

THE APPLICATION OF THE FLEET MANAGEMENT SYSTEM AND FIELDS OPS IN TRANSPORT LOGISTIC

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Abstract

Monitoring of vehicles, packages or services is an important element in serving clients in the transportation industry, as well as essential services in logistics. However, modern monitoring systems they are intended for use within a company and thus always-suited for the use in several companies at once. This paper presents independent access systems for tracking vehicles, packages or the like, which can be applied in most companies of transport logistics. The research in this paper we present a modern approach (GPS, GPRS, FMS or Field Ops) to monitor the flow of funds or materials distribution networks more (multicompany) logistics companies at once.

Key words: Fleet managements, transport, frotcom.

1 INTRODUCTION

This paper shows the commercial structure to drive, etc. Fleet Management System (FMS), which can be used to monitor the work and research shpeditiorite. FMS systems are widest use in passenger and freight vehicles (cars and trucks). Companies use the system to monitor FROTCOM, which provides centralized data storage and access by administrators and software managers monitoring system. All received data are sent using GPRS to a central database in which final reports are generated and sent to end users. System than the standard things like vehicle tracking and current coordinates, and allows the use of advanced features such as. instantaneous fuel consumption, advanced sensors to detect errors in the engine start-stop sensors etc..

Fleet management system integrated to: Control the movement of vehicles in real time, refresh interval of 5 seconds; Reduce the cost of control of the vehicle for about 50%; Control of fuel - and spent honed; Comprehensive system for generating reports with the possibility of

exporting in Microsoft Excel format; Alert based on given parameters and geo-restriction (Geo-Fence); Taking data from digital tahografi trip computer and vehicle; Integration of the entire system with Google maps; On-board diagnostics in real time; SIM chip that enables the transmission of data to the central database via GPRS; Remote system management from any location with an internet connection.

As an additional module of this system is set up the possibility of direct communication between the control center with drivers of vehicles, as well as a direct connection between the controllers, thus effectively manage the default routes, perform additional planning loading and downloading of goods and It introduces the possibility of reporting in emergency situations.

2 APPLICATION OF FROTCOM

FROTCOM a system for tracking vehicles, which allows control of fleet in a simple and effective way, resulting in a clear increase in productivity, margins and quality of services offered shpeditiorite. FROTCOM System (FMS) is a professional solution primarily aimed at companies that want to control fleet: road transport companies, companies courier services companies for logistics and distribution companies for construction machinery companies car rental, taxi companies, etc. .

FROTCOM system consists of a GPS receiver, in this case the model Garmin Nuvi 2455 (shown in Figure No. 1) and GPRS communication module installed in any vehicle.

With such devices installed in vehicles, managers allow any control over moving vehicles, where they are, where they were before, when they began the journey, how long were stopped in place and so on. The system allows monitoring of all vehicles 24 hours a day, with positions and data from sensors that are refreshed in 1 minute. Additional data include cost management, navigation module for drivers, two-way text communication and automatic driver identification.

The data collected from the vehicles are processed in the control center, where they generate the required reports. The situations alarms can also be detected and be reported by SMS and e-mail.



Fig 1. GPS device with built-in tracking system

All that is necessary for normal functioning and access to the program is an Internet connection and a web browser. The advantages offered by this system are: Reduce costs and increase productivity (lower costs for fuel,

communication and maintenance); Improving the quality of service offered to customers (to avoid delays and inform customers in real time, when planning delays); Better business planning (knowing exactly what is on your own fleet); Increased safety (fewer thefts, fewer accidents).

2.1. Mode Frotcom

Monitoring each vehicle, Frotcom system uses GPS / GPRS device, which is connected to the vehicle battery (12 or 24V). Power consumption is very low (around 100mAh), comparable to the consumption of the handset. By using a Web browser can access all the information necessary for monitoring the fleet. Vehicle location is shown on digital maps. Speed, start the engine and all the data about the sensors can be viewed in tables or graphs. All data sent to the system Frotcom central database using GPRS communication, shown in Figure No2.

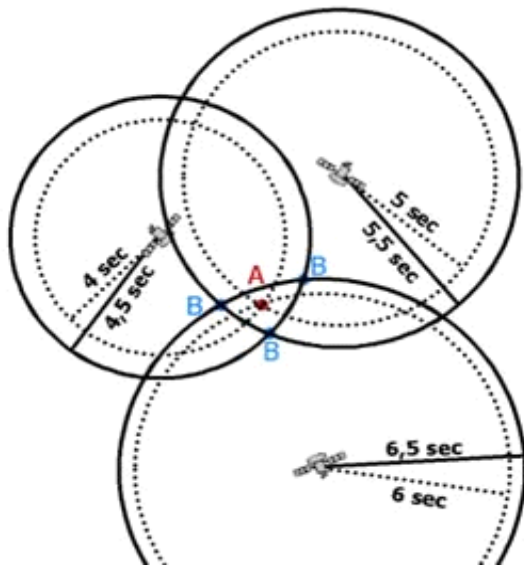


Fig 2. Communication within the system

The main features of the system can enumerate: Permanent access to information; GPRS communication; GPS position; The status of starting the engine; No need arises for software, because the solution is based WEB; Multilingual support; Included module management costs; User interface for mobile phones (smartphones); Compatible with Google and Bing maps; Automatic sending of reports and alarms via e-mail; WEB integration with other applications; To export all reports to Microsoft Excel and others.

