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1. Introduction

Navitel Navigator is a navigation software aimed at efficient search of the shortest route on a map. Voice hints will allow you to navigate the route, not paying attention to the display, and "Navitel. Traffic Jams" function will help you to overcome any formed traffic jam on your way.

This document is the user's guide to navigating program <<Navitel Navigator 3.2>>. It contains full information about elements of the user interface, the basic functions of the navigating program, and also the right order of user's actions at performance of typical operations.

2. General Info

GPS (Global Positioning System) is a satellite system for high-precision determination of static and moving objects. To successfully use the navigation software based on GPS technology, it is necessary to understand some peculiarities of this system.

GPS System also called NAVSTAR (NAVigation System using Timing And Ranging), is based on the satellites moving around the Earth on orbital trajectories. 24 satellites provide 100 % serviceability of system in any point of globe, but not always can provide maximum reception and good calculation of a position. Therefore, for increase of accuracy of a position and a reserve in case of failures, the general number of satellites supported on an orbit it is supported in a lot. The maximal possible number of simultaneously working satellites in system NAVSTAR is limited to 32.

GPS is passive system of navigation which allows to receive signals of satellites, however excludes an opportunity transferring a signal. The signal of satellites GPS has frequencies 1.227 and 1.575 GHz. It means, that metal and wooden surfaces, some kinds of plastic, concrete can block electromagnetic wave of such frequency. For this reason it is impossible to catch satellites in a ferro-concrete building, for this purpose it is necessary to change a location of the device on more favourable for reception of a signal.

Attention! The most precise results are got when the signal goes from an open area from more than 4 satellites at one time. Satellites should be uniformly placed on the sky and the navigator should be fixed.

The quality of position finding depends on that set of satellites which the device currently works with. If the receiver has an opportunity to choose the best signals from a plenty of accepted, it will have a positive effect on quality of definition of coordinates. If the choice is not possible, accuracy of work will be difficult to predicted.

After activating the GPS-receiver the navigating system starts preparing for lunch. Navigating messages transmitted from satellites contain two types of the data — ephemeris and the almanac of satellites. The almanac contains parameters of an orbit making possible to calculate an approximate location of the satellites but with rather big error.

The almanac is stored in memory of the receiver and constantly updates, since each satellite transfers the data of the almanac for all group of satellites. The almanac's lifetime makes 2-3 months. Further, the size of the integrated error in calculations will be inadmissible.

Ephemeris data contains parameters which allows to calculate current location of the satellites more precisely. Unlike the almanac, each of the satellites transfers only it's own ephemeris. Ephemeris lifetime does not exceed 4-6 hours.

The received information on the ephemeris and the almanac data is constantly corrected. It occurs once a day (and more if necessary). The network of ground stations receives the information from satellites and analyzes measurements similar to usual users than compares it with main data followed by adjusting amendments calculation and transferring them to the main station from which data transmission on satellites is carried out.

Starting process time necessary for the navigating receiver on definition of a position after activation depends on the initial information available in memory. There are several modes :

- "Cold start" — time, position, almanac and ephemeris are unknown. The possible reason is the device being switched off during long time (more than 70 hours) or his(its) moving in the switched off condition on the big distance. In this case it is necessary for device to load the new almanac and ephemeris. This process can last for more than 20 minutes.
- "Warm start" — position and ephemeris are unknown, time and the almanac are known. The device begins data gathering about ephemeris then can carry out a fix-ing. Usually "Warm start" lasts for some minutes.
- "Hot start" — the almanac, ephemeris are known, time and a position are known with some mistakes. This is the fastest kind of system start and it is accessible if the device was switched off less than 4 hours. Last data is actual except for small inaccuracies which the system eliminates in less than a minute.

Navitel Navigator is a navigation software developed for personal navigation devices (PND), pocket PC and PDA working on OS Windows Mobile and equipped with the builtin or external GPS-receivers.

The Software allows loading detailed maps of cities and regions containing house numbers, street names, metro stations and other important information. Among other things, the satellite navigation software supports voice guidance on a chosen route. The software is optimized for small PDA screen resolutions, it has fast map scaling and scrolling, as well as automatic switching between maps having various scales.

Advantages of the Navitel Navigator in comparison with other similar software:

1. Fast map scaling and scrolling;
2. Maps auto switching;
3. Possibility to choose map orientation — on a direction of movement, on a direction of a route or on a direction to the north;
4. Fullscreen mode;
5. Apart from 2D map viewing mode, there also is the pseudo 3D mode, which supports three-dimensional image of road overpasses and significant objects of architecture;
6. Pop-up help;
7. Internet maps can be converted to NM2 format. Maps can also be created with the help of GPSMapEdit software;
8. Supports traffic jams information upload.

The primary functions of the program are: acquisition and display of current position on map, automatic and manual route creation, various objects search options, calculation and display of a plenty of the travelling information, display and record of a trajectory of movement as a track and many other things.

Cartographical editor GPSMapEdit (demo version) delivered together with the navigating program and allows user to create his own maps and to edit the loaded maps. For more information please visit <http://www.geopainting.com>. The official "CNT" close corporation maps are ciphered and it is impossible to edit them in GPSMapEdit software.

3. Interface

3.1. “Drive” interface



Fig. 1

This figure shows all the interface elements. Device used for this example is not default, recommended or advertized. Model you use and it's screen orientation may be different from this figure but element's functionality will remain the same.

#	Name	Function
1	Next maneuver	Next maneuver on the way and distance up to it. Press this icon to open route options menu.
2	Compass	Press the compass icon to edit map rotation mode, map view and day/night mode.
3	Sound	Press this button to open sound effects menu
4	Information panels	Displays time until the end of the trip, total route length, and arrival time.
5	GPS-cursor	If GPS connection is established displays your current location.
6	Route	Route you are currently navigating displays as a wide blue line.
7	Search	Press this button to enter the search menu and to find specific adres or object (you can find more info about Search in "Functionality" section).

#	Name	Function
8	Information panel	Shows street name you are currently moving on. Available only if GPS/GLONASS connection is established. If there is no street name, the direction will be shown.
9	Scale	Map current scale.
10	Return to current location	You can see the green arrow at the top of the screen if the map was moved relative to your position. Press it to return view to your current location.
11	Autoscale	If you zoom in/out with "Autozoom" function activated, this function will deactivate for a period according to settings. Press this button to activate "Autozoom" function manually.
12	MENU	Press to enter the Main Menu.
13	Zoom Out	Decrease map scale.
14	Zoom In	Increase map scale.
15	Map slope	Press "Up"/"Down" to slope the map. Available only if scale is between 5 and 300 m.
16	Speedcam window	When you approach a speed camera with visual warnings being activated the window will appear in upper right corner of the screen. This window shows you permitted speed and distance left. Press the window to turn On/Off speed exceeding sound warnings.
17	Speed	Current speed. Available only with GPS connection established.
18	Information panel	Street name followed by the next maneuver.
19	Battery	Icon displays battery life. Press it to open window with full information about battery life and remaining memory.
20	GPS	GPS connection button. Green icon - connection enabled, white icon - function disabled. Green icon also has a dot of different color: red - no connection, yellow - poor connection, green - connection established.

Warning!: Set of buttons you see on display depends on interface settings. To edit this settings press **Main Menu -> Settings -> Interface**. You can find more information about interface settings in the "Main Menu" section.

3.2. “Map” interface

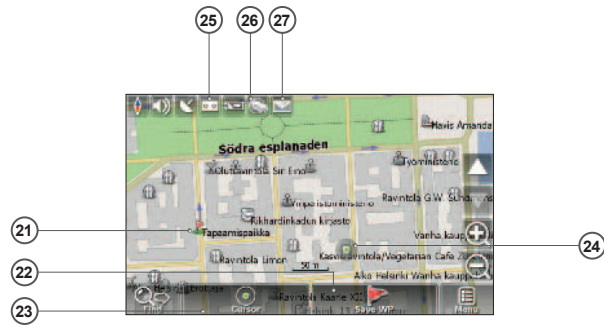


Fig. 2



Fig. 3

#	Name	Function
21	Waypoint	Waypoints are manually created by the user and display with red flags on a map.
22	“SaveWP”	Saves current mark on map as a waypoint.
23	“Cursor”	Shows the menu of mark on map (Fig.3)

#	Name	Function
24	Mark on map	Touch the screen with a stylus to set a mark. You can save this mark as a waypoint, add it to the route or see object's characteristics the mark was set on.
25	Track record *	Track record. Green icon - track record enabled, white icon - function disabled. You can find more info about track recording in "Functionality" section of this manual.
26	Traffic Jams **	Press this icon to edit "Navitel.Traffic Jams." function.
27	Navitel.SMS ***	Button is used to read/send SMS-messages and to work with coordinates given there. Figure near the icon displays number of unread messages.
28	"Go To"	"Mark on map" becomes the end point of the route.
29	Insert	"Mark on map" becomes the middle point of the route
30	"Add"	"Mark on map" becomes the end point of the route, whereas previous end point becomes middle point.
31	"Start"	"Mark on map" becomes the start point of the route. You should turn off your GPS/GLOANASS-reciever.
32	Back	Depends on way you got to this screen (Fig. 3), returns back to "Map" screen or to find menu.
33	Info	Info about current "Mark on map" position. Tap to see more.
34	Back to map	Returns to the "Map" page
35	Object of interest	Different objects on map (traffic lights, metro stations, petrol stations etc.).

Warning! Set of buttons you see on display depends on interface settings. To edit this settings press **Main Menu -> Settings -> Interface**. You can find more information about interface settings in the "Main Menu" section.

* - this function may be erased by manufacturer.

** - this function is available only on some devices with GSM or Bluetooth with DUN support.

*** - this function is available only on some devices with GSM.

4. Pages

4.1. “Map” page

“Map” page (Fig. 4) is used to display your current location on a map and carries most of the road information.

You can create and edit routes, waypoints, search for objects and many other things.







Fig. 4





4.1.1. Map scrolling

Using stylus press and hold it in any point on a map and drag the map to any side of screen. After this a new zone of a map will reveal.



4.1.2. Zooming

You can zoom in with “” key and zoom out with “” key. The scale is set to 5 meters with maximum zoom and is set to 2000 km, with minimum zoom. It is possible to set scale to 5 m, 8 m, 12 m, 20 m, 30 m, 50 m, 80 m, 120 m, 200 m, 300 m, 500 m, 800 m, 1,2 km, 2 km, 3 km, 5 km, 8 km, 12 km, 20 km, 30 km, 50 km, 80 km, 120 km, 200 km, 300 km, 500 km, 800 km, 1200 km and 2000 km. Press “”/ “” key ones to change the scale to next/previous value. You can also hold down this keys to quickly change the scale.

4.1.3. Map slope

Press “”/ “” arrows to change map slope. “” arrow increases the slope. When map reaches maximum slope it switches to pseudo-3D mode which works only on scales from 5 m to 300 m. “” arrow decreases slope. Possible map slope depends on it's scale — the closer map is, the more slope you can get.




4.1.4. GPS-cursor

GPS-cursor displays on map with GPS-connection established and shows your current location on map. Cursor can take 1 of 2 states: “Moving” (), or “Stop” — (). Green arrow points at current direction. If movement speed is less than 2,5 km/h cursor changes to green circle. And if GPS-connection is missing or “Off”, the GPS-cursor will not display.



4.1.5. Compass

Press the button to open map settings menu (Fig. 5).

4.1.5.1. Map rotation:

-  Route rotation;
-  Guidance rotation;
-  North up (Static mode).

4.1.5.2. Map view mode:

-  3D view mode;
-  2D view mode.

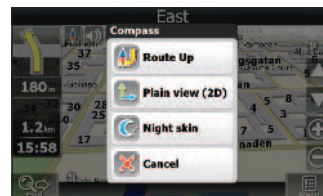


Fig. 5

Note: 3D mode is inaccessible if the scale is more than 300 m.

