



"GPS OFF-LINE" MONITORING (post Trip GPS and fuel monitoring)

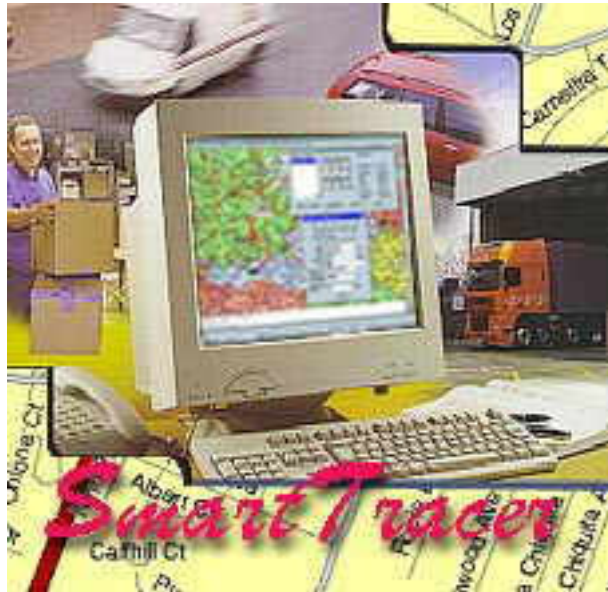


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- **"Off-Line" GPS* monitoring system** is the most inexpensive and the most effective solution of vehicle and special technics** control, it allows to analyze usage effectiveness of an exact vehicle or of a whole vehicle fleet.
- **"Off-Line" GPS monitoring system** does not have any visible or hidden operating payments.
- **"Off-Line" GPS monitoring system** provides fuel-monitoring function (determinates fuel consumption and facts of fuelling and of fuel drains).
 - * – "Off-Line" GPS monitoring system is based on satellite system of geographical coordinates definition (GPS System).
- ** – Special technics – tractors, bulldozers, loaders, building and agricultural machinery etc.



SmartTracer

*"Off-Line" GPS vehicle monitoring software
(for vehicle modules GuardMagic mTF)*

"Off-Line" GPS vehicle (and fuel) monitoring system

- allows company owners, directors, transport managers always to have a real information of their vehicles, vehicles fleet and of their usage, of a trip and movement parameters.

This information allows:

- to increase vehicle or special machinery effectiveness;
- to minimize non-productive expenses;
- to minimize or prevent fuel theft;
- to control drivers working hours and/or operators working hours effectiveness



monitoring system (depending of the System Structure and the module) allows

- to control a vehicle trip;
- to control movement parameters and a real vehicle run;
- to make out an optimal route;
- to control a real fuel consumption;
- to control a real fuel volume in a fuel tanks and fuelling points;
- to determinate facts of fuel drains and locate the places of fuel drains;
- to control activity of the exact vehicle and of the whole vehicle fleet;
- to check operating time of the exact vehicle (special technics);
- to identify the active driver;
- to check operating time of the exact driver (operator);
- to control time of vehicle load / unload;
- to check visited points and visiting time;
- to check work performance and /or analyze the reason of backlogs.



monitoring system (depending of the System Structure and the module) allows

- The system allows to detect (prevent):
 - irrationality of transport application;
 - fuel theft and inefficiency of fuel usage;
 - breach of vehicle (special machinery) operating terms.
- System software generates a special reports, giving a detailed information:
 - of an exact vehicle and it's activity during the exact time interval;
 - of fuel consumption;
 - of the whole vehicle fleet operating;
 - of drivers activity and their working time.
- System software allows to display the following information on electronic maps:
 - the vehicle track and movement parameters;
 - visited points (objects);
 - event points;
 - drain points and refueling points;
 - points of logical sensors activation.



monitoring system (depending of the System Structure and the module) allows

- In order to organize
 - the most optimal system
 - for every customer
- **GuardMagic** offers the next vehicle modules with different function characteristics:
 - [GuardMagic mTL3](#);
 - [GuardMagic mTF1](#);
 - [GuardMagic mTF2](#);
 - [GuardMagic mTF3](#).



GuardMagic mTL3

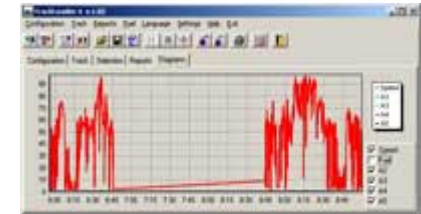
- For the control of vehicles and special technics (road, building, construction, maintenance, earth moving, agricultural machines etc.).
- System based on mTF3 is more simplest and mote cheapest version of "Off-Line" monitoring system.
-
- **GuardMagic mTL3** allow to create universal and cheap vehicle GPS tracking system.
- During the works **GuardMagic mTL3** in fully automatic mode stores in internal memory information:
- GPS information (geographical location);
 - vehicle movement parameters (speed, date and time);
 - condition of engine (engine On; engine Off);
 - condition of customer logical sensors (till three logical sensor);
 - condition of customer analog sensors (one analog fuel level sensor and one customer sensor);
 - "Event" button pressing.



GuardMagic mTL3



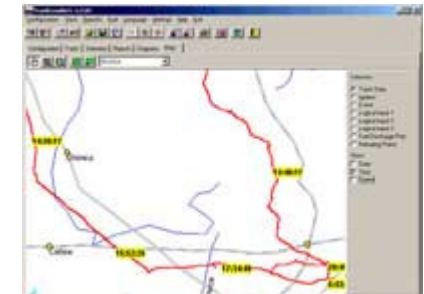
TrackLoader 4



Loading data from Logger;
 Logger programming;
 Generation standard reports of vehicle activity;
 Diagrams generation;
 Fuel consumption control.

Export data to cartographical programs.

TrackLoader 5



Loading data from Logger;
 Logger programming;
 Generation standard reports of vehicle activity;
 Diagrams generation;
 Fuel consumption control.

Visualization track,
 points in electronic maps.
 Support Vector maps in MapInfo format.



GuardMagic mTL3

- is detachable established on a vehicle and record in the internal memory trip of transport movement,
 - parameters of movement,
 - condition of sensors.
- After the return to the garage **GuardMagic mTL3** is connected to a personal computer and all stored information are read out to personal computer (vehicle track and parameters of movement, condition of logical sensors).
 - The monitoring software analyzing the loaded data and generate reports and diagrams about vehicle activity and visualized main information in electronic maps.



