



# BRIDGE

**Developing participatory methodology for addressing trans-regional issues bridging science and practice:  
Use case of Intelligent Transport Systems from managerial and technical perspective**

**October, 28<sup>th</sup> 2021, Second webinar**

**Bosnia and Herzegovina**





*“Teamwork is the ability to work **together** toward a common vision. The ability to direct **individual** accomplishments towards organizational objectives. Is the **fuel** that allow common people to attain uncommon results “*

*Andrew Carnegie*



# About project



## DEVELOPING PARTICIPATORY METHODOLOGY FOR ADDRESSING TRANS-REGIONAL ISSUES BRIDGING SCIENCE & PRACTICE

### Use case of Intelligent Transport Systems from managerial and technical perspective

Our project is selected from the 1st Call for WBAA Projects 2021.

Developing participatory methodology for addressing trans-regional issues bridging science and practice: Use case of Intelligent Transport Systems from managerial and technical perspective

The project aims are to develop and plot, through this project, an integrated methodology for innovative managerial technical access in Intelligent Transport Systems (ITS). The methodology will be based on a multi-creation approach and critical success factor method (CSF) as a means for identifying important elements of success. Systematic and successful approaches set priorities and establish the long-term vision; promote convergence for addressing trans-regional uses for innovative managerial technical access in ITS. Additionally, this project will devise guidelines/roadmap, describing in detail how this methodology can be used efficiently. The best practices and lessons learned from North Macedonia will be distributed in the region and all identified stakeholders.

Project Manager:

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Collaborates:

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☰ Klejda Harasani, (UMED AL)

☰ Albana Veseli, (UNI-PR XK)

Regional project

WBAA Projects

WBAABridge

Participants

General

The PROJECT

Workshop North Macedonia

Workshop Bosnia and Herzegovina

Workshop Albania & Kosovo

Organisational meetings

Press clipping

The HANDBOOK

> About us

> Implementations of the DENICA managerial method

> Courses in Change Management in Complexity & B...

> Children's corner (& inspiration)

> Facilitating Co-Creation



# About project



Project portal >> [http:// tactical-management-in-complexity.com](http://tactical-management-in-complexity.com) <<

## WBAABridge

WBAABridge

Announcements: WBAABridge is HAPPENING THESE MONTHS!



Developing participatory methodology for addressing trans-regional issues bridging science and practice: Use case of intelligent Transport Systems from managerial and technical perspective



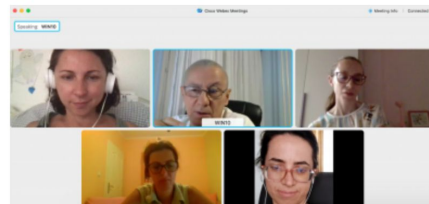
Presentation of the project and concept

Workshop North Macedonia

Workshop Bosnia and Herzegovina

Workshop Albania & Kosovo

Organisational meetings







**Prof. Tihomir Latinović**  
Faculty of Mechanical Engineering  
University of Banja Luka  
Bosnia and Herzegovina  
Project collaborator  
Panelist



**Prof. Daniela K. Nechoska**  
St. Kliment Ohridski University - Bitola  
Faculty of Technical Sciences  
Project manager and moderator



**Prof. Valentina Mirović**  
Faculty of Technical Sciences  
University of Novi Sad  
Guest lecturer-Panelist



**Assist. Prof. Anita Jurić**  
University of Mostar  
Bosnia and Herzegovina  
WBAA member  
Panelist



**Emina Hadzimuhamedovic**  
SDGs Roll-out Project Assistant at UNDP  
Bosnia and Herzegovina  
Panelist



**Second webinar**  
**Bosnia and Herzegovina**  
**28<sup>th</sup> October, 2021, 6:00pm - 7:00pm**

**Topic to be discussed:**  
Internet of Things (IoT) and Transport  
Economic, Social and Environmental  
Dimensions in Smart City  
Intelligent Transport Systems in Light of  
Sustainable Development Goals



**Assist. Prof. Renata P. Nechoska**  
Ghent University Belgium (UGENT)  
St. Kliment Ohridski University – Bitola  
Faculty of Economic – Prilep  
Project co-organizer and moderator

Join us on the WebEx link in the post!  
Discuss, learn, share, network, participate...,  
and obtain a certificate for completion!





# Overall view

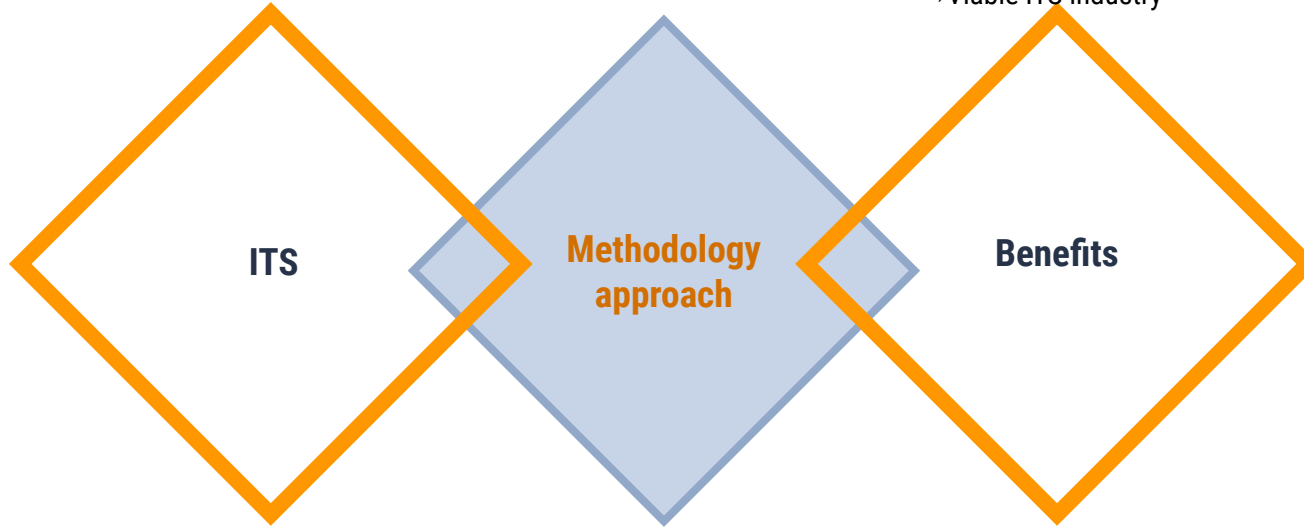


„Crossroads“ (Congestion, Safety, Environment,  
Energy & Productivity, Economy...)

↑ Safety, Quality Mobility, Energy Efficiency,  
Economic industry  
↓ Congestion, Environmental Impact  
→ Viable ITS industry

Intelligent transport  
systems (ITS) apply  
well-established  
technologies of  
communications,  
control, electronic and  
computer hardware  
and software to the  
surface transportation  
system

Main features  
> adaptability &  
information in real  
time <



Technology & Research >> Link  
Institutions >> Partnership  
Transport >> Information infrastructure