4.1.5.3. Day/Night view mode

This option allows you to switch between day and night views modes. Use night view mode when it is dark. It will protect your eyes from tiredness and make the device more comfortable to maintain. You can set this option to one of three positions.

Day view mode (Fig. 6);

Night view mode (Fig. 7);

Automatic — Allow the device to auto switch between day and night views modes subject to sunrise and sunset time in your region and when entering a tunnel.



Fig. 6



Fig. 7

4.1.6. Information pannels

There are several information panels on the “Map” page. Bottom panel displays current street name or driving direction (Fig. 8). Top panel shows street name followed by the next maneuver (Fig. 9).

Note: Control panel or information screen can occupy the bottom of the screen. Press the “Minimize” button at the top of the control panel to hide it. To get it back just put a mark anywhere on a map using stylus.

While navigating a route you can see an information panel in the left side of the screen displaying next maneuver, time to it, route overall length and destination achievement time. Press the next maneuver icon to display route settings menu.

Note: The set of buttons in this menu depends on demo: is it on or off? If you press the maneuver icon with demo-mode turned On, you will see Fig. 10 (a). Otherwise you will see Fig. 10 (b).

More information on working with routes can be found in “Functionality” section of this manual.

4.2. “Dashboard” page

“Dashboard page” (Fig. 11) is used to display various navigational info. It consists of number of windows, each with different type of information. Windows layout depends on screen type and orientation. You can control windows display mode by moving joystick “Up”/“Down”. “Previous page” button (“Route page”) is located in the left bottom side of the page and “Map” page button is in the bottom right corner.



Fig. 8



Fig. 9

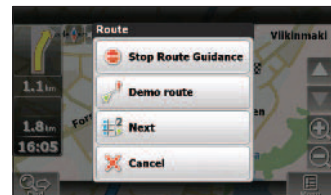


Fig. 10 (a)

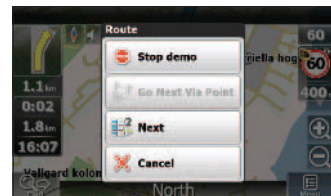


Fig. 10 (b)

Speed	Moving Av Sp	Moving Av Sp	Sunrise
-	12.3 km/h	12.3 km/h	-
Max Speed	Moving Time	Moving Time	Sunset
3.0 km/h	0:00:26	0:00:26	-
Time of Day	Stopping Time	Stopping Time	Longitude
-	2:32:33	2:32:33	-
Odometer	Trip Odometer	Trip Odometer	Total Alt
89 m	89 m	89 m	14.01 MB

Fig. 11

Choose a window and press it using stylus. The “Dashboard” page settings menu will appear on the screen (Fig. 12):

Select gauge — select a gauge from list. New gauge will replace the one you selected to open settings menu. Gauges are separated into groups to ease the search. Detailed info on each gauge can be found in “Gauge list” table;

Reset gauge — reset current gauge. System will demand an acknowledge;

Reset all gauges — reset all gauges. System will demand an acknowledge;

Default gauges — apply a default set of gauges. System will demand an acknowledge.

Big/Small dashboard — Each gauge increases/decreases in size at the cost of overall number of gauges on the screen. System automatically chooses the most common gauges to display, but you can create a set manually.



Fig. 12

4.2.1 Gauges list

Name	Function
1. Trip computer 1	
1.1. Stopping time	Overall number of stops made since last trip computer reset.
1.2. Moving time	Overall moving time since last trip computer reset.
1.3. Measurement time	Overall measurement time since last trip computer reset.
1.4. Trip Odometer	Distance passed since last trip computer reset.
1.5. Overall Av Spd	Avarage speed including all the measurement time period since last trip computer reset.
1.6. Moving Av Spd	Avarage speed including only movement time since last trip computer reset.
2. Trip computer 2	
2.1. Stopping time. (2)	Overall number of stops made since last trip computer reset.
2.2. Moving time (2)	Overall moving time since last trip computer reset.
2.3. Measurement time (2)	Overall measurement time since last trip computer reset.
2.4. Trip Odometer (2)	Distance passed since last trip computer reset.
2.5. Overall Av Spd (2)	Avarage speed including all the measurement time period since last trip computer reset.
2.6. Moving Av Spd (2)	Avarage speed including only movement time since last trip computer reset.

Name	Function
3. Max values	
3.1. Max Descent	Maximal descent speed measured since last gauge reset
3.2. Max Ascent	Maximal ascent speed measured since last gauge reset
3.3. Max speed	Maximal speed measured since last gauge reset
3.4. Min Altitude	Minimal altitude measured since last gauge reset
3.5. Max Altitude	Maximal altitude measured since last gauge reset
3.6. Odometer	Overall distance traveled (unresetable gauge)
4. Navigation	
4.1. 5 s Ave.Speed	Average moving speed for the last 5 seconds
4.2. Bearing	Next waypoint azimuth relative to current location
4.3. Waypoint Final	Final waypoint name
4.4. Waypoint Next	Next waypoint name
4.5. To final point	Distance between final waypoint and current location
4.6. To the next point	Distance between next waypoint and current location
4.7. ETA Current	Next waypoint arrival time estimation
4.8. ETE Final	Final waypoint moving time estimation
4.9. ETE Current	Next waypoint moving time estimation
4.10. ETA Final	Final waypoint arrival time estimation
4.11. Next Turn	Next maneuver on active route and distance left
4.12. Pointer	Nearest waypoint pointer and it's distance
4.13. Time zone	Current location time zone
4.14. VMG	Next waypoint approaching speed
4.15. Sunset	Sunset time for current location
4.16. Sunrise	Sunrise time for current location
5. GPS data	
5.1. Date GMT	Greenwich GPS data
5.2. Time GMT	Greenwich GPS time
5.3. Date	Formed date according to GPS and recalculated to local time
5.4. Time of day	Formed time according to GPS and recalculated to local time
5.5. Speed	Comparative moving speed
5.6. Longitude	WGS-84 longitude (or any other datum GPS-receiver works with)
5.7. Latitude	WGS-84 latitude (or any other datum GPS-receiver works with)
5.8. Heading	Comparative moving direction azimuth. Magnetic azimuth if using magnetic compass and NMEA-0183 protocol.

Name	Function
6. Altitude	
6.1. Vertical Speed	Current vertical speed
6.2. Climb angle	Angle between current driving direction and horizontal level
6.3. Glide Ratio	Horizontal speed comparative to vertical speed. Available only if using Garmin and SiRF protocols.
6.4. Height of Geoid	Geoid's height (average sea level) above WGS84 ellipsoid
6.5. Altitude	Altitude above geoid (above sea level)
7. GPS data precision	
7.1. Vertical EPE	Vertical coordinate precision with 95% probability. Available only if using Garmin protocol
7.2. VDOP	Vertical coordinates precision deterioration factor reflecting geometric satellites configuration. Value exceeding 10 means low precision. Available only if using NMEA-0183
7.3. Magnetic Variation	Magnetic Variation — difference between true meridian (north direction) and magnetic. Available only if using NMEA-0183 protocol
7.4. Used Satellites	Number of satellites used during last position determination
7.5. EPE	Horizontal coordinates precision, 95% probability. Available only on Garmin devices.
7.6. HDOP	Horizontal coordinates precision deterioration factor reflecting geometric satellites configuration. Value exceeding 10 means low precision. Available only if using NMEA-0183
7.7. GPS Fix Quality	Coordinates determination method – 3D (all coordinates are known), 2D (only horizontal coordinates are known), differential, etc.
8. DGPS Data	
8.1. DGPS station	Number of station used to make differential correction data
8.2. DGPS age	Time passed from last received differential correction data
9. Area	
9.1. Area	Figure area consisting of motion path and a section, connecting start and end points.
10. Sonar data	
10.1. Temperature	Water temperature. Available only if NMEA-0183 protocol compatible temperature sensor is connected
10.2. Depth	Depth. Available only if NMEA-0183 protocol compatible sonar is connected

Name	Function
11. Map	
11.1. Rendering 3D	Time spent for rendering 3D models
11.2. Indexation	Atlas last loaded indexation time
11.3. Check atlas time	Time spent to check atlas integrity
11.4. First element search	Time spent to find first object from "Nearest places"
11.5. First element search (city)	Time spent to find first object "City"
11.6. First element search (street)	Time spent to find first object "Street"
11.7. First element search (building)	Time spent to find first object "Building"
11.8. Map infotip	Time spent to find nearest object on a map to display pop-up help window after pressing it using stylus
11.9. Maps in Cache	Current number of maps loaded in cache. This value affects on consumable memory
11.10. Map Zoom Level	Map detalization level (0—maximum detalization)
11.11. File name	Map file displaying at the moment. If several map files is using, only one of them will be displayed in this gauge
11.12. Map Rendering	Number of maps rendering on the screen
11.13. Blocks	Number of rendered blocks
11.14. Labels in objects	Number of label on the map after rendering
11.15. Points in objects	Number of points in objects rendered on a map
11.16. Objects	Number of points/polyline/polygons appeared on a screen after last rendering
11.17. Text redraw	Text redraw time
11.18. Label redraw	Label redraw time calculation
11.19. Routes Rendering	Time spent on last route rendering
11.20. Jams Draw.	Time spent on last traffic jams rendering
11.21. Wpts Rendering	Time spent on last waypoints rendering
11.22. Map Rendering	Time spent on last map rendering. If the value exceeds 1 second, the special map optimization is required.
11.23. Trk Rendering	Time spent on last track rendering
11.24. Map Opening	Map opening time
11.25. Map Covering	Current map and region match time

Name	Function
12. Система	
12.1. Routing	Time spent on autorouting
12.2. Redraw	Image redraw time
12.3. Data Failures	Number of failures during GPS-data receiving. If this value is increasing, poor electrical contact may occur
12.4. Battery	Main battery charge (value determined by operational system)
12.5. Free Memory	Amount of RAM available to run applications.
12.6. Lock on Road	Time spent on finding an ancor point to lock on road
12.7. Initialization	Program loading time
12.8. CPU Usage	Amout of CPU resources evolved in runing process
12.9. Clock Fix-ups	System time adjustment counter with GPS time
12.10. Clock Drift	Current system time deviation
12.11. Kalman	Kalman filter working time (used to boost position finding precision)
12.12. Current Phone Cell	Code of current GSM cell. It is used for netmonitoring and consists of MCC (Mobile Country Code), MNC (Mobile Network Code), LAC (Local Area Code) and CELL
13. Weather	
13.1. Temperature	Current temperature
13.2. Pressure	Current pressure
13.3. Wind	Wind speed and direction
13.4. Cloudiness	Current precipitation
13.5. Weather forecast+1 day	Weather forecast for tomorrow
13.6. Weather forecast+2 day	Weather forecast for the day after tomorrow
13.7. Weather forecast+3 day	Weather forecast for 3-rd day
13.8. Weather forecast+4 day	Weather forecast for 4-rd day
13. Internet traffic	
13.1. Total.All	Overall internet traffic from the first program initialization
13.2. Outgoing. All	Outgoing internet traffic from the first program init.
13.3. Incoming. Total	Incoming internet traffic from the first program init.
13.4. Total. Current	Overall internet traffic from the current program init.
13.5. Outcoming. Current	Outgoing internet traffic from the current program init.
13.6. Incoming. Current	Incoming internet traffic from the current program init.

4.3. “Satellites” Page

“Satellites” page (Fig. 13) is used to display GPS/GLONASS signal status, number of satellites and their position. Schematic sky map with directions is in the upper left corner of the screen.

Note: GLONASS receiver is necessary to show GLONASS signal status.

Hemisphere center correspond with zenith and circumference – with horizon line. If GPS-connection is enabled, satellites display on the hemisphere as green and yellow icons. Green color means higher quality than yellow. You can see current data transfer protocol and COM-port used under the hemisphere.

