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**IMPLEMENTATION OF NTI IN THE CONTEXT OF «AUTONET»
MARKET DEVELOPMENT**

***Abstract:** The article examines the fundamental principles of the development of «AutoNet» - one of the most widespread markets of the National Technology Initiative (NTI). This market is focused on the creation of unmanned vehicles. The authors investigate the main ways of modernization of the road transport network and how it*

will work in the future. Attention is focused on how the «AutoNet» «roadmap» will be useful in this context.

Keywords: *smart system, wireless network, security, information technology, NTI, «AutoNet».*

ВНЕДРЕНИЕ ПРОЕКТОВ НТИ В КОНТЕКСТЕ РАЗВИТИЯ РЫНКА «АВТОНЕТ»

Аннотация: *В статье рассматриваются основополагающие принципы развития одного из наиболее распространенных рынков Национальной технологической инициативы (НТИ) – «АвтоНет». Данный рынок ориентирован на создание беспилотных транспортных средств. Авторами исследуются основные пути модернизации автотранспортной сети и то, как она будет работать в будущем. Акцентируется внимание на том, чем будет полезна дорожная карта «АвтоНет» в данном контексте.*

Ключевые слова: *интеллектуальная система, беспроводная сеть, безопасность, информационные технологии, НТИ, «АвтоНет».*

The AutoNet program is a direction of the national technological initiative and contains an action plan aimed at creating a smart road project or another intelligent road network. Since this project is under development all over the world, this intelligent network will increase road safety in the future.

This system combines information technologies that will be integrated into cars, which will increase safety, as well as the efficiency of roads, that is, drivers will be more comfortable to move in their vehicles.

The appearance of the road map is due to an increase in car owners around the world, which resulted in a noticeable increase in road traffic, which have a bad impact on the environment. The expansion of the street network has not kept pace

with the growth in the number of cars. There is also no adequate organization of movement. These factors create traffic jams and, as a result, increase emissions of carbon monoxide, nitrogen oxides, hydrocarbons, lead compounds and soot. In the presence of nitrogen oxides and hydrocarbons, a secondary pollutant with highly oxidizing properties is formed under the influence of solar radiation – ozone, which was the reason for attracting more specialists.

If we talk about the economic development of Russia, the scope of the implementation of the AvtoNet roadmap lies in the field of transport, logistics, navigation and telecommunications infrastructure and has a direct impact on the rest of the industry and the economy of the country as a whole, in fact being a driver of economic growth [2].

Nowadays, Moscow and its surrounding areas have topped the ranking of cities by Traffic Index traffic congestion. Despite the fact that the level of congestion in the capital has decreased by 5 percentage points — from 59% in 2019 to 54% in 2020 - Moscow has risen from sixth place in the ranking to first. As explained in the Center for Traffic Management (Data Center), in Moscow, the number of cars on the roads increased by 4%, by 155 thousand. Of the Russian cities, Novosibirsk (9th place, 45% congestion rating), St. Petersburg (12th place, 44%), Samara (20th place, 41%), Yekaterinburg also entered the top 100 of the rating, which includes 416 settlements from around the world (28th place, 36%), Rostov-on-Don (37th place, 34%), Chelyabinsk (46th place, 31%), Omsk (50th place, 31%), Nizhny Novgorod (56th place, 30%), Kazan (64th place, 29%) and Tomsk (70th place, 28%). Therefore, this roadmap will help reduce road traffic in large cities of the country, which will significantly save citizens' time. In addition, the AutoNet system can modernize the logistics component of the country, or completely automate it.

As part of this direction of the national technology initiative, Autonet uses cars with a self-organizing VANET network, as well as DSRC technology. To determine the location of the car on the territory of Russia, such a satellite system as GLONASS is used, which essentially replaced the GPS system. The VANET

network is responsible for the interaction of vehicles between each other via wireless communication. For example, a radio, a WLAN system, or an LTE network [3].

