PTV TiledMap in practice

For desktop applications the local application (e.g. internet browser) accesses the complete database of the central servers. The tiles required are selected and loaded into the local data environment. For internet applications, tiles which have been loaded can be saved in the cache and reused. For local applications data records can be preloaded from CDs or DVDs.

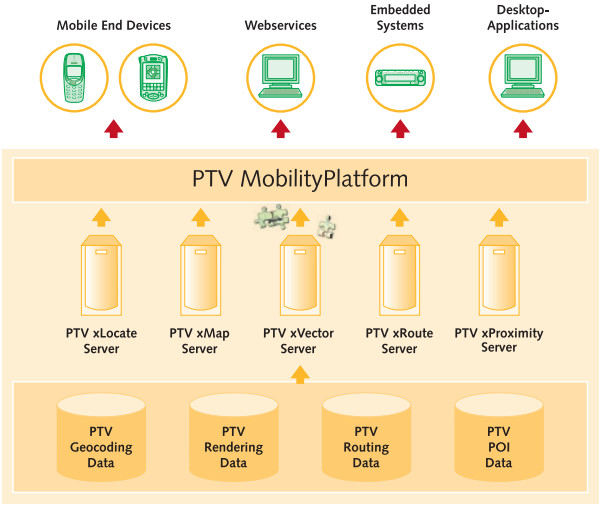
For a simple map on a mobile end device defined map sections are transferred to the end device (MMC, SD, via cable or over the air). Several map sections can be joined together or also deleted when they are no longer required.

For an onboard navigation map sections are predefined. Several map sections can be dynamically joined so that for example a section from a French map can be seamlessly joined with maps from Germany and Switzerland.

For an offboard navigation only those tiles in the route corridor are transferred to the end device on which navigation is carried out self-sufficiently. For a new route already existing tiles can be integrated – a new transfer is not necessary. With a corresponding license certain map sections can remain in the end device while other areas are dynamically loaded or deleted again. In this way outdated tile data is automatically updated as required.

Your benefits with PTV TiledMap at a glance

- Up-to-date maps and information at any time thanks to easy update
- Easily extendible maps
- High performance
- For use with various end devices, optimal memory utilisation
- Individually adapted to the needs of the providers and users



PTV Planung Transport Verkehr AG

PTV AG provides software, consulting and research for travel, traffic and transportation planning in the B2B field. For years PTV products such as map&guide for professional trip planning, VISUM for traffic planning and PTV Intertour for distribution planning have been established as European market leaders. Future-oriented concepts and innovative technologies ensure continuous mobility in the business fields Traffic, Mobility and Logistics.

Our group-independent enterprise was founded in 1979. With more than 300 employees in the parent company in Karlsruhe and numerous branches and subsidiaries in Europe, Asia and the USA, PTV AG is actively opening up national and international markets.

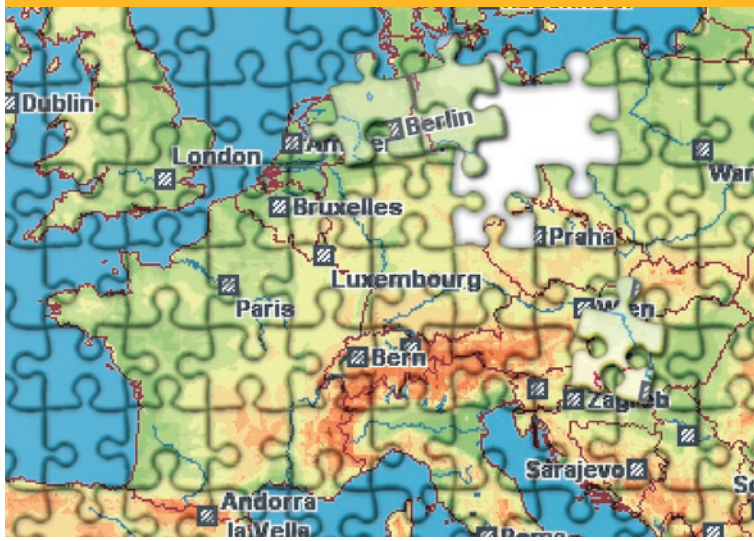
Any questions? Just contact us!

traffic mobility logistics.

PTV AG
Stumpfstraße 1
76131 Karlsruhe
Tel.: +49-721-9651-415
E-Mail: mobility@ptv.de

PTV TiledMap

Scalable map architecture (SMA) – the map format of the future



traffic mobility logistics.

PTV TiledMap

Easily updating map data at any time

In the past in order to update digital road maps the entire data had to be exchanged and reinstalled. Today that is no longer required thanks to PTV's new map technology. The scalable map architecture (SMA) enables digital maps to be dynamically and selectively updated and supplemented – an excellent basis to easily implement all types of customised mobility services.

Meets different requirements

The requirements placed on digital map data depends on how the data is used: for a rough orientation a location specification down to 10km could suffice, however driver assistance systems of the future would like to know the position of the dotted line down to the last 10cm. For some applications maps which cover 10km² are sufficient, others need detailed information world wide. And how frequently should the data be updated? Once a year or daily in order to depict current traffic obstructions? And last but not least the compatibility is important so that the map data is available on all end devices.

PTV TiledMap can be integrated in various operating systems (currently available for Windows®, Linux and Symbian) and meets your individual demands regarding:

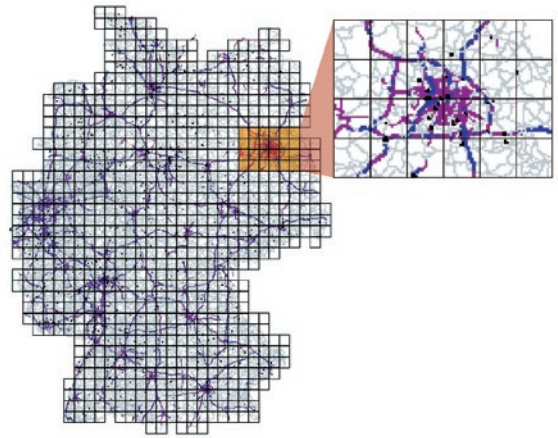
- resolution
- map sizes
- current accuracy
- compatibility
- depth of information

Flexibility thanks to the tile format

PTV TiledMap divides the entire world into fixed standardised square tiles. Germany alone is divided into 550,000 tiles. Each tile contains certain data in a degree of accuracy specified for the entire coverage, each geographic information applies up to the border of a tile and is continued in the next tile.

The data is separated into individual layers which can be used as required. These include:

- geographic information: roads, places and areas
- traffic structures: junctions, turn-off regulations, speed limits
- postal address information: postal codes, house numbers (geo coding)
- points of interest (POIs)
- dynamic data such as traffic conditions, weather



Berlin – updated in a flash tile by tile

Especially for automotive companies and telecommunications providers

The new map format is one of the corner stones for hybrid navigation and therefore particularly interesting for automotive companies and telecommunications providers. For example the map data can be provided for areas in any size needed, dynamically supplemented or also deleted again. Data records already available on the end devices can also be selectively updated with the overall data remaining consistent.

Your benefits

- Only exactly what you need is updated and extended.
- The data is tailor made to suit your needs.
- After being updated (POIs, new road etc.) the new data is immediately available online.
- You increase performance (e.g. map display or routing).
- The size of the data quantity is in line with your application: from small quantities for end devices with limited memory up to extensive data for internet applications.
- You can zoom infinitely in the map and move or change map sections without wasting any time.
- The data of the individual tiles can contain rights of use via DRM (digital rights management). This information regarding the duration and scope of utilisation can be individually defined and displayed in different license models.