
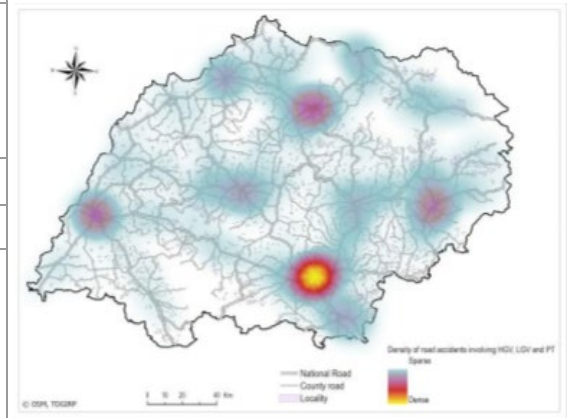
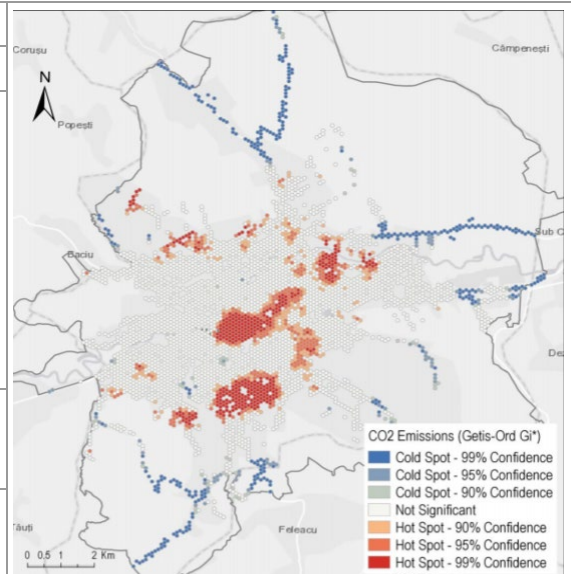


TRANSPORT SYSTEMS RESEARCH GROUP

Contact details

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Areas of expertise

Traffic Engineering and Transportation Planning:

Traffic operations and control
 Intelligent Transport Systems (ITS)– monitoring activity with GPS and weight-in-motion systems.
 Transport impact on urban mobility – survey deployment and analysis, transport macroscopic modeling.
 Economic, health and environmental impacts of transport systems; – congestion analysis, population safety and exposure, environmental impact assessment. Intermodal regional transport; Integrated transport and land-use planning – modal distribution analysis, modal shift policies
 Congestion mitigation
 Traffic safety under mixed traffic flow
 Heterogeneous traffic-flow modeling and simulation
 Activity-based travel demand modeling
 Dynamic and stochastic modeling of transportation networks

Pavement Engineering

Pavement recycling
 Road reliability
 Circular economy - sustainable processing, reuse, recycling and recovery schemes
 Micro-mechanical characterization of asphalt concrete
 Raw materials innovation
 Investigation on modified binders
 Laboratory testing and field studies for road structures and materials
 Fatigue and healing of asphalt mixtures
 Performance based design of bituminous mixes
 Concrete pavements
 Road-infrastructure asset management

Team

Prof. Dr. Eng. Mihai Iliescu - PhD supervisor, Asoc.Prof. Dr. Eng. Gavril Hoda, Assist. Prof.Dr.Eng. Beca Ilinca Mirela; Assist. Prof.Dr.Eng. Boitor Melania, Assist. Prof. Dr. Eng. Cadar Rodica, Assist. Prof.Dr.Eng. Ciocan Remus, Assist. Prof. Dr. Eng. Andrei Florin Clitan, Assist. Prof.Dr.Eng. Danciu Alexandra, Assist. Prof. Dr. Eng. Mihai Liviu Dragomir; Assist. Prof.Dr.Eng. Toşa Cristian, Assist. Prof.Dr.Eng. Marusceac Vladimir, Technician/analys: eng. Jecan Daciana

