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ЧТО ТАКОЕ 5G? ВСЁ ЧТО ВАМ НУЖНО ЗНАТЬ

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WHAT IS 5G? EVERYTHING YOU NEED TO KNOW

MULTIPLATE DEPOSIT

АННОТАЦИЯ. На сегодняшний день развитие интернет технологий

происходит семимильными шагами. Человечество всё больше и больше

осваивает интернет вещей, развивает интернет сервисы, однако для

развития и внедрения новых технологий требуются современные сети.

КЛЮЧЕВЫЕ СЛОВА: 5G, сеть нового поколения, сети.

**ABSTRACT.** Today, the development of Internet technologies is taking place in

leaps and bounds. Humanity is more and more mastering the Internet of things,

developing Internet services, but the development and introduction of new

technologies require modern networks.

**KEY WORDS**: 5G, new network generation, networks.

5G networks are the next generation of mobile internet connectivity, offering faster speeds and more reliable connections on smartphones and other devices than ever before.

Combining cutting-edge network technology and the very latest research, 5G should offer connections that are multitudes faster than current connections, with average download speeds of around 1GBps expected to soon be the norm.

The networks will help power a huge rise in Internet of Things technology, providing the infrastructure needed to carry huge amounts of data, allowing for a smarter and more connected world.

Today, a new generation of networks can significantly increase the speed of data transmission, as well as provide a modern and secure network architecture. Thanks to the new generation of networks, it was possible to significantly reduce the power consumption of mobile devices to work with network modules. The modules of the new generation are the future.

## 5G modules in cars

Many of the world's leading companies are focused on the introduction of a new generation of modules in their new cars. Thanks to these modules, you can significantly improve the comfort and safety of the car. The introduction of new modules can significantly speed up the autopilot. Large companies such as Mercedes, Tesla, Volkswagen are actively researching the introduction of new modules in the car. As the first results show, thanks to such modules, machines can become not only a means of transportation, but also a very important component of the Internet of things.

Today in cars very widely introduced all kinds of auxiliary systems to save lives, but they are all aimed at the safety of the driver and passengers. However, thanks to the modules of the new generation there is the possibility of creating a notification system about emergency situations. Now the Russian market has a similar system that notifies emergency services that an accident has occurred, but what if you use this system not only to notify about the accident, but also to use it to notify about a potentially dangerous section of the road?

A person can ignore a threat, a bad road, a damaged power line, but with the help of new high-speed modules and special processors, it is possible to automate the collection of such data and timely transmit a notification of a potential threat.

## 5G in phones

But despite all the advantages of the new generation modules, many manufacturers are in no hurry to implement them into their devices. At the moment, only Huawei and Samsung install 5g modules in their devices. Apple planned to introduce 5g modules into the model line of devices in 2018, but due to the fact that the production lines were not ready for mass production of such modules, unfortunately the company had to abandon their implementation. However, in 2019 we can hope for the emergence of a new generation of modules in new devices. In particular, this can be facilitated not only by simplifying the production process of new modules, but also by signing a contract with Huawei for the supply of modules. If these expectations are met, then in the market we can see a powerful player who is not inferior to competitors in terms of network speed.

Moreover, each company tries to optimize the operation of the new module with its own processor, this will significantly reduce the already low energy consumption of 5g module.

Looking at the development of the electronic industry, we can calculate that in 2-3 years it will be possible to completely abandon the modules of old generations, which will reduce the load on the towers of mobile operators, thereby increasing the final speed of the Internet for end users.

## Conclusion

5G modules are essential for the development of today's Internet infrastructure. The field of application of such modules is very wide, from the introduction of cars to use in the nuclear industry, thanks to the new safe and high-speed networks will be able to significantly advance in the development of the Internet of things, thereby improving the quality of life.

However, to date, the production of such modules is only part of the series, but it will take several years, and the new generation of networks will be closely linked to human activity.

## СПИСОК ЛИТЕРАТУРЫ

- 1. Кузьменко, Н.Г. Компьютерные сети и сетевые технологии / Н.Г. Кузьменко. СПб.: Наука и техника, 2013. 368 с
- 2. Галушкин, А.И. Нейросетевые технологии обработки информации: Учебное пособие для вузов. / А.И. Галушкин, Э.Д. Аведьян, Н.С. Червяков, П.А. Сахнюк. М.: Альянс, 2016. 528 с.
- 3. Галушкин, А.И. Нейросетевые технологии в криптографии: Учебное пособие для вузов. / А.И. Галушкин, Э.Д. Аведьян, Н.И. Червякова. М.: Альянс, 2016. 528 с.
- 4. Будылдина, Н.В. Сетевые технологии высокоскоростной передачи данных: Учебное пособие для вузов / Н.В. Будылдина, В.П. Шувалов. М.: РиС, 2016. 342 с.