GuardMagic mTF1

- **GuardMagic mTF1** is an universal "GPS & Fuel Data Logger" with additional inputs, driver identification function and USB output interface.
- **GuardMagic mTF1** is intend for the control of vehicles and special techniques (road, building, construction, maintenance, earth moving, agricultural machines etc.).
-
- **GuardMagic mTF1** supports till **TWO fuel tank** (TWO fuel level sensor with analog output: **GuardMagic FLPa** or vehicle regular fuel level sensor).
- In additional **GuardMagic mTF1** has an immobilization function. Data moving from **GuardMagic mTF1** to Personal Computer is carried out by standard "**USB Flash Drive**".



GuardMagic mTF1

- **GuardMagic mTF1** allow to create non expensive universal vehicle "GPS and fuel monitoring" system.
- During the works **GuardMagic mTF1** in fully automatic mode stores in internal memory information:
 - GPS information (geographical location);
 - vehicle movement parameters (speed, date and time);
 - fuel level in fuel tank, **till TWO tanks** (fuel history);
 - active driver information (driver ID code);
 - condition of engine (engine On; engine Off);
 - engine overheat information;
 - condition of customer logical sensors (till three logical sensor);
 - "Event" button pressing.



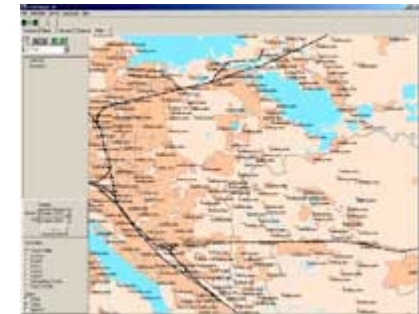
Smart Tracer



Loading data from "Fuel & GPS data Logger" **GuardMagic mTF** series;
 Generation fuel and standard reports of vehicle activity;
 Fuel consumption control;
 Diagrams generation;
 Visualization track,
 points in electronic maps.



Track Manager series



Loading data from "Fuel & GPS data Logger" **GuardMagic mTF** series;
 Generation fuel,
 standard and advanced reports of vehicle activity;
 Fuel consumption control;
 Diagrams generation;
 Visualization track,
 points in electronic maps.
 Client-Sever based.



GuardMagic mTF1

- **GuardMagic mTF1** is established on a vehicle and record in the internal memory fuel history of fuel tank (fuel level in fuel tank),
 - route of transport movement,
 - parameters of movement etc.
- After the return to the garage to **GuardMagic mTF1** connected a standard **USB Flash Drive**.
- All data stored in **GuardMagic mTF1** removed to this USB Flash Drive.
- Later this data from USB Flash Drive moved to a personal computer with monitoring software.
- The monitoring software analyzing the loaded data and generate reports and diagrams about vehicle activity, fuel consumption, fuel usage (including drain and fuelling), and visualized main information in electronic maps.



GuardMagic mTF2

- **GuardMagic mTF2** is an universal "GPS & Fuel Data Logger" with additional inputs, driver identification function and USB output interface.
- **GuardMagic mTF2** is intend for the control of vehicles and special technics (road, building, construction, maintenance, earth moving, agricultural machines etc.).
-
- **GuardMagic mTF2** supports till **TWO fuel tank** (TWO fuel level sensor with analog output:
-
- **GuardMagic FLPa** or vehicle regular fuel level sensor). **GuardMagic mTF2** has an immobilization function.
- In additional **GuardMagic mTF2** allow to store data about rounds of engine, engine overheat and data from vehicle odometer circuit.
- Data moving from **GuardMagic mTF2** to Personal Computer is carried out by standard "**USB Flash Drive**".
- **GuardMagic mTF2** allow to create non expensive universal vehicle "GPS and fuel monitoring" system.

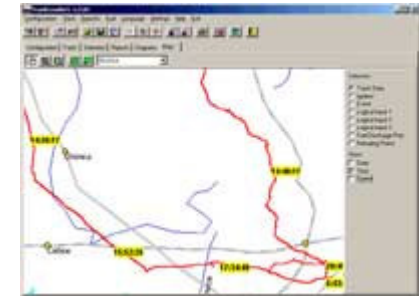


GuardMagic mTF2

- During the works **GuardMagic mTF2** in fully automatic mode stores in internal memory information:
 - GPS information (geographical location);
 - vehicle movement parameters (speed, date and time);
 - fuel level in fuel tank, **till TWO tanks** (fuel history);
 - active driver information (driver ID code);
 - condition of engine (engine On; engine Off);
 - engine overheat information;
 - condition of customer logical sensors (till three logical sensor);
 - engine working parameters (rounds);
 - vehicle odometer data;
 - "Event" button pressing.

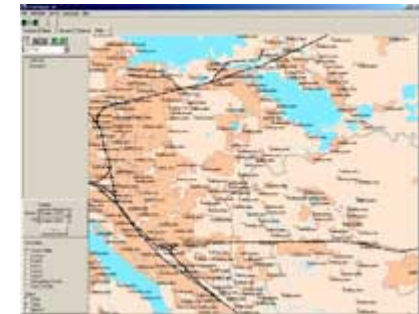


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GuardMagic mTF2

- **GuardMagic mTF2** is established on a vehicle and record in the internal memory fuel history of fuel tank (fuel level in fuel tank),
- route of transport movement, parameters of movement etc.
- After the return to the garage to **GuardMagic mTF2** connected a standard **USB Flash Drive**.
- All data stored in **GuardMagic mTF2** removed to this USB Flash Drive.
- Later this data from USB Flash Drive moved to a personal computer with monitoring software.
- The monitoring software analyzing the loaded data and generate reports and diagrams about vehicle activity, fuel consumption, fuel usage (including drain and fuelling), and visualized main information in electronic maps.