Representative projects

“Study on establishing the number of public transport taxi licenses in the city of Cluj-Napoca for the period 2020-2025”, contract with Cluj-Napoca Municipality 2019
“Traffic impact study for the urbanization area following the construction of County Emergency Clinical Hospital Sibiu” - Contract no. 40/ 2018, 2018-2019
“Design services of the new general urban plan and the local urban planning regulation of Apahida commune-traffic study”, contract with industry, 2018
“Experimental and numerical study on the performance of asphaltic concrete from the perspective of the thermal susceptibility and the value of the modulus of elasticity” - CICDI2017, ID 18, internal project financed by TUCN, 2017-2018
“Study on light stains at runway surface with asphalt road” – CICDI2017, ID5, internal project financed by TUCN, 2017-2018
“Mobility study to support the introduction of local public transport system in Floresti commune, Cluj County” - CONTRACT Nr. 20788/14.11.2012. Project study period: 3rd December 2012 - 28th February 2013
“Traffic study on rehabilitated county road” DJ 151 Km 45+810 – Km 126+712 between Mureş and Bistriţa Counties. Project study period: July 2013 - September 2013.
“Study of road asphaltic mixtures improved with bitumen additives”, Contract 8/18.10.2013,for C.N.A.D.N.R. S.A
THE ISSUE – “Traffic Health Environment Intelligent Solutions for Sustaining Urban Economies”, Associated partner within the North West Development Region of Romania. Starting October 2012.

Significant results

The most representative publications of the past 5 years:

1. Boitor, R. M., Cadar, R. D., Măran, P. D., Mannini, L., & Petrelli, M. (2019). A NEW TOOL FOR THE EVALUATION OF CO2 EMISSIONS FROM ROAD TRAFFIC: A CASE STUDY IN CLUJ-NAPOCA, ROMANIA. Environmental Engineering & Management Journal (EEMJ), 18(9). Online at <http://www.eemj.icpm.tuiasi.ro/issues/vol18/vol18no9.htm>, Indexed in Web of Science
2. The Speed - Flow Relationship on Urban Roads in A Romanian Town, Dorina, Cadar Rodica ; Melania, Boitor Rozalia ; Mihai, Dragomir ...More, 3RD WORLD MULTIDISCIPLINARY CIVIL ENGINEERING, ARCHITECTURE, URBAN PLANNING SYMPOSIUM (WMCAUS 2018), Volume 471 Published 2019
3. A ROAD TRAFFIC PREDICTION STUDY BASED ON WEIGH-IN-MOTION DATA, By: Ciont, Nicolae; Cadar, Rodica Dorina; Cimpean, Dalia Sabina, PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE Volume: 19 Issue: 4 Pages: 567-574 Published: OCT-DEC 2018
4. Effects of Traffic Volumes on Accidents: The Case of Romania's National RoADSm By: Cadar, Rodica Dorina; Boitor, Melania Rozalia; Dumitrescu, Mara, GEOGRAPHIA TECHNICA Volume: 12 Issue: 2 Pages: 20-29 Published: OCT 2017
5. Improving Traffic Conditions on a Set of Three Intersections Using Microscopic Simulation Models, Clitan, Andrei - Florin; Dragomir, Mihai-Liviu; Madalina, Ciotlaus; et al., Conference: 10th International Conference on Interdisciplinarity in Engineering (INTER-ENG) Location: Tirgu Mures, ROMANIA Date: OCT 06-07, 2016 INTER-ENG 2016 Book Series: Procedia Engineering Volume: 181 Pages: 139-145 Published: 2017
6. Urban Mobility and Road User Behavior Assessment, By: Cadar, Rodica Dorina; Boitor, Rozalia Melania; Petrelli, Marco, Conference: 10th International Conference on Interdisciplinarity in Engineering (INTER-ENG) Location: Tirgu Mures, ROMANIA Date: OCT 06-07, 2016, 10TH INTERNATIONAL CONFERENCE INTERDISCIPLINARITY IN ENGINEERING, INTER-ENG 2016 Book Series: Procedia Engineering Volume: 181 Pages: 116-122 Published: 2017
7. Employing a Traffic Data Processing Software to Efficiently Design Road Pavements, By: Ciont, Nicolae; Iliescu, Mihai; Cadar, Rodica Dorina, Conference: 10th International Conference on Interdisciplinarity in Engineering (INTER-ENG) Location: Tirgu Mures, ROMANIA Date: OCT 06-07, 2016, 10TH INTERNATIONAL CONFERENCE INTERDISCIPLINARITY IN ENGINEERING, INTER-ENG 2016 Book Series: Procedia Engineering Volume: 181 Pages: 868-875 Published: 2017
8. TRAVEL BEHAVIOR ASSESSMENT FOR IMPROVED URBAN MOBILITY, By: Cadar, R. D.; Boitor, R. M.; Petrelli, M., Conference: 16th International Multidisciplinary Scientific Geoconference (SGEM 2016) Location: Albena, BULGARIA Date: JUN 30-JUL 06, 2016, NANO, BIO AND GREEN - TECHNOLOGIES FOR A SUSTAINABLE FUTURE CONFERENCE PROCEEDINGS, SGEM 2016, VOL II Book Series: International Multidisciplinary Scientific GeoConference-SGEM Pages: 771-778 Published: 2016