At the bottom of the page there is a graphical scheme with information on satellites. Signal strength displays with green and yellow columns with personal satellite number under each column. The higher the column is, the stronger signal is being received by this satellite.

In the right side of the screen you can see some usefull information:

Latitude and longitude;

Number of satellites used. This value is determined by GPS-receiver. Only 12 satellites can be used at the same time;

Coordinates determination method.

There are three buttons at the bottom of the page. Green arrow – move to previous page (“Dashboard” page), central button – GPS settings menu, and globe icon – move to “Map” page.

If Navitel Navigator is minimized, Navitel plug-in for “Today” screen displays GPS-connection status. Yellow icon means GPS-connection is established, but position is not determined. Green icon – GPS-connection established and position is known.

Note: this function is available only on Windows Mobile-based devices only if it's on and supported.

Note: to activate this icon, press “Start” — “Settings” — “Today” — “Element” and check “Navitel Today” item. Press “Ok” to apply changes made. For more information about “Today” function, please refer to user guide supported with your device.

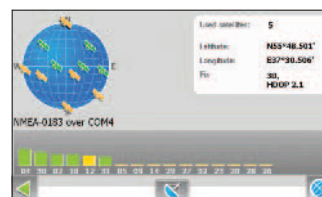


Fig. 13

4.4. “Route” Page

The page (Fig. 14) is available only with active route. It shows all the route's maneuvers. Detailed information about next maneuver is at the top of the page. Below it you can see a list of maneuvers with destination and street names. Also, there are 4 gauges in the “Next maneuver” information window. Default gauges are: ETA Final, ETE Final, To Final Point and Speed. You can select another gauge to display by pressing any gauge to open settings menu (Fig. 15):

Select gauge — select a gauge from list. New gauge will replace the one you selected to open settings menu. Gauges are separated into groups to ease the search. Detailed info on each gauge can be found in “Gauge list” table;

Reset gauge — reset current gauge. System will demand an acknowledge;

Reset all gauges — reset all gauges. System will demand an acknowledge;

Default gauges — apply a default set of gauges. System will demand an acknowledge;

More information on using gauges you can find in section 9.2. “Dashboard” page.

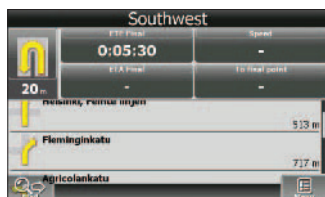


Fig. 14

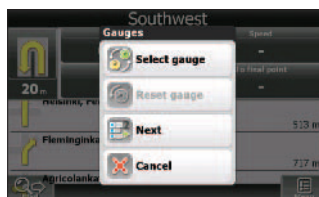








Fig. 15

Press the current maneuver icon in the top left side of the screen to enter route settings menu. The set of buttons in this menu depends on demo: is it on or off? If you press the maneuver icon with demo-mode turned On, you will see Fig. 16 (a). Otherwise you will see Fig. 16 (b). Followed functions are presented in this menu:

-  Stop Route Guidance;
-  Demo route;
-  Go Next Via Point;
-  Show route;
-  Maneuvers;
-  Settings;

Note: detailed information on working with this menu can be found in 10.1. “Route” section.

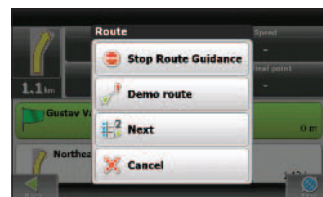


Fig. 16 (a)

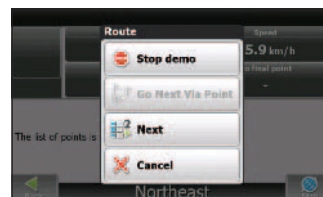


Fig. 16 (b)

4.5. “Weather” Page *

“Weather” Page (Fig. 17) is used to show weather forecast for a few days and to show current weather too. At the top of the page you can see information about current weather, pressure, wind speed and direction. In the right side weather forecast for four days is displayed. The “More” button will open your default browser on the GISmeteo.ru page.

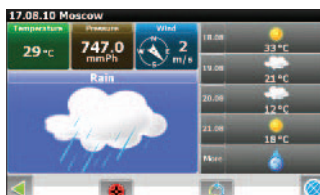


Fig. 17

By defaults, the weather forecast will be shown for the town, which is nearest to the GPS position. If GPS is not connected, the forecast will be shown for the town which is nearest to the center of the map.



At the bottom of the screen you can see these buttons:

“City select” — using this button you can change the city (Fig. 18);

“Refresh” — refresh forecast.

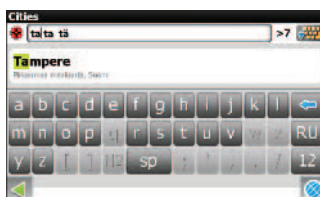


Fig. 18

Instead of refreshing manually, you can set automatic refresh.

Note: information about setting automatic update can be found in 7.5.4.3 “Weather”.

* - this function is available only on some devices with GSM or Bluetooth with DUN sup-

5. Main Menu






In the bottom right corner of “Map” and “Route” pages you can find the Main Menu icon (). Press it to open system main menu and carry out any changes or see information you require. In the bottom of every menu page you can find 2 buttons: green arrow () – return to previous menu page, globe icon () – move to “Map” page (Fig. 19).



Fig. 19

5.1. “Find”

This menu item is used to find different objects on the map. Detailed information can be found in 8.6 “Search”.

5.2. “Route”

This menu item is used to manage active route and waypoints. Press it to enter route management screen with a set of buttons which depends on active route presence and GPS-connection status.

If you press “Route” menu item with absent route on a map, a menu will appear with only “Route properties” function available (Fig. 20). However, you may import a route and work with it.

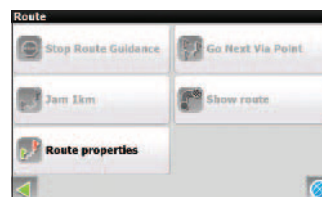


Fig. 20

If you press “Route” menu item with GPS-connection turned on (), all functions will be available in the opened window (Fig. 21).

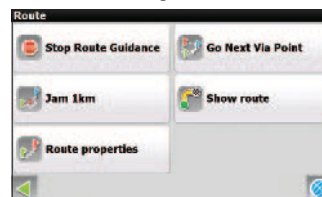


Fig. 21

5.2.1. «Stop Route Guidance»

Press this button to stop active route guidance. Also it will disappear from map;

5.2.2. «Go Next Via Point»

Press this button to navigate to the next point if you missed current point or decided not to visit it. This menu item available only with active route;

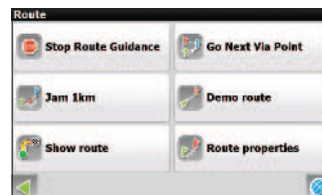


Fig. 22

5.2.3. «Demo route»

This menu item is available only with GPS-connection turned off. Press it to activate demo mode. It may help you to reveal all the unfavourable and dangerous route sections and change the route if needed.

5.2.4. «Show route»

Press this to show full route, including start, finish and all middle points. The scale will be changed so you can see the route.

5.2.5. «Route properties»

All waypoints in active route list with turns and intermediate waypoints filters. Also it is possible to import, export or reroute using this menu.

Note: for more information on track import and working with route please refer to “Functionality” section of this manual.


5.3. “Pages”

Use “Pages” menu item to select one of four main system pages (Fig. 23):



Fig. 23

You can find detailed information on each of this pages in 9. “System pages” section.

Note: While system page is displaying, pressing green arrow () will bring you to the previous system page instead of previous screen. For example, if you press green arrow on the “Satellites” page you will move to the “Dashboard” page.

5.4. «Information»

Use the “Information” page to see various system data. This menu consists of 3 items (Fig. 24):

📁 “About” — Page holds information on software version, license key, device serial number, technical support telephone number and “Navitel” company web site (Fig. 25 (a));

📁 “About Map” — Page shows path to file currently being used, map name and its creation data, and copyrights (Fig. 25 (b));

📁 “Copyright” — list of rightholders of all the terms used (Fig. 25 (c));

📁 “Map activation” — you can activate any additional map using this page (Fig. 25 (d));

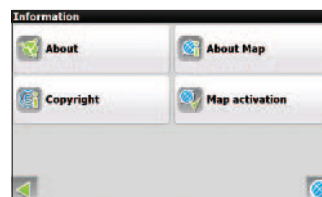


Fig. 24



Fig. 25 (a)

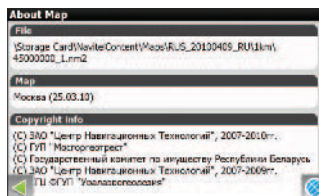


Fig. 25 (b)

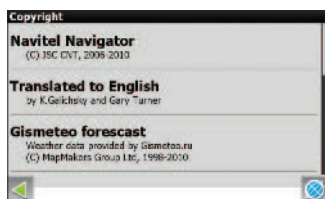


Fig. 25 (c)

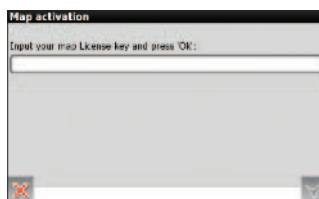


Fig. 25 (d)

5.5. «Settings»

“Settings” menu (Fig. 26) contains some functions and program main settings. Color and type of some icons may vary because of corresponded function status and current Skin-file. Also icons color on “Map” page depends on interface settings.

5.5.1. «Map».

This menu (Fig. 27) contains various map view settings. Most of these settings control number and quality of objects on the map.

5.5.1.1. «Map detail».

“Map detail” (Fig. 28)—effects on map details displaying with different scales. Low details setting will prevent some details from displaying (Fig. 29) but it will boost the rendering. Otherwise you will get maximum detailed image (Fig. 30), but it will take system some more time to render it.

Press left/right arrow or move the slider using stylus to set “Map detail”

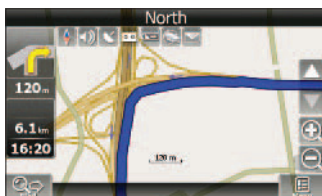



Fig. 29

5.5.1.2. «Map rotation».

“Map rotation” — map direction setting (Fig. 31). Press the green arrow in the right side of the window to choose from “North Up”, “Track Up” and “Route Up”. You can also access this function by pressing compass icon () (see 6.1.5.1 “Map rotation”).

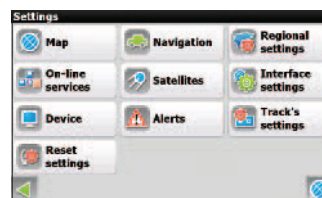


Fig. 26

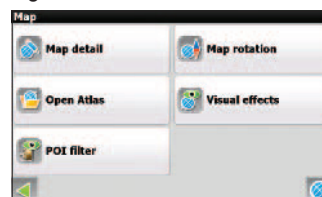


Fig. 27

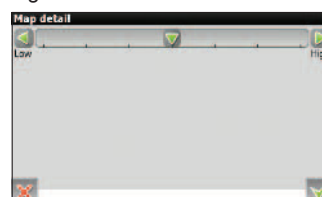


Fig. 28

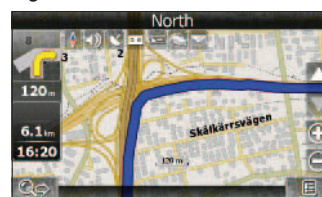


Fig. 30

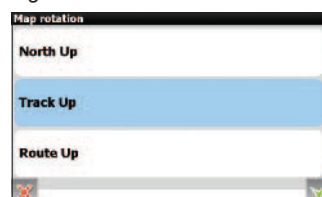




Fig. 31

5.5.1.3. «Open Atlas»


Atlas – is a set of map and one of the main elements of the system (Fig. 32). Without atlas proper software operation is impossible. Press this menu item to open atlas management window where you can edit current set of maps or create a new one. Also you can see name, directory and number of maps in existing atlas.