GuardMagic mTF3

- **GuardMagic mTF3** is an universal "GPS & Fuel Data Logger" with additional inputs, driver identification function and USB output interface.
-
- **GuardMagic mTF3** is intend for the control of vehicles and special techniques (road, building, construction, maintenance, earth moving, agricultural machines etc.).
- **GuardMagic mTF3** is a most advanced "Fuel & GPS Data Logger" (Fuel and GPS trip controller) with many additional function:
 - USB output interface;
 - monitor fuel level in main fuel tank;
 - monitor fuel level in cargo fuel tank (for truck tanker);
 - support till **SEVEN Fuel Tanks** (Seven Fuel Level Sensor **GuardMagic DFLS** with digital 485 interface). **TWO** main fuel tanks and till **FIVE** cargo fuel tanks;
 - driver identification function;
 - immobilization function;
 - temperature control function. Till **SEVEN** temperature or humidity sensors;
 - GPS support;
 - engine rounds and vehicle odometer control function.

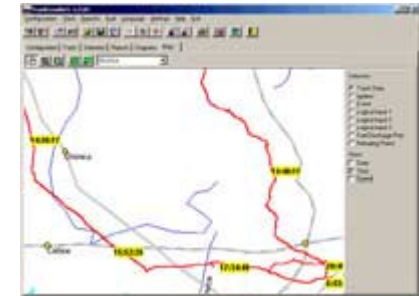


GuardMagic mTF3

- Data moving from **GuardMagic mTF3** to Personal Computer is carried out by standard "**USB Flash Drive**".
- During the works **GuardMagic mTF3** in fully automatic mode stores in internal memory information:
 - GPS information (geographical location);
 - vehicle movement parameters (speed, date and time);
 - fuel level in fuel tank, **till SIX tanks** (fuel history);
 - active driver information (driver ID code);
 - condition of engine (engine On; engine Off);
 - engine overheat information;
 - condition of customer logical sensors (till three logical sensor);
 - temperature from till SEVEN digital temperature sensors;
 - engine working parameters (rounds);
 - vehicle odometer data;
 - "Event" button pressing.



Smart Tracer



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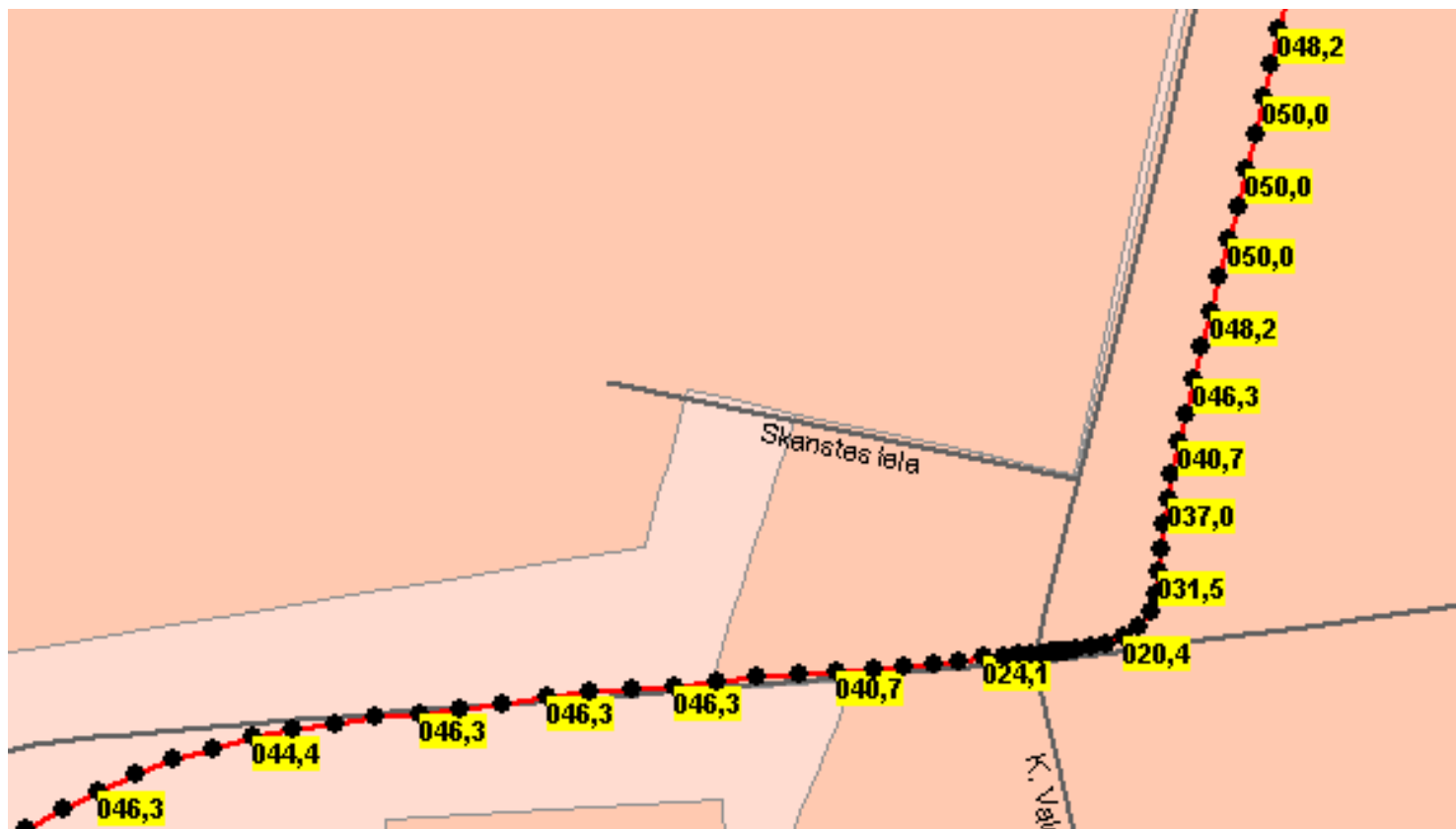
GuardMagic mTF3

- **GuardMagic mTF3** is established on a vehicle and record in the internal memory fuel history of fuel tank (fuel level in fuel tank), route of transport movement, parameters of movement etc.
- After the return to the garage to **GuardMagic mTF3** connected a standard **USB Flash Drive**.
- All data stored in **GuardMagic mTF3** removed to this USB Flash Drive.
- Later this data from USB Flash Drive moved to a personal computer with monitoring software.
- The monitoring software analyzing the loaded data and generate reports and diagrams about vehicle activity, fuel consumption, fuel usage (including drain and fueling), and visualize main information in electronic maps.



