structuring of roles and rights, orders, vehicles and drivers
- ▶ Cooperative trip planning across several subsidiaries or employees
- ▶ Configuration that is flexible and user-oriented
- ▶ Easy connection to external systems
- ▶ Integrated master data maintenance
- ▶ Stand-alone solution or multi-user system
- ▶ Telematics
- ▶ Freight calculation

CONVINCE YOURSELF!



ONLINE PRESENTATION

Get an insight into PTV Smartour with our short web presentation. If you wish you can also take control and test PTV Smartour for yourself. There is no installation required, all you need is a telephone and an internet connection.

- ▶ **Arrange a meeting!**



PTV QUICK-CHECK

The Quick Check allows you to identify how you can optimise your trips, vehicle use, trip lengths and trip durations. We analyse your current situation and prepare a new plan using PTV Smartour based on your requirements and data. You will then receive a result presentation that identifies your optimisation and savings potential.

- ▶ **Request your free version of the PTV Quick-Check.**



PTV SMARTOUR:

YOUR BENEFITS AT A GLANCE



YOU REDUCE COSTS

The automated planning improves the **utilisation of your resources** such as drivers, vehicles or trailers. The trips are optimised according to your sequence, number, duration and length. The software support means that even with small fleets you generally **save between 7 and 15 %**.



YOU SAVE TIME AND IMPROVE CUSTOMER SERVICE

The manual preparation of a trip plan can take several hours. PTV Smartour generally calculates the optimal solution in just a few seconds. Take advantage of this time saving as a result of the **shorter planning duration** in the scheduling department or in other company areas. (e.g. to start picking and loading sooner) This allows expensive late, night or early shifts to be cancelled. Or improve your **customer service** through later planning and extend the order times for your customers.



YOU EASE SCHEDULING WORKLOAD

PTV Smartour gives you all the important information at a glance. Activities that were previously performed manually are now **standardised** and some are fully automatic. The **quick implementation** of changes to vehicles or customer orders is no longer a problem, as all the data and consequences are always available. This transparency makes it easier to manage employee holiday replacements or to staff vacant positions, fewer errors occur and you obtain better results.



YOUR PLANS ARE COMPLIANT

Trip planning is not just about the optimal use of resources, it also has to comply with the statutory provisions and social obligations. This is made even easier by PTV Smartour. In addition to the **driving and rest periods, individual company agreements** can also be included in your resource scheduling.



YOU HAVE ALL THE FIGURES AT YOUR FINGERTIPS

Use PTV Smartour to search for additional savings and optimisation potentials. Your new planning tool provides precisely the figures you need to evaluate your logistics processes. PTV Smartour calculates your **toll, emissions, mileage, transport and vehicle costs**.