Additional Features: Integrated navigation with two-way messaging via mobile terminal; SMS messages to mobile phones; Door open sensor and temperature; Possibility of automatic identification with RFID; Alarms via SMS

For general settings and display the entire system has created a simple user interface through which remote can manage the entire process of sledenjeOvde should be noted that it is possible to login to users at several levels (multi-level), where some users may restricted to use only certain

features of the system. Login Enter the system Login screen. Selecting vehicle is in motion, we get information on how long the vehicle is in motion and the speed varies in time (Figure 4). Selecting a vehicle which is stationary, we get information on how long the vehicle is stationary when the vehicle has stopped moving and how much total time has passed on the move in the past 24 hours. (Figure 5).

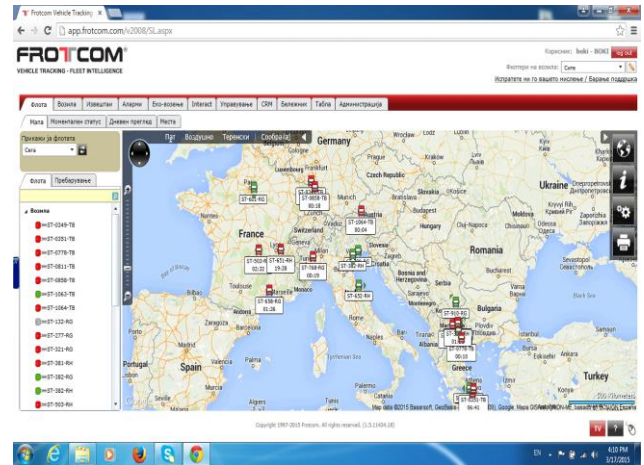


Fig 3. Home - an overview of all vehicles

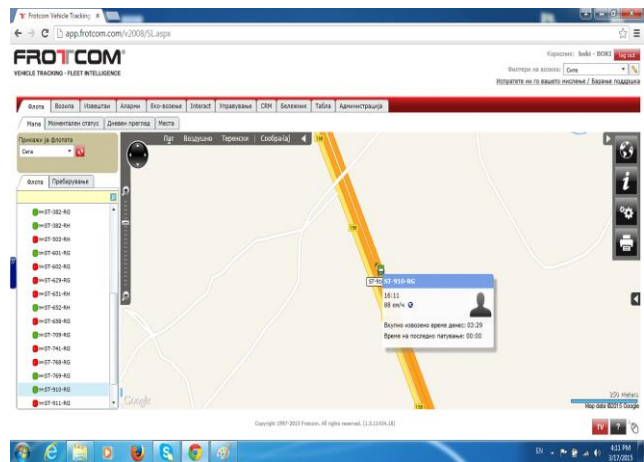


Fig 4. Tracking moving vehicle

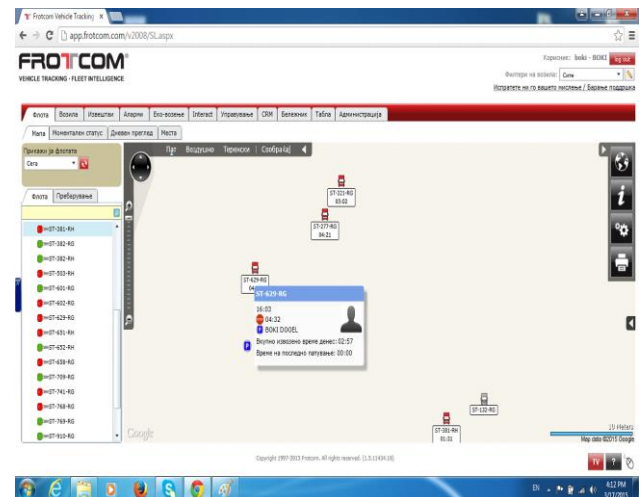


Fig 5. View vehicle stationary

In the system there is a possibility for a detailed view of the path of the vehicle at a specified interval. This draws the trajectory of the vehicle for a given time interval and at the same time marking the points in which it is made a halt in the movement, while giving us detailed information on how long the vehicle is in motion and time the vehicle is stopped. Figure No. 6, and Figure 7 is a display movement of a vehicle over a period of 24 hours, which are marked on a map the path of movement, as well as places and duration of congestion vehicle.