Products and technologies:

1. Road Traffic and Transport measurements:

Weight in motion system hi-trac 90, hi-trac 100, Laser TruCAM (All-in-one Digital Video Camera/Laser Speed and Ranging Device), MCLocator system for fleet management and location (6GPS vehicle test), Portable Skid Resistance Tester Device, GPS Leica GS09 NetRover RTK, GPS Data Logger Performance Meter, Weather Center Tehnoline WS

550, Sound Level Meter DeltaOHM HD2010UC, Infrared and Contact Thermometer FLUKE 561, Video camera Sony XR160E, Digital Camera Canon EOS1100D, QuickMap 3D (QM3D) 5.0 from Laser Technology; Transportation planning and traffic modelling software (Transyt, Arcady, Picady, VISUM, VISSIM), Programming language MATLAB, Graphing and data analysis software OriginPro.

2. **Road materials/structures**-laboratory and field studies:

Marshall test, Unitronic Frame, Proctor, Asphalt and Cement concrete: recipes, preparation and laboratory tests; Lucas plate test, Zorn plate test, Benkelman test; Bitumen tests (ductility, ball and ring, penetration, RTFOT).

The offer addressed to the economic environment

Research & development	<p><u>Research on traffic</u> safety and solution development; Development of traffic models (road network and junctions); Development of original solutions regarding survey structure for transport mobility studies in urban and rural areas; Development of statistical analyses for collected traffic data;</p> <p><u>Research on ecological road materials</u> using recycled material or different waste materials (bricks, old pavements, old concrete form demolition etc.); Development of new road materials or different pavement solutions; Research on laboratory analyses on road materials and development of improved road materials.</p>
Consulting	<p>Technical assistance in projects; Consulting, design, research and assistance for infrastructural projects (roads, parking lots, bridges and railroads); Award of contracts in urban roads field. Valuation: investments, acquisitions, economic costs, financial reporting, sales. Public transport planning.</p>
Applied engineering services	<p><u>Mobility studies</u>; Road network capacity assessment; Air quality assessment; Spot speed studies for enforcement measures in the urban environment; Traffic studies regarding speed profiles and fleet composition;</p> <p><u>Laboratory tests and reports on road materials</u>; Field measurements: load capacity, deflections, flatness, core extractions; Analyze asphalt/cement concrete recipes – for different utilities: (road, playgrounds, bridge decks, parks alleys etc). Studies on stabilized materials (with different types of binder); Studies on mineral skeleton (the main part of all construction materials)</p>
Training	<p>Actual standards and legal framework in road construction; Rehabilitation projects and road rehabilitation methods; Traffic safety - Audit and Inspection Training.</p>

Last updated: February 2021