Visualization on Maps

Trip with "Speed stamps"

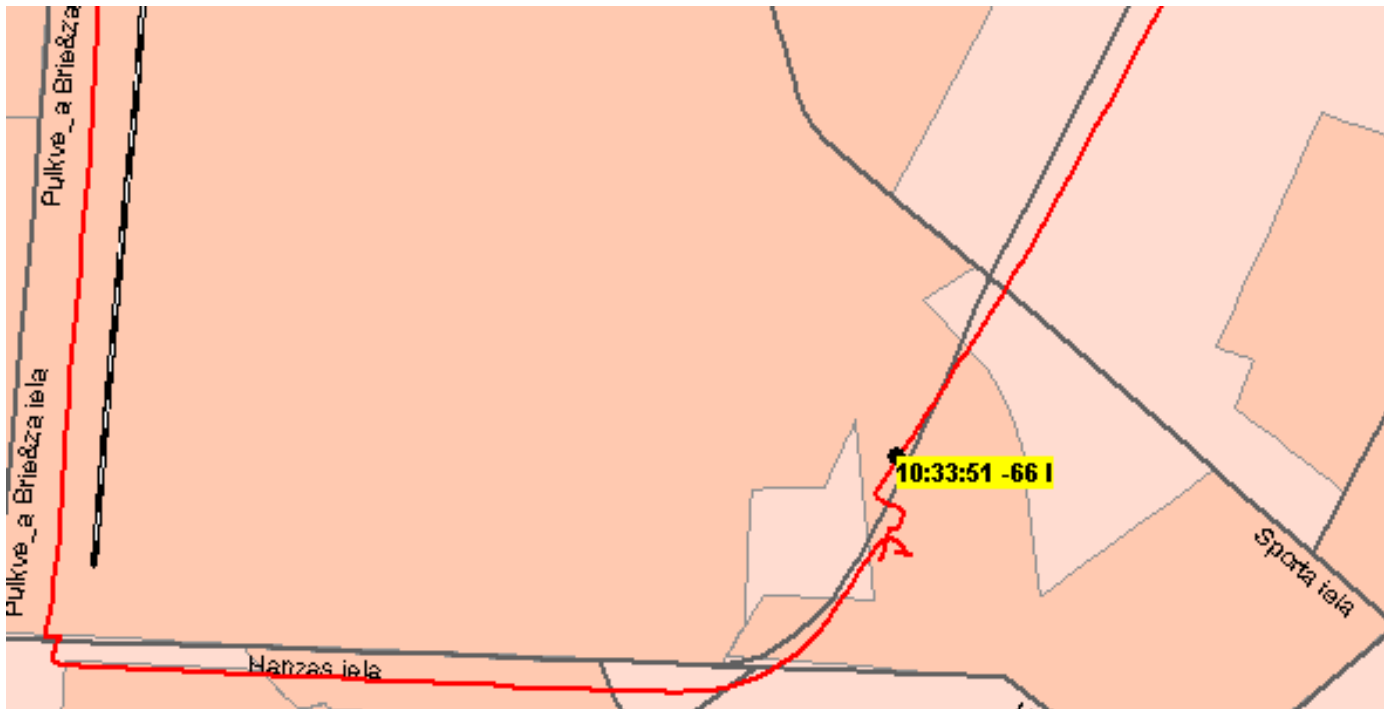


Display on electronics map the speed of movement



Visualization on Maps

Trip with "Drain stamps"

