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INTRODUCTION OF INTELLECTUAL TRANSPORT TECHNOLOGIES TO UZBEKISTAN

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Abstract : This in the article In Uzbekistan intelligent transportation systems (ITS) and intelligent vehicles technologies current of reaching current issues illuminated . In intelligent vehicles radar , LiDAR, ADAS cameras , ultrasound sensors and inertial measurement modules such as modern of technologies road movement safety increase traffic flow effective management and driver mistakes in reduction place analysis Also in Tashkent current being done intelligent transportation systems , smart traffic lights , video surveillance tools and the transport infrastructure of the BRT (Bus Rapid Transit) system efficiency increase and traffic jams in reduction importance seeing published . In the article intelligent transportation technologies development regulatory and legal basics and them to the country's transportation system wide current to grow prospects statement done .

Key Keywords : Intelligent Transportation System (ITS) , intelligent vehicles , artificial intelligence , ADAS, LiDAR, radar, sensors , smart traffic lights , BRT (Bus Rapid Transit), road movement safety , transport infrastructure , traffic flow management , digital transportation, video surveillance , smart city

The Resolution of the President of the Republic of Uzbekistan No. PQ-358 dated 27.11.2025 “On additional measures to stimulate the results of intellectual activity and expand the introduction of modern information and communication technologies in the sector” and the Resolution of 03.12.2025 on the organization of road traffic and the introduction of an intelligent transport system (ITS) in Tashkent, which will serve to reduce traffic jams, speed up the work of emergency services, and increase the efficiency of transport infrastructure, were signed [1,2].

World in practice road movement management the most effective method as intelligent transportation system (ITS) is widely is being used . This to the approach in cities the movement control to do , to analyze to do and planning centralized and real time in mode done is increased .

In our country, in recent years, extensive organizational and practical work has been carried out to improve the road safety system. In particular, with Resolution No. 717 (“Special regime” for artificial intelligence) A special regime will be introduced to support artificial intelligence (AI) technologies . Within the framework of this regime, incentives will be created for practical developments, AI-based software products and services, and appropriate organizational and legal conditions will be provided for pilot testing. The Ministry of Information Technologies and Communications Development is responsible for monitoring the decision.

Admission in 2019 done “ Smart transport and logistics systems " Resolution No. 48 on “ Intelligent Transport and Logistics” systems organization " is planned to be completed . " The decision according to , public transport management for sensors (e.g. , detectors) and specialized

software supply current to be Also , the traffic flow information with provider infrastructure (road) movement about real time information (to build) to be in mind caught .

President decision Based on , « Digital "Uzbekistan - 2030" strategy SI technologies in the transport sector within the framework current to be It is marked . mainly According to SI scientific and technical research and innovations support task Innovative development to the ministry loaded .

Intelligent vehicles technologies - of this vehicle safety , efficiency and convenience increase for to him/her installed sensors , computing systems and communication devices Their main goal is to help people factor with related mistakes minimize through road movement safety provide and driver and passengers for maximum convenience and efficiency create and in the future , the vehicle complete independent to a controlled (driverless) system to convert service does .

Intelligent vehicles technologies the following sensor and observation devices own inside is taken :

- Radar and LiDAR - distance identify , obstacles to feel
- Cameras (ADAS cameras) - road signs , pedestrians , road lines determines .
- Ultrasound sensors - parking in the process close distance control does .
- Inertial measurement modules (IMU) - acceleration , yaw , stability manages .

On highways intelligent transportation systems one year inside thousands unhappy of events prevent to take help gave . New generation road movement management automated system (YHBAT) is used road in the plots security level analysis to do this showed that advanced technologies Accidents number three even to reduce opportunity gave [3].



Figure 1. Transport management in Tashkent city improvement according to intelligent transportation systems

Ministry of Transport to the information According to the A -373 road , only from Tashkent Andijan to the city was in the part YHXB two year inside drivers to the accident take arrival possible 182 incidents occurred about in advance warned . With this together , accident Commissioners from " smart " roads in real time in mode accident about information Road traffic

accidents happened was in places of the corridor own on time The closure is also secondary . accidents prevent to take opportunity gave [4].

Intelligent transportation systems in the composition panoramic photo and videos writing to take to the possibility has thousands video cameras , hundreds dynamic information scoreboards working It is standing . The weather conditions dozens weather stations by day and night following is going .

Also , the driver status control using MONTRANS DVR driving safety noticeable at the level improves . Device fatigue level and distraction signs following goes , this and break to do necessity about own on time warning opportunity gives .

On October 20, 2025 , the President of our Republic , President Shavkat Mirziyoyev, noted that if separate lanes for buses are increased between roads under the BRT (Bus Rapid Transit) system on the roads of Tashkent, people will abandon the use of personal cars on weekdays. [5] .

BRT (Bus Rapid Transit) system - fast bus transport is iron road of transport speed and reliability like of buses speed and high effective movement adaptable public transport system . Its basis general from the stream separated (usually commute part of (in the middle) sections , intersections priority , until exit right payable stations and short movement intervals organization (Figure 2).



Figure 2. In Tashkent Sh.Rusraveli street

"If this is how it is roads if we do this , buses let's say people only Saturday , Sunday days his/her own in the car walks . Shota Rustaveli BRT system on the street other an example for the streets too to be known did .

In this of the road edge bicycle and on foot corridors for separated , they separately It was 14 thousand . bush tree planted . Drainage system all of them closed to the situation transfer . Bus only from the middle walks . Buses speed two equal increased [6].

BRT – all in the world tested model, it is one of the 200 in the world more than in the cities works in Bogota, Istanbul, Beijing, Guangzhou , Mexico City such as thanks to BRT in megacities

traffic jam reduced , millions citizens fast and cheap movement as far as possible has was . BRT– city developing indicator .

Street BRT system between based on separated bus corridor in Tashkent first there is Shota Rustaveli street Mirabad from the street Chashtepa to the street was about 7 kilometers in part current 10 trips to the part divided on 6 lanes of the road cars , special in 2 separate directions buses The remaining 2 lanes and cars stop to stand for intended [7].

General worth 19.2 million dollars project within buses stop 21 new ones for station , 463 " smart " traffic lights Intelligent transportation system current was done .

In the city 10 more destinations cover recipient length about 51 km buses for separately corridors organization to be is being planned . That is other buses on the streets Shota Rustaveli on the street such as easily movement possible will be . To the President presented done to the project according to , by 2030 this system Shahrisabz , Amir Temur , New Sergeli , Makhtumkuli , Nurafshon such as also valid on the streets is [8].

This project Allocating $ 126 million for plan This is done . done increase after in the city of buses average speed from 18 km/ h to 23 km/ h increase , intervals and from 20 minutes to 8-10 minutes contraction in sight captured [9].

Road to the field intelligent transport infrastructure current to grow issue in the world current and wide discussion is a matter to be done , because this kind of projects many investors attraction from doing according to quickly himself justification with separated It is currently at the time in our country this problem discussion doer conferences regular accordingly is being held , intellectual road control technologies active developing and is being improved .

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