

PTV xSequence Server

Sequence optimisation

PTV xSequence Server identifies the ideal sequence for stopping-off points in a particular trip. The calculations are based in part on vehicle capacity, time restrictions, and legal guidelines on driving times and rest periods.



Functions

PTV xSequence Server solves the kind of sequencing problems typically encountered in sales force and transport planning.

- Shortest / fastest trip: the stopping-off points are completed in a specially optimised sequence that minimises the overall driving distance or travel time (travelling salesman problem).
- Maximum number of stop-off points: The PTV xSequence Server selects orders or customer appointments and optimises the sequence of calls, so that as many stop-offs as possible can be made. The maximum trip length or duration is specified in this scenario (orienteering problem).
- Maximum revenues: this version of the orienteering problem plays an important role in sales force planning. All stopping-off points are assigned a particular

revenue level. PTV xSequence Server selects the stopping-off points and optimises their sequence in order to maximise revenues from the trip.

- Minimal financial penalties: the same method can be used to sequence service calls by technicians in order to minimise financial penalties due to delays in after-sales service.

PTV xSequence Server can be used to plan a new trip and to validate existing trips. Planning and optimisation are performed on the basis of exact routes or driving times.

Applied restrictions

PTV xSequence Server optimises trip sequences based on the following restrictions:

- Time restrictions: required driving times and rest periods, customer opening hours, specified visit hours, no overnight stays
- Vehicle capacities / loading capacities
- Transport times / expiry times (product's maximum residence time on the vehicle)

Settings

The following settings can be configured in PTV xSequence Server:

- Vehicle type (e.g. car, truck)
- Speed per road class
- Heavier weighting for either travel time or road distance (results in faster or shorter trips)

Data basis

PTV xSequence Server uses PTV's standard maps. PTV offers a wide range of regularly updated maps. For decades, PTV has been working closely with NAVTEQ, Tele Atlas and AND – all leading suppliers of map data.

Hardware requirements

- At least 1 GB RAM (1 GB RAM recommended for each CPU in use)
- Pentium 4 (1 GHz) or better
- Hard drive space: depends on map in use. Example – Europe map: 10 GB

Operating system

PTV xSequence Server runs on the following Windows platforms:

- Windows 2000
 - Windows 2003
 - Windows XP
 - Windows Vista
- (Linux support under development)

PTV xSequence Server at a glance:

- ▶ **Optimise trip sequence**
 - ▶ **Optimisation goals: shortest trip, fastest trip, highest number of stopping-off points**
 - ▶ **Travelling salesman and orienteering problems**
 - ▶ **Take vehicle capacities and time limitations into account**
 - ▶ **Integrate the component easily using standardised interfaces (XML/SOAP)**
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