PTV SMARTOUR FUNCTIONS

1. TRIP PLANNING



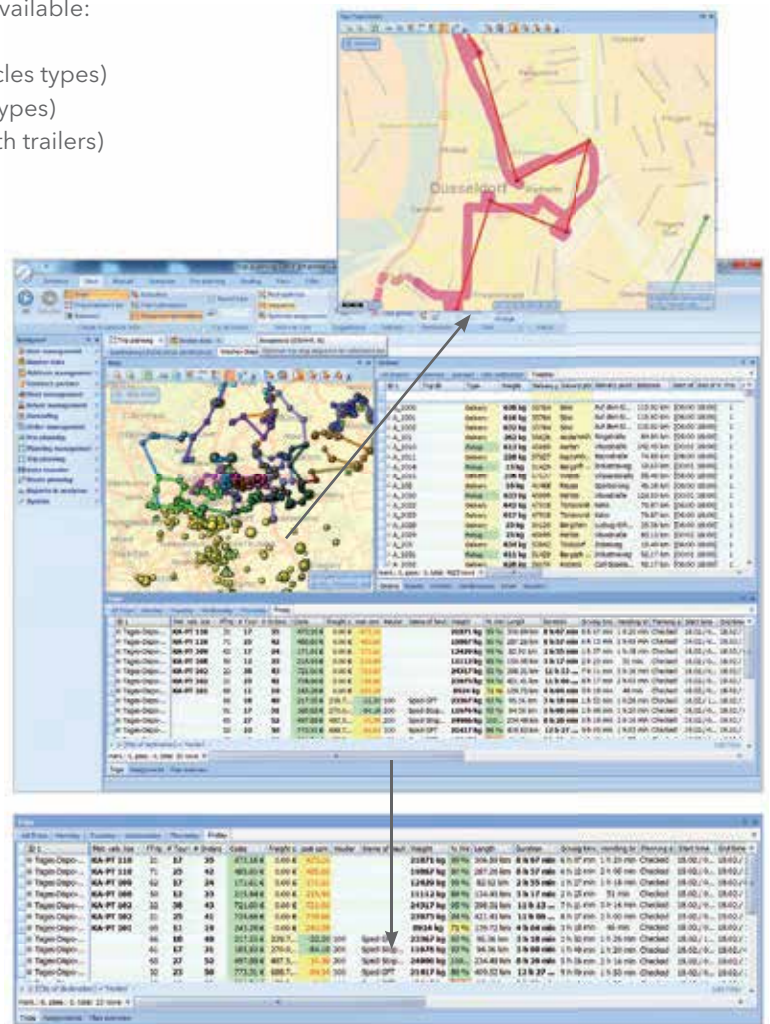
The trip planning program area is the central component of PTV Smartour. This is where all the planning objects are displayed and can be automatically or manually planned into trips and optimised, regardless of whether this is for a **daily or weekly plan**.

The following **planning objects** are available:

- ▶ Orders
- ▶ Vehicles (actual vehicles and vehicles types)
- ▶ Trailers (actual trailers and trailer types)
- ▶ Vehicle combinations (vehicles with trailers)
- ▶ Depots
- ▶ Drivers
- ▶ Trips
- ▶ Forwarders (using the additional Cargo module)
- ▶ Day or multi-day trips

PTV Smartour supports your trip planning with an intelligent suggestion system.

PTV Smartour lets you plan **mixed transports**. You can plan depot-related orders with deliveries from a depot or pickups from a pickup point as well as direct delivery orders from A to B.



Your benefits

- Automatic trip planning based on planning objects
- Mixed transport planning
- Support by using suggestion function
- Consideration of truck attributes

2. USER-FRIENDLY



These features help make PTV Smartour extremely convenient and easy to operate:

▶ Ergonomic interface and customised settings

PTV Smartour's interface is designed to be used intuitively. Every user has their **own profile** and can adapt the interface to suit their individual needs. The interface can be displayed across several screens, making it even clearer and more transparent.

The map in trip planning provides visual information on orders, trips with stops and depots. This **enables geographic references to be recognised quickly and easily** and provides direct planning support. In addition, the size, form and colours of the objects can be formatted depending on the object properties. For example, the object size of orders can be selected depending on the load quantity or the colour according to the priority or the precombined trip.

Your benefits

- Easy handling
- Clear display
- Quick planning
- Customised settings

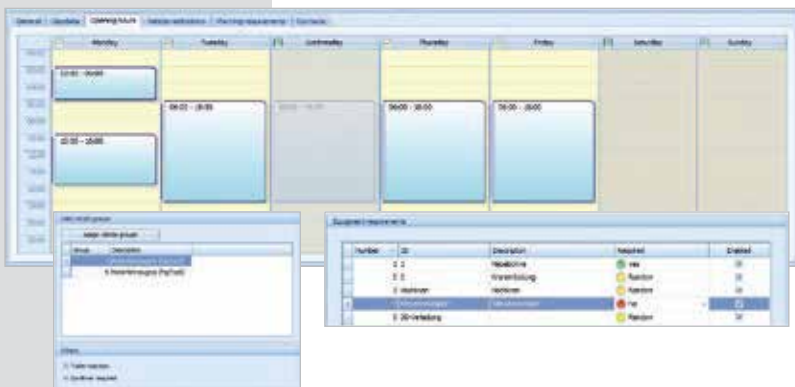


- ▶ **Planning speed**
PTV Smartour impresses with its **quick planning**. Complex trips and all the associated restrictions can be planned in seconds.
- ▶ **Drag-and-Drop**
Drag-and-Drop lets you to easily make individual changes, both in the list as well as on the map.
- ▶ **MultiUser**
PTV Smartour operates on a data base, so it can be used at **several workstations, regardless of their location**. The **customisable rights** for example allows several employees to view all tasks, but only some of them have administration rights. PTV Smartour can be installed locally, in the network and in Terminal-Server environments.