To edit an atlas, press it using stylus and following buttons will appear (Fig. 33):



 **Select** — if you have several Atlases, you may select one of them. Press this button to apply selected atlas for system usage;

 **Reindex** — after editing an atlas (adding/deleting map-files, for example) press this button to reindex it and apply changes;

 **Delete** — delete the selected atlas;

 **Cancel** — close menu;

If atlas is missing, you should add it. Please press the button in the bottom of the screen () and search menu will appear (Fig. 34). First, select a root folder on your device by pressing the green arrow on the top of the screen. Then lay a path to an atlas folder with set of maps you need: select a catalog and press “Enter” (). When you reach the desired folder, press it using stylus and select “Create Atlas” (). Press “Up” () to get back to previous catalog. Press “Cancel” () to close this window.

After you press “Create Atlas” (), the indexation process will begin and it’s duration depends on number of map-files in the catalog. When the process is finished you will see a window (Fig. 35) with information on indexation time, number of maps and directory path. Press “Ok” () to close the window. New atlas will appear in the atlas management menu (Fig. 32).

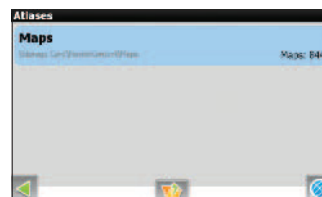


Fig. 32

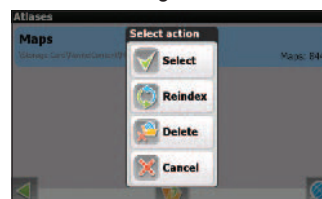


Fig. 33

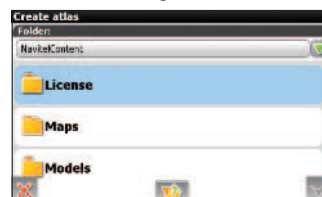


Fig. 34

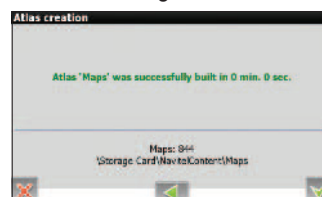


Fig. 35

5.5.1.4. «Visual Effects».

Visual effects (Fig. 36) may increase the image quality, but it will also increase rendering time. The following visual effects are available:

- Highlight objects;
- Object border smoothing;
- Show 3D models;
- Smooth motion.

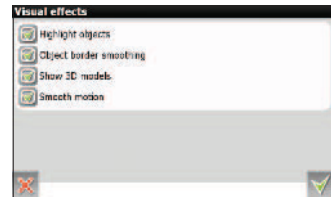


Fig. 36

To turn on/off an effect, press it using stylus.

5.5.1.5. «POI filter».

Infrastructure objects display settings.

POI are divided into different groups (Fig. 37): “Motor transport”, “Trade”, “Services”, “Leisure”, “Catering”, “Other”. Each field shows icon of corresponded group and scale interval. Symbol ✓ in the left side of each field shows the group status. Green color means the group display is On. Otherwise you will see gray color symbol. Press the symbol to turn On/Off group icons display on map.



Fig. 37

The “☰” button at the bottom of the display is used to control all groups simultaneous. After pressing this button, a menu will appear (Fig. 38).

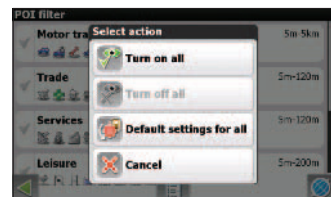


Fig. 38

☑ “Turn on all” — Turn on displaying all groups and all the elements of each group;

☐ “Turn off all” — turn off displaying all the groups and all the elements of each group;

⚙ Set all groups values to factory default settings. After pressing this button a menu will appear. Use it to confirm your actions (☑) or to abort (☒).

☒ “Cancel” — close menu.

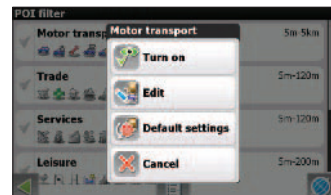








Fig. 39

Press any group field to edit it (Fig. 39):

  “Turn On/Turn Off” — turn on/turn off all icon of the selected group;

 “Edit” — edit the selected group;

 Set group values to factory default settings. After pressing this button a menu will appear. Use it to confirm your actions () or to abort ().

 “Cancel” — close menu

After pressing “Edit” button (), the group editing menu will appear, which consists of two pages.

Page 1 (Fig. 40)

“Name” — the selected group name. To change it, press the field with stylus and use keyboard to enter new name;

“Seen on scales” — scale lower limit and upper limit. Icons of the corresponded group will display between this values. Lower limit value cannot exceed upper limit value and vice-versa;

“Show POI names” – check this item if you want to see name of each icon on the map.

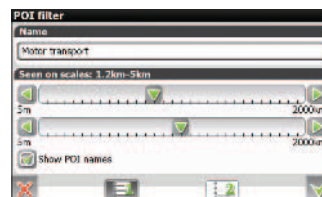


Fig. 40

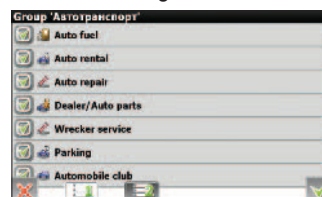


Fig. 41

Page 2 (Fig. 41)

Page contains full icons list of current group and allows you to edit POI displaying more precisely. Check the icons you want to see on “Map” page.

5.5.2. «Navigation».

Navigation system and route settings (Fig. 42).



Fig. 42

5.5.2.1. «Vehicle».

Function allows you to optimize system according to vehicle being used for navigation. Press the green arrow in the right side of the screen to choose an option (Fig. 43):

Pedestrian; Bicycle; Car/Motorcycle; Taxi; Bus; Emergency; Delivery; Truck.



Fig. 43

5.5.2.2. «Route settings».

Route settings: using two following pages you can set your route options:

Page 1 (Fig. 44):

“Route style” – select routing method: “Use routing” or “Use direct routes”.

“Calculation style” — guided by this setting, system calculates the “Quick” or “Short” route.

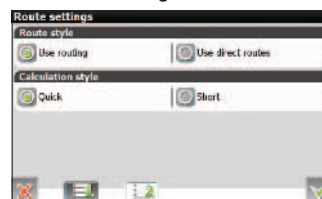


Fig. 44

Page 2 (Fig. 45)

“Try to avoid” – check the items you want to avoid during route calculation:

“U-turns”, “Toll roads”, “Unpaved roads”.

“Off-route recalculation” – system reaction on going off-route. Press green arrow to choose from: “Automatic” or “Off”.

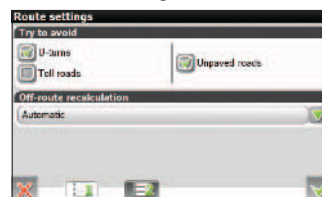


Fig. 45

5.5.2.3. «Zoom settings».

System defines the best map scale while navigating a route depending on the environment and speed (Fig. 46). Press item to On/Off.

“Automatic zoom” — enables automatic zoom.

“Smooth zoom” — enables smooth zoom.

“Restore autozoom” – time setting before Automatic zoom is activated if you have changed it manually. Options available: 5 s, 10 s, 15 s, 20 s, “Never”.

“Min./Max.” – automatic zoom functionality limits.



Fig. 46

5.5.2.4. «Guidance prompt».

Set time for system to inform you about incoming maneuver (Fig. 47). You can set slider to 1 of 5 positions from "More distance" to "Less distance".

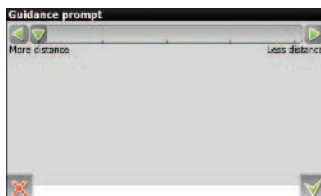


Fig. 47

5.5.2.5. «Lock on road»

Function (Fig. 48) braces active route to the road, helping you keep close to them if GPS-connection became weak or you have decided to bypass an obstacle.



Fig. 48

Options: "Don't lock" (function off); Closer 20 m; Closer 50 m; Closer 100 m; Closer 200 m; Closer 500 m; Auto.

5.5.2.6. «Reset position»

If you have moved map while navigating a route, this function gets image back to your current location in the set amount of seconds. You can choose from 5 s, 10 s, 15 s, 20 s, and "never" (function off) (Fig. 49).



Fig. 49

5.5.3. «Regional settings».

On this page you can choose language, voice package, keyboard layout and units (Fig.50).



Fig. 50

5.5.3.1 «Language»

Press the green arrow on the right side of the field and select a language from list. Russian, English, Spanish and Turkish languages are supported (Fig. 51).



Fig. 51

5.5.3.2 «Voice»

A set of voice prompts used to inform you about different events. You can change the set by pressing this button, then select another set from list (Fig. 52). To download optional voice sets, please visit <http://www.navitel.su/download>. Unpack the archive to program folder in \Navitel\Content\Voice\ catalog in your SD card. The folder name must be like "0409" for English, or "0419" for Russian.

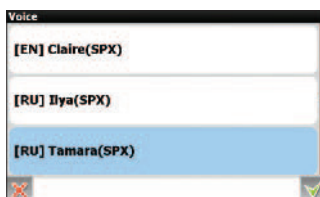


Fig. 52

5.5.3.3 «Keyboard»

Keyboard layout and supported language select. “Keyboard layout” – type of keyboard layout appearing on the screen (Fig. 53) after pressing a text window or searching for a specific address or object.

Available keyboard layout options:

- QWERTY 1 — standard PC keyboard layout. First top left letters are qwerty (Fig. 54);
- QWERTY 2 — can be used with portrait screen orientation. The difference from variant 1 is interlacing even and odd letters (Fig. 55) because one row do not fit in fully on the screen. (When using landscape screen orientation, both variants are the same);
- ABCDEF — Letters are settled in the alphabetical order (Fig. 56);
- Keyboard reflects mobile phone layout, there are several letters are binded to one figure.

“Languages” — there is a button on a keyboard to change the language. Check languages you want to include in this chain.

5.5.3.4 «Units»

The page (Fig. 57) is used to select unit of measurement of coordinates, azimuth, length/speed, height/depth, area and address format. Press the green arrow in the desired field to reveal the list of probable variants.

- | | |
|--|--|
| <ul style="list-style-type: none"> • “Coordinates”,
Latitude/Longitude:
ddd.ddddd°;
ddd°mm.mmm’;
ddd°mm’s.s”. • “Postal address”:
Number, street;
Street, number. • “Elevation/altitude, depth”:
Meters;
Feet. | <ul style="list-style-type: none"> • “Azumuth”:
Degrees;
Cardinal direction. • “Lenght, speed”:
Metric (meters, km, km/h);
Nautical (feet, nautical miles, knots);
Statute (feet, miles, mph) • “Area”:
Square Meters, Square Kilometers;
Square Feet, Sq. Miles;
Hectares;
Acres. |
|--|--|

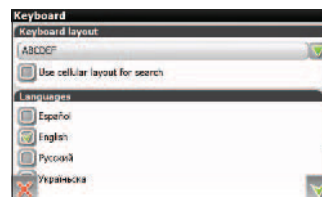


Fig. 26

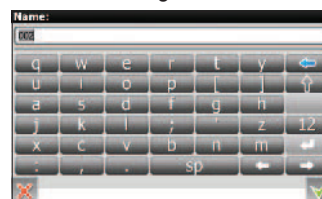


Fig. 27



Fig. 28

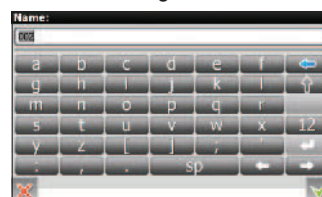


Fig. 30

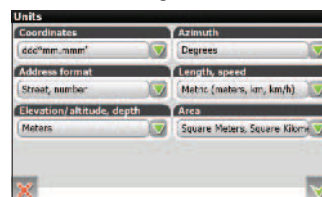


Fig. 31

5.5.4. «On-line services».*

This page (Fig. 58) allows user to set Internet-services and Navitel.SMS.

