

**EXISTING SITUATION OF TRANSPORT, INDUSTRIAL, TECHNOLOGICAL,  
AND ENERGY INFRASTRUCTURES AND NETWORKS IN BULGARIA**

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***Abstract:***

*Bulgaria, as part of the European Union and a country with an extremely important geographical location, has the need to plan and develop its transport corridors, in accordance with demand and the needs of global transport flows. In this regard, good planning of transport corridors is needed, but after a in-depth analysis of the existing situation and infrastructure of the entire Balkan Area. The analysis should be based on an overview of the transport arteries surrounding the country, bearing in mind that when referring to a transport corridor, this means not only a road itself, but also a railway and sea corridor, as well as an energy and information corridor.*

***Key words:*** Strategy, Transport, Transport corridors, BRI

**1. INTRODUCTION (Times New Roman, 12 pt, Bold, Left Alignment)**

Bulgaria, as part of the Balkan Peninsula, occupies a particularly important and strategic position in today's geopolitical map, not only Europe but also the world. It outlines the border between Turkey, the Middle East and the Far East, with the interior of the European Union and Ukraine, Moldova, Russia. This is the reason why over the years not a small part of the strategic transport corridors at the international level pass through our territory. Unfortunately, however, the transport arteries, which have to ensure the movement of people, goods and services in that direction, namely the South - North and North - South, are poorly secured. This reality, coupled with the need to rapidly realize North-South connectedness, sets the higher pace at which decisions shall be made in order ensure the future realization of the transport arteries across the region in the necessary directions with the rest of the Balkan countries.

**2. RESEARCH ELABORATIONS**

**2.1 North**

From the north, Romania, continues the construction of the highway Constanta - Bucharest - Pitesti - Sibiu - Timisoara - Arad - Hungarian border (continues to Budapest). The corridor is represented by two motorways: the A2 - Constanta - Bucharest motorway - 200 km - fully in operation. From the east there are connections across the Black Sea to Russia, the Caucasus and the East. From the west there is a connection with the developed highway network of Central and Western Europe. This, combined with the Rhine-Main-Danube waterway, takes not a small part of the transport traffic in the region. [1]

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Port of Constanta - investment of more than 1.5 billion dollars in 25 years, increase in cargo volume 10 times. For 10 years, Bucharest Airport has increased its passenger traffic with more than 3 times and has already exceeded 10 million passengers per year. [1]

### **2.2 West**

Serbia is currently building the A1 motorway with a total length of 588 km. It connects Western and Central Europe with North Macedonia and Greece. The highway is almost complete. The plans are to begin operation in 2019. The project aims to establish a link between Greece and Central Europe, which passes through Serbia. On North Macedonian territory, too, the construction of motorways along the Corridor 10 route is also under way.

### **2.3 South**

From the south - Greece has the fully-built Egnatia - Odos. The motorway, which connects the Adriatic with the Black Sea. It is 670 km long with 76 tunnels with a total length of 99 km (the longest tunnel 4 700 m) and 1650 bridges (13 toll stations and a total investment of nearly EUR 7 billion). Port of Piraeus is currently taken on concession by a Chinese operator (COSCO). Also, the port of Thessaloniki is concessioned to a German-French-Chinese consortium against 1.1 billion euros. [1]

In recent years, Turkey, in spite of its political changes, has invested more than \$ 50 billion in rail infrastructure. The whole railway network, aiming to reach Western European markets, has one possible way to access them by land - through Bulgaria and Greece.

Near Istanbul, but relatively close to Bulgaria, is located the largest airport in the world. It is planned to take 150 million passengers a year. This completely changes the world map of important transfer airports. Certainly, the existence of such an object influences the development of infrastructure in a very large territorial scope. In this case, the air traffic over the Bulgarian territory is expected to increase by 50%.

## **3. RESULTS OR FINDING**

Since ancient times, it has been proven that good infrastructure leads to more investments, better trading conditions and more traffic. The result is improvement of the quality of life for the local population that takes advantage of these assets.

The current situation in our country and the European Union – a situation of financial deficits, problems with economic development and insufficient resources, it is extremely important to make the right decisions for the development of the following corridors. [2]

### **3.1. Corridor №4**

This corridor (road, rail, energy and internet) is the shortest distance between the Danube transport corridor and the Mediterranean Sea. Until now parts of it are under construction and / or reconstruction. The construction of the part between Sofia and Vidin will cost about 500 mln Euro. This part of the corridor is divided into 4 main sections: Vidin-Dimovo, Dimovo-Rujintsi, Rujintsi-Montana and Montana-Vratsa. During the years they have different progress. In the direction of Botevgrad - Sofia – Greek border, the Hemus and Struma highways are in operation, except a small, but most complex part of Struma highway. It is considered as the most complex and expensive part and there are still issues with different non-government organizations, which try to sabotage the realization of the project.

### **3.2. Corridor №9**

The second corridor that provides the North-South direction is Corridor 9 - Bucharest - Rouse - Veliko Tarnovo - Stara Zagora - Turkey. It is no less complicated to build from

Corridor 4, but due to the transport policy and the European financing, concentrated mainly in the direction of Sofia - Kulata, and the complexity of the transition to the Stara Planina, it remains less developed. This, combined with the growing tourist movement, including goods coming from the north, Romania and Ukraine, as well as the flow from Turkey and the closest connection with Central and Western Europe, determines the need for its prioritization.