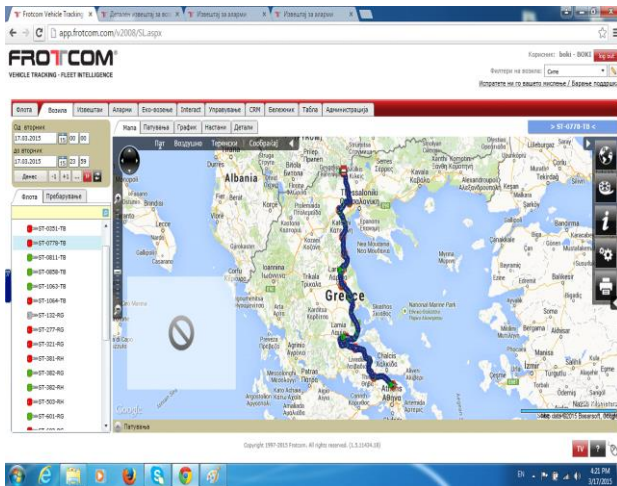


Fig 6. View the path of the vehicle within 24 hours

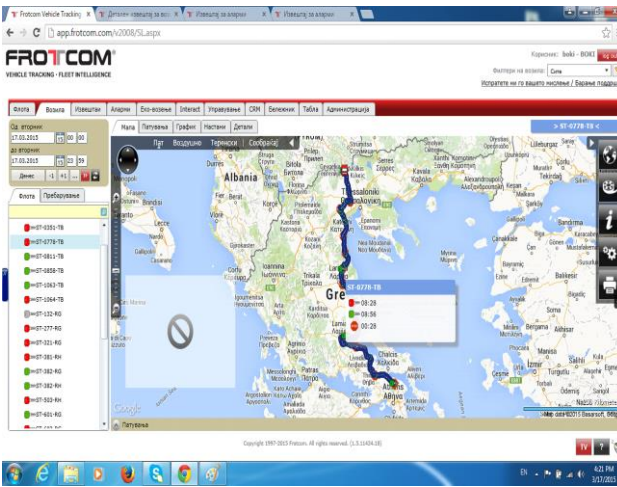


Fig 7. View downtime vehicle

The monitoring system FROTCOM, has the ability to generate detailed reports that we presented data on the time and place of departure of the vehicle as well as the mileage of the vehicle at the time of departure from specified location. Upon arrival at the location specified, the system also records the time and place of arrival, mileage, average speed through the set route and downtime. The system holds option which can transmit the generated reports in Microsoft Excel format, the reports will be available for further transmission and processing (Figure 8).

One of the advantages in using these intelligent transport systems are able to alert based on given parameters and geo-restriction. In this case in Figure 9 and Figure 10 is

shown alarming system for speeding vehicle alarm and waiting in a situation where the vehicle was started a long time, but finding the non-driving condition.

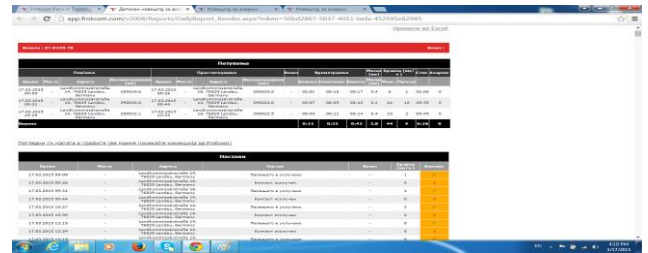


Fig 8. Generated reports into the monitoring system



Fig 9. Summary table for alarms

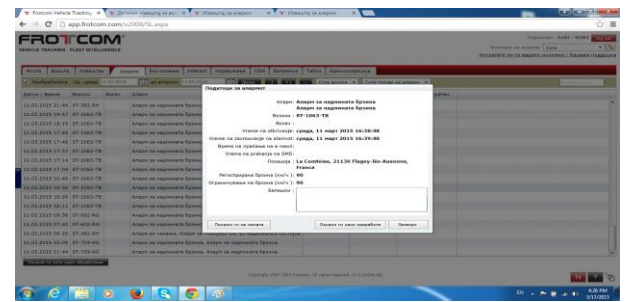


Fig 10. Alarm for exceeding the speed of a vehicle

Finally, I would mention one of the most important components of intelligent transport systems, and that is the ability to directly send the coordinates to the navigation of the vehicle using GPRS communication, shown in Figure No. 11.

This option enables the employees in the governance database directly to adjust the built-in vehicle navigation by entering the correct destination with latitude and longitude of where you need to arrive shipment. This is an important step in cutting operational costs required to perform the entire transport process.