5.5.4.1. «Traffic jams».*

Traffic jams settings.

Page 1 (Fig. 59):

“Use for automatic routing” – activate the function for system to include traffic jams during route calculation.

“Show on map” — if the function is activated, traffic jams will display on a map with lines of different colors.

Use the “Update data” field to configure automatic data update function. Press the green arrow to set time for data to update automatically. You can set value from 2 min to 24 h.

You can use the “Update” button any time to update traffic jams data.

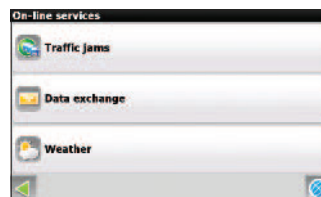


Fig. 58

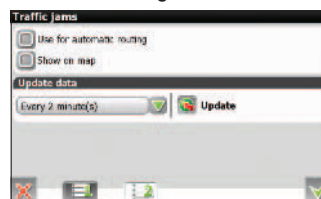


Fig. 59

Page 2 (Fig. 60):

“Connection with Internet” – Internet connection is required to update traffic jams data. Use this item to control the system access to the Internet.

“Traffic jams update in roaming” – allows you to control the internet connection if you are using roaming function.

Both functions can be set to one of three positions:

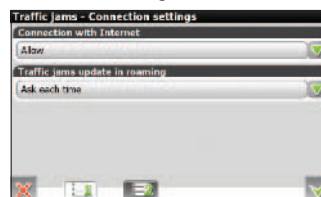


Fig. 60

- Allow – Internet connection will establish automatically with set periodicity;
- Ask each time – if the Internet connection is missing, system will ask for permission each time it makes an attempt to establish the connection;
- Forbid – disable automatic connection to the Internet.

5.5.4.2. «Data Exchange».** (Fig. 61)

“Allow Navitel.SMS receipt” – Check this item if you want to receive SMS from other users; “Show a pop-up window automatically” – if the function is active, a window appears on the screen informing you about a received SMS. Otherwise, press the symbol on top of the “Map” page;

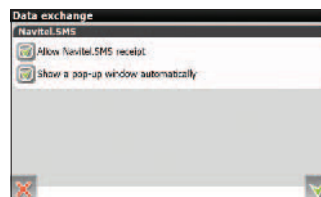


Fig. 61

* - this function is available only on some devices with GSM or Bluetooth with DUN support.

** - this function is available only on some devices with GSM.

5.5.4.3. «Weather».* (see comment on the prev.page)

Using this page (Fig. 62) you can set the weather forecast service:

“Automatic” — set automatic update mode;

“Manual” — set manual update mode.

5.5.5. «Satellites».

The satellites GPS-connection settings. “Autodetect settings” – this function allows system to automatically detect GPS-settings according to your device and its adjustments. After autodetection was successful, you will see an information window (Fig. 63). If the appeared information meets your requirements, accept it. Otherwise, press button to update settings.

“Source” – GPS-signal source selection affects on amount of settings available in the menu. Each source has its own set of functions on the page 2:

- **Option 1: “Operating system”** (Fig. 64)

“Troubleshooting” — Log-file record function used for troubleshooting.

Activate this function only if inappropriate functionality of GPS-receiver or at the request of technical support.

- **Option 2: “COM-ports”** (Fig. 65)

“BlueTooth” — BlueTooth activation before connection established setting;

“Troubleshooting” — similarly to option 1. Also, if “COM-ports” source is selected, you will see COM-ports, protocol, data rate and data read method on the page 1.

- **Option 3: “Demo track”** (Fig. 66)

“Track file” — demo track selection. Press the field to open file selection menu. Folder selection window is in the top left corner and format selection window is in the top right corner. Use it to apply a filter on displaying files: “All formats” (no filter), *.gpx, *.plt, *.gdb, *.mps. Then, select a file by pressing folders. Press” button to move one step backwards.

“Play rate” — 1x (normal speed), 2x, 4x, 8x.

“Start at” — Demo track replay starting point. Measured in percent (100% = full track’s length). You can select one of the following values: 0%, 10%,..., 100%.

“Loop” — Activate this function to auto repeat playing demo track at the end of each circle.

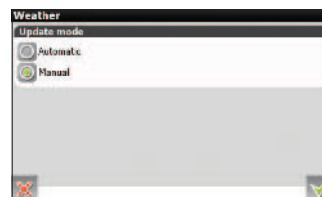


Fig. 62

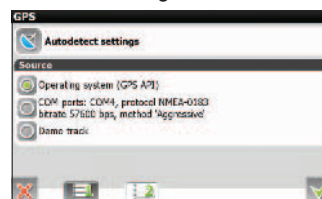


Fig. 63

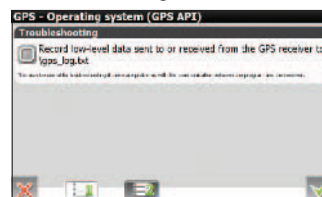


Fig. 64

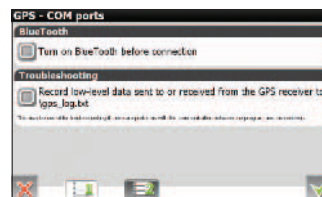


Fig. 65

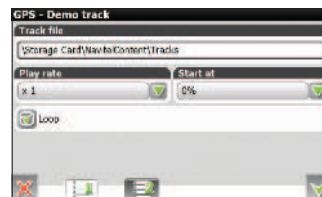


Fig. 66

5.5.6. «Interface settings».

Interface settings (Fig. 67) allow you to use “Map” and other pages and all their elements at maximum efficiency.



Fig. 67

5.5.6.1. «Skin».

In this menu (Fig. 68) you can see the interface color scheme selection. Press the green arrow in the right side of the field to select another scheme from list. To download optional color schemes, please visit <http://www.navitel.su/download/>. Unpack the archive to \NavitelContent\Skins\ on your SD card.



Fig. 68

The “Skin type” option allows you to switch between day and night views modes. Use night view mode when it is dark. It will protect your eyes from tiredness and make the device more comfortable to maintain. You can set this option to one of three positions.

Day view mode;

Night view mode;

Automatic — Allow the device to auto switch between day and night views modes subject to sunrise and sunset time in your region and when entering a tunnel.

This function is duplicated in “Compass”  menu.

5.5.6.2. «Interface».

“Map” page control panel settings (Fig. 69).

Interface settings allow you to use “Map” page and all its elements at maximum efficiency. You can edit every element displaying under different state of the corresponded function.

There is a ✓ symbol left of each element, and it can take different color depending on element display settings. Green color means button will display under each state of correspond function. If the color is grey – button display is disabled. And half colored symbol means what under certain circumstances button display will be Off. Press the ✓ symbol to fully On/Off button display on “Map” page.

Press the settings button in the right side of each field to open the display settings under corresponded function state menu (Fig. 70). Press the symbol to On/Off button displaying under current state.

At the bottom of the interface settings menu there is (☰) button, allowing you to edit displaying of all the buttons (Fig. 71):

- 🐸 “Turn on all” — turn on all button displaying on “Map” page;
- 🐸 “Turn off all” — turn off all button displaying on “Map” page;
- 🐸 “Default settings” — return to a factory default set of buttons displaying on “Map” page. System will ask confirmation;
- 🐸 “Cancel” — close menu.

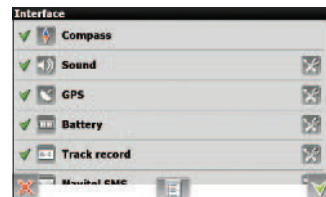


Fig. 69

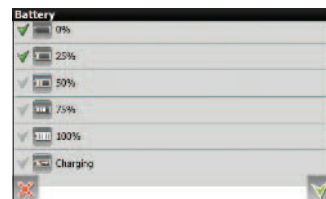


Fig. 70

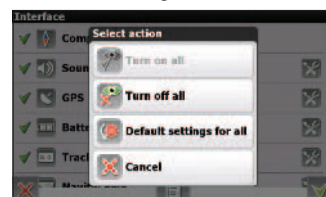








Fig. 71

5.5.6.3. «Hide elements».

On this page (Fig. 72) you can set hiding some elements on the map page. All of them will appear again after your activity, for example, after the screen tap.

«Hide buttons» — sets hiding time of the “Cursor”  and the “Save WP”  buttons.

«Hide» — sets hiding time of the “Menu” , the “Find”  buttons, the “Compass” , “GPS”  and etc. elements.

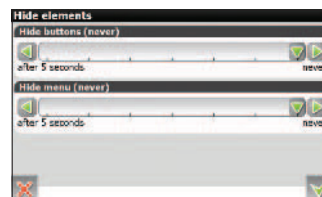


Fig. 72

5.5.6.4. «Inertial list scrolling»



Fig. 73

If the function is active (Fig. 73) you will have an opportunity to use stylus to create an impulse by rapidly moving it up/down then release. List will continue to scrolling what way slowly decelerating.

5.5.6.5. «Exit confirmation»

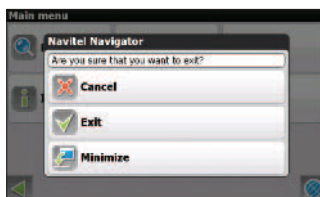


Fig. 74

Program will close instantly after pressing “Exit” button if this function is enabled. Otherwise, the exit menu will appear on the screen (Fig. 74). For more information on this window, please refer to “Exit” section of this manual.

5.5.7. «Device».

Overall functional device setting (Fig. 75)

5.5.7.1. «Sound»

On this page (Fig. 76) you can set sound effects. “Turn off sound” – the function allows you to turn off sound effects and voice completely; “Keep volume” – Navitel Navigator volume will be equal to system settings if the function is active.

5.5.7.2. «Screen orientation»

Rotate image on a certain angle. Orientations available (Fig. 77): “Keep system”, “Portrait”, “Portrait (rotate)”, “Landscape (left)”, “Landscape (right)”.

5.5.7.3. «Power control»

This is the power management page (Fig. 78).

“Keep power on while the application is active” – device will not turn off or go to sleep mode automatically if the Navitel Navigator is running;

“Keep screen backlight on while the application is active” – for the purpose of saving battery life, the screen backlight turns off after definite time if the device is idle. Activate the function to backlight on;

“Turn off GPS in sleep mode” – activate this function for the purpose of saving GPS-traffic. GPS-receiver will be off while sleep mode;

5.5.7.4. «Clock settings»

Clock setting page (Fig. 79).

“Correct system clock using GPS time” — automatic clock adjustment using GPS time function;

“Update time zone automatically” – activate this function if you happen to change time zone frequently. System will make corresponded changes automatically.

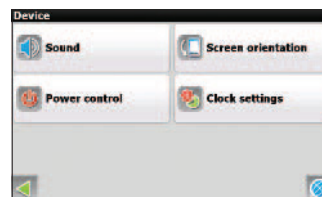


Fig. 75

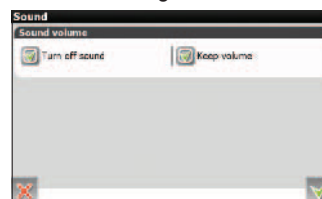


Fig. 76

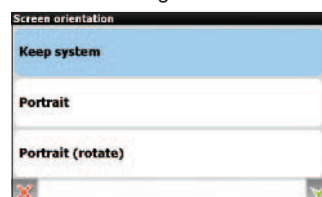


Fig. 77

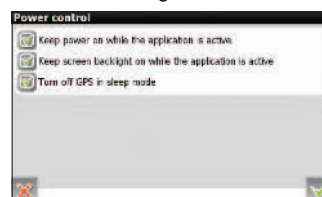


Fig. 78

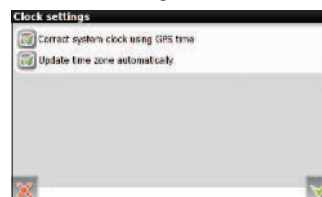


Fig. 79

5.5.8. «Alerts».