### **3.3 New East-Balkan transport corridor**

This corridor provides the most direct access possible between Turkey, the East, through Bulgaria with the interior of the European Union and Ukraine, Moldova and Russia. Existing and emerging port infrastructure (Constanta, Burgas, Varna, Alexandroupolis, etc.), including airports (in Istanbul, Burgas, Varna, Constanta), would generate a huge transport flow. The passage of this transport stream across our territory to the north where the main countries to which it is headed would be done in the shortest and easiest way - along the Black Sea. [2]

Such a development of the circumstances leads to the need to build additional opportunities for the Danube basin to pass, which in the Bulgarian territory in this part of our country takes place only through Rousse and at a particularly low rate. This transport development, ease of movement and greater movement would subsequently stimulate the construction of a second, overlapping bridge. The importance of this South-North link is also underlined by the previously signed Memorandum for the construction of a Black Sea Motor Ring, which implements the above-mentioned South-North strategic link. The document is part of the Black Sea Rings Corridor, a multimodal transport network, and includes maintenance, reconstruction, development, upgrading and rebuilding of main and auxiliary road infrastructure.

The route is part of the road infrastructure of the Trans-European Transport Network and connects the Black Sea region with the Adriatic and Romania, Ukraine and Moldova, with the potential for combined transport. The corridor passing through Bulgaria, part of a future motorway ring around the Black Sea, will help not only to expand cross-border and regional cooperation in the Black Sea area, but also to further realize its economic potential while also facilitating transit coastal freight traffic and will reduce the adverse impact on the environment. The length of the Black Sea Highway Ring is approximately 5000 km.

### **3.4 Corridor №8**

The route includes all details of intermodal transport, motorways, railways, airports and even an energy connection. The corridor will provide one of the fastest direct links from southern Europe and the Mediterranean, through the Balkans to the Caucasus, the Central Asia region and the East. For this purpose, rail and road links should be built to ensure easy and seamless cargo and passengers. Corridor 8 is much more than a transport artery - it is also an energy and an information link. It connects three other pan-European transport corridors. – 4, 9 and 10. In addition it is also intersected with the New Eastern Balkan Transport Corridor and the Adriatic-Ionian Highway, which connects the countries of the Adriatic-Ionian Sea Basin. [1],[3]

The total length of Corridor 8 is about 1300 km, depending on the specific features of its road and rail routes. On the Bulgarian territory the length of the road section of the corridor is 640 km and the constructed railway part - 747 km. This means that about 52% of the road infrastructure and over 55% of the railway infrastructure in the corridor are on Bulgarian territory.

### **3.5 The New Silk Road**

The New Silk Road is an initiative of China, presented by Xi Jinping, for the 21st century Silk Road. The Belt and Road Initiative is a sea and land routes forming a common economic and transport belt. The plan to finance infrastructure projects along the economic interest of China in the amount of over 8 trillion US dollars. This is the axis of supply and commodity exchanges between Europe, the East, and Africa. Trade volume between China and countries along the Belt and Road Initiative totaled \$ 1.3 trillion in 2018.

The land route in official publications from China goes through Bulgaria, repeating the route of the New Eastern Balkan Transport Corridor. [4]

In addition to the whole picture, we can mention Corridor 8. Making such a transport link would shorten the time for shipping goods from China to the heart of Europe with 2 weeks.

### **3.6 Branch of Corridor №10**

The modernization of the road between the border with the Republic of Serbia and Sofia will improve the country's connectivity with the western countries. This will reduce travel time and increase road safety along the route. Only this section of the trans-European corridor from London to Istanbul is not designed as a highway. It is divided into two main sections - Border - Dragoman, the project also will provide a link to a new Intermodal Terminal. And Dragoman - Slivnitsa. The contracting procedures are close to the end and the construction of both sections will begin at the beginning of the summer season of 2019.

### **3.7 Energy corridors**

This month has been chosen the contractor for the construction of Balkan Gas Hub. The concept of building a gas distribution center (hub) on the territory of Bulgaria is to bring significant quantities of natural gas to the area of Varna for further transport. The idea for the construction of the gas center is supported by the projects for interconnections with Romania, Turkey, Greece and Serbia.

The interconnector between Greece and Bulgaria also has a key role in the Balkan gas hub. This is a key project not only for the two countries but also for the whole of the European Union. It is no coincidence that it is included in the EU's top 7 priorities in the energy sector.

## **CONCLUSION**

The current geopolitical situation, along with the accelerated transport development of the neighbours around us, puts us in the position of a country that must make its decisions quickly. This is the reason why there is a huge risk that Bulgaria will fall in a very unfavourable situation in the coming years, due to late actions and missed opportunities. The current situation of open borders to the north and a large flow of tourists from this direction, combined with the large flow of goods from the southeast is an occasion to rethink our priorities in terms of transport in this part of Bulgaria and not to miss opportunities to implement a trans-European corridor with Asian significance by being surrounded again.

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