Road map



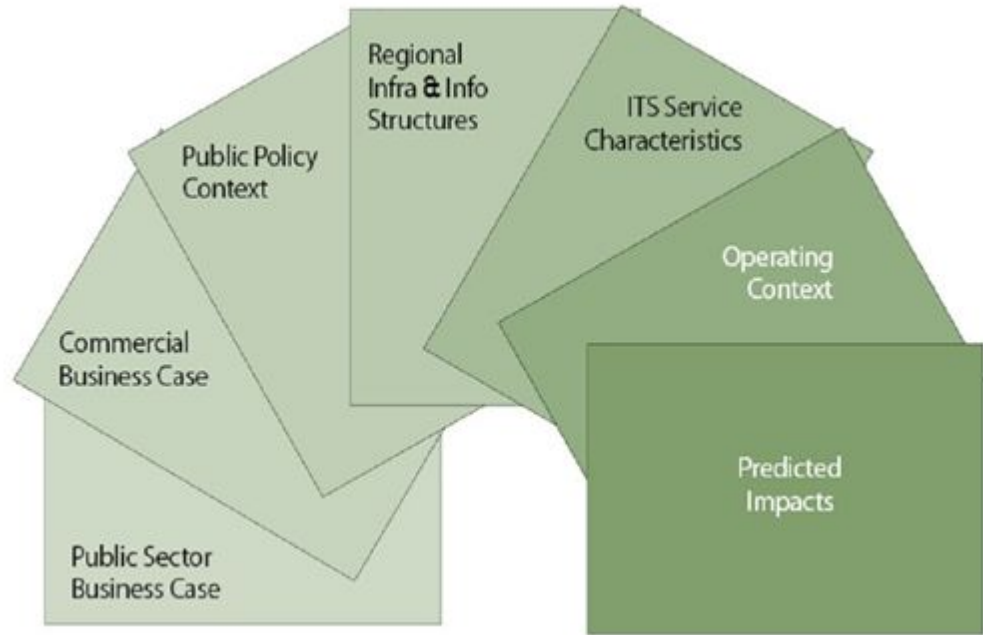
<https://docs.google.com/spreadsheets/d/1gIHai8iUQgOsCGMxGFqatUoeORNqvPYsJ0B4Mh4o374/edit?usp=sharing>

7



## Overall view

Different dimensions that a city or region will need to consider when embarking on a programme of ITS deployment





# Legal Framework for ITS

## 6 Annexes

### 6.1 The EU legal framework for ITS implementation

In order to stimulate the use of ITS around Europe EU put in place a legal framework that aims to a) facilitate the use of data produced by ITS and b) support coordinated and interoperable deployment of ITS along the TEN-T corridors and in urban and interurban environments.

The milestones of efforts been undertaken for supporting implementation of ITS are the ITS Action Plan and the ITS Directive 2010/40/EC. Following these the Urban ITS Expert Group has been formed, to study the specific needs and potentials of ITS in urban areas.

The activities of the expert group have resulted to the publication of guidelines covering:

- Multimodal Information
- Smart Ticketing
- Traffic Management
- Standardisation needs
- Best Practice Collection

The reports are available at <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=2520>.

The EC having acknowledged the importance of C-ITS formed the C-ITS Platform, a cooperative framework including national authorities, C-ITS stakeholders and the EC, to develop a shared vision on the interoperable deployment of C-ITS in the EU. The C-ITS Platform developed two reports in 2016 and 2017, available at [https://ec.europa.eu/transport/themes/its/c-its\\_en](https://ec.europa.eu/transport/themes/its/c-its_en).

The EC has adopted in 2016 the European Strategy on Cooperative Intelligent Transport Systems [COM 2016/766 <https://eurlex.europa.eu/legalcontent/EN/TXT/HTML/?uri=CELEX:52016DC0766&from=EN>], aiming to accelerate the deployment of C-ITS in Europe.

The strategy includes the adoption of the appropriate legal framework at EU level to ensure legal certainty for public and private investors, the availability of EU funding for projects, the continuation of the C-ITS Platform process as well as international cooperation with other main regions of the world on all aspects related to cooperative, connected and automated vehicles. It also involves continuous coordination, in a learning-by-doing approach, with the C-ROADS platform, which gathers real-life deployment activities in Member States. Security and certificate policies for the deployment of C-ITS technologies are also supported as a result of the C-ITS Strategy.

“EU put in place a legal framework that aims to a) facilitate the use of data produced by ITS and b) support coordinated and interoperable deployment of ITS along the TEN-T corridors and in urban and interurban environments.

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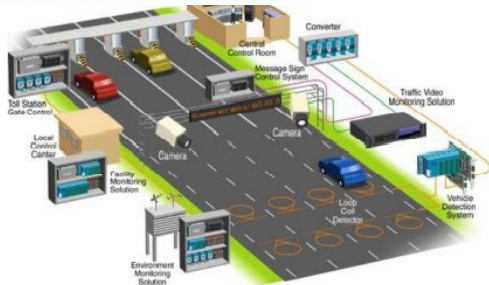
source: THE ROLE OF INTELLIGENT TRANSPORT SYSTEMS (ITS) IN SUSTAINABLE URBAN MOBILITY PLANNING





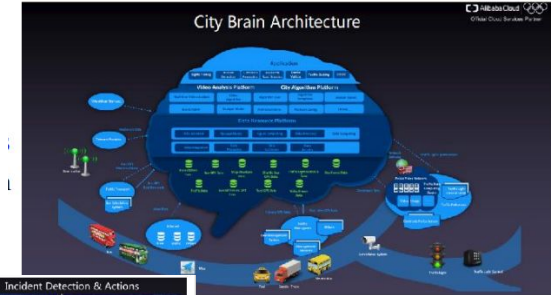
# ITS Application & Technology

## Linkage of vehicle & transportation infrastructure through ITS



## Sensing, Communications, Computing, Algorithms - Artificial Intelligence (AI)

### „City Brain”

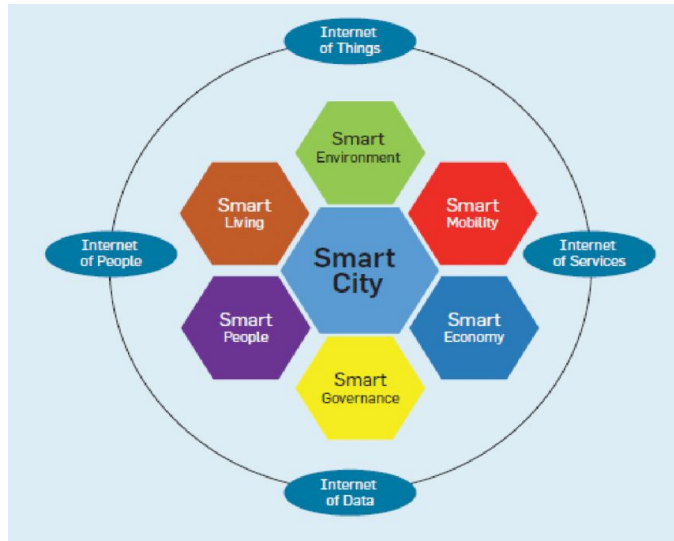




# ITS & SMART CITY

**Smart city (digital city)** is a framework composed of Information and Communication Technologies (ICT) >> develop, deploy, and promote sustainable development practices to address growing urbanization challenges<<

Components:

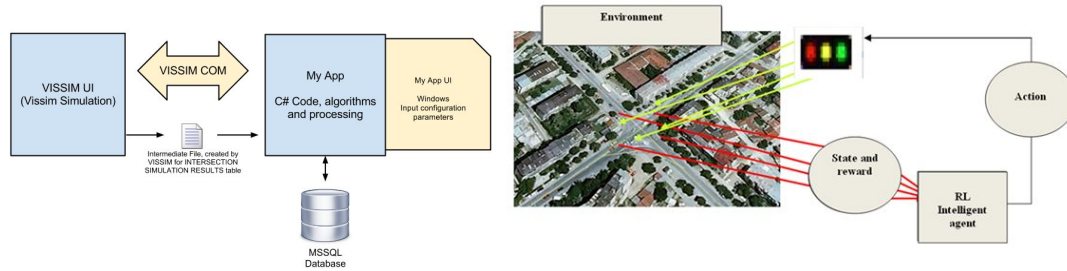


ITS and the Internet of Things (IoT), the next stage of movement  
>> smart transportation <<



# ITS & SMART CITY

Testing the smart solutions in simulation area



Case study - Bitola

[Video examples](#)

Interaction between CAVs and infrastructure/testing scenarios

<https://carla.org/>

**The benefits of smart transportation within a smart city**

>> Transportation is **more safer, better managed, more efficient and cost effective...**<<





# Towards ITS in the Western Balkan



Congestion  
environmental pollutions...