3. MASTER DATA AND PLANNING RESTRICTIONS



In PTV Smartour, you can create and manage different types of vehicles, including individual speed profiles. Moreover, it allows you to visualise logistical specifications, such as vehicle restrictions, which are often not included in the order data from the upstream system. Vehicles and/or vehicle settings can be included in the version, which means that modifications such as equipment changes that become valid on a specific date in the future can be taken into consideration.



Planning-related information may include:

- ▶ Vehicle requirement
- ▶ Truck attributes
- ▶ Individual vehicle profiles, speed categories, Multidima)
- ▶ Order dimensions
- ▶ Order types (pickup, delivery, transport)
- ▶ Customer ID (for pickup and delivery)
- ▶ Addresses for deliveries and pickups and/or coordinates
- ▶ Deadlines or time slots for pickup and delivery
- ▶ Driving times and rest periods
- ▶ 10 capacity values (weight, volume, etc.)
- ▶ Precombined trip

Your benefits

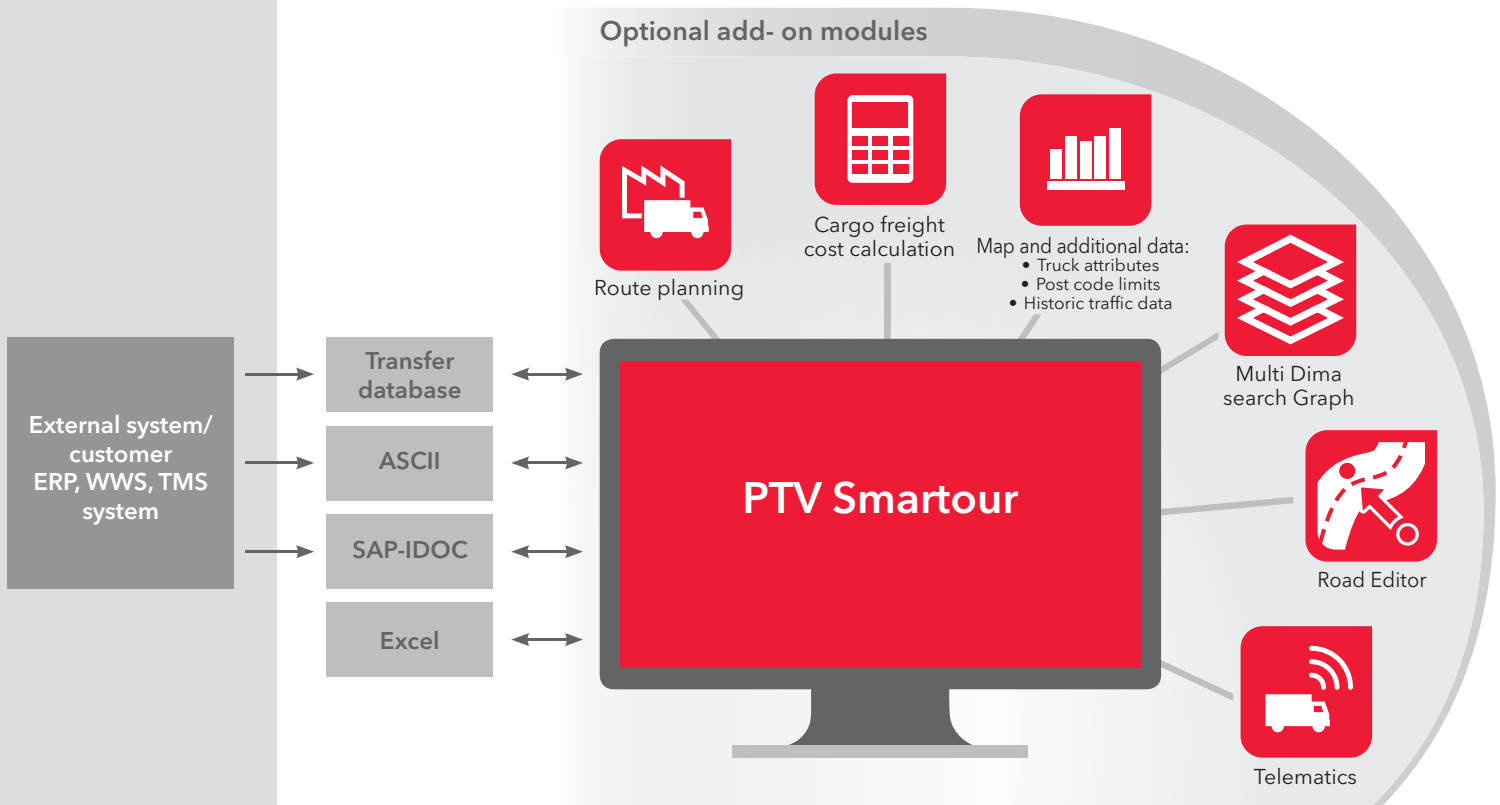
- Consideration of various time slots
- Tolerance classes
- Merger prohibitions
- Individual vehicle restrictions