Voice and visual alert setting (Fig. 80).

“Turn off sound alert” – activate this function to turn off sound alert when approaching railroad crossing, speed cameras and sleeping policemen.

You can select the alerting method: “Voice alert” or “Signal alert”.

Also it is possible to set conditions of activating alert: “Do not alert”, “Always alert”, “Overspeed is 0 km/h, 10 km/h, 20 km/h, ... , 100 km/h).

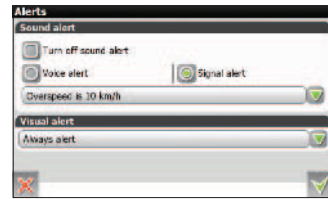


Fig. 80

5.5.9. «Track's setting»*

You can save your track in different formats to view it afterwards. (Fig. 81).

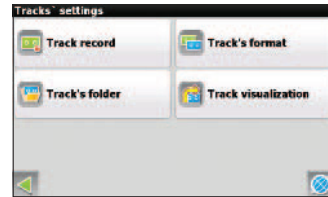


Fig. 81

5.5.9.2. «Track's format»*

Select track recording format (Fig. 82). It can be saved in *.mps or *.gpx file formats.



Fig. 82

5.5.9.3. «Track's folder»*

Select a folder to write a track. (Fig. 83).

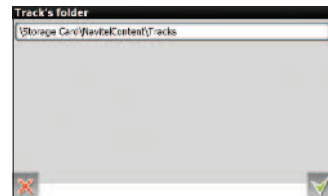


Fig. 83

5.5.9.4. «Track visualization»*

If you check this, the last 10 000 points of your track will be shown on the map via violet line (Fig. 84).

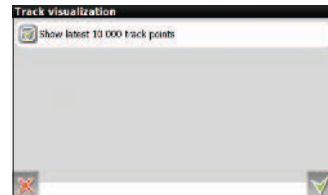


Fig. 84

5.5.10. «Reset settings»

Function is used to set all values to factory defaults. It can be useful if you have made many changes and want to get all back with one touch. Press the button to apply the function and set all the values to factory defaults or press the button to return to previous screen without making any changes. Program will automatically restarts after function is applied.

* - this function may be erased by manufacturer.

6. Functionality

6.1. Routes

Route creation function was included in program functionality to plan the forthcoming way and to monitor the accuracy following it. There are several ways to create a route: using “search” function, from your current location to any point, and from point A to point B.

Buttons:



«Go To» — Pressing this button in route guidance mode will lay a route from the first point of existing route to selected point, deleting all waypoints between;



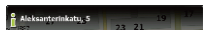
«Start» — Add a point as a start point. You should turn off your GPS receiver.



«Drive before» -Add a point between two points of existing route. Last added point (if several were added), becomes second priority point in current route;



«Add to route» — Point is added to the end of a route and continues it;



«Info» — Highlighted point properties. Tap to see more.

6.1.1. Autorouting

In order to create a route automatically, from the current position to the destination point, tap with the stylus pen on the place on the map where the final point is, tap on the “Cursor” button and in the context menu choose “Go to” (Fig. 85). The calculated route will be shown on the map in blue color with highly visible dark border (Fig. 86). Please, note that in case of non-routable maps, the route will represent a straight green line from your position to the destination point, ignoring the existing buildings, roads, etc.



Fig. 85

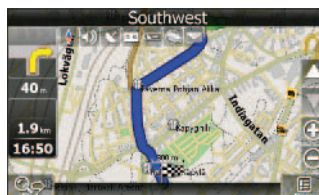


Fig. 86

6.1.2. Autorouting using search

Find an object of interest using “Search” and press it with stylus, then select “Go To” item from the menu. Apart from this item there are also “Insert” — add a point between two points of existing route, and “Add” — point is added to the end of a route and continues it. Both items are available only with existing route.

6.1.3. Manual route creation

The difference of this route creation method from previous two is what you can set a start point and a destination point.

To create a route, press a map using stylus, press the “Cursor” (Fig. 87) button and “Start” button after the menu appears (Fig. 88). Then find the destination point and press “Cursor” — “Go To” (Fig. 89). If you using maps supports autorouting, route will be created referring to this data and will be the shortest or the quickest. Otherwise waypoints will be connected with strait green lines.

Please note! If GPS-receiver is active, you cannot set the start point!

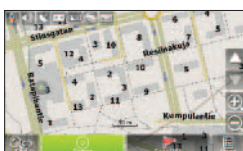


Fig. 87

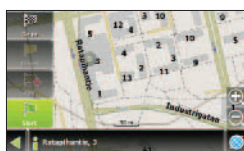


Fig. 88

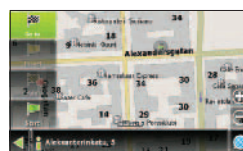


Fig. 89

6.1.4. Route editing

Press the maneuver window to open route editing menu. The following functions are available:

«Stop Route Guidance» — delete a route from map and stop following it.

«Demo route» — This function available only if GPS-connection is Off. Use is to observe the forthcoming path, U-turns and some general route information. Such full demonstration allows you to reveal all the dangerous and unfavourable sections and correct the route if needed.

«Go next via point» — press this button to go to the next waypoint if you missed the current one or decided not to visit it.

«Show route» — Press this to show full route, including start, finish and all middle points. The scale will be changed so you can see the route.

«Maneuvers» — Fast access to the “Route” page.

«Settings» — Fast access to “Menu” —> “Settings” —> “Navigation”

You can also edit a route using waypoints. Press any place on map and then press “Cursor” while navigating a route to create a waypoint. Following buttons will appear at the bottom of the page: “Go To”, “Insert”, “Add”, “Start”, “Info”.

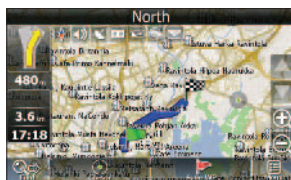


Fig. 90

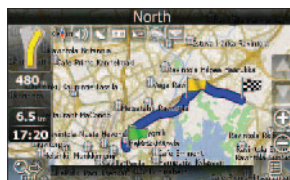


Fig. 91

6.1.5. Edit route waypoints

You can edit different waypoints using “Search” — “Waypoints” item. After pressing any waypoint a menu will appear with set of possible actions (Fig. 92).

«Show on map» — show current waypoint and its properties on the map (Fig. 90);

«Go To» — autorouting to current waypoint

«Include» — reroute including current waypoint;

«Add» — add current waypoint to the end of existing route (Fig. 91);

«Edit waypoint» — main waypoint's properties editing (coordinates, name, etc.);

«Delete waypoint» — delete waypoint, independent of route accessory;

«Send Navitel.SMS» — Send an SMS with waypoint coordinates;

«Cancel» — return to waypoint list; Use «Back» and «Next» buttons to switch pages with possible actions.

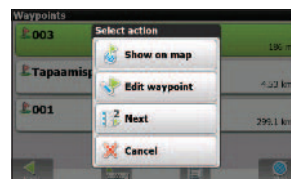


Fig. 92

6.1.6. Route properties

The Software allows basic route editing. Enter “Route”, “Route properties” item (Fig. 93).

This page reflects route points with different filter. The general route length is indicated at the top of the page. Press a button (context menu) at the bottom of the page to view the menu for rerouting, importing, and exporting the route. “Reroute” and “Export” (Fig. 94) options are available only during automatic route navigation.

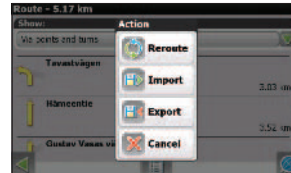


Fig. 93

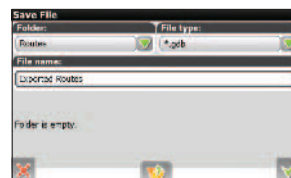


Fig. 94

6.2. Track

While driving, it is possible to record the actual track passed. The "Track Record" function can be controlled by pressing "Menu" — "Settings" — "Track's settings" — "Track Record", or by pressing the corresponded icon on "Map" page if it was enabled in "Interface" options. "Track Record" function is available only with GPS-receiver On and connection established.

Track displays on "Map" page with purple line, repeating your trajectory, if "Show latest 10000 track points" function is active. Track automatically records as MapSource (.MPS) file format. However you can change it to .GPX by pressings "Menu" — "Settings" — "Track's settings" — "Track format" and select Track's format. Track files are saved in «My documents/GPS Tracks and Way points» catalog in the device main memory. Additional service files are stored in the same catalog.

Track display on "Map" page is limited to 10000 points. Track record is limited only with available memory. Recorded track in the sequel can be imported to a route. Besides tracks created by system, tracks of other types can be imported – OziExplorer Tracks, Garmin GPS Database. To import a track press "Route" — "Route Properties" then press icon in the bottom center and select "Import Track" item. A file list will appear on the screen. Go to «My documents/GPS Tracks and Way points» (catalog name can differ depending on device model), select the track you need and press "Ok" button. If the track is separated into segments, select a segment and press "Ok".

You can also replay tracks on map. Press "Settings" — "Satellites" and select "Demo Track" as a source. Select the file on the next page and start demo track.

6.3. Waypoints

Waypoints allow you to mark places with specified coordinates. This may help you to improve your orientation in the city and to check places of interest. Waypoints can be created manually. They are named automatically in chain of three-digit format. To create a waypoint, press any place on a map, using stylus. A big grey circle will appear in that place. Then press "Save WP" button in the bottom of the page (Fig. 95).



Fig. 95

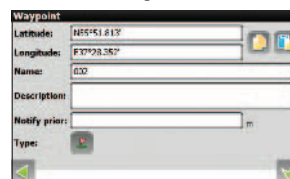


Fig. 96

After this operation a waypoint edit menu will appear on the screen (Fig. 96). Use this menu to edit name, description, coordinates type, preference display method of the waypoint, paste coordinates from the clipboard and distance to current point for system note.

Waypoints types are divided into several groups (for example: Outdoors, Business, Civil etc.) to ease the search of specific waypoint. In order to select waypoint type, press the "Type" icon and select a type.

Full waypoints list can be entered from "Search" — "Waypoints". Using this page you can make general operations with waypoints: add waypoint, delete all, export or import waypoint by pressing button in the bottom of the page.

To export a waypoint, enter "Waypoints" menu then press button in the bottom of the page and select "Export" (Fig. 97). List of files will appear. Select the catalog and press the "Ok" button to export all waypoints in it. Make similar actions to import waypoints. After import process is finished, a window will appear on screen informing you about the amount of waypoints imported.

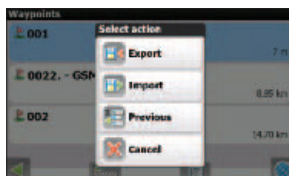


Fig. 97

It is possible to manage each point individually by pressing it in list (Fig. 98). More information on this menu you can find in "Route" section. It is also possible to edit a waypoint right on map. Find it visually and press it with stylus (Fig. 99). To edit waypoint press the "Cursor" — "Settings" button. You can delete waypoint by pressing "Remove WP" button (Fig. 100).

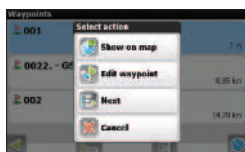


Fig. 98

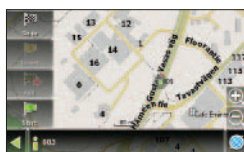


Fig. 99

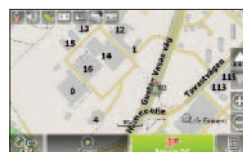


Fig. 100

6.4. Traffic Jams

Attention! The function is available only with GPRS-module connected. Please, refer to your supplier for more information.