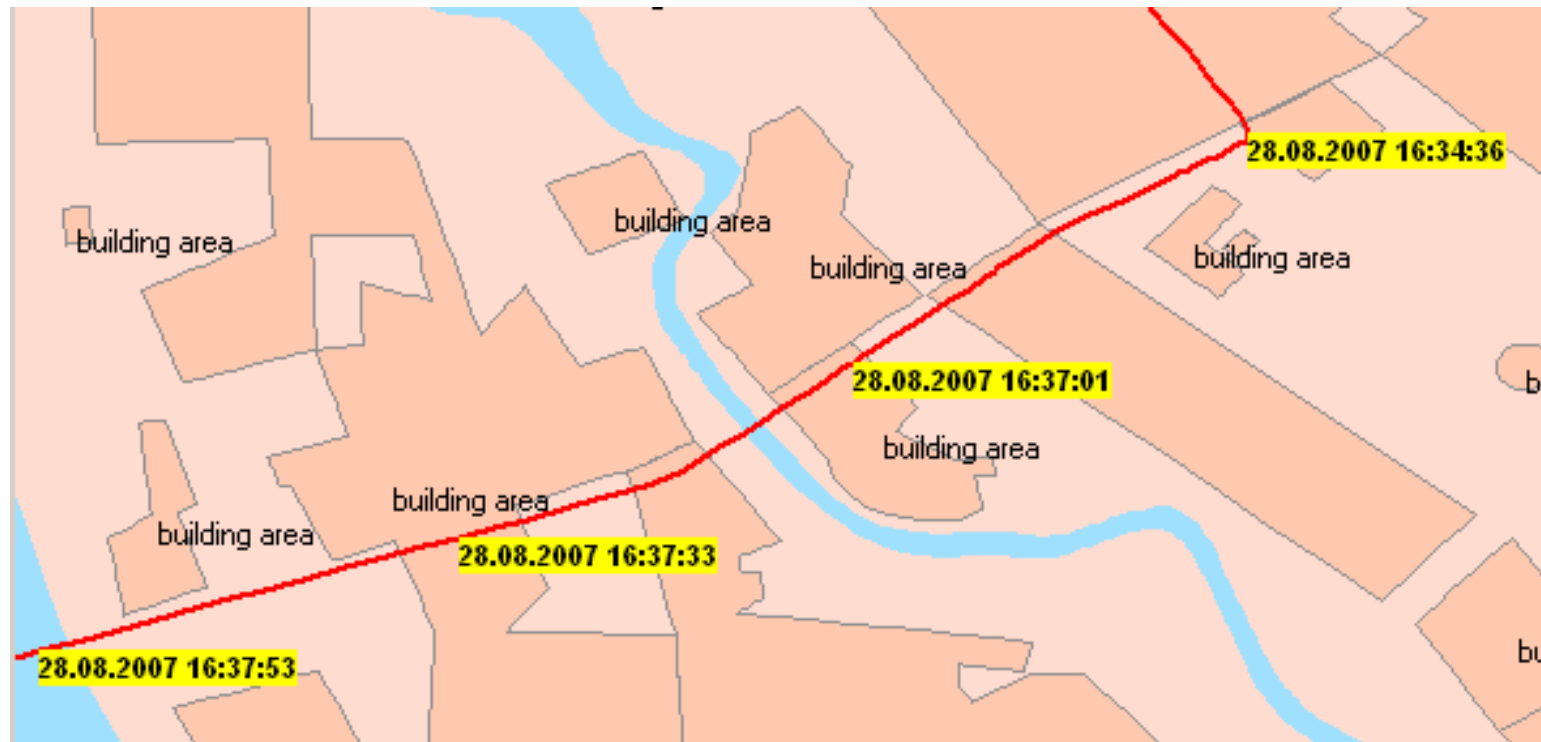


Display on electronics map the points of drain with additional information:
value of drain;
date and time of drain.



Visualization on Maps

Trip with "Time and Date stamps"

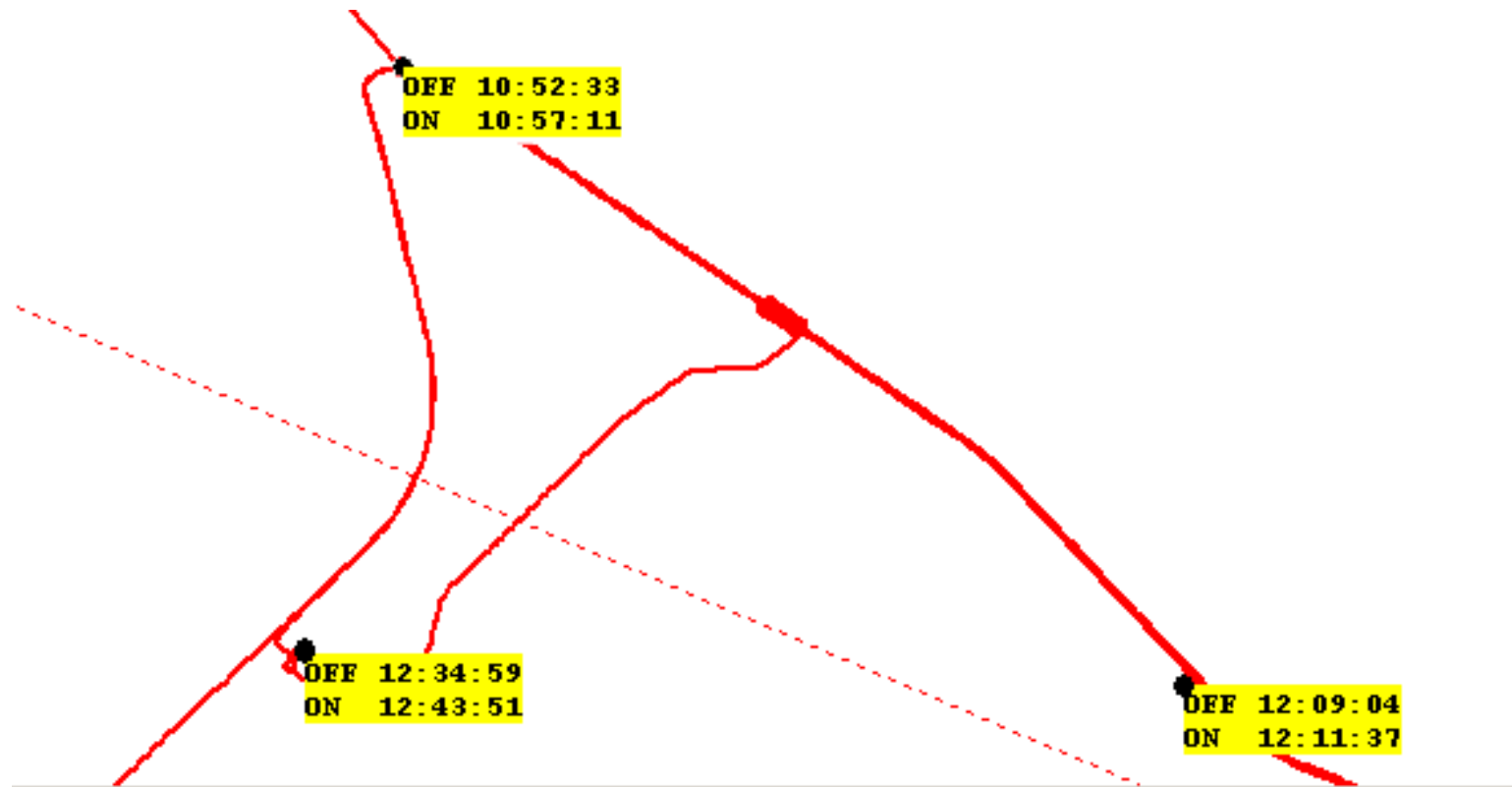


Display on electronics map the trip of vehicle with additional marks:
Date and Time



Visualization on Maps

Trip with "Ignition ON / OFF stamps"