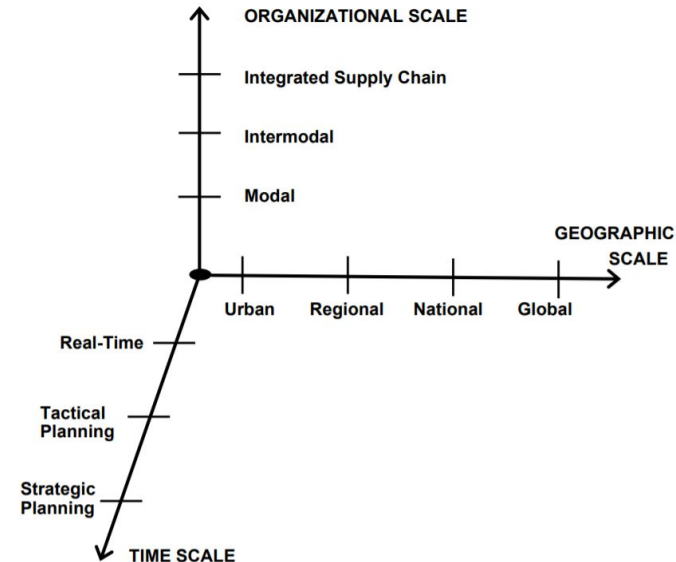


## Classic solutions

Build new transport  
infrastructure ?

Challenge of improving  
ITS in the Western  
Balkans to meet TEN-T  
demands

A shift toward new technology  
concepts & dimensions





# ITS & Macedonian Experiences

The North Macedonia is at the very beginning of the process of applying ITS

information allowing for well-informed travel decisions (pre-trip information) and during the journey (on-trip). In Skopje, five variable message signs have been implemented. They include real time information concerning a road network and traffic conditions.

One way to promote greater use of public transport is by providing real time passengers information. The automatic location of the vehicles allows to obtain the time of departure/arrival and transfer from one to another vehicle that stands out at the stops, at home, etc. In Skopje, there are several signs on certain public transport lines on the bus stops, which show real - time bus arrival.

## Traffic Management and Operations Services

A special and crucial element for traffic management and ITS is the Traffic Management and Control Center (TMCC). To cope with the increased traffic demand a TMCC using the UTOPIA (Urban Traffic Optimization by Integrated Automation) adaptive system has been built in Skopje in 2014 as a result of FP7 project CIVITAS RENAISSANCE and with extra funding from EBRD grant [3]. Currently, it monitors and manages 90 intersections in real time. New parts of the road network are being constantly added. TMCC is organized based on the highest standards and its main functions are: obtaining traffic data in real time, regulation of the traffic signal system, traffic monitoring, giving priority to public transport and providing real time information for drivers. For this purpose, detectors and sensors have been installed at urban intersections, as well as 50 cam-

**UTOPIA (Urban Traffic Optimization by Integrated Automation)**  
UTOPIA belongs to the third generation of adaptive control systems and is an innovation in urban traffic control as a hierarchical, adaptive, distributed and open system. The system offers a wide range of strategies designed to suit any road network. A range of strategies are available: from plan selection to traffic responsive and fully adaptive, to permit the ideal solution for each specific site. The effectiveness of mentioned system for a congested corridor of 7 signalized intersections in the wider center area of the City of Skopje is presented in [5]. Consequently, research is constantly being undertaken on in - depth analysis in this area.

## Public Transport Services

These services aim to improve the efficiency and friendly attitude of public transport to passengers. Public transport priority can be given by integration in urban traffic management systems. Public transport priority is a means to make the switch from individual to public transport more attractive. The introduction of the Automatic Vehicle Location (AVL) system in the public transport of the city of Skopje is the last project in this area. From 1 January 2016, electronic tickets and AVL system have been put into use in public transport, but problems regarding BUS locations are detected during system field testing. Electronic bus tickets have become available =

*Solutions from the area of traveler service information, traffic management and operations and public transport services*

ITS on Macedonian freeway road network



In progress:

BCP at Deve Bair and BCP at Kjafasan, deployment of an Intelligent Transport System (ITS) on the A1 motorway, which is part of Corridor X



