



XIII Меѓународна конференција – ЕТАИ 2016
Хотел Дрим, Струга, Македонија
22-24 септември 2016

XIII International Conference – ETAI 2016
Hotel Drim, Struga, Macedonia
September 22-24, 2016

ПРОГРАМА

TECHNICAL PROGRAMME SCHEDULE

З Д Р У Ж Е Н И Е З А
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S O C I E T Y F O R
E L E C T R O N I C
T E L E C O M M U N I C A T I O N S
A U T O M A T I C S A N D
I N F O R M A T I C S
O F T H E R E P U B L I C
O F M A C E D O N I A

Програма за ЕТАИ 2016

Financial sponsors:

The logo for ZTE, consisting of the letters 'ZTE' in a bold, blue, sans-serif font.

ZTE

Tomorrow never waits

The logo for TELELINK, featuring a stylized blue and orange graphic element to the left of the word 'TELELINK' in a blue, sans-serif font.

TELELINK

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NEOTEL

The logo for Makedonski Telekom, featuring a stylized white 'T' and three dots on a pink square background.

MAKEDONSKI TELEKOM AD –
SKOPJE

The logo for SmartIS, featuring the word 'SmartIS' in a black, sans-serif font, with 'IS' in green. Below it, the text 'PAMETNI INFORMACIJSKI SISTEMI' is written in a smaller, black, sans-serif font.

SmartIS d.o.o.

The logo for MIKROSAM, featuring the word 'MIKROSAM' in a white, sans-serif font on a blue background. Below it, the text 'CONTROL • AUTOMATION • ROBOTICS' is written in a smaller, white, sans-serif font.

MIKROSAM

The logo for SisKon, featuring a stylized blue and green graphic element to the left of the word 'SisKon' in a blue, sans-serif font. Below it, the text 'Systems Engineering' is written in a smaller, blue, sans-serif font.

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Ministry of education and science

ПРОГРАМА - SCHEDULE

ЧЕТБОТОК - THURSDAY, 22.IX.2016

SESSION T1: TELECOMMUNICATIONS (1)

15:30 - 17:00

Претседавачи - Co-chairs: **Toni Janevski, Mitko Bogdanoski**

- T1-1 5G Terminals with QoS provisioning and Vertical Multi-Homing and Multi-Streaming features
Tomislav Shuminoski and Toni Janevski
- T1-2 ESTIMATION OF VOIP AND VIDEO STREAMING CAPACITY OF LTE-ADVANCED
Marko Porjazoski, Ivana Todorovska, Pero Latkoski and Borislav Popovski
- T1-3 5G NETWORKS IN FOG COMPUTING ENVIRONMENT
Stojan Kitanov and Toni Janevski
- T1-4 HACKING ATTACKS - MALWARE POWERED BY IPV6 ADDRESS
Mane Piperevski
- T1-5 SOME PHYSICAL LAYER ASPECTS IN THE DEVELOPMENT OF 5G NETWORKS: CHANNEL MODEL, SIGNAL WAVEFORMS AND MASSIVE MIMO
Slavche Pejoski
- T1-6 PLATFORM FOR COOPERATION AMONG PRIVATE AND PUBLIC SECTOR IN THE AREA OF CYBER SECURITY
Marjan Stoilkovski, Mitko Bogdanoski, Tomislav Dzekov and Risto Hristov

SESSION CS: CONTROL SYSTEMS

15:30 - 17:00

Претседавачи - Co-chairs: **Georgi Dimirovski and Jovan Stefanovski**

- CS-1 THE DEVELOPMENT OF A PRACTICAL SOLVING METHOD FOR CONTROL PROBLEM WITH DESCRIPTOR SYSTEMS
Drilon Bunjaku and Jovan Stefanovski
- CS-2 A NOVEL SYNTHESIS OF SMC FOR UNCERTAIN TIME-DELAY PLANTS VIA FUZZY MODELS
Yang Mi, Juntao Li, Wenlin Li, Dilek Tukul and Georgi Dimirovski
- CS-3 UNCERTAIN SWITCHED DISCRETE-TIME SYSTEMS WITH TIME-VARYING DELAYS: ROBUST H_{∞} CONTROL REVISITED
Zhengui Song, Georgi Dimirovski and Jun Zhao
- CS-4 EFFECTS OF TIME DELAY AND LOSS PROBABILITY ON THE POWER CONSUMPTION IN A NETWORKED CONTROL SYSTEM
Ivan Gochev, Gorjan Nadzinski and Mile Stankovski