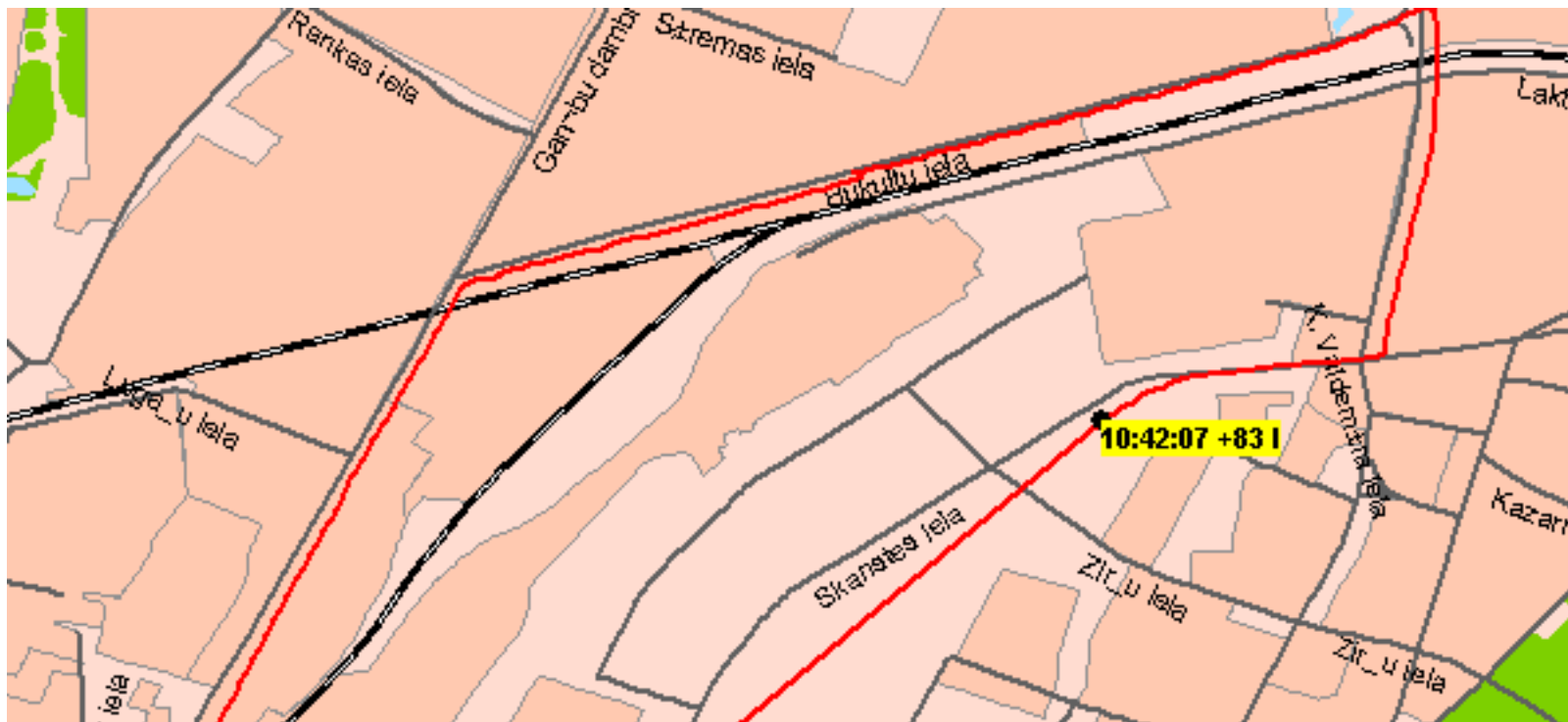


Display on electronics map the points than engine was On / Off and additional information: date and time.



Visualization on Maps

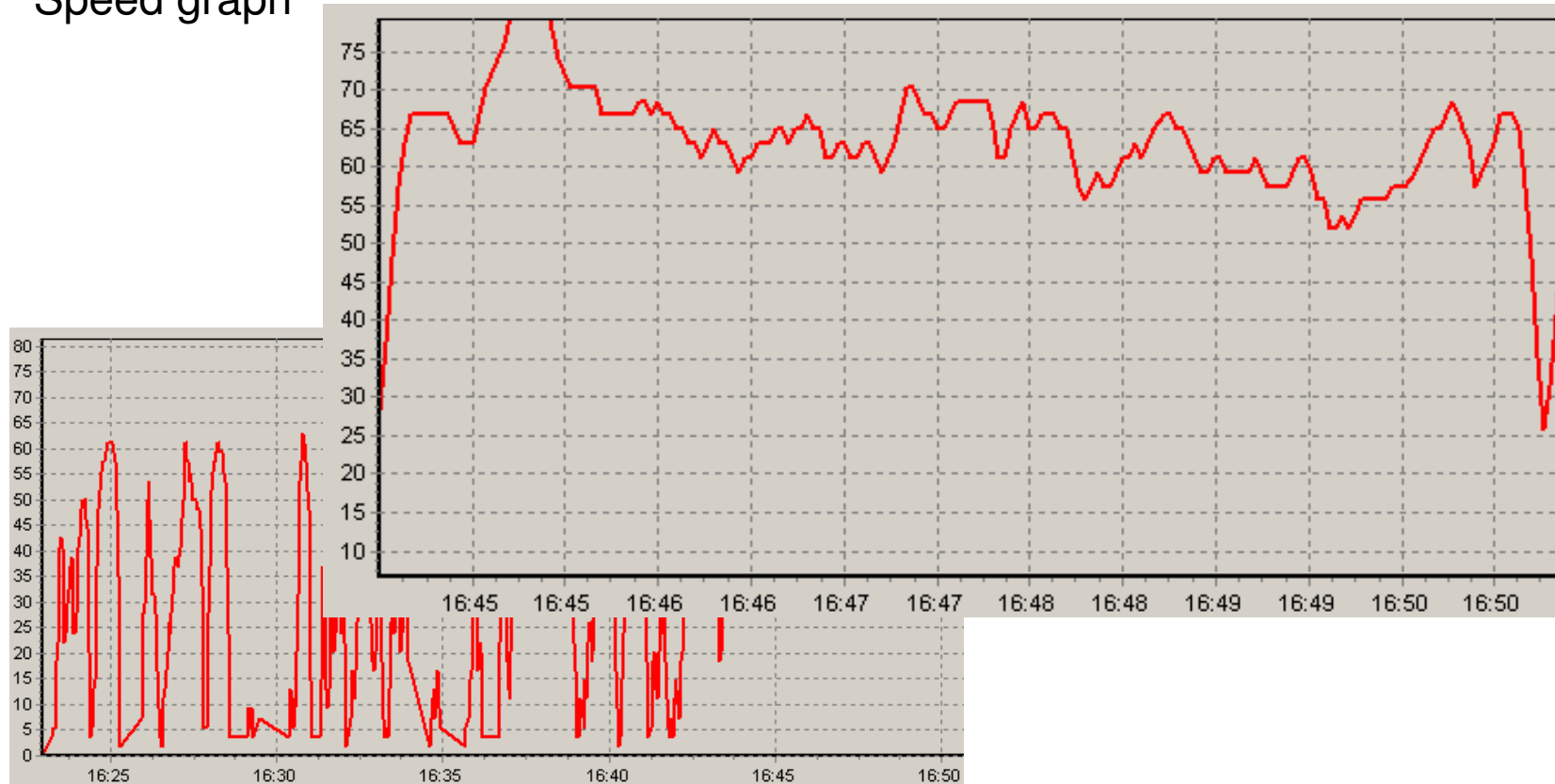
Trip with "Filling stamps"



Display on electronics map the points of filling with additional information:
value of filling;
date and time of filling.