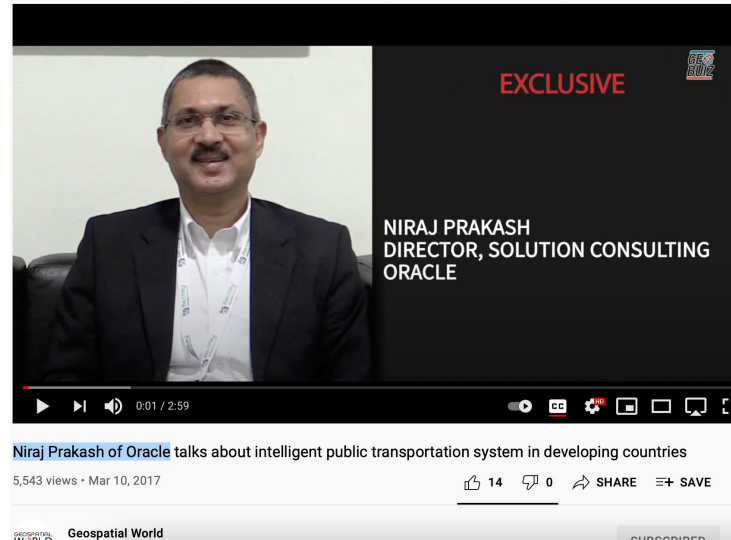
# Methodology approach



# Intelligent public transportation systems in developing countries



**Niraj Prakash of  
Oracle**

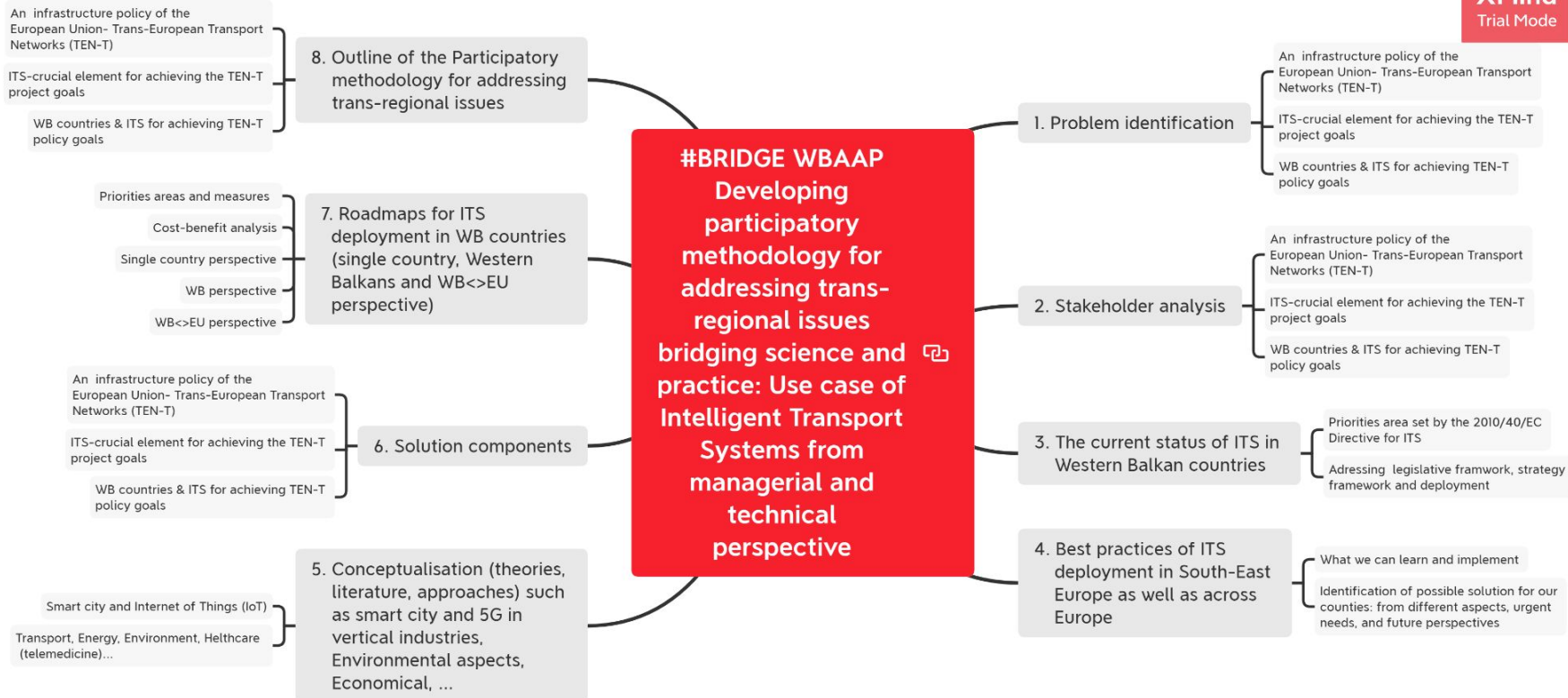


<https://www.youtube.com/watch?v=2dZCsFQ7NLI>



# QUESTION TIME ;-)

XMind  
Trial Mode



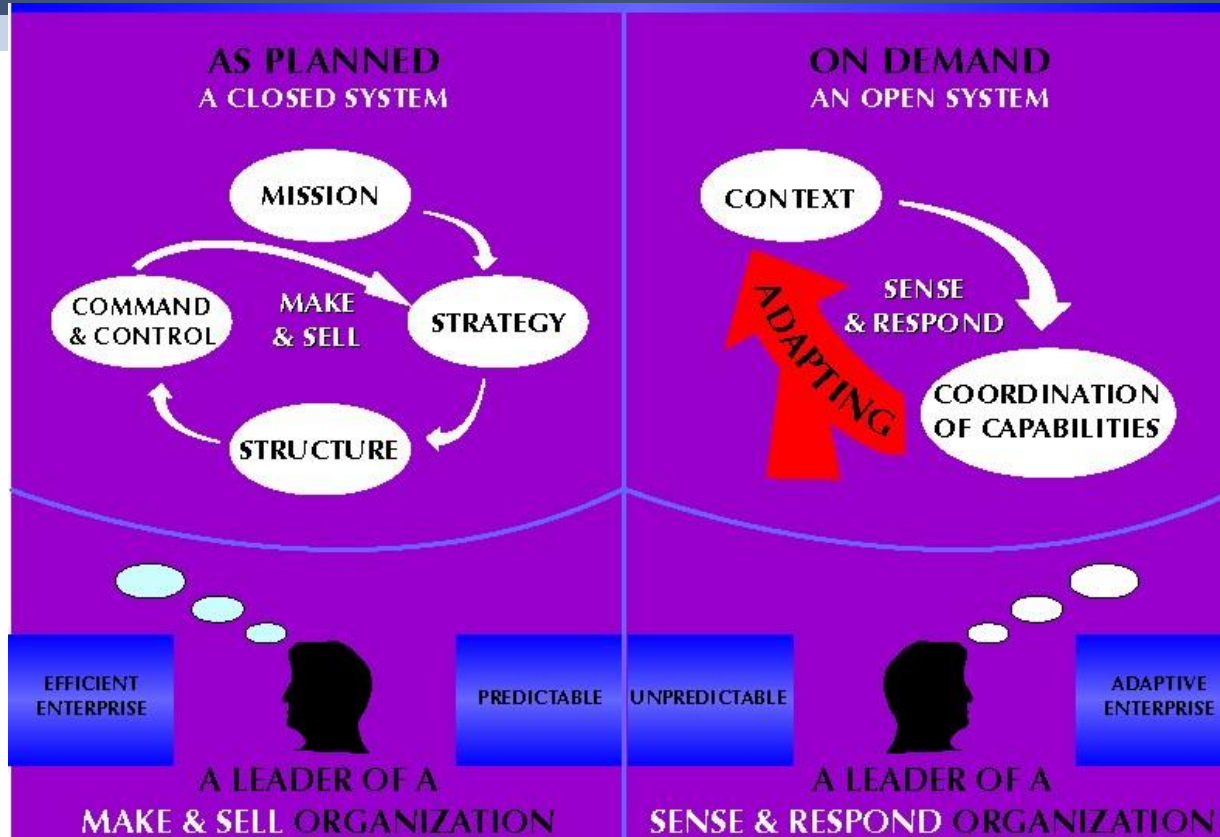


## Our reflection Jamboard (if needed)

<https://jamboard.google.com/d/1cLD8i4tR4o4nDUA4vXWjhTKli5o5BdWlgwl5hh1dl88/edit?usp=sharing>



# Prediction &/vs Adaptation



<http://www.senseandrespond.com/sr-summary/>

Stephan H. Haeckel

Strategy

Renata Petrevska

Nechkoska

Tactics

Complexity

<https://link.springer.com/book/10.1007%2F978-3-030-22804-0>





# Complexity Scientist Beats Traffic Jams Through Adaptation



*To tame urban traffic, the computer scientist Carlos Gershenson finds that letting transportation systems adapt and self-organize often works better than trying to predict and control them.*

To solve a complex problem, Gershenson believes, scientists need to let go of traditional methods and find novel ways to study ever-changing challenges. “Science and engineering have assumed that the world is predictable, and that we just need to find the proper laws of nature to be able to foresee the future,” he wrote while he was a visiting professor at the Massachusetts Institute of Technology and Northeastern University in 2016. “But the study of complex systems has shown that this assumption is misguided.”



“You cannot predict where a car will be two minutes ahead,” Gershenson said, because a vehicle’s precise position depends not just on its own travel speed but on the behaviors of all the other vehicles and pedestrians in the traffic pattern.

Meghan O’Halloran for Q

By using computer simulations that specialize in adaptation and not in prediction, Gershenson uses self-organization as a tool to improve urban mobility. Although most of the transport-system solutions he has proposed to various cities have encountered political and bureaucratic obstacles, his ideas were implemented successfully in Mexico City’s metro system in 2016. Just by signaling clearly where people should wait to let passengers exit before boarding the trains, the pilot project eliminated almost all conflicts and pushing during the boarding process and reduced the time spent boarding by as much as 15%.

“Carlos’ work has significantly advanced the state of the art of our understanding of self-organized traffic flows and their implications for real world control and optimization,” said Yaneer Bar-Yam, a visiting professor at M.I.T. and the president of the New England Complex Systems Institute, who supervised a postdoctoral fellowship with Gershenson in 2007–2008. He added that Gershenson “has reframed

So we want to try this at a small scale as a test. But it's been like 15 years and we haven't been able to do it anywhere for different reasons. We tried in Brussels, we tried in New York, we tried in Morocco, we tried in Mexico.

What failed in all these places?

Politics.

What advice would you have as we enter a future with artificial intelligence and self-driving cars? Do you think bureaucracy and governments will still be the biggest hurdle rather than the actual technology development?

“

The traffic light tells the cars what to do. But because of the sensors, the cars tell the traffic lights what to do, too.

”



# ITS and how it works

<https://www.geospatialworld.net/blogs/what-is-intelligent-transport-system-and-how-it-works/>



GIS GNSS EOS LiDAR Location & BI AEC Autonomous Sustainability

## Application areas of Intelligent Transport System

The entire application of ITS is based on data collection, analysis and using the results of the analysis in the operations, control and research concepts for traffic management where location plays an important role.

**READ MORE: [GIS in Transportation](#)**

Here sensors, information processors, communication systems, roadside messages, GPS updates and automated traffic prioritization signals play an imperative role in the application of:

- 1- Advanced Traffic Management System
- 2- Advanced Traveler Information System
- 3- Advanced Vehicle Control system
- 4- Advanced Public Transportation System
- 5- Advanced Rural Transportation Systems
- 6- Advanced Commercial Vehicles Operations system



FIGURE 3: Intelligent transportation systems (ITS) [49].