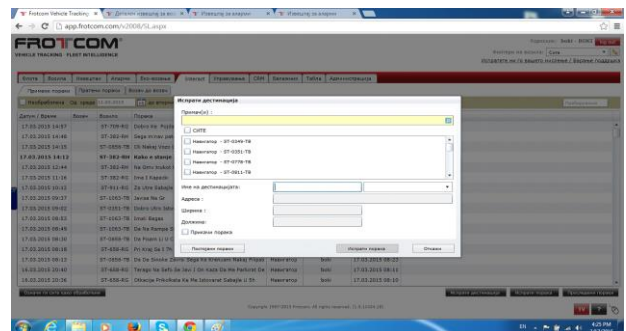


Fig 11. Module sending coordinates to the vehicle

2.2. Mode Field Ops

Numerous everyday Field Ops tasks imposes the need for an organized system of monitoring the network, receiving treatment and management of client requests and coordination, or dispatch tasks and running the specialist teams in the field. These complex daily field operations more efficiently and effectively managed through an electronic system for monitoring, recording and dispatching. All information (requests for connection charges or defect) of customers are entered into the electronic system software by employees in the call center. Specialist teams on the ground in each city, at the same time receive electronic work orders selected for each team separately. Electronic jobs contain data on the name of the specialists in the team, the car, time and place of the scheduled task, job description with possible objection is taken by then, and so on. Electronic system for dispatching the "Field Ops" allows for analysis and statistics for all completed tasks and tasks waiting to be completed. Information can be requested for any period that is the subject of interest.

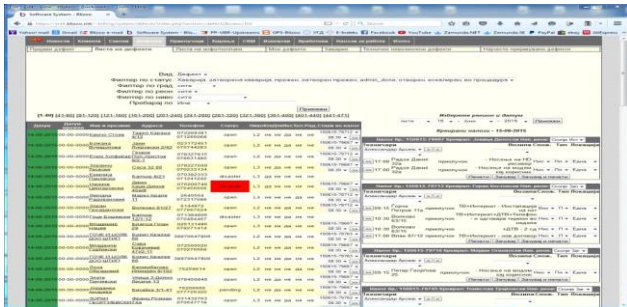


Fig. 12. Entering and monitoring of all faults

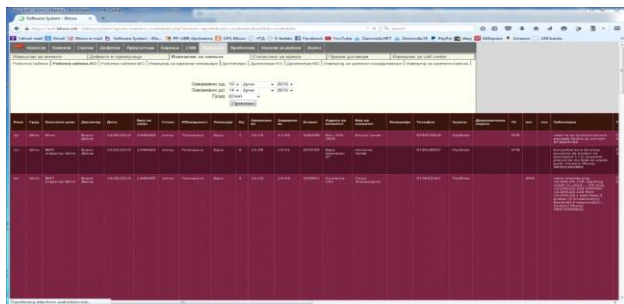


Fig. 13. Entering and monitoring of all faults

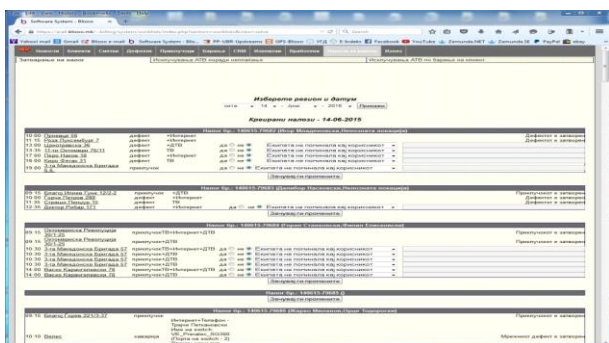


Fig. 14. Data on the current activity of the specialist teams in the field

ACKNOWLEDGMENT

During the management of logistics, one of the constant challenges is to provide acceleration, accuracy, safety and reliability of transport. The transport company or it must have a detailed description of the cargo or goods that are transported. During transport, the logistics center is necessary to know whether goods transported is protected and secure, whether the goods are damaged or stolen and most important thing is to know the exact geographical position of the vehicle which carries out transportation. When the vehicle arrives at its destination, the transport company need to know what type of products should be unloaded.

From here arises the need for logistics management closely monitor supply chain professionals using advanced technologies such as RFID and GPS. System management fleet (Fleet management) used, the system offers cost savings and increased productivity, improved quality of service, better business planning and most importantly, increase safety.

Electronic system for dispatching the "Field Ops" allows for analysis and statistics for all completed tasks and tasks waiting to be completed. Electronic jobs contain data on the name of the specialists in the team, the car, time and place of the scheduled task, job description with possible objection is taken by then, and so on.

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