In addition, the VANET network can also provide interaction with the roadside network, which can help simplify the road for the user. That is, the system informs the user about a detour or a more convenient route, as well as informs about signs and the maximum possible speed.

The scheme of interaction of components of the VANET network:

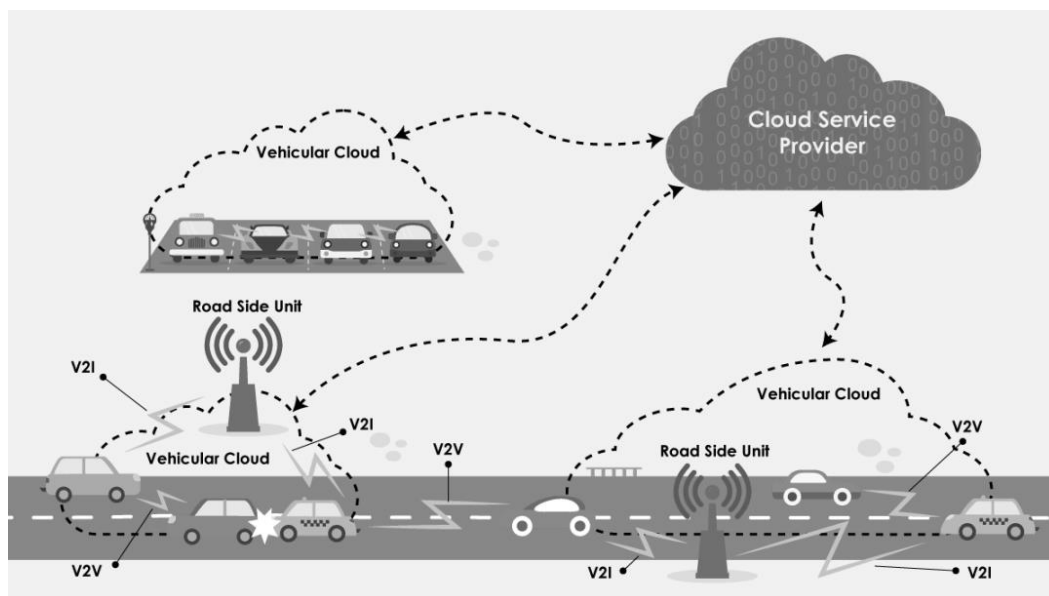


Figure 1. The "VANET" network [3]

If we talk about DSRC technology, it is designed to transfer data between the car and the objects of the dispatch service. This system is most often divided into two main parts: OBU (Onboard Net), RU (Roadside Unit). So, the first part of the OBU system collects data from sensors and devices of the car and displays them on the driver's monitor, as well as on the transmitter of the second system – RSU. The RSU system itself is part of the traffic control structure of the serviced company. Both parts of the system include GPS receivers, in our case, the GLONASS system for more accurate determination of the location of the car.

This technology makes it possible to provide a wireless data transmission system in ITS, as well as to increase its functionality by introducing the necessary management services that can ensure road safety and control.