# ITS and how it works

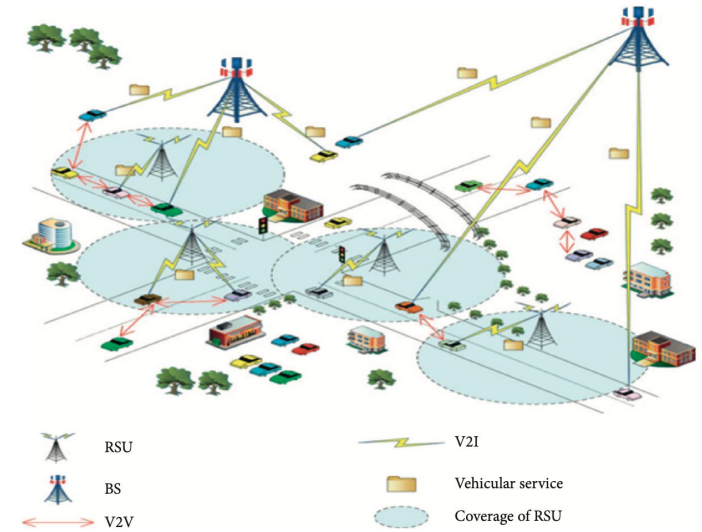
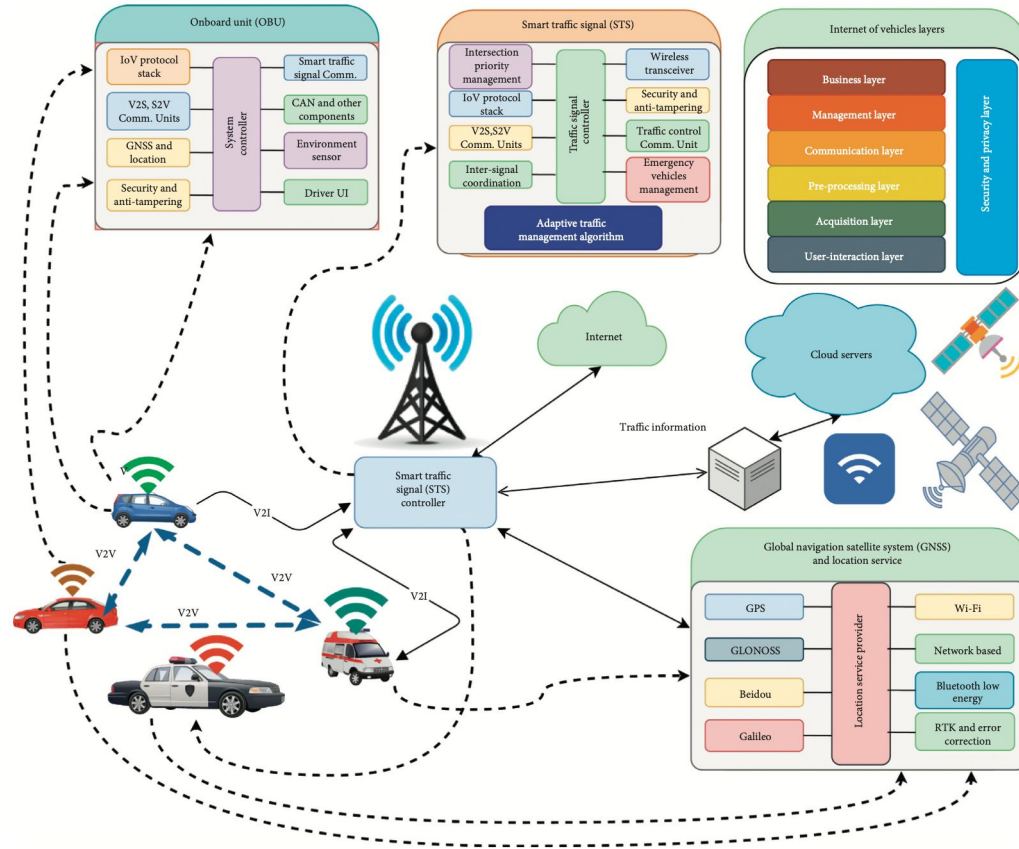


FIGURE 1: Vehicular Ad-hoc Network (VANET) architecture [46].



# One level up

## Improving Public Transport Value Chain through Technology

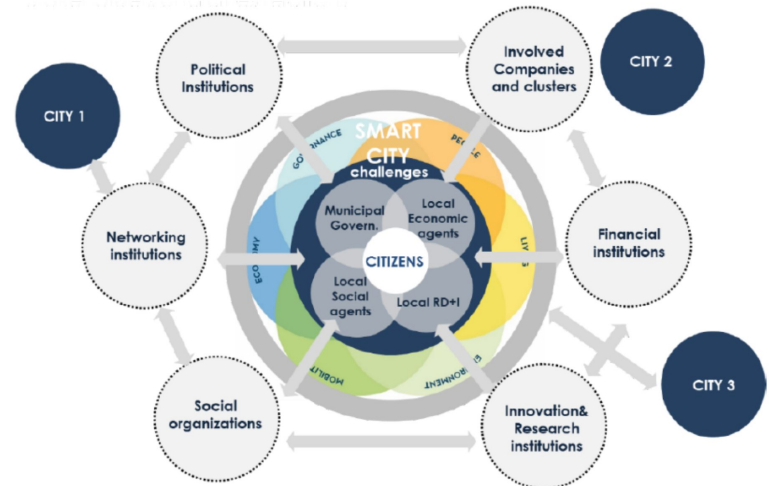


Figure 7: Relationships among Smart cities and possible roles of stakeholders as intermediaries.

<https://www.n-ix.com/intelligent-transport-system/>






# Toolkit, case studies, global practices



Complicated

Reality

Complex

 THE WORLD BANK  
Working for a World Free of Poverty

Toolkit on Intelligent Transport Systems for Urban Transport

OVERVIEW GUIDANCE TRANSPORT FUNCTIONS ITS APPLICATIONS ITS TECHNOLOGIES CASE STUDIES TOOLS

You are here: Transport Functions »

Expand content

**Transport Functions**

- Strategic Context Level +
- Tactical Planning Level +
- Service Delivery Level +
- General Support Level +
- Statistical Analysis Level +

Toolkit

<https://www.ssatp.org/sites/ssatp/files/publications/Toolkits/ITS%20Toolkit%20content/case-studies/zurich-switzerland.html>

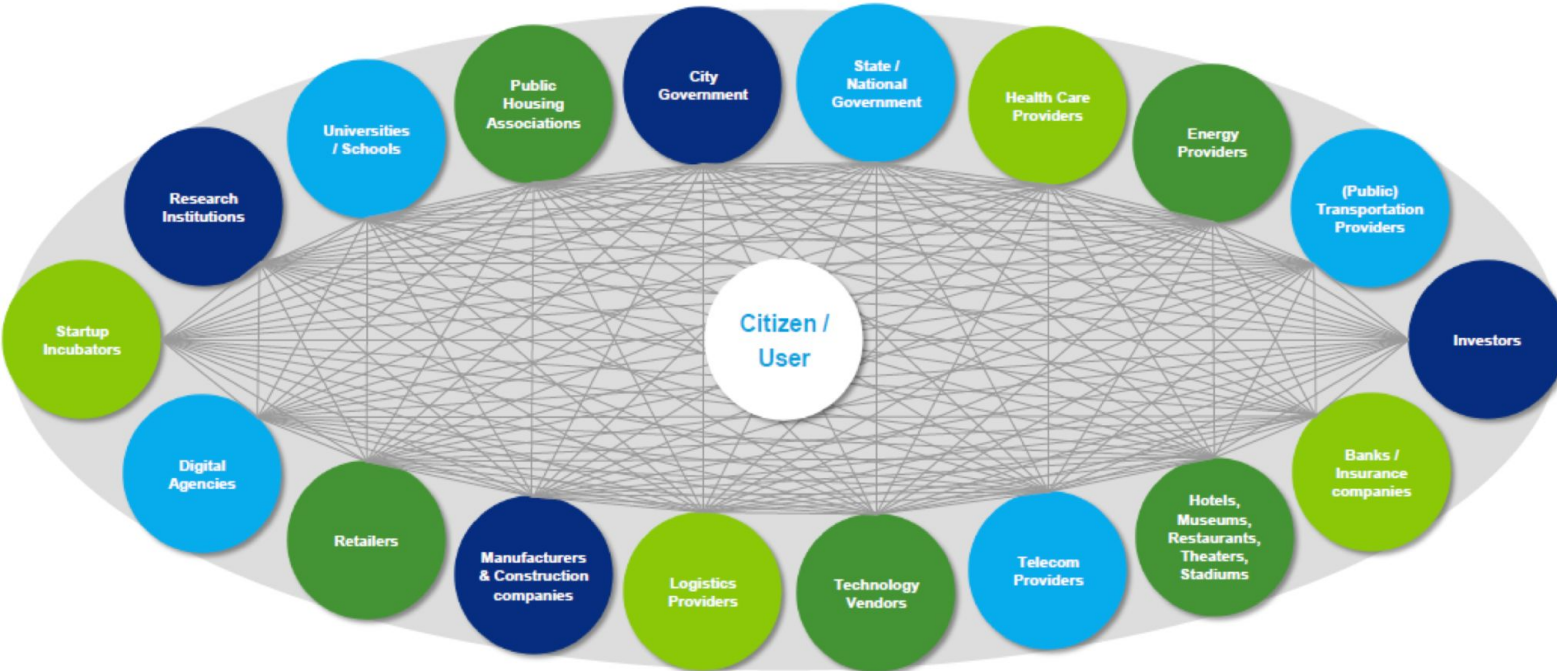




# Who is in the 'game'?

## Smart City actor map

A smart city is the result of the efforts of many stakeholders, working together in partnerships of different shape and form. The citizen / user is at the center of the map, indicating that successful smart cities are always user-centric.







