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MOSCOW AUTOMOBILE AND ROAD CONSTRUCTION STATE TECHNICAL UNIVERSITY (MADI)
INSTITUTE OF RADIO AND INFORMATION SYSTEMS (IRIS)
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**«2023 INTELLIGENT TECHNOLOGIES
AND ELECTRONIC DEVICES IN VEHICLE
AND ROAD TRANSPORT COMPLEX»
(TIRVED-2023)**

(IEEE Conference # 58506)

15-17 November 2023

CONFERENCE PROGRAM

**Moscow
2023**

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MOSCOW AUTOMOBILE AND ROAD CONSTRUCTION STATE TECHNICAL UNIVERSITY (MADI)

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Chapter 1. Advanced digital intelligent technologies, robotic and big data systems, machine learning and artificial intelligence

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Chapter 2. Intelligent transport systems and monitoring the state of road network objects

(Интеллектуальные транспортные системы и мониторинг состояния объектов дорожной сети)

Chapter 3. Electronic driver assistance systems. Self-driving cars and electric vehicles

(Электронные системы помощи водителю. Самоуправляемые автомобили и электромобили)

Chapter 4. Automated vehicles, intelligent management and control methods

(Автоматизированные транспортные средства, интеллектуальные методы управления и контроля)

Chapter 5. Peculiarities of data exchange in cooperative ITS

(Особенности обмена данными в кооперативных ИТС)

Chapter 6. Electrical and electronic engineering pedagogy

(Инженерная педагогика в области электроники и электротехники)

* The reports in the program inside the sections are listed in alphabetical order by the name of the first author. By agreement with the chairman of the section, the order of reports may be changed
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CONFERENCE SCHEDULE

15 November 2023

Lecture hall MADI (аудитория) 402л
15-00 – 17-00

Chapter 5. Peculiarities of data exchange in cooperative ITS

16 November 2023

Lecture hall MADI (аудитория) С31
09-00 – 17-00

Chapter 1. Advanced digital intelligent technologies, robotic and big data systems, machine learning and artificial intelligence

Lecture hall MADI (аудитория) 502н
10-00 – 13-00

Chapter 3. Electronic driver assistance systems. Self-driving cars and electric vehicles

17 November 2023

Lecture hall MADI (аудитория) 132
10-00 – 12-00

Chapter 2. Intelligent transport systems and monitoring the state of road network objects

Lecture hall MADI (аудитория) 457а
10-00 – 18-00

Chapter 4. Automated vehicles, intelligent management and control methods

Aviamotornaya str, 8A
10-00 – 12-00

Chapter 6. Electrical and electronic engineering pedagogy

November 16, 2023
Lecture hall MAD1 (аудитория) С31
09-00 – 17-00

CHAPTER 1

ADVANCED DIGITAL INTELLIGENT TECHNOLOGIES, ROBOTIC AND BIG DATA SYSTEMS, MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE

(ПЕРЕДОВЫЕ ЦИФРОВЫЕ ИНТЕЛЛЕКТУАЛЬНЫЕ ТЕХНОЛОГИИ, РОБОТИЗИРОВАННЫЕ СИСТЕМЫ И СИСТЕМЫ БОЛЬШИХ ДАННЫХ, МАШИННОЕ ОБУЧЕНИЕ И ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ)

CHAIRMEN: **M.V. Yashina**, *Doctor of Technical Sciences, PhD of Physical and Mathematical Sciences, Head of the Department “Higher Mathematics”, MAD1, Member IEEE*

Mukhamed T. Aleroev, Marina V. Yashina

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

METHODS FOR OPTIMIZING THE DEFORMATION-STRENGTH CHARACTERISTICS OF POLYMER CONCRETE

M.V. Andreeva

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

M.Y. Zvezdochkin

JSC «SRC «Progress», Ryazan, Russia

APPLICATION OF MORPHOLOGICAL OPERATIONS AND HOUGH TRANSFORM FOR RECOGNIZING OBJECTS IN AN IMAGE WHEN HIGH INTENSITY GLARE OCCURS

Mikhail Bakulin, Taoufik Ben Rejeb, Vitaly Kreyndelin, Denis Pankratov, Aleksei Smirnov

Moscow Technical University of Communications and Informatics, Moscow, Russia

PROBLEMS OF COMBINING NOMA WITH MIMO

V.A. Bogatyrev

Saint Petersburg State University of Aerospace Instrumentation, St. Petersburg, Russia