Speed graph

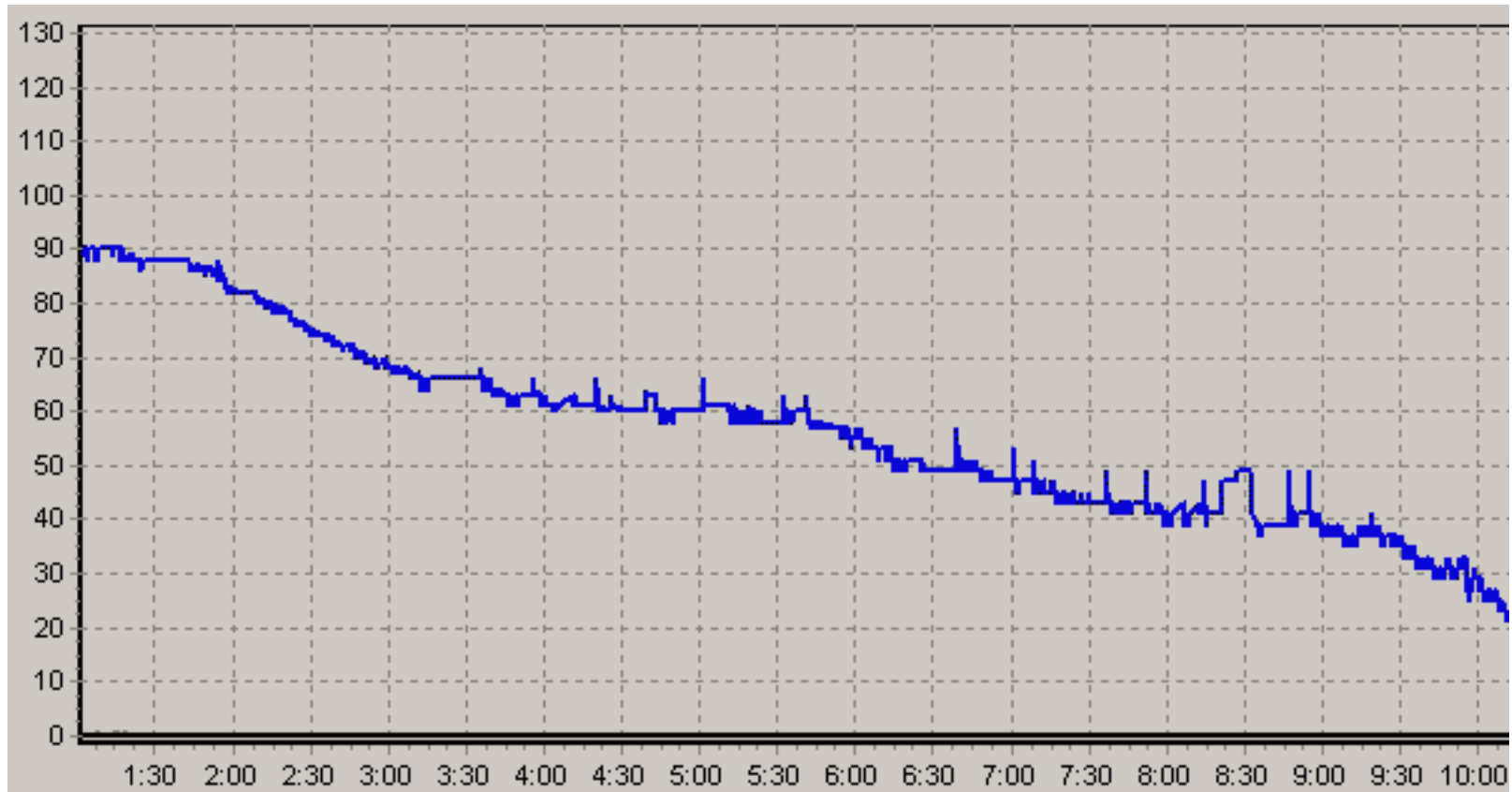


Speed graph base in time.

Show the speed of vehicle during the trip (selected period).



