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Necessary tools, devices, materials

1. The GALILEOSKY satellite monitoring terminal (hereinafter – terminal) of one of versions. Detailed manual for the terminal`s connection and setting can be found, following the link: <http://7gis.ru/en/podderzhka/dokumentacziya.html>



Picture 1

2. Windows-based computer with the installed program of configuration of the terminals – "Configurator". You can download it here <http://7gis.ru/en/podderzhka/programmyi.html>



Picture 2

General information

Each GALILEOSKY terminal is equipped with the accelerometer, which allows to support a number of functions:

1. to determine the terminal`s orientation in space;
2. to filter «coordinates crowding» at stops on the basis of the vehicle vibration;
3. to determine the terminal`s strike and incline.

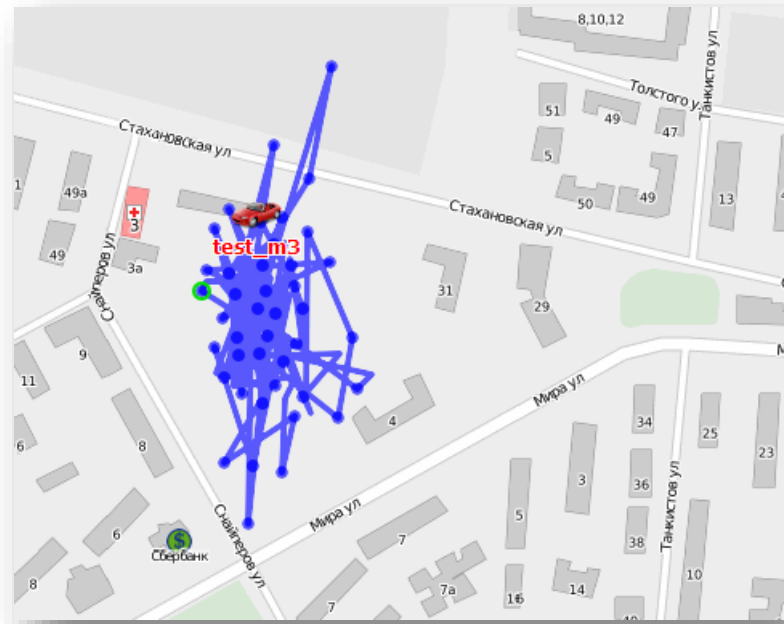
The terminal`s orientation in space is displayed on «Device» tab of the Configurator (Picture 3).



Picture 3. Displaying of the terminal`s orientation in space on «Device» tab

Filtering of «coordinates crowding» at stop

Accelerometer allows to filter «coordinates crowding» at stops on the basis of the vehicle vibration. In Picture 4 there is an example of «coordinates crowding» displaying in «Wialon Hosting» software (hereinafter - monitoring software) at stop.



Picture 4. «Coordinates crowding» at stop

Accelerometer setting parameters are:

1. Threshold – acceleration value, above which the vibration, corresponding to the engine operation or vehicle traffic, is determined. Threshold – a value, opposite to sensitivity. The higher the threshold value, the lower the sensitivity and vice versa, the lower the threshold value, the higher the accelerometer sensitivity.
2. Timeout. After vehicle stops, the terminal counts the interval, specified in this field, and after its expiration stops coordinates updating, identifying that the terminal is at stop. «Motion» status is replaced by «stop» status in «Motion (using accelerometer)» field.

For setting of these parameters, it is necessary to make the following actions:

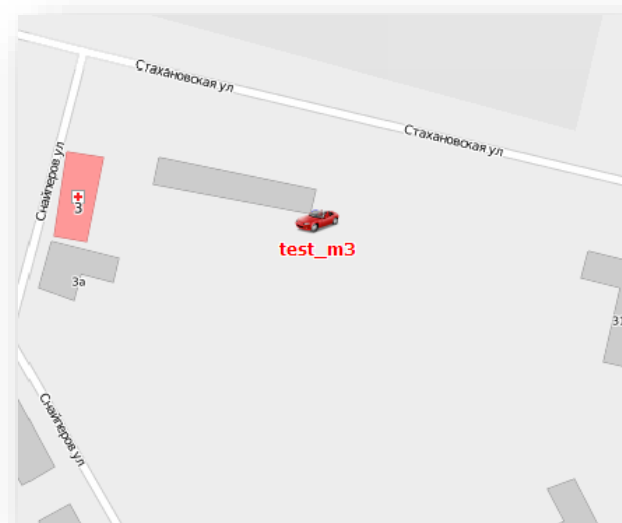
- a) launch the Configurator and go to «Settings» tab -> «Track»;
- б) specify threshold and timeout in «Threshold of accelerometer» section (Рис. 5).

Turning	
Speed	3 [km/h]
Angle	10 [°]
Distance	300 [m]
Speed exceed	60 [km/h]
Speed delta	20 [km/h]
Threshold of accelerometer	
Threshold	40
Timeout	300 [sec]
Generator	
Low level	0 [mV]
High level	0 [mV]
Ignition in	no

Picture 5. Accelerometer parameters setting on «Track» tab.

Recommended value of the threshold – from 40 and more on the basis of correlation that 600 units correspond to 1g acceleration (gravity acceleration).

By correctly specified threshold value the object displaying has the following format in the monitoring software at stop (Pic.6).



Picture 6. Filtering of «coordinates crowding»

Setting of sensitivity and time parameters for the filtering of «coordinates crowding» at stop can also be carried out with the help of commands, which are mentioned in Table 1 of Addendum №1.

Setting of the coordinates crowding filtering with the help of accelerometer is finished, terminal is ready to operate.

ADDENDUM №1. Commands for the accelerometer setting

Table 1.

Setting commands of the accelerometer operation threshold

Command format	AccSens Sens,TO
Parameters	Sens – accelerometer sensitivity; TO – time after the vehicle stop, during which coordinates are updated, [sec].
Explanation	This function allows to avoid unnecessary outbreaks during stop. By default, value = 40,300. Sens value is equal to 600, 1g (g – gravity acceleration).
Example	Request: AccSens 40,300 Reply: Accelerometer sensitive: sens = 40,time out=300