V.S. Moskvina

ITMO, St. Petersburg, Russia

APPLICATION OF GROVER'S ALGORITHM IN ROUTE OPTIMIZATION

V.S. Moskvina

ITMO, Saint-Petersburg, Russia

QUANTUM NEURAL NETWORKS AND THEIR POTENTIAL IN TRAFFIC PREDICTION

Timur Fatkhulin, Yuri Leokhin, Maxim Mentus, Alena Kulikova, Rafif Alshawi
Moscow Technical University of Communications and Informatics, Moscow, Russia
ANALYSIS OF THE BASIC IMAGE GENERATION METHODS BY NEURAL NETWORKS

Grigoriy Fokin, Dmitriy Volgushev,
The Bonch-Bruevich SPbSUT, Saint Petersburg, Russia
Vladimir Grigoriev, Konstantin Ryutin
Limited Liability Company, Laboratory of Infocommunication Networks, Saint Petersburg, Russia
SOFTWARE-DEFINED RADIO NETWORK POSITIONING TECHNOLOGY DESIGN. FIELD EXPERIMENT DEMONSTRATOR

Dmitriy Volgushev, Grigoriy Fokin
The Bonch-Bruevich SPbSUT, Saint Petersburg, Russia
LINK LEVEL SIMULATION MODEL FOR VEHICLES WITH LOCATION-AWARE BEAMFORMING IN 5G MM WAVE ULTRA-DENSE NETWORKS

Alla G. Garibyan
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
DEVELOPMENT OF A NETWORK COMPUTER LABORATORY FOR TRAINING IN ROAD TRAFFIC SIMULATION AND MODEL VERIFICATION

Dmitrii S. Gerasimov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

Marina V. Yashina
Moscow Automobile and Road Construction State Technical University (MADI); Moscow Aviation Institute (Research University), Moscow, Russia
ACCUMULATION OF INTERFERENCE OF MODULATION SCHEMES OF COMMUNICATIONS IN SATURATED TRAFFIC FLOWS

O. V. Ilina, M. V. Tereshonok
Moscow Technical University of Communications and Informatics, Moscow, Russia
ADAPTIVE METHOD TO INCREASE VEHICLE DETECTION SYSTEM ROBUSTNESS ON BLURRED AND NOISY AERIAL IMAGES

Vitaly Kreyndelin, Mikhail Bakulin, Taoufik Ben Rejeb, Denis Pankratov, Aleksei Smirnov
Moscow Technical University of Communications and Informatics, Moscow, Russia
ANALYSIS OF QAM CONSTELLATIONS WITH BINARY SIGNAL REPRESENTATION

N.G. Kuftinova, A.V. Ostroukh, D.K. Izmailova

*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

M.A. Pirozhkov

Scientific and Research Institute of Motor Transport (NIIAT), Moscow, Russia

**ENVIRONMENTAL, SOCIAL, AND GOVERNANCE FACTORS IN
TRANSPORTATION PLANNING**

Yuri Leokhin, Timur Fatkhulin, Alena Kulikova

Moscow Technical University of Communications and Informatics, Moscow, Russia

**RESEARCH OF THE INFLUENCE OF THE SEMANTICS AND SYNTAX
OF A TEXT REQUEST ON THE IMAGE QUALITY GENERATED BY NEURAL
NETWORK TECHNIQUES**

S. Z. Lygdenov

ITMO University, Saint-Petersburg, Russia

I. Z. Lygdenova

First St. Petersburg University named after Academician Pavlov, Saint-Petersburg, Russia

**DATA TRANSMISSION WITH PRIORITY SERVICE AND LIMITED
CAPACITY STORAGE IN UNSTATIONARY FLOW AND HIGH LOAD**

Alexander Stempkovskiy, Roman Solovyev, Dmitry Telpukhov, Alexander Kustov

*Institute for Design Problems in Microelectronics of Russian Academy of Sciences
(IPPM RAS), Moscow, Russia*

**HARDWARE IMPLEMENTATION OF CONVOLUTIONAL NEURAL
NETWORK BASED ON SYSTOLIC MATRIX MULTIPLIER**

Pavel Plotnikov, Gleb Tambovtsev, Andrei Vladyko (Member IEEE)

*The Bonch-Bruевич Saint-Petersburg State University of Telecommunications,
Saint Petersburg, Russia*