# Sustainable and Smart Mobility

VALENTINA MIROVIĆ



## Sustainable and Smart Mobility Strategy together with Action Plan The European Commission

- 82 initiatives that will guide work in EU for the next years
- Transport has been one of the sectors hit hardest by the COVID-19 pandemic, and many businesses in the sector are seeing immense operational and financial difficulties.
- The result will be a 90% cut in emissions by 2050, delivered by a smart, competitive, safe, accessible and affordable transport system.





## Ambitions - **Milestones for a smart and sustainable future**

- By 2030:

- ✓ at least 30 million zero-emission vehicles will be in operation on European roads.
- ✓ 100 European cities will be climate neutral.
- ✓ high-speed rail traffic will double.
- ✓ scheduled collective travel of under 500 km should be carbon neutral within the EU.
- ✓ automated mobility will be deployed at large scale.
- ✓ zero-emission vessels will become ready for market



- By 2035:

- ✓ zero-emission large aircraft will become ready for market.

- By 2050:

- ✓ nearly all cars, vans, buses as well as new heavy-duty vehicles will be zeroemission.
- ✓ rail freight traffic will double.
- ✓ high-speed rail traffic will triple.
- ✓ the multimodal Trans-European Transport Network (TEN-T) equipped for sustainable and smart transport with high speed connectivity will be operational for the comprehensive network.



82 initiatives in 10 key areas for action (“flagships”)

### Sustainable transport

- zero-emission vehicles, vessels and aeroplanes, renewable & low-carbon fuels
- zero-emission airports and ports
- interurban and urban mobility healthy and sustainable
- greening freight transport
- pricing carbon and providing better incentives for users



82 initiatives in 10 key areas for action (“flagships”)

### Smart

- Making connected and automated multimodal mobility a reality
- Boosting innovation and the use of data and artificial intelligence (AI) for smarter mobility



# *ITS application as a part of national transport strategy*

Serbia and WB

- *The term ITS means any system which integrates electronics, informatics and telecommunications with the traffic system. This integration enables more efficient, more comfortable, safer and more rational traffic and a positive impact on people's health, energy consumption and the environment.*
- **THE DEVELOPMENT OF THE CONCEPT OF THE SMART CITY IS VIRTUALLY IMPOSSIBLE TO CONCEIVE AND IMPLEMENT WITHOUT APPLYING ITS**
- *These systems are used in cities for collecting and processing different data, communication of parts of the transportation system and traffic participants, for improving the comfort and the level of service, as well as for the implementation of different management measures for the optimization of the transportation system.*



# *ITS application as a part of national transport strategy*

*Serbia and WB*

- *Apart from the technology and the equipment, ITS demands the procedures and standards which enable communication, analysis and distribution of the data among parts of the traffic system and the system users.*
- *In the European Union (EU), the standards and the procedures for the application of ITS have been defined.*

1. *Egis International Strategies of ITS Development from 2017*
2. *CONNECTA Strategic Framework for the implementation of ITS on TEN-T Core in 2018, etc.*
3. *ITS Directive 2010/40/EU, Commission Delegated Regulation (EU) No 305/2013, 885/2013, 886/2013*

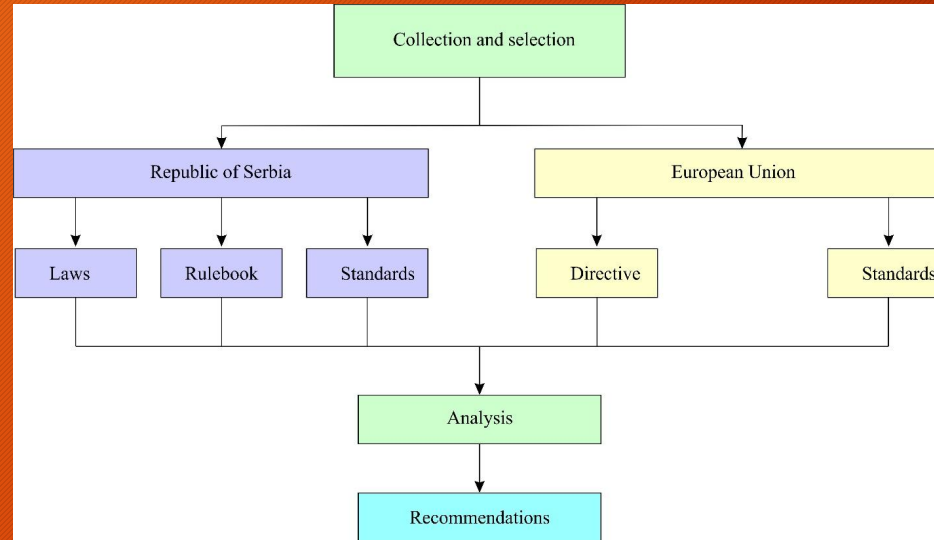


# *ITS application as a part of national transport strategy* Serbia

- ITS was defined within Law on Roads ("Official Gazette of The Republic of Serbia", No. 41/2018 and 95/2018 - state law) as systems of information and communication technology in road transport which are related to roads, vehicles and participants in traffic, and are used for traffic management and mobility, as well as for interconnectivity with other traffic modes.
- Standards accepted by the Institute for standardization, which is the national body for standards.
- In the previous period a significant number of research studies and projects have been conducted which included analyses and proposed measures for the development of ITS, through cross-border cooperation projects, for instance HUSRB/1602, projects of Implementation of River Information Services in Serbia, Danube Regional Strategy, as well as projects and studies conducted for the needs of ITS development in cities, such as SMART plan Belgrade, SMART plan Novi Sad, etc



# *ITS application as a part of national transport strategy* Serbia



!!! Harmonization of national standards related to ITS with EU standards and laws in compliance with EU directives, as well as bylaws in the field of production, quality, information exchange, certification, attesting, implementation, equipment installation and control.



## *Pioneer steps of micromobility in Novi Sad*

- A new rental system of e-scooters has recently appeared on the streets of the city.
- Its the Kazakhstani franchise named „Jet“ and its operating in Kazakhstan, Ukraine, Belarus, Armenia, and from recently in Serbia.





