


Types of geodata


In QV, all waypoints, routes, tracks, geocaches, trainings and drawing are summarized as Marks. Thus, Marks represent the symbols, lines and drawing elements which are plotted in a map.

In other words: Marks refer to certain objects in the QV database. Following, an example for a map where various types of geodata have been plotted on a topographic map in a 3D map window:




In order to display geodata as marks in a map window, simply mark them in the QV X-Plorer and click the Show in map  icon. For detailed instructions please refer to the chapter Displaying geodata.

Modifying the Style of plotted geodata

Of course you can also adapt the style of plotted geodata to your needs. To do this, you have two options: Either you click the Style  icon in the QV X-Plorer (after marking the data of interest) or right-click on the object in the map window and choose Style from the pop-up menu. You find further information in the Style chapter.

Labelling of marks

Each mark can be labelled with a user-defined annotation. Thus, you can name all waypoint, routes, tracks, etc. in a clear and unique way. Through the option Style in the pop-up menu or by clicking the Style  icon in the X-Plorer, you can define the color, the text style and text size according to your preferences.

There you can also select if only the name should be used as label or if additional remarks should be added as the coordinates of a waypoint.

In order to avoid that important map details are masked, you can also move such a label by a simple drag-and-drop operation with the mouse to another place (after switching to the Edit mode).

Of course all style options for all geodata will be saved in the database.

For further details please refer to the Style chapter.

Types of Geodata

There are a couple of different categories of geodata and it is important to note their specifics and differences. So, first of all, some short definitions.

Waypoints

A waypoint is a unique location on the globe which is defined by its coordinates (latitude and longitude or easting and northing) and its elevation. In case an elevation value is missing, it is supposed that the point is located on the surface of the earth, so the elevation value is taken from the DEM or it is left empty. Waypoints are plotted in a map using a specific, user-derived symbol.

Routes

A route is a list of consecutive waypoints which are linked by a line. So each position along a line is represented by a route waypoint with its specific symbol. Usually a route is used in order to plan a trip which is later on uploaded to a GPS unit. Generally route waypoints are placed at locations where navigation decisions have to be taken (crossings) or at other important locations (restaurants, fuel stations, lodges, etc.). Intersections between route waypoints are plotted line-of-sight, so the line intersections do not show the exact course of the path but only the direction and distance to the next waypoint. A Route will only represent the real way to go if they have been calculated with "routable maps" such as the NAVTEQ street maps with a "Routing" or "Navi" option.

Tracks

Tracks are nothing more than positions (also defined by coordinates) in a ranked and numbered order. Physically they are identical with waypoints but their labels and symbols are fixed. Usually tracks represent the exact course of a path or street. They can be downloaded as "tracklog" from a GPS unit where they have been recorded when driving/walking/hiking. However, they can also be created on the PC by simple mouseclicks and later on be uploaded to a suitable GPS. This can be a helpful option with older GPS models where tracks can contain more points than routes.

Geocaches

Geocaches are pretty much the same as simple waypoints but they include a couple of attributes which describe important characteristics of the "geocaches" such as size, difficulty, suitability for families, etc.

Trainings

A “training” is very similar to a tracklog recording from a GPS unit but additionally to the positions, physiological parameters like heart rate or cadence are recorded along with the track. This implies that trainings cannot be generated in the PC software, they always come from a downloaded recording of a suitable GPS unit.

Differences between Routes and Tracks

Routes

As described above, a route is a list of waypoints, connected in a specific order and is usually used in order to plan a tour. When a route has been created in the PC and has been uploaded to a GPS-receiver, the GPS unit will compare its own position with the next waypoint of the planned route and will guide you to this destination. It is important to distinguish in this context whether we are talking about line-of-sight navigation or a navigation along routable maps. In case of tour planning off the public street network, most GPS units will use conventional line-of-sight navigation showing the direction and distance along the beeline usually with a compass as navigation aid. If you reach the first waypoint, the GPS-receiver will automatically skip to the next one of the route and so on.

However, some sophisticated GPS units will allow for autorouting capabilities in case topomaps with autorouting functionality are installed. The same holds true for navigation along the public street network. For most GPS units autoroutable street maps are available or already installed on the GPS units.

Whether you are using GPS units with routable maps or not, this will not have a big influence on route planning with QV. Just open a map which is best suited to provide you with the kind of details you need for planning your tour in the way you like. Then define the route waypoints (e.g. starting point, crossings, places for breaks, fuel stations, points for spending the night, etc.) and finally upload the route to your GPS unit.

However please note, that in case of autoroutable maps installed in your GPS unit, your GPS will guide you according to its own intelligence from point to point (for example along the shortest or quickest path). So it is of high importance how you define your route waypoints (i.e. your “stop-over-points”).

If you want to “force” your GPS unit to calculate the route along the path you originally intended, we highly recommend to insert some extra stop-over-points on the intersections between your route waypoints. If you place route waypoints only at junction points, your GPS unit has the option to calculate the route through different paths. As soon as you define an additional stop-over point in the middle of the intersection you really want to use, your GPS unit won't find an alternative to the way you really wanted to go!

No matter if you will follow your route conventionally or with dynamic autorouting: By an intelligent planning of a route on your PC at home, you can later on find the best way out in the real world by foot, using a vehicle, a boat or plane. Your GPS unit will exactly lead you to the waypoints which you defined on your map with the PC.

Tracks

As also described above, a track is also a set of points in a specific order. However, in contrast to a route, the trackpoints are not named but only consist of geographic coordinates. Most GPS-units feature an automatic logging of trackpoints. Please note that some GPS units will store additional information on time/date or altitude. If available, these data will also be downloaded to QV and can be analyzed. These tracklogs can later on be downloaded and stored in QV. Thus, you can document on any suitable map where you have been and also when.

You can also express it in another way: The route is the theory of where you wanted to go and the track is the reality about where you have really been.

Please note that some GPS units will store additional information on time/date or altitude. If available, these data will also be downloaded to QV and can be analyzed.

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