**PERFORMANCE EVALUATION OF V2X MODEL WITH A MOBILE ROAD
SIDE UNITS**

O. B. Popov, T. V. Chernysheva, V. A. Abramov, A. A. Borisov

Moscow Technical University of Communications and Informatics, Moscow, Russia

**RATIONAL USE OF DYNAMIC RANGE IN ANALOG-TO-DIGITAL
CONVERSION**

C.B. Pronin, A.V. Ostroukh, D.K. Izmailova

*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

M.A. Pirozhkov

Scientific and Research Institute of Motor Transport, (NIIAT), Moscow, Russia

**ENVIRONMENTAL, SOCIAL, AND CORPORATE GOVERNANCE
PERSPECTIVES IN DEVELOPMENT OF QUANTUM VECTOR DATABASES
BASED ON GROVER'S ALGORITHM**

Timur D. Potapchenko

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Centre for Strategic Planning of FMBA of Russia, Federal State Budgetary Institution
«Centre for Strategic Planning and Management of Biomedical Health Risks» of the
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Lionella A. Fedotova

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**APPROACHES TO ACCOUNTING FOR GREENHOUSE GAS EMISSIONS
FROM VEHICLES IN PERSONAL USE**

S.A. Sidnev, L.Y. Krasikova, G.S. Artemeva, L. I. Gushchina

Moscow Technical University of Communications and Informatics, Moscow, Russia

NETWORK MULTICHANNEL COMMUNICATION DEVELOPMENT PLAN

Trofimenko Yu.V., Yakubovich A.N., Lytov V.M.

*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

Lytov V. M.

Yu.A. Izrael Institute of Global Climate & Ecology (IGCE), Moscow, Russia

**DEVELOPMENT OF APPROACHES TO UPDATED DATABASE ON THE
VEHICLE FLEET OF VARIOUS COUNTRIES FOR ASSESSING GROSS
GREENHOUSE GAS EMISSIONS**

**Andrew V. Toutov, Natalia V. Toutova, Georgy A. Bulanov, Elena A. Frolova,
Iliya A. Andreev**

Moscow Technical University of Communications and Informatics, Moscow, Russia

**RESOURCE ALLOCATION ALGORITHMS FOR SINGLE, CLUSTER AND
TIRED VIRTUAL MACHINES**

Marina V. Yashina

*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia;*

Moscow Aviation Institute (Research University), Moscow, Russia

Vyacheslav A. Shein

*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

**MOTION PLANNING OF 2D WHEELED MOBILE ROBOT USING
REINFORCEMENT LEARNING**

November 17, 2023
Lecture hall MAD1 (аудитория) 132
10-00 – 12-00

CHAPTER 2
INTELLIGENT TRANSPORT SYSTEMS AND MONITORING
THE STATE OF ROAD NETWORK OBJECTS

(ИНТЕЛЛЕКТУАЛЬНЫЕ ТРАНСПОРТНЫЕ СИСТЕМЫ И МОНИТОРИНГ СОСТОЯНИЯ
ОБЪЕКТОВ ДОРОЖНОЙ СЕТИ)

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Alexei A. Tsesar, Sergey V. Varshavskiy

Small Innovative Enterprise “Monitoring of Roads and Road Technologies” SIE
“MADiDT”, Moscow, Russia

MODELS FOR CALCULATING THE PAVEMENT CONDITION INDEX

Anatoliy A. Solovyev, Andrey M. Valuev

Laboratory of Dynamics of Man-Machine Systems, Mechanical Engineering Research
Institute named after A.A. Blagonravov of RAS, Moscow, Russia

AUTOMATIC CONTROL METHODS AS THE BASIS FOR THE

DEVELOPMENT OF INTELLIGENT URBAN TRAFFIC CONTROL SYSTEMS

Alexei A. Tsesar

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“MADiDT”, Moscow, Russia

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Kirill A. Barinov, Yuri E. Vasiliev, Kristina V. Mikolaichuk

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METHODOLOGY FOR SELECTING NEURAL NETWORK ARCHITECTURE
FOR RECOGNIZING PAVEMENT DEFECTS

