## Multitracking

QuoVadis 7.3 offers various (technical) tracking options in Multitracking (object tracking). The interface in QV7.3 always shows the same position, regardless of the technology used. An object can be displayed on any map available in QV7.3. However, there are big differences in position frequency, coverage and costs depending on the hardware used. There is no ultimate technology that can completely defeat any application. It must therefore be checked in each individual case which requirements must be met and which technology is best suited to achieve the set goal. We will try to briefly describe the different possibilities here.

We ask for your understanding that the options described below may require a not inconsiderable amount of prior knowledge in the selection and procurement of hardware, setting up networks, programming work, understanding of mobile phone types and ranges. We cannot provide any detailed advice free of charge beyond setting up the interface in QV/QVM. Just contact us, we will be happy to make you an offer as part of a consulting assignment.

In the further text are: QVM = QuoVadis Mobile (-i=iOS; -A=Android; -W=WindowsPhone) in the latest version QV7.3-PU = QuoVdis 7.3 Poweruser

Solutions for receiving position data (host)

"SPOT-Messenger." In our opinion, the SPOT satellite tracker currently offers an unbeatable price/performance ratio with almost worldwide coverage. If you have purchased a SPOT Tracker and registered an account with SPOT, the positions received on the SPOT server can be queried with QV7.3-PU. It goes without saying that the SPOT Tracker should be placed exposed on the object. However, we were very surprised that our SPOT Tracker easily connected to the SPOT satellite from a concealed shelf on top of the dashboard of our vehicle.

Depends solely on establishing a connection to SPOT satellites, which now have almost worldwide coverage, no roaming problems, fixed costs consist of hardware and registration. The possible tracking intervals are between 2 and 5 minutes (depending on contract).

"QVX(QVM) shared locations." These are position reports from our mobile apps (QVM-i V3, QVM-A V3, QVM-W V2) that are stored in the cloud (Azure Server) and can be queried with QV7.3-PU.

Depending on the establishment of an Internet connection - transnational, there can be problems and considerable costs (roaming). You have to find out exactly how the Internet coverage looks like in the desired area. The shortest possible tracking interval is 1 minute

"GSM/SMS": A tracker with SIM card sends position data via SMS to a GSM modem connected to the computer with QV7.3PU. QV reads the incoming SMS and displays the positions. QV7.3-PU has integrated customization options for the format of the position report to be able to adapt as many different formats as possible.

Depending on the establishment of an Internet connection - Cross-border, there can be problems and considerable costs (roaming), you have to find out exactly what the Internet coverage is in the desired area. The shortest possible tracking interval is 30 seconds. The coverage of the GSM network needed to send SMS is much better than the mobile coverage via Edge/G3/G4. You usually get position reports via SMS even in places where Edge/G3/G4 is not working anymore.

"QV Tracking Gateway." The Gateway is a database on one of our servers that can receive positions

via http from SANAV trackers (in their internal format) or from any other client that can send a position via http in \$QVPOS (similar to NMEA record) format. This can be any hardware or application. Interested parties can program hardware to meet this requirement, or program applications (software clients) in connection with their own position reporting systems (BOS...), which can then supply the gateway with position data. The QV-Tracking Gateway can then be queried with QV7.3-PU and displays all positions stored on the Gateway since the last query. QV7.3-PU does not have to be running permanently to display the complete course of a route.

Depending on the establishment of an Internet connection - transnational, this can cause problems and considerable costs (roaming), you have to find out exactly how the Internet coverage looks like in the desired area. The shortest possible tracking interval is 30 seconds per position transmission. The QV-Tracking Gateway is charged per tracked object

"File Polling: A very interesting and very flexible variant is "File polling". Any external application which receives position data, decodes it and stores the position data with a certain format (\$QVPOS) in files which follow a certain naming scheme. This can be in a local directory, a networked directory or on a webserve where QV7.3-PU has access (via FTP if necessary). QV7.3-PU looks in this directory in definable intervals, reads in new positions and displays them. It is used by authorities, police and military if the position report is encrypted and the decoding cannot be given "out of house".

No costs in the local network, via WAN connection costs can arise. Coverage depends on the range of the hardware used. Tracking interval, whatever the hardware provides, practical min. 10 seconds.

"Serial port: z. e.g. for use with radio decoders, i.e. radio receivers that can extract a position report from a radio signal and forward it to a computer via serial port. QV7.3-PU can process NMEA, AIS or APRS signals.

No costs in the local radio network, depending on the range of the equipment. Tracking interval whatever the hardware provides, practical min. 10 seconds

"TCP socket." Here QV7.3-PU can evaluate position messages sent via a network connection to a certain adjustable port. These positions can be received via the local LAN, (Ethernet/WLAN) or WAN. The configuration of the hardware involved requires very good network knowledge.

No costs in the local radio network, connection costs in the WAN possible. Coverage depends on the range of the hardware used. Tracking interval, whatever the hardware provides, practical min. 10 seconds.

"Garmin Astro." From older Garmin Astro devices you can read out tracked positions with the Astro. A real "tinkering solution", because Garmin never intended it that way and according to our information it is no longer possible with newer Garmin Astro.

No costs in the local wireless network, coverage depends on the range of the hardware used. Tracking interval, whatever the hardware provides, practical min. 10 seconds.

"GPS Gate": here you can establish a connection to the Franson GPSGate <a href="http://www.gpsgate.com/">http://www.gpsgate.com/</a> Prerequisite is that you have registered a corresponding account there.

No costs in the local network, via WAN connection costs can arise. Coverage depends on the range of the hardware used. The shortest possible tracking interval is 20 seconds.

"QVM WP8 GPS Locations": This variant should not play a role anymore and was only briefly in the

Tracking with QuoVadis Mobile V2/V3 as client (transmitter): all current QuoVadis Mobile apps can store their position in the cloud (Azure server), the positions can be shared by a single device with QVM or in a group of devices with QVM and can also be picked up by QV7.3-PU.

Tracking with QuoVadis 7.3 as client (sender): It is also possible that a running Quovadis 7.3 power user can forward positions received from a connected GPS receiver. QV7.3 PU can send positions to the QV tracking gateway (see above), in the QVX(QVM) system to the cloud and to a GPS Gateway Account from Franson. Furthermore QV7.3-PU can also transfer position data with structured content (\$QVPOS) according to a certain naming scheme in a local directory, a networked directory or via FTP on a web server

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