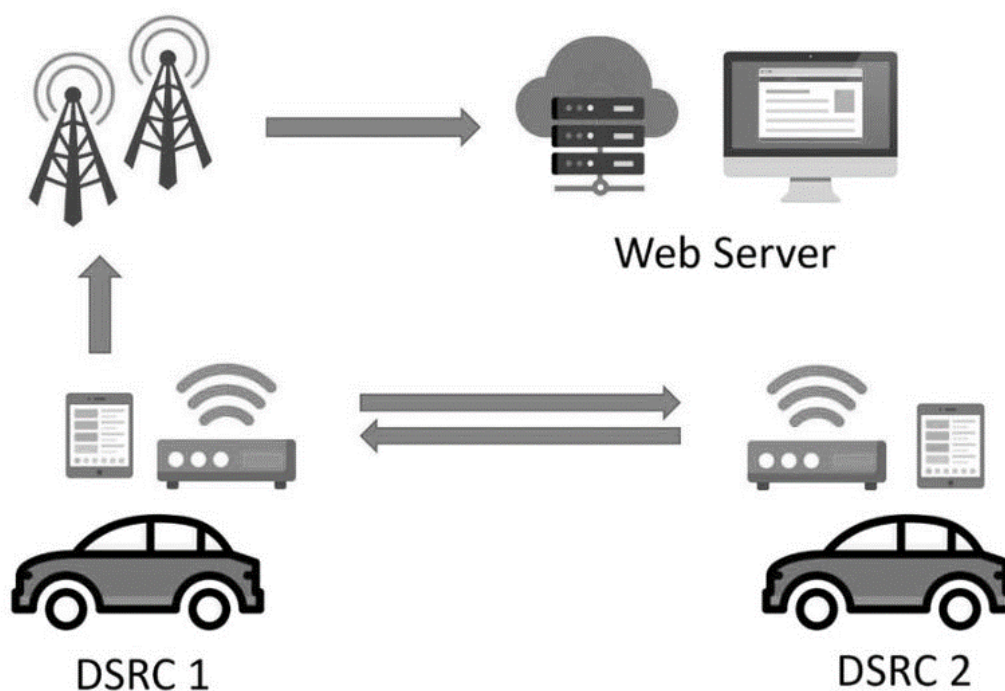


Figure 2. The scheme of the DSRC system [4]

Having figured out how some projects of the AutoNet system will be arranged, let's talk about how this system as a whole will be able to improve the country's economy. In Russia, most of the services in the field of transportation, cargo storage, as well as inventory management and supply chains are performed by the enterprises themselves. In addition, a low level of trust in the business environment, companies that depend on the quality of supplies and storage of goods prefer to independently manage everything related to these processes. So, for example, the fleet of the leader of the Russian market of transportation of combined cargoes "Business Lines" is about 4 thousand trucks, while the chain of stores "Magnit" manages its logistics system independently and has about 6 thousand trucks. At the same time, the road transport market itself is highly fragmented [1]. According to analysts' estimates, three-quarters of road carriers are individual

entrepreneurs with no more than 5 trucks. Thus, the purpose of the AutoNet system in Russia is:

- 1) Providing conditions for improving the reliability and efficiency of Russian foreign trade transportation;
- 2) involvement of additional transit cargo flows to transport communication countries;
- 3) attracting domestic and foreign investments for the development of transport and logistics infrastructure;
- 4) creating conditions for accelerating the development of the country's regions located in the zone of gravity to the highways;
- 5) ensuring the integration of Russian transport into the Eurasian and global transport systems as an equal partner.

In general, the development of the AutoNet system is gaining momentum and is already working with more than 13 regions of our country: Dagestan, Rostov Region, Volgograd Region, Moscow Region, Ryazan region, Samara region, Nizhny Novgorod region, Tatarstan, Yaroslavl Region, Kemerovo Region, Moscow, St. Petersburg, Sevastopol. It should be noted that this roadmap plans to fill all regions of our country. At the moment, the AvtoNet market is interested in cooperation with Primorsky Krai, since the level of logistics companies there is low. Below is a map of the development of the AutoNet system.

Thus, the AutoNet system as a market is receiving the most active development in the world. The role of the main market participants is increasingly shifting to ordinary people who use aggregators of services and content, new infrastructure. A new ecosystem of consumers and service providers, auto industry systems, as well as modern vehicles operating through intelligent platforms is being formed. The implementation of the NTI "AutoNet" will ensure sustainable growth of Russian GDP, create new highly qualified jobs, ensure independence in the production of technological products and strengthen national security. As a result of my work, an analysis of new markets and their impact on the digital economy of

Russia was carried out using the example of the AutoNet system, which illustrated the importance of digital development in all spheres of society in modern conditions and the importance of new markets in this process.

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