Sergey V. Varshavskiy

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**INTELLECTUALIZATION OF THE PAVEMENT DEFECT RECOGNITION
PROCESS**

A.P. Zhuravlev

Moscow Technical University of Communications and Informatics, Moscow, Russia

MODULAR SOFTWARE ENVIRONMENT FOR DISTRIBUTED SDR SYSTEMS

November 16, 2023
Lecture hall MADI (аудитория) 502н
10-00 – 13-00

CHAPTER 3
ELECTRONIC DRIVER ASSISTANCE SYSTEMS. SELF-DRIVING CARS
AND ELECTRIC VEHICLES

(ЭЛЕКТРОННЫЕ СИСТЕМЫ ПОМОЩИ ВОДИТЕЛЮ. САМОУПРАВЛЯЕМЫЕ
АВТОМОБИЛИ И ЭЛЕКТРОМОБИЛИ)

CHAIRMENS: A.M. Ivanov, *Doctor of Technical Sciences, Head of the Department*
"Cars" MADI

Alexey N. Andreev, Maxim A. Toporkov, Yury M. Furletov, Maxim I. Alexeenkov
Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia

INTERACTION OF HIGHLY AUTOMATED VEHICLES WITH PERSONAL
MOBILITY DEVICES IN THE URBAN ENVIRONMENT

Phillip K. Dyakov, Ivan N. Rovchanin, Maxim I. Alexeenkov, Alexey N. Andreev,
Egor P. Dyakov.
Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia

BLOCKING GRID USAGE FOR ADVANCE DRIVER ASSIST SYSTEM (ADAS)
EVALUATIONS ON PROVING GROUND

Vitalij V. Gaevskij, Andrey M. Ivanov, Irina V. Odinkova
Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia

MAINTAINING SAFETY IN THE SYSTEM OF THE NEW URBAN MOBILITY

Tatyana A. Kuzovkova, Alexander D. Kuzovkov, Olga I. Sharavova, Maria M.
Sharavova

Moscow Technical University of Communications and Informatics, Moscow, Russia
PROSPECTS FOR THE DEVELOPMENT OF UNMANNED TRANSPORT
BASED ON 5G AND 6G MOBILE COMMUNICATION TECHNOLOGIES

Daria A. Makarova, Sergey S. Shadrin, Yury M. Furletov, Andrey M. Ivanov
*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

**METHODOLOGY FOR ASSESSING THE AUTOMATED VEHICLES SAFETY
BASED ON OPERATIONAL DATA**

A. F. Nadeev, T. F. Shcherbakova, A. A. Kobyzeva, S. S. Sedov
*Kazan National Research Technical University named after A.N. Tupolev-KAI, Kazan,
Russia*

**VEHICLE DRIVER CONDITION MONITORING SYSTEM BASED ON
ELECTROCARDIOGRAPHIC SIGNAL ANALYSIS**

N.V. Popov, V.V. Gaevskiy, A.N. Andreev, Ph.K. Dyakov, I.V. Pivovarov
*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

**CARRYING OUT FAULT TOLERANCE TESTS OF AUTOMATIC
EMERGENCY BRAKING SYSTEMS TO PREVENT COLLISIONS WITH A
BYCYCLIST**

**Alexandr G. Tynyanny, Sergey R. Kristalniy, Phillip K. Dyakov,
Maxim I. Alexeenkov**
*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

**STUDYING THE CAPABILITIES OF NEURAL NETWORKS FOR ADAPTIVE
DRIVER ASSISTANCE SYSTEMS**

November 17, 2023
Lecture hall MADI (аудитория) 457a
10-00 – 18-00

CHAPTER 4
AUTOMATED VEHICLES, INTELLIGENT MANAGEMENT
AND CONTROL METHODS

(АВТОМАТИЗИРОВАННЫЕ ТРАНСПОРТНЫЕ СРЕДСТВА, ИНТЕЛЛЕКТУАЛЬНЫЕ
МЕТОДЫ УПРАВЛЕНИЯ И КОНТРОЛЯ)

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Sergey B. Benevolensky
Scientific Research Institute – Federal Research Centre for Projects Evaluation and Consulting Services, Moscow, Russia

Evgeniy V. Subachev
LLC "Zavod SpetsAgregat", Miass, Russia

THE SOFTWARE OF CONTROL SYSTEM FOR COLLECTIVE WORK
OF THE TECHNICAL DEVELOPMENTS

Alexey A. Akulov, Vladimir S. Ershov
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Boris B. Sidorov
LLC "KONDEX", Moscow, Russia

Rustam R. Mirzaev, Dmitriy S. Taldykin
Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia

