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SOUTH-EAST FINLAND - RUSSIA

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# Automotive innovation camp

Race4Scale

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## Business case «Maintenance optimization and vehicle fleet management platform using IoT»

### MGbot LLC.

Expert board:

- Sergeev Pavel, general director
- Kotov Maxim, lead engineer
- Bogolubova Alexandra, project manager

Age group: students of students of secondary professional education

**MGBOT**®  
№1 в «Интернете вещей»



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## General information about the business case

### Maintenance optimization and vehicle fleet management platform using IoT

The current trend in the field of road transport for companies that own or operate a fleet of vehicles is the need to remotely track the location and operation of vehicles, as well as their technical condition.

- Manufacturers and car owners need to identify malfunctions and promptly report them on the phone screen. In-car sensors measure the performance of every part and then tell the owner when to repair using the Internet of Things.
- Fleet managers use special applications that not only monitor the vehicle in real time, but also monitor the weather conditions, which is important for drivers. Fuel consumption and part wear data allows managers to control costs and cut costs. All this leads to the fact that the business works more efficiently, and consumers receive a better service.

# Application in other countries

There are sensors and tags in the design of the car that help to read important information: fuel level, oil level, engine condition, etc.

Some manufacturers have gone a little further:

- Lexus additionally marks a number of car parts and elements with VIN numbers to check their originality and enhance identification capabilities
- Also, all Lexus models sold in the Russian market have the L-Mark identifier. The tags are unique to each vehicle and are designed to protect against theft.

Tags are read and thus you can identify the brand of the car and its owner





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## Prospects, problems

Today the process of servicing a car is a must. Fleet owners take a very long time to identify faults and fix them before scheduled maintenance.

Most drivers do not understand when to send a car for inspection, and why it is needed in principle. The Internet of Things (IoT) can help in this case too.

The IoT will improve the traditional approach to prevention by identifying what needs immediate replacement: sensors built into the car measure the performance of every part, then they tell the owner when one needs to be repaired.

This quick response allows drivers to send the car for inspection before significant damage occurs. Automakers have the ability to track how often a problem occurs on their vehicles thanks to information from sensors. Using it, they will be able to create more reliable cars in the future.



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## Statement of the problem

### **Task:**

**for the platform to optimize maintenance and fleet management is to develop:**

- 1. Platform interface (how it will look to the user);**
- 2. Specification of sensors from which it is necessary to collect information about the car**
- 3. Algorithm for transmitting and outputting data using the Internet of Things**

The platform should:

- Provide information to the driver, vehicle fleet owner and car manufacturer information on the technical condition of each vehicle in the fleet in a convenient and accessible form;
- Issue recommendations for planned repairs;
- If possible, recommend new parts or repair services from contractors.



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## Business case solution format

- Up to 10 PowerPoint presentation slides with infographics
- The total time for the presentation of the case should not exceed 10 minutes.
- Optionally - demonstration of the transmitted data from the car in the Blynk application