## *How it works?*

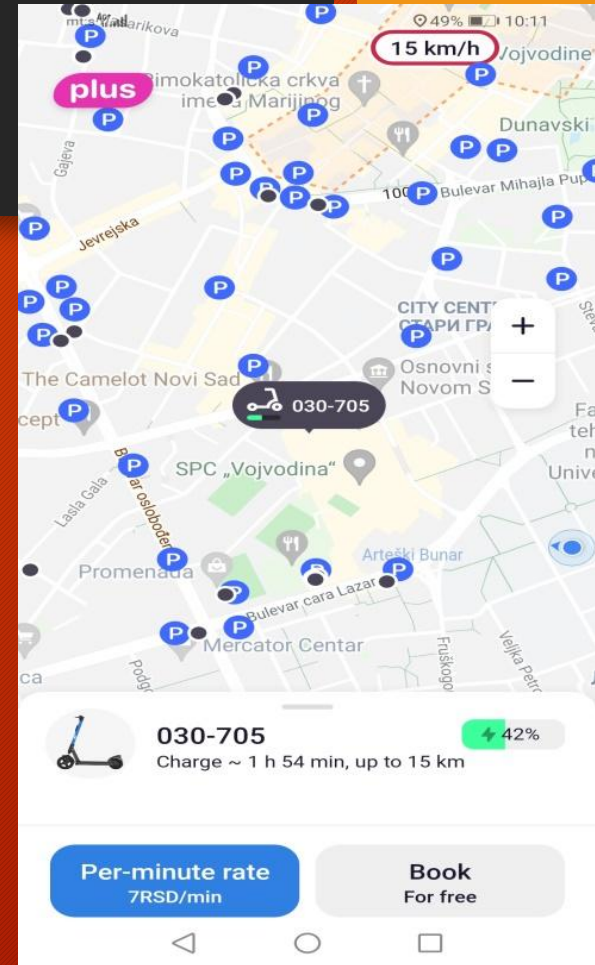
- For renting e-scooter you need to follow next steps:
- 1. Download the application (The JET app)
- 2. Sign up and link a credit card
- 3. Scan the QR code that's located on e-scooter and enjoy your ride
- 4. Complete the rental by parking the e-scooter on one of the hundreds parking lots which can be found all over the city





## JET app

- When you enter the application, it shows you the map with all parking lots and all available e-scooters in the city.
- The black dots on map are available e-scooters and by clicking on them you can see cost of the rental fee and percentage of battery.
- In Novi Sad cost of the rental fee is 0.7\$/min.







University of Novi Sad  
Faculty of Technical Sciences  
Department of Traffic Engineering



REPUBLIC OF SERBIA  
AUTONOMOUS PROVINCE OF VOJVODINA  
PROVINCIAL SECRETARIAT FOR ENERGY,  
CONSTRUCTION AND TRANSPORT



Association  
**Humane City**

8th INTERNATIONAL CONFERENCE

## **"Towards a Humane City"** New Mobility Challenges

THE FIRST ANNOUNCEMENT



**Towards a Humane City**

UNDER THE AUSPICE OF:



REPUBLIC OF SERBIA  
AUTONOMOUS PROVINCE OF VOJVODINA  
ASSEMBLY OF THE AUTONOMOUS  
PROVINCE OF VOJVODINA

NOVI SAD

11th and 12th November 2021





# Intelligent Transport Systems in Light of Sustainable Development Goals

Emina Hadžimuhamedović



# TRANSPORT – MEANS TO AN END

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ITS are not only meant to make cities a better place to live, but a better place to enjoy life





UN, 2015.







# SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD





**3** GOOD HEALTH  
AND WELL-BEING



**11** SUSTAINABLE CITIES  
AND COMMUNITIES



**12** RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



**13** CLIMATE  
ACTION



- **Exposure to air pollution is one of the main risk factors for non-communicable diseases**
- **BIH has the highest European mortality rate attributed to air pollution (2017 WHO statistics)**



Sarajevo, 2019  
Private collection



# 6

## CLEAN WATER AND SANITATION

- transport emissions can impact on fresh water sources and water quality
- transport infrastructure and emissions impact on ecosystems





# IMPACT ON TERRESTRIAL ECOSYSTEMS



**12** RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



**15** LIFE  
ON LAND





# 2 ZERO HUNGER



- Improving rural transport infrastructure and services is key to reduce food waste and losses



TRT Bosanski, 2017



**1** NO  
POVERTY



**8** DECENT WORK AND  
ECONOMIC GROWTH



**10** REDUCED  
INEQUALITIES





# 4 QUALITY EDUCATION



Private collection

- availability, affordability and reliability of transport determine access to educational facilities
- transport sector as a source of learning, research and innovation







# ROAD SAFETY

- pre- and post-disaster management
- the death or severe injury of a family member in a road crash can plunge a family into poverty for generations.

11 SUSTAINABLE CITIES  
AND COMMUNITIES





9 INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



11 SUSTAINABLE CITIES  
AND COMMUNITIES



13 CLIMATE  
ACTION

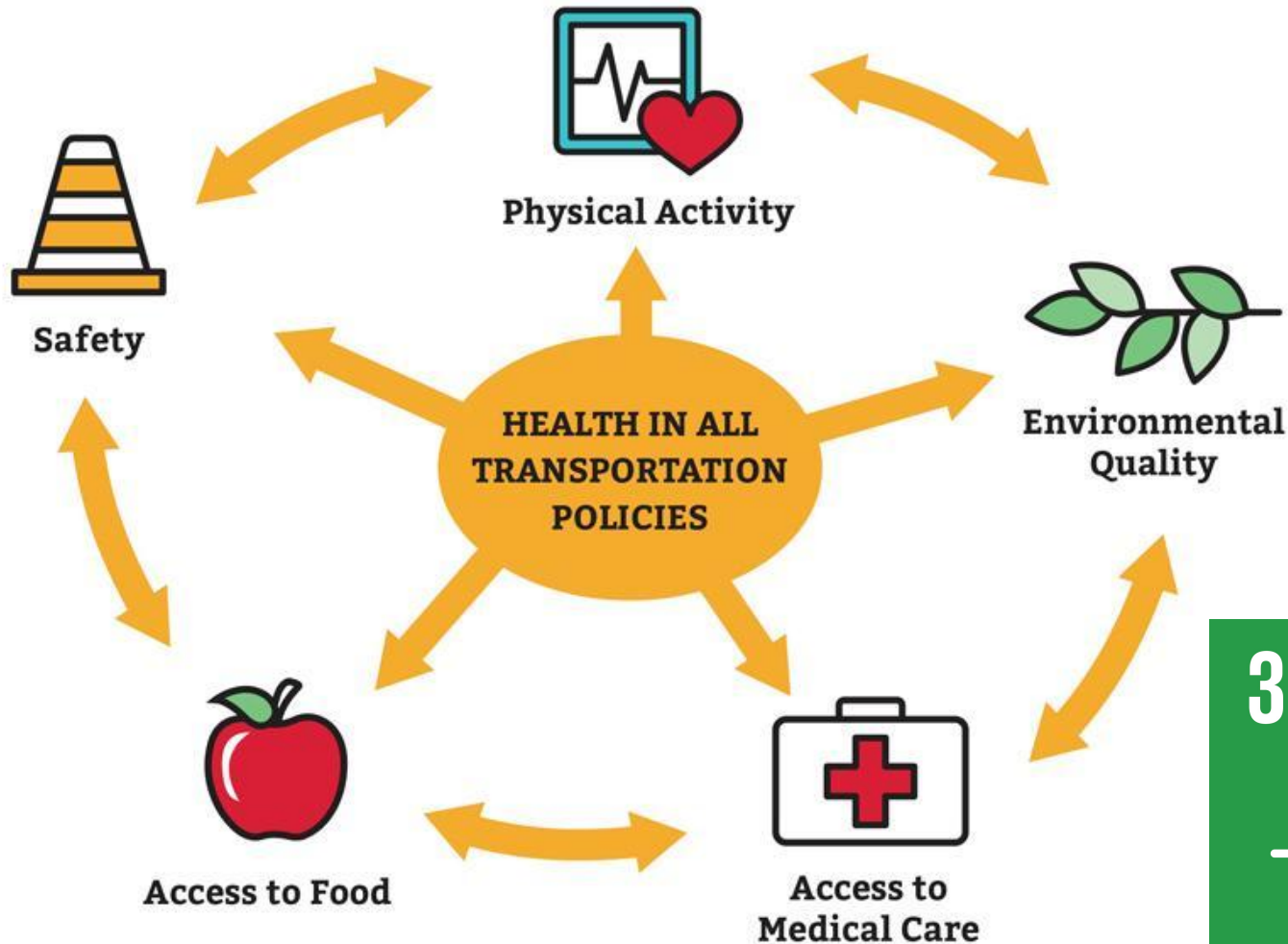


Jabuka.tv, 2019.

- a reliable transport infrastructure is a major (and life-saving) component of emergency preparedness - as a carrier of relief and food supplies.