CALCULATION OF THE DESIGN OF THE AIRFIELD OF AERODROME
EQUIPMENT USING ITS MODELING IN THE SOFTWARE PACKAGE

Kristina A. Arzhanova
State University of Management (SUM), Moscow, Russia

Sergey B. Benevolensky
Scientific Research Institute – Federal Research Centre for Projects Evaluation and Consulting Services, Moscow, Russia

METHODOLOGY FOR IMPLEMENTING NEURAL NETWORKS INTO THE
MANAGEMENT OF MARKETING COMMUNICATIONS OF COMPANIES

Andrey Yu. Andreev

Research Institute of Communication Technology FGBOU VO SPbGUT im. Bonch-Bruевич, Saint Petersburg, Russia

Alexey V. Terentyev

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

Roman O. Sudorjin

Federal State Budgetary Educational Institution of Higher Education "Pushkin State Institute of the Russian Language", Moscow, Russia

Vladimir V. Filatov, Vladimir S. Ershov

*State University of Management, Moscow, Russia;
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia*

DEVELOPMENT OF A HETEROGENEOUS DYNAMIC TRANSPORT SYSTEM BASED ON THE BELLMAN FUNCTION TO OPTIMIZE THE PROCESS OF PLANNING AUTOMOBILE ROUTES

Vladimir V. Filatov, Maria Yu. Karelina

*State University of Management, Moscow, Russia;
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia*

Nikolay V. Solovyov

LLC "Mercator Kaluga", Kaluga, Russia

Igor Yu. Kashtanov, Sergey V. Sidorenko

State University of Management, Moscow, Russia

EFFICIENCY IMPROVEMENT OF THE IMPLEMENTATION OF RESEARCH WORK ON THE BASIS OF HIGHER EDUCATIONAL INSTITUTIONS

B. G. Ibrahimov (Member IEEE), A. D. Tagiyev (Member IEEE),

M.Y. Orujova (Member IEEE)

Azerbaijan Technical University, Baku, Azerbaijan

RESEARCH MULTISERVICE ACCESS NETWORKS WHEN TRANSMITTING HETEROGENEOUS TRAFFIC

Ekaterina A. Karelina, Alexey A. Stepanov

State University of Management, Moscow, Russia

Petr I. Smirnov

Vologda State University, VOGU, Vologda, Russia

Artem Velimirovich Podgornuy

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

Vitaly V. Guly

*State University of Management, Moscow, Russia;
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia*

DETECTION OF ABNORMAL TRAFFIC FLOW WITH THE HURST PARAMETER FOR TRAFFIC MANAGEMENT

Maria Yu. Karelina, Alexey A. Akulov

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*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

Petr I. Smirnov

Vologda State University, VOGU, Vologda, Russia

Natalia V. Atamanenko

*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

A METHOD FOR CONSTRUCTING AN URBAN PUBLIC TRANSPORT NETWORK BASED ON THE ASSESSMENT OF TRAFFIC FLOWS BY ITS DETECTORS

Anton A. Noskov

Group of companies «Milarin», St. Petersburg, Russia

Alexey V. Terentiev

St. Petersburg State University of Architecture and Civil Engineering, St. Petersburg, Russia

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Moscow, Russia*

Roman O. Sudorgin

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"Pushkin State Institute of the Russian Language", Moscow, Russia*

THEORETICAL FOUNDATIONS FOR DESIGNING AN INTELLIGENT SYSTEM FOR CONTAINER FREIGHT ROAD TRANSPORT

Irina V. Odinkova, Alexander V. Sukhodolya, Artem V. Podgorny,

Dmitry A. Nikitin

*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

Alexey E. Sorokin

Center of Automobile and Road Engineering, Moscow, Russia

DEVELOPMENT OF AN ELECTRONIC CONTROL SYSTEM A NEW GENERATION OF AIRFIELD IRRIGATION MACHINE EQUIPMENT

A.V. Ostroukh, N.G. Kuftinova, A.A. Podberezkin, B.S. Subbotin, A.V. Podgorny

*Moscow Automobile and Road Construction State Technical University (MADI),
Moscow, Russia*

USE DIGITAL TWINS AND THE METAVERSE TO ANALYSIS DATA IN THE AGGLOMERATION TRANSPORT NETWORK

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MEGATRENDS OF DIGITAL ENGINEERING TECHNOLOGIES: ANALYSIS OF THE MODEL OF INTEGRAL ASSESSMENT OF THE STATE AND POTENTIAL OF DIGITAL DEVELOPMENT IN THE CONDITIONS OF THE FOURTH INDUSTRIAL REVOLUTION