Your benefits

- Optimal integration into your existing environment
- Considers your requirements

4. MODULAR CONSTRUCTION

The PTV Smartour trip planning software is as individual as you are. The modular construction guarantees that you receive the elements that you require. The individual modules range from the transfer database to the telematics system and freight calculation with Cargo. The modules can be adapted widely to your process requirements, as well as to complex system landscapes and planning tasks.



5. TELEMATICS INTEGRATION



This model allows PTV Smartour to support even more extensive telematics applications. Planned trips can be transferred to the telematics system and therefore directly into the vehicle. This significantly speeds up and improves the communication between the driver and the scheduler. During the trip the **status messages** are displayed directly in PTV Smartour's trip planning and any delays are highlighted. This gives the scheduling department a real time overview of the entire trip:

- ▶ Trip planning
- ▶ Vehicle planning
- ▶ Order delivery status
- ▶ Possible delays and impact on the current trip planning

| ID | Client | Periods | City | Street | Eventen | Arrival scheduled | Departure | Delay | Arrival (actual) | Departure |
|----|--------|---------|-----------|-----------------|---------------|-------------------|-----------|--------|------------------|-----------|
| 0 | DE | 45*** | Herborn | | Driver | 05:07 | 05:07 | -2 min | | 05:09 |
| 1 | DE | 50256 | Eisenp... | Delitzhausen | Driver | 06:00 | 06:00 | 0 min | 06:04 | 06:11 |
| 2 | DE | 50119 | Hagen | Spinnstraße | Driver | 06:51 | 06:58 | 0 min | 06:54 | 06:58 |
| 3 | DE | 50642 | Iserlohn | Schmerlestraße | Driver | 07:05 | 07:10 | 11 min | 07:09 | 07:20 |
| 4 | DE | 50642 | Iserlohn | Am Burgberg | Driver | 07:13 | 07:18 | 7 min | 07:22 | 07:25 |
| 5 | DE | 50638 | Iserlohn | Berliner Platz | Driver | 07:24 | 07:29 | 0 min | 07:33 | 07:38 |
| 6 | DE | 50638 | Iserlohn | Güterstraße | Driver | 07:31 | 07:36 | 0 min | 07:40 | 07:42 |
| 7 | DE | 50639 | Iserlohn | Schödenhofe... | Driver | 07:36 | 07:42 | 0 min | 07:43 | 07:46 |
| 8 | DE | 50639 | Iserlohn | Säkerstraße | Driver | 07:42 | 07:47 | 0 min | 07:45 | 07:48 |
| 9 | DE | 50639 | Iserlohn | Südenweg | Driver | 07:48 | 07:55 | 0 min | 07:50 | 07:57 |
| 10 | DE | 50675 | Hemer | Altener Straße | Driver | 07:58 | 08:05 | 0 min | 08:04 | 08:11 |
| 11 | DE | 50802 | Dalre | Im Braukhaus... | Arrive | 08:31 | 08:36 | 0 min | | |
| 12 | DE | 50802 | Italen | Widuenplatz | Not yet ch... | 08:43 | 08:43 | | | |
| 13 | DE | 50710 | Menden | Fachstraße | Not yet ch... | 09:00 | 09:07 | | | |