With the help of "Navitel. Traffic Jams" service, device is able to show you information on traffic jams all other Russian Federation and Ukraine territories.

To activate the service, press "Settings" — "Advanced" — "Traffic Jams" and no other actions are required.

Current information reliability on Moscow roads are:

Moscow encircling highway – 95%;
 City center in the range of The Third Transport Ring – 80%;
 The Third Transport Ring and radial highways – 70%;
 Other streets – 50-70%.

The icon correspond to this service displays on the top part of the screen. It can take one of three colors: green (information available and up to date), yellow (information available, but is hasn't been refreshed in time), and red (service unavailable, no connection). The icon will take grey color if "Use for automatic routing" and "show on map" items are unchecked in setting.

Note: Interface settings are also affect on icon displaying.

Note: GPRS-traffic is paid individually in compliance with telecoms operator charge rate.

Traffic jams are displayed with polygons of different colors depending on traffic rate. On the city main highways depending on relative speed:

Red — Traffic Jam;
 Pink — movement is complicated;
 Yellow — movement is a bit complicated;
 Green — favourable traffic.

In addition status depends on overall segment load and roads adjoined, traffic lights, road works, traffic accidents, emergency line availability and other factors which can influence on traffic intensity. With "Use for automatic routing" function activated traffic jams will be taken into account when laying a route. Such route may be longer, but it will pass through less loaded roads (guided by Navitel system information). Optimal route takes into account maximum speed allowed on different road segments and your route settings – the shortest or the fastest route.












6.5. Speed Cameras

Speed camera alert function is supported by Navitel Navigator since version 3.2.1.7443. Please visit <http://www.navitel.su/download/> and enter your license key to download this update. For more information on updating program, please refer to “Software and maps updating” section of this manual.

Device alerts driver with sound signal and shows maximum speed allowed. Near the speed camera icon you may see arrows which show you speed camera direction. When you enter speed camera range (1000 m) – arrow becomes red.

Speed cameras information editing

Use any text editor to open SpeedCam.txt file with information on speed cameras and sleeping policemen;
Fields description: Field names can consist of capital or small letters. Last two fields can be skipped – in that case camera will consider as “All directions”

Field name	Description
IDX	Serial number
X	Horizontal/Longitude (E/W) coordinate
Y	Vertical/Latitude (N/S) coordinate
TYPE	Camera type:  1-static camera;  2-traffic lights camera;  3-red lights crossing camera;  4-speed camera;  5-mobile camera (ambush);  101-speed limit;  102-speed bump;  103-poor road;  104-dangerous corner;  105-dangerous crossroads;  106-other dangers.
SPEED	Speed limit
DIRTYPE	Speed camera direction: 0- all directions (360°); 1- define direction (see Direction field); 2- two directions (forward/backward)
DIRECTION	Viewing angle (between 0° and 359°, 0°-North, 90°—East, 180°—South, 270°-West)

Changes entered should look like this example:

IDX, X, Y, TYPE, SPEED, DIRTYPE, DIRECTION

1,18.9429837,47.4521967,1,100,2,90

Please note, what the coordinate format in file should be Latitude/Longitude ddd.ddddd°. It can be changed in "Menu" — "Settings" — "Regional settings" — "Units".

Speed cameras information removal

1. Delete the SpeedCam.txt file from main program catalog;
2. Run the program and make sure the speed cameras information is no more. Go to specified coordinates: N55°52,866' E37°26,728') and see if the camera icon is missing.

6.6. Search

Navitel Navigator is able to find objects of interest under different conditions (Fig. 101). Press "Search" button on map page. The object you have found can be shown on map or added to current route using different methods. Use keyboard to set the search conditions. You can hide the keyboard by pressing button in the upper right corner of the screen.

When using keyboard in some search methods, a list of appropriate names to already entered letters displays on screen. If you made a mistake during name input, press Backspace. When list fits to a single screen, keyboard automatically closes. Then select an object from list by pressing it with stylus.

6.6.1. «By Address»

Buildings and houses search if address is known.

• «Country Search»

At the top of search page there is a button (Fig. 102): "[Select country]". If you want to select a country, press the "[Select country]" button. Select a country from list using keyboard (Fig. 103). If the keyboard is not required it can be hidden by pressing button in the top right corner. Then list of countries will fit to a single screen, keyboard will close automatically. Press a country using stylus to select it. After this you will see "[Select city]", "[Select street]" and "[Select building]" buttons (Fig. 104). If you want to change the country, press on it's name.

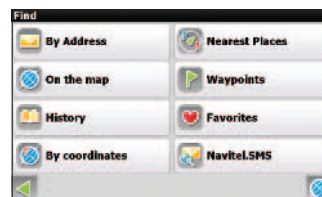


Fig. 101

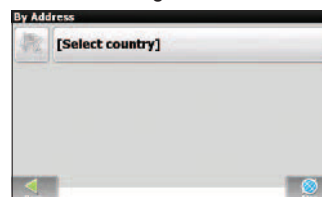


Fig. 102

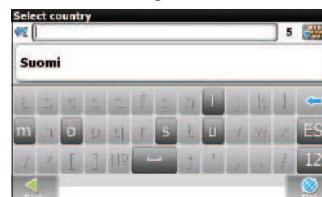


Fig. 103

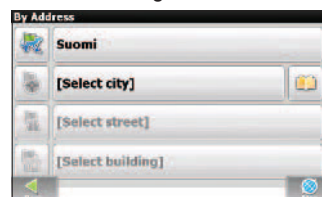


Fig. 104

- **«City Search» and «Street search»**

City and street search tools are absolutely similar to country search tool.

Use the keyboard to enter street name with object of interest (Fig. 105). Street name with different name will disappear step-by-step while you entering letters. Also, probable next letters will be highlighted on the keyboard. When list of names will fit to a single screen, keyboard will close automatically and you can select the street you've been searching for.

- **«House search»**

"House search" is similar to "Street search (Fig. 106)". Enter house number. If there is only one building with such number you will move to the next step. Press the green arrow in the bottom left corner to make backward step.

- **«Result»**

After the object is found you can look at it on map and lay a route to it. Also if there is already an active route, you can add the object to route as a next point "Insert" or to the end of the route "Add" (Fig. 107).

6.6.2. «Nearest places»

Search for nearest to current point objects. This method is also consists of several steps. Apart from objects type here also is a nearest objects search history. (Fig. 108)

- **«Selecting reference point»**

Reference point is the principal in the "Nearest places" search. System will search for nearest selected object types relative to reference point. To change a reference point, press the "Up" arrow in the bottom of the screen. You can see the following reference points: "City" – search for nearest places relative to selected city; "Address" – search for nearest places relative to address entered; "History" – one of the objects from overall search history can be selected as a reference point; "Route start"/"Route end" – items are available only with active route; "Cursor" – the distance is measured between search point and current position.



Fig. 105

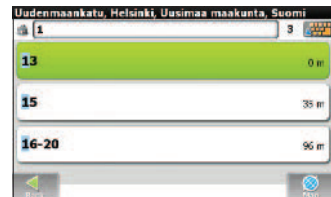


Fig. 106

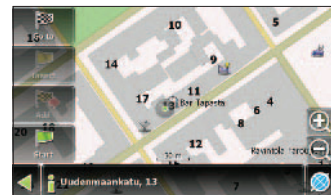


Fig. 107



Fig. 108

- **«Selecting search type»**

There are several types of objects (Fig. 109): “Trade” – stores of different types; “Services” – entertainments, restaurants, cafes, hotels, etc; “Transport” – vehicle repair, public transport, aviation, water transport etc; “Public institutions” – medicine, education, etc; “Cultural objects” – religion, rest, sport etc; “Geographical objects” – settlements, artificial objects, etc; “History” – object types sorted by frequency of usage. If you want to search from all types at the same time, select “All”. Each object contains some subobjects (Fig. 110, Fig. 111).

- **«Search for specific object»**

After selecting an object type, page with all needed types sorted by distance to reference point will open. The closest objects will be at the top of the page. Press the button in the bottom of the page to search for an object by name. Keep entering letter until the needed object name will appear on the screen (Fig. 112).

- **«Result»**

After the object is found you can look on it on map, lay a route, and “Drive before” or “Add to Route” if there is already an active route – similar to other search modes.



Fig. 109



Fig. 110

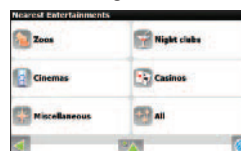


Fig. 111



Fig. 112

6.6.3. «Waypoints» search

The full waypoints list which can be used for “Search”. Waypoints are searched by names. Also a distance is displaying in each waypoint field. The waypoint found can be used to create a route or you can look at it on map. You can also edit a waypoint using this menu, delete a waypoint or even delete all waypoints, send a Navitel.SMS, import and export.

6.6.4. «History» search

List of all the objects have ever been found using any of search methods. The most recently objects searched are at the top of this list. You can delete an object from list if you won't use it anymore. You can also delete all objects, lay a route to the selected object or look at it on map

6.6.5. «Favorites» search

This search method is aimed at finding the most frequent objects used. As opposed to “History” search method, objects in this list is sorted by times used.

6.6.6. Search «By coordinates»

Search for specified object by coordinates (Fig. 113). Coordinates can be entered manually or you can paste them by pressing button in the right side of the screen after copy them from objects properties on “Map” page. Press the button in the bottom of the page to open the coordinates editing menu.

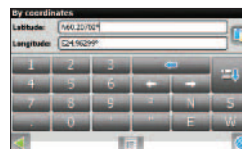


Fig. 113

«Show on map» — show waypoint with specified coordinates on map with options:

«Go To» — route to the selected point (Fig. 114);

«Insert» — add the point to the route as a next point;

«Add» — add the point to the route as a final point;

«Add waypoint» — create a waypoint with specified coordinates;

«Cancel» — exit from menu;

Use «Back»/«Next» buttons to switch between pages.



Fig. 114

6.6.7. «Navitel.SMS» *

Attention! The function is available only with GSM-module connected. Please, refer to your supplier for more information.

List of receives Navitel.SMS. Messages are sorted by date – the last received message is on the top of the list. Press an item to open the message coordinates edit menu. Press the button in the bottom of the page to delete all messages or mark all as read (Fig. 115).

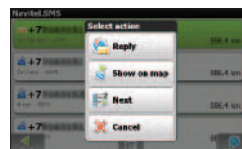


Fig. 115

* - this function is available only on some devices with GSM.

6.7. 3D-models

3D-models replicates real objects with high accuracy. To apply 3D models, please visit <http://www.navitel.su/update/hidden-secure-page/> and enter you license key. Find "3D models" in list and download Models.zip file.



Fig. 116

Unpack the Models.rar archive. Copy "Models" folder to the main program catalog (CNT\Navitel Navigator). Then run the program and use "By address" or "Nearest" search methods to find the objects of interest (Fig. 116).

6.8. Navitel. SMS *

The "Navitel.SMS" option makes it possible to exchange with coordinates between users to define the location of each other or to show an object by coordinates on map (Fig. 117). Press this menu item to open a window with different fields. Here you can enter recipient number, name, description and coordinates. Use the keyboard to enter data. There are 2 types of SMS-messages: sending coordinates to another user – "I am here" (Fig. 118), and request for another user coordinates – "Where are you?" (Fig. 119). Press the button in the bottom of the page to change message mode.



Fig. 117



Fig. 118



Fig. 119

6.9. Optional color schemes (Skins)

It is possible to change the interface color scheme by adding new skins. Please visit <http://www.navitel.su/download/> and download Skins.rar file archive. Unpack the archive content to Navitel Navigator main catalog. Then press "Settings" — "Interface settings" — "Skins", go to the fourth page and press the green arrow in the "Select skin" field. A list with possible optional skins will appear. Press a skin to apply it to system interface.