Viatcheslav M. Prikhodko, Dmitry S. Simonov, Nikita N. Kalyagin,

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MODERNIZATION OF BUCKET CUTTING EDGE USING SOFTWARE MODELING

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APPROACHES TO THE CREATION, PILOT IMPLEMENTATION AND ORGANIZATION OF OPERATION AND USE OF UNMANNED SYSTEMS AND COMPLEXES

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FEATURES OF RISK MANAGEMENT OF DIGITAL AND INFOCOMMUNICATION DEVELOPMENT TO ENSURE A UNIFIED INFORMATION SPACE OF COMPANIES IN MODERN CONDITIONS

Ekaterina F. Shamaeva, Elizaveta A. Alexandrova

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THE MANAGEMENT OF ENGINEERING AND TECHNICAL DEVELOPMENTS IN A REGIONAL ENVIRONMENT BASED ON ECOLOGICAL-SOCIO-ECONOMIC INFORMATION

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ROAD INFRASTRUCTURE OPTIMIZATION TO IMPROVE THE ENERGY EFFICIENCY OF VEHICLES

Vasily S. Starostin, Dmitry V. Dolgopolov, Kristina A. Arzhanova

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MANAGING THE ARTIFICIAL INTELLIGENCE TECHNOLOGIES FOR THE HIGHER EDUCATION SPHERE

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ANALYTICAL MODEL OF THE ORGANIZATION OF FREIGHT TRAFFIC IN THE INTELLIGENT TRANSPORT SYSTEM OF THE METROPOLIS

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USING A DIGITAL TWIN IN ULTRA-LARGE-SCALE SYSTEM

November 15, 2023
Lecture hall MADI (аудитория) 402л
15-00 – 17-00

CHAPTER 5
PECULIARITIES OF DATA EXCHANGE IN COOPERATIVE ITS

(ОСОБЕННОСТИ ОБМЕНА ДАННЫМИ В КООПЕРАТИВНЫХ ИТС)

CHAIRMEN: S. V. Zhankaziev, Doctor of Technical Sciences, Head of the Department
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Taras Bogachev, Tamara Alekseychik

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**INFORMATION TECHNOLOGIES IN LOGISTIC MODELING OF RAILWAY
FREIGHT TRANSPORTATION IN PORT TRANSPORT AND
TECHNOLOGICAL SYSTEMS**

M.V. Gavriluk, A.I. Vorobyev, T.V. Vorobyeva, D.Yu. Morozov, A. M. Merkovich

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**PRINCIPLES OF THE FORMATION OF PHYSICAL AND FUNCTIONAL
ITS ARCHITECTURES**

Aleksei Portnov

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Zhenfeng Shao, Wuhan University (WHU), Wuhan, China

Viktor Nepoklonov

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**PROBLEMS OF USING FLAT COORDINATE SYSTEMS TO ASSESS THE
SUSTAINABLE FUNCTIONING OF URBANIZED TERRITORIES WITH
THE USE OF SATELLITE IMAGES OF THE EARTH**

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A.M. Iliushin, FSUE NAMI, Moscow, Russia

**APPLICATION OF ITS RESEARCH LABORATORIES IN THE FIELD OF
COOPERATIVE SYSTEMS**

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P.V. Harbunou, "INVIAN (Intellectual Video Analitics)" L.t.d., Innopolis, Russia

**RAISING AWARENESS OF DRIVERLESS CARS AT CLOSED INTERSECTIONS
USING URBAN INFRASTRUCTURE, MACHINE VISION TECHNOLOGIES
AND V2X SHARING**

November 17, 2023
Aviamotornaya str, 8A
10-00 – 12-00

CHAPTER 6

ELECTRICAL AND ELECTRONIC ENGINEERING PEDAGOGY **(ПЕДАГОГИКА В ОБЛАСТИ ЭЛЕКТРОТЕХНИКИ И ЭЛЕКТРОННОЙ ИНЖЕНЕРИИ)**

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A.V. Safonova, A.M. Mokrov
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IMPLEMENTATION OF CLASSIFICATION ALGORITHMS FOR DATA TRAFFIC ANALYSIS

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MODELING OF E-LEARNING PROCESSES