Your benefits

- Direct connection to the drivers and the vehicles
- Independent information on the delivery status in real time
- Up-to-date overview of all trips and vehicles
- Enables a quick response in case of deviations



6. FREIGHT CALCULATION

The Cargo module with integrated freight calculation allows you to compare transport costs arising through external and internal procedures. You can then decide on the basis of cost whether routes are assigned to forwarding agents or to your own drivers. To this end, you can select forwarding agents and allocate them to trips created by PTV Smartour. You can create and manage **individual freight tariffs** for each forwarding agent which can be used to calculate the **precise freight costs**. This can map both simple distance and volume-based structures or even complex variants with different surcharges. PTV Smartour uses the integrated eCargo component provided by our partner LOCOM GmbH for the creation of freight tariffs and cargo accounts settlement.

Your benefits:

- Individual freight tariffs for every forwarder
- Forwarder cost comparison (internal and external comparison)

The screenshot shows the 'Tariff editor' interface. On the left, there's a tree view under 'Objects' with 'GFT-Ladungssatz nach 1992' selected. The main area shows 'Calculation rules' with a table:

| Field | Formula | Description | Entfernung/Gewicht |
|-------|-------------------------------------|-------------|---------------------|
| GFT | GFT-Ladungssatz nach 1992(Trip L... | GFT | KM<= 1000 und Ge... |

Below this, there's a 'Costs' table:

| Costs | Freight cost | Freight_Comparison | Max. | Name of hauler |
|----------|--------------|--------------------|------|------------------|
| 423.18 € | 333.18 € | 90.00 | 100 | Speed GFT |
| 471.01 € | 357.79 € | 113.26 | 200 | Speed Stopkosten |
| 567.67 € | 500.38 € | -12.71 | 100 | Speed GFT |
| 549.89 € | 492.96 € | 57.33 | 100 | Speed GFT |
| 189.97 € | 189.00 € | 0.97 | 200 | Speed Stopkosten |
| 273.63 € | 234.05 € | 39.63 | 100 | Speed Stopkosten |
| 491.40 € | 409.50 € | 81.90 | 200 | Speed Stopkosten |
| 415.50 € | 420.00 € | -4.50 | 200 | Speed Stopkosten |

On the right, there's a 'Rates' table with columns for 'Station', 'Rate', and 'Unit'.

7. ROUTE PLANNING

The route planning module offers independent truck routing including truck attributes and can be used to calculate routes between selected drop-off points for different vehicles. This gives you a quick overview of:

- Distances
- Duration
- Costs
- Emission data
- Toll costs

Routes can also be extensively edited. For example, **points en route** can be entered, **alternative routes** can be calculated or the **route can be reversed**. Route planning can be customised by entering the following attributes:

- Routing profiles
- Truck attributes
- Driving times and rest periods

The screenshot shows the 'Route planning' interface. It features a map with a route highlighted. Below the map, there's a table for 'Vehicle-related emissions' and a detailed 'Route-related emissions' table.