* - this function is available only on some devices with GSM.

7. Troubleshooting

Problem	Possible Solution
Program do not start	<ol style="list-style-type: none"> 1. Reinstall the software. Please visit http://www.navitel.su/update/hidden-secure-page, enter your license key and download the update. Then install it following the instructions given on web site. 2. Please check the SD (micro SD) – card (if the software is stored on it). Backup all the data and format the card. 3. Please check the screen operability.
No connection with satellites	<ol style="list-style-type: none"> 1. Please make sure the GPS-connection is On. The satellite icon should be green color with a dot. 2. Update your maps and software version. Please visit http://www.navitel.su/update/hidden-secure-page, enter your license key and download correspond file archive. Follow the instructions given on the web site to install it. 3. Press “Menu” — “Pages” — “Satellites”. If you see yellow icon – the GPS settings are correct. The device should be left on open territory (or windowsill, balcony, dashboard), then without moving the device, wait until GPS-connection is enabled. 4. Make sure none of the other software is using the same COMports with GPS-receiver. 5. Reset the GPS settings to factory defaults. Please, refer to authorized service center. 6. If all steps above didn't help, please refer to the authorized service center to check the GPS receiver operability.
Program is closing due to system error	<p>When laying a route:</p> <ol style="list-style-type: none"> 1. Delete the DataRoute.bin file (main catalog or Navi folder if usingPND). <p>When recording a track:</p> <ol style="list-style-type: none"> 1. Update your software version. Please visit http://www.navitel.su/update/hidden-secure-page, enter your license key and download correspond file archive. Follow the instructions given on the web site to install it. <p>Other cases:</p> <ol style="list-style-type: none"> 1. Update your software version. Please visit http://www.navitel.su/update/hidden-secure-page, enter your license key and download correspond file archive. Follow the instructions given on the web site to install it; 2. Please check the SD (micro SD) – card (if the software is stored on it). Backup all the data and format the card.

Problem	Possible Solution
Program runs in demo mode after the device maintenance, OS changed, firmware download.	<ol style="list-style-type: none"> 1. Make sure the NaviTel Activation Key.txt file is in the main catalog; 2. Send the request to support@navitel.su with following content: Subject: Please reregister the software. Required content: <ol style="list-style-type: none"> 1. Software license key (22-digit number) or activation file; 2. Name and contact number. Photos of software license key envelope should be attached to the letter.
Can't activate the software:	<ol style="list-style-type: none"> 1. Make sure the NaviTel Activation Key.txt file is in the main catalog; 2. In case of OEM-version, please make sure the software is being registered to the supplied device.
Different IDs are shown with each program initialization.	Make sure in MultiDID software absence. If not – delete it and send the reregistration request (see above).
No sound	<ol style="list-style-type: none"> 1. Please make sure /Wav/ folder is in the main catalog; 2. Press “Menu” — “Settings” — “Advanced” — “Other settings” — “System” — page 2 and make sure the “Turn off sound” option is disabled.
Problem with maps while software is working	<ol style="list-style-type: none"> 1. Please make sure the set of maps is installed and the software version is updated (“Menu” — “Information”); 2. Please make sure the set of maps corresponds to software version (3.1 or 3.2). New set of maps can be downloaded from http://www.navitel.su/update/hidden-secure-page after entering your license key; 3. Please make sure the unofficial maps is missing in the “Atlas” folder. If you have such maps on your device, please move them to different folder and index it later if needed; 4. Send a letter to support@navitel.su with your problem or make a call: +7 (495) 23-23-137.
Program is closing due to system error	<ol style="list-style-type: none"> 1. Press “Start” — “Settings” — “Today”; 2. Select the “Elements” page and uncheck the “Navitel Today” item. To change the plug-in size, press “Settings” and select the needed format.

8. Updating software and maps

8.1. Updating Navitel Navigator

1. Copy the activation file for the program “NaviTel Activation Key.txt” and “Registration keys.txt” to a desktop computer;
2. Remove all files from a folder with the program, except NaviTel Activation Key.txt and “Registration keys.txt”;
3. Download a new version of the software from <http://navitel.su/en/authorization/devices/> You will need to authorize at the site. If you have no login and password, you will need to register there. Add a device to the list, if you didn't do it before, for what you will need to enter a license key which you can find out, having pressed in the program the Main Menu → the Information → About the program (Fig. 120);
4. Copy the files to your device using the manual at the site;
5. Copy the “NaviTelAuto Activation Key.txt” and “Registration keys.txt” to Navitel's folder on your device's flash card.



Fig. 120

8.2. Updating maps for Navitel Navigator

1. Remove from folder Atlas (or other folder in which the archive with maps which you update is stored) files with expansion *.nm2;
2. Download the updated archive of cartography from the site in section of updating (<http://navitel.su/en/authorization/devices/>) You will need to authorize at the site. If you have no login and password, you will need to register there. Add a device to the list, if you didn't do it before, for what you will need to enter a license key which you can find out, having pressed in the program the Main Menu → the Information → About the program (Fig. 120);

Attention! The size of the given archive can exceed 500 Mb. It is recommended to use the high-speed channel of the Internet for download.

3. Unpack the kept archive of cartography and copy its contents in a folder “Atlas”;
4. Carry out procedure of indexation of the atlas (see item 7.5.1.3. “Open atlas”).

All questions connected with updating navigating system, address in service of technical support: support@navitel.su or by the phone (495) 232-31-37.

9. Glossary

Accuracy — the parameter which depends on various factors: number of visible satellites, signal quality, interferences, reflected signals, of the navigator moving speed etc. Most exact readings are expected when reception is carrying out from more than 4 satellites, uniformly located in the sky, and the navigator stands still. The accuracy used for calculation of your current coordinates can be displayed on the screen.

Active route segment — a segment of a route which you are currently move on. Also, this is the distance between any of the two waypoints in a route.

Almanac — these is the data about the orbit parameters of all the satellites. Each satellite transmits these data for all others. Unlike the ephemeris data, this data carry a general picture of satellites' location, and they are valid for several months. The almanac of satellites allows the GPS-receiver to quickly find and receive the signals from satellites, without performing a cold start.

Autorouting (automatic route navigation) — an important feature of the Software, allowing to produce a route to the destination point in automatic mode. It means, that it is enough for the user to just specify the destination point, and the Software will generate the shortest and most convenient route. To take advantage of the autorouting feature it is necessary to have routable maps.

Azimuth — the heading towards the destination point from the current position, measured in degrees and counted clockwise from the direction to the North. The azimuth can be graphically displayed on the PDA screen.

Cold start — is when you switch on the GPS-receiver for the first time, or after it moved far away from its previous location. In such case the receiver does not have any almanac and ephemeris data, or these data must be updated. Hence, the GPS-receiver starts loading the almanac, then the ephemeris. This process takes time — several minutes or more.

Datum — system of coordinates, based on ellipsoid. In such coordinates, when one specifies the latitude and longitude of some point in the area, this is actually referred to as the coordinates of the projection of this point on the ellipsoid. In different countries, a bit different ellipsoids are used. For this reason, it is not sufficient to specify the coordinates of some point in order to assess its location exactly. It is also needed to specify in what datum these coordinates are set. A wrong datum can generally lead to errors from 10 m to 1 km. Popular Russian maps, as a rule, are published in "Pulkovo-1942" coordinates system, while the GPS uses the datum WGS84.

Distance — length (in miles, meters, feet, etc.) between two waypoints, or from your current position to a waypoint.

Ephemeris — are the data used for precise correction of orbit parameters and time for each satellite. Each satellites transmits its own data only. These data quickly become outdated. Thus, the almanac gives to the navigator some general idea about the location of satellites, while the ephemeris provides very precise information. **Estimated time of arrival** — estimated time of the day/night when you will arrive to the next waypoint or to the destination. It is possible to see this time on the GPS screen while moving.

Estimated time of the trip – estimated time needed to reach a certain waypoint, or the next point in a route. It is possible to see this time on the GPS screen while moving. Calculation is made according to the current speed and heading.

Go to – function leading to the required point on the map both during the autorouting and search. While moving, the screen will show the remaining distance to the waypoint.

GPS (Global Positioning System)—is a global system used for location identification. The navigation system uses the data received from the satellites, which are continuously transmitting the navigation signals. The purpose of GPS is to provide high precision data on navigation and time to mobile and stationary objects in the air, on ground and on water.

Heading towards Northern magnetic pole — the heading shown by a regular magnetic compass.

Hot start – the process of starting the GPS-receiver which had been turned off for less than 30 minutes. The initialization of the navigator when it's switch on is done in a fast manner, because the receiver immediately starts to search for satellites using the almanac, and there is no need to collect the ephemeris data.

Route – broken line, connecting an initial and final points, passing through some via points, where the direction changes. It is possible to include existing waypoints into a route, or to enter them directly from the map displayed on the screen. When calculating the route, the Software will automatically replace the current destination point, once it's reached, with the next waypoint.

Stylus pen – a tool, which looks like a pencil, used for interacting with PDA's display.

Track — is the actual track passed, a path, or a log file, which is recorded by the GPS-receiver when it is on. The track consists of many points (their number shows how often the GPS-receiver marks the current position, usually it does it once per second, but the newer models may do it more precise). The number of points in a track (volume of track log) tells us about the maximum number of points that one track can have. Each point of a track contains information about the coordinates, altitude over ocean level, time and moving speed of the GPS-receiver.

True heading towards North — direction from any point on Earth towards the geographical NorthPole.

Warm start — the process of starting the GPS-receiver which had been turned off for more than 30 minutes. It takes more time to initialize, because the ephemeris data are outdated and the GPS receiver has to gather the ephemeris data from each satellite.

Waypoint — is a point on Earth surface which has its coordinates recorded in PDA's memory. Coordinates of a point can be obtained either through a map calibration process, or by manual input of their values taken, for example, from a topographic paper map. Waypoint can be assigned a name by default (e.g. 001, 002 and so on) or you can choose a custom name (e.g. "House", "Work"), and a custom symbol (from the list provided). The navigator has a function to search through the waypoints (to find the nearest or to find points by name). Also, it is possible to plot the point on the map screen, or to see its coordinates.

10. The Joint Stock Company “CNT”



NAVITEL
navigation system

The Joint Stock Company “CNT” – actively developing company, primarily focused on the markets of Russian Federation and CIS countries.

The mission of our company – is to improve, develop and spread modern solutions and products in the fields of IT and digital cartography. We strive for develop software meeting high requirements with respect to reliability, safety and ease of use.

The Joint Stock Company “CNT” devotes significant efforts to ensure a fast and qualified technical support will reach its clients. Our company aimed at successful projects development and achievement of such results that are able to meet the requirements of our corporate clients and end users.

The staff of our company are active, young people, who press towards developing their professional and personal qualities. We welcome and promote multiplication of skills and knowledge of our employees, because it ultimately leads to the most effective solutions for our projects.

Contact information:

125190

Leningradsky Prospect 80/16 , entrance 3, Moscow, Russia

Telephone number: +7 (495) 787-66-80

Operating schedule: monday — friday from 10-00 till 19-00

Email: sales@navitel.su

Web: <http://www.navitel.su>

Technical support: support@navitel.su

Telephone number: +7 (495) 232-31-37

Operating schedule: monday — friday from 7-00 till 20-00, saturday — sunday from 11-00 till 20-00

Regional contacts: <http://www.navitel.su/support/support-main/>.

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SUPPORT - HOTLINE

< MOTREX / Russia Branch >

<<MOTREX>>, 117303 Russia, Moscow, Ul.Bolshaya Yushunskaya, Dom 1A, K.1, office 410

EMAIL : motrex@mail.ru / motrex@motrex.co.kr

MAP UPDATE SITE ADDRESS : <http://www.navitel.su>

Tel : (+7) 495 318 1527

MAP UPDATE SITE ADDRESS :

<http://www.navitel.su>