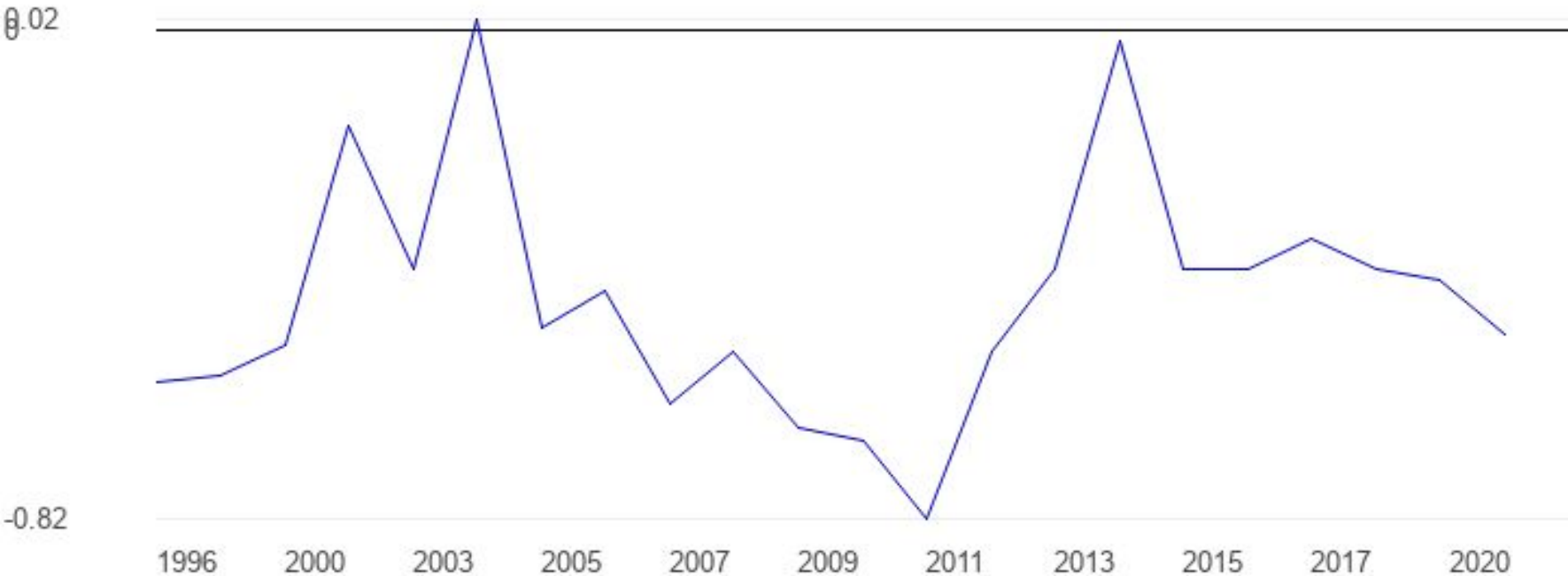


**3** GOOD HEALTH  
AND WELL-BEING





# Political Stability Index: Bosnia and Herzegovina







## THE SDGS FRAMEWORK IN BOSNIA AND HERZEGOVINA



December 2020



## Accelerator 2 under the development pathway “Smart Growth”: Increasing investments in infrastructure





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# Lessons learned from mountains

PhD Anita Lalić,  
Hiker and hikers guide



# Unmanned Aircraft Systems (UASs)



Roles and responsibilities for hikers:

- Positive role i.e for enjoyment
- Positive role for search and rescue



## *Literature:*

- <https://www.youtube.com/watch?v=MnNVcMgMCQs>
- <https://www.mdpi.com/2072-4292/12/20/3295>





Thank You for  
attention!





## About the panelists and guest lecturer



**Prof. Tihomir Latinovic** is an author of eight books from the Computer Science and Electrical Engineering. Author of more than 100 papers published in domestic and foreign journals as well as domestic and international conferences. 26 papers on internationally recognized SCI lists. Expert of the RS Government for Licensing of Faculties and Universities of the Republic of Srpska. BiH Expert for Licensing of Faculties and the University of BiH. Visiting professor at Universities in Serbia, Romania, Hungary, Poland and Slovakia through CEEPUS and Erasmus. Participant of two domestic and several international projects Tempus, CEEPUS and HERD. Editor of 4 international journals. Reviewer of the magazine with SCI list. Active English proficiency and level 4 degrees. Knowing and serving all MS Office applications, programming languages C++, Java, Visual Basic, Python, tools for designing information systems (BPWIN, ERWIN, UML, SQL Workbench).

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**Prof. Valentina Mirovic** is a professor at the Faculty of Technical Sciences, University of Novi Sad and chair of Traffic Systems. Her research focuses on project planning, transport and traffic engineering. LinkedIN: <https://www.linkedin.com/in/valentina-mirovi%C4%87-2a91161b/?originalSubdomain=rs>

**Assist. Prof. Anita Juric** is a assistant professor at University of Mostar. She is a active member of WBAA and international researcher. She participated in various projects, such as: EU-QMS B&H: „Support to Introduction of Quality Management Systems in Bosnia and Herzegovina”, Harmonization and Innovation in PhD Study Programs for Plant Health in Sustainable Agriculture – HarISA (ref. No. 598444-EPP-1-2018-1-HR-EPPKA2-CBHE-JP).

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## About the panelists and guest lecturer

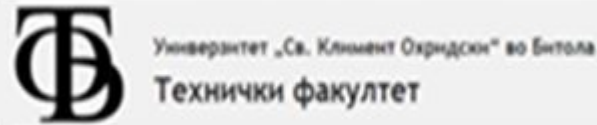


**Renata Petrevska Nechkoska** - after completing double PhD degree in Business Economics from Ghent University Belgium (UGENT) with PhD in Management at University St. Kliment Ohridski Bitola, North Macedonia (UKLO), she currently works as: assistant professor at UKLO and postdoc at UGENT. Since 2015, she is also engaged as European Commission evaluator for projects in Horizon 2020. Before academia, she was a practitioner for almost a decade - a banker in international financial institution ProCredit Bank - with HQ in Frankfurt Germany, mostly on middle management positions - head of HR, branch manager, project coordinator, She is Ghent University alumni ambassador since 2015, Western Balkans Alumni Association Head of research team since 2019, Elsevier Advisory Panel member since 2015, Harvard CID PDIA Community of Practice Alumni since 2017, and during the pandemic, she was EUvsVirus project manager for academia and R&D partners and is now facilitating open innovation in science collaboration under the name of Academia diffusion experiment, with global scholars and practitioners. Co-evolution by bridging & bringing out the best in us is her trajectory for boarding. LinkedIn: <https://www.linkedin.com/in/renata-petrevska-nechkoska-4691362a/> and <http://tactical-management-in-complexity.com>

**Daniela Koltovska Nechoska** is an Associate professor at the Faculty of Technical Science, St. Kliment Ohridski University – Bitola. Her research focuses on intelligent transport systems, application of artificial intelligence in road traffic control (smart cities), modelling and simulation of road networks and navigation of autonomous vehicles. During her professional carrier, she received various international mobilities scholarships such as Erasmus Mundus External Cooperation Window - Basileus Project, Erasmus + staff mobilities for training, STSM - Cost actions, Ceepus mobilities, etc. She is/has been the principal investigator/researcher in multiple projects and cooperative agreements including international and domestic research projects. Since 2017 she is engaged as evaluator for COST project. She enjoys teaching at the graduate and undergraduate levels, as well as in other venues, such as summer schools and short courses, and also, she was organizer/co-organizer of various professional workshops for students, courses designed for professional and soft skills development. She is actively involved in the promotion of the Erasmus+ students exchange at her faculty. LinkedIn: <https://www.linkedin.com/in/daniela-koltovska-nechoska-32359972/>



# Participating institutions







# BRIDGE

**Developing participatory methodology for addressing trans-regional issues bridging science and practice:  
Use case of Intelligent Transport Systems from managerial and technical perspective**

**October, 28<sup>th</sup> 2021, Second webinar**

**Bosnia and Herzegovina**