| Station | Description | km | CO ₂ | CO ₂ e | NO _x | Fuel | CO ₂ | CO ₂ e |
|------------|-------------------------|-------|-----------------|-------------------|-----------------|-------|-----------------|-------------------|
| Station 1 | DBU 11421 Bergholz G... | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Station 2 | DBU 11421 Bergholz G... | 24.20 | 28.99 | 28.99 | 18.80 | 12.99 | 28.79 | 27.79 |
| Station 3 | DBU 11421 Bergholz G... | 36.80 | 21.79 | 15.37 | 14.11 | 11.79 | 29.79 | 29.79 |
| Station 4 | DBU 11421 Bergholz G... | 32.88 | 29.79 | 25.39 | 18.79 | 15.39 | 31.39 | 31.39 |
| Station 5 | DBU 11421 Bergholz G... | 32.00 | 48.89 | 38.89 | 30.39 | 27.39 | 41.39 | 41.39 |
| Station 6 | DBU 11421 Bergholz G... | 42.00 | 36.87 | 28.87 | 24.87 | 21.87 | 35.87 | 35.87 |
| Station 7 | DBU 11421 Bergholz G... | 40.65 | 53.05 | 43.05 | 34.05 | 31.05 | 46.05 | 46.05 |
| Station 8 | DBU 11421 Bergholz G... | 78.00 | 72.74 | 62.74 | 47.74 | 44.74 | 69.74 | 69.74 |
| Station 9 | DBU 11421 Bergholz G... | 82.04 | 77.84 | 67.84 | 50.14 | 47.14 | 74.14 | 74.14 |
| Station 10 | DBU 11421 Bergholz G... | 90.20 | 87.28 | 77.28 | 58.18 | 55.18 | 83.18 | 83.18 |
| Station 11 | DBU 11421 Bergholz G... | 90.20 | 88.19 | 78.19 | 59.19 | 56.19 | 84.19 | 84.19 |

Your benefits

- Automatic route calculation
- Identification of the relevant costs and data
- Consideration of individual attributes

COMPANIES OF DIFFERENT INDUSTRIES RELY ON US

Over 800 customers speak for themselves. PTV Smartour is the leading software for route planning and optimisation in Germany and the Benelux countries. No matter what industry they are: food or fresh food logistics, building materials, wood or steel trade, sanitary and home automation, automotive and furniture industry - with PTV Smartour you are right!

| | | | | |
|---|--|---|---|--|
|  <p>Lekkerland the convenience company</p> | <p>Lekkerland AG & Co. KG "What we expected of the PTV solution: We wanted to reduce the kilometers our fleet drives by 8%. This was definitely achieved. We currently have a saving of over 10%. And at peak times we have even reached up to 15%."</p> |  <p>PAPYRUS</p> |  <p>bonami FoodService</p> |  <p>VIESSMANN climate of innovation</p> |
|  <p>Das Auto.</p> | <p>Apostolos Couvaras, Officer Corporate Transport</p> |  <p>ROCKWOOL</p> |  <p>DHL</p> | <p>DHL Solutions GmbH „Professional trip planning helped us to reduce the number of our trips from 18 to 14-16. This saves kilometres and protects the environment.“</p> <p>Karl-Heinz Becker, Management regional distribution centre</p> |
|  <p>trans-o-flex Logistics Group</p> | |  <p>FRESENIUS MEDICAL CARE</p> |  <p>igefa Hygiene For Professionals</p> | |

PTV. THE MIND OF MOVEMENT:

The PTV Group provides software and consulting for traffic, transport logistics and geomarketing. Be it transport routes or sales structures, private or public transport - we plan and optimise everything which moves people and goods worldwide. Our range of products and services includes Concepts & Solutions, Software & Services, Components and Data & Content. Customers in more than 100 countries rely on our solutions. Our software tools enable private and public sector organisations to perform their everyday tasks in a highly efficient manner.

Scientific expertise is one of our particular strengths. We run projects in a goal-based and practice-oriented manner. Currently, we have over 650 employees worldwide crafting powerful and innovative solutions. Our head office, which is located in the technology region of Karlsruhe, Germany, has been the centre of development and innovation since the formation of our company in 1979.

Convince yourself and ask for:

- ▶ User report from your industry
- ▶ Quick Check
- ▶ Online Presentation
- ▶ Trial

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