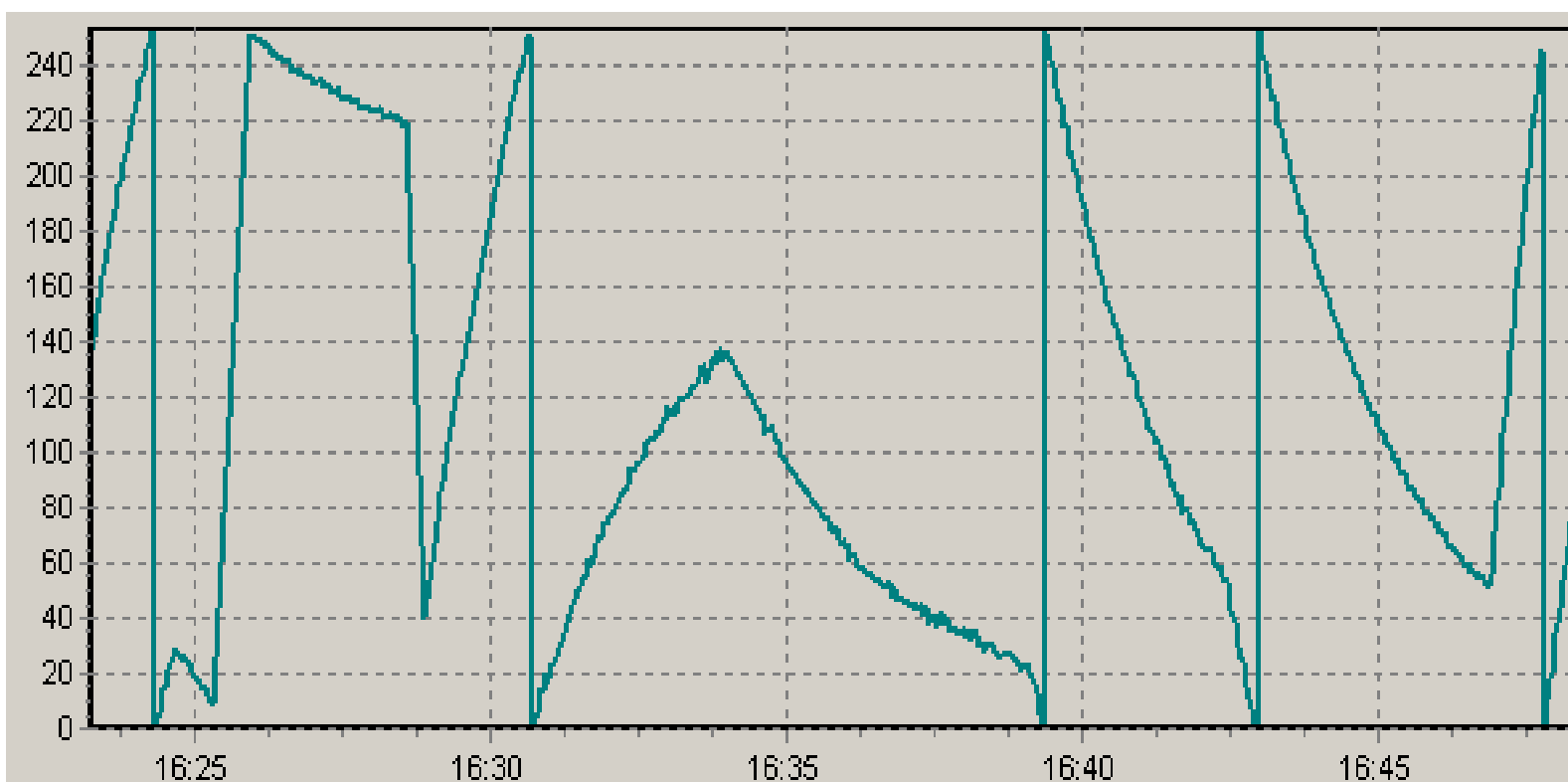
Fuel consumption graph



Fuel consumption graph base in time.
This graph display the dynamics the fuel level in tank.



Data from external analog sensor



Display the graph data from external analog sensor



Reports Vehicle

- Detailed reports about specific (and selected) vehicles:
- general information per selected period, month, week;
- daily information per selected period, month, week;
- speed and over speed reports per selected period, month, week;
- fuel consumption;
- routes and visited points (cities, check points, objects, refuelling station) per selected period, month, week, day;
- event, drain, refuelling points per selected period, month, week, day;
- drivers history per selected vehicle.



Reports Fleet

- General and comparative reports about yours all fleet.
- Fleet General reports:
 - fleet general information per selected period, month, week;
 - fleet general activity detailed information;
 - fleet general utilization information;
- Fleet Comparative information by selected period, month, week, day:
 - efficiency;
 - trip;
 - effective time;
 - trip time;
 - idle time;
 - stopping;
 - Over speed;
 - non utilization;
 - fuel consumption;
 - fuel filling;
 - fuel drain;
 - over fuel consumption (average and maximum).
 - Fleet comparative reports allow to compare the vehicles activity in yours fleet or fleet group by certain parameters .



Reports: Drivers

- Drivers history, drivers activity and comparative drivers activity.
- Drivers history:
 - general;
 - per week;
 - per month;
- Drivers comparative information by selected period, month, week:
 - working time;
 - trip time;
 - travel time;
 - idle time;
 - stopping time.



Reports: Objects

- There are the next type of objects:
 - cities;
 - points (checkpoints);
 - bases (for example, yours office, garage etc.);
 - objects (the objects that yours vehicle regular visit. For example stocks, shops, factories etc.);
 - sites, construction site (for example, bridge construction site etc. This allow to make the full control of yours special technique works inside such type of object);
 - refuelling station. Allow to control the filling procedure of yours vehicle and special techniques.
- Object, site visiting:
 - general per period;
 - general per month, per week; per day;
 - detailed by day.
- works on site:
 - general;
 - detailed.



General "Fuel Report" for the trip

```
Fuel on Track Starting: 90
Fuel on Track Finish: 7

Refueling Quantity: 0
Amount of Refueling, Litres: 0

Quantity of Discharge: 2
Amount of Discharge, litres: 20

Total Fuel Consumption: 83
Fuel Consumption(1./100km.): 18
Fuel Consumption: (1./per Hour): 10

Fuel Consumption: 63
Fuel Consumption(1./100km.): 13
Fuel Consumption: (1./per Hour): 8
```

Give the general information about fuel consumption per trip including the numbers of **fillings** and **drains**.

Calculated fuel consumption include two types of fuel consumption:
summary fuel consumption including the fuel drain;
clear fuel consumption for the trip distance, without draining fuel.



Filling and Drain reports

```

-----
| Date and Time      | Type | Value | Latitude      | Longitude     |
|                   |      | (L.)  |               |               |
+-----+-----+-----+-----+-----+
| 18.10.2005 8:35:20 | -    | 0010 | 080,287890 N | 55,191450 E |
| 18.10.2005 10:17:04 | -    | 0010 | 081,815320 N | 55,090170 E |
  
```

Give in tabular form detailed information about the fillings and drains.

Detailed include:

the value of filling or drain fuel;

date and time of filling or drain;

geographical coordinates of filling or drain points.

Fuel reports per period

```

-----
| Date      | Effective | Run   | Total Fuel | Refuelling | Quantity | Discharge | Quantity |
|           | Time      | (km.) | Consumption (L.) | (L.) | Refueling | (L.) | Discharge |
+-----+-----+-----+-----+-----+-----+-----+
| 18:10:2005 | 08:07:09 | 0468 | 0083      | 0000 | 0000      | 0020 | 0002      |
  
```



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