SESSION DP: AUDIO/VIDEO/TEXT PROCESSING

15:30 - 17:00

Претседавачи - Co-chairs: **Vlado Delić and Zoran Ivanovski**

- DP-1 APPLICATION FOR COMPARISON SIMILARITIES BETWEEN SPEAKERS BY USING ALGORITHM FOR AUTOMATIC SPEAKER RECOGNITION
Ivan Jokić, Stevan Jokić, Vlado Delić and Zoran Perić
- DP-2 REAL-TIME IMPLEMENTATION OF ALGORITHM FOR AUTOMATIC CLASSIFICATION OF VIDEO CONTENT IN ARTIFICIAL-NATURAL CLASS ON LOW-END DUAL-CORE MOBILE PLATFORM
Marjan Drndarevski and Zoran Ivanovski
- DP-3 A DYNAMIC TIME WARPING BASED MACEDONIAN AUTOMATIC SPEECH RECOGNITION SYSTEM FOR SMART HOME APPLICATIONS
Bojan Matovski, Bojan Maksimovic, Branislav Gerazov and Josif Kosev
- DP-4 UNIFIED PROSODY MODEL BASED ON ATOM DECOMPOSITION FOR EMPHASIS DETECTION
Branislav Gerazov, Aleksandar Gjoreski, Aleksandar Melov, Pierre-Edouard Honnet, Zoran Ivanovski and Philip N. Garner
- DP-5 EEGPY: A SYSTEM FOR THE ANALYSIS OF COHERENCE IN EEG DATA USED IN THE ASSESSMENT OF ADHD
Branislav Gerazov and Silvana Markovska-Simoska
- DP-6 OVERVIEW OF TEXT-INDEPENDENT SPEAKER IDENTIFICATION
Aleksandar Melov, Branislav Gerazov and Zoran Ivanovski
- DP-7 ANALYSING MEDICAL VIDEO COMPRESSION PARAMETERS TO MINIMIZE THE EFFECTS OF ARTEFACTS
Goran Jakimovski and Zoran Ivanovski

ПЕТОК - FRIDAY, 23.IX.2016

SESSION A: APPLICATION PAPERS

14:30 - 17:00

Претседавачи - Co-chairs: **Georgi Gicev**

- A-1 Telekom Smart Technology
Makedonski Telekom
- A-2 SECURITY IN IOT GATEWAYS
Seavus - Embedded Division
- A-3 PRESENTATION OF A REMOTE WIRELESS STREET LIGHTING CONTROL MANAGEMENT SYSTEM SOLUTION
Elektro Dizajn, Skopje
- A-4 LS1021A IN INDUSTRIAL SAFETY SYSTEMS
Gjorgji Petkovski
- A-5 RED LIGHT ENFORCEMENT SYSTEM
Inray Solution Ltd, Sentice Ltd
- A-6 REAL TIME IRRIGATION SYSTEM BASED ON WIRELESS SENSORS
Mile Mirchevski, Slavco Delovski, Goran Gruev, Toshu Ilievski
- A-7 ADWERBOT - SEMI-AUTONOMOUS ROBOT THAT IS USED FOR MARKETING PURPOSES
Ljupco Karajanovski, Milan Glishikj

SESSION T2: TELECOMMUNICATIONS (2)

10:30 - 12:00

Претседавачи - Co-chairs: **Peco Nedelkovski and Miroslav Kotevski**

- T2-1 DESIGN OF TRANSPORT PROTOCOL FOR USAGE IN THE NEXT GENERATION MOBILE AND FIXED NETWORKS
Ivan Petrov and Toni Janevski
- T2-2 ARCHITECTURE OF BILLING SYSTEM FOR OTT SERVICES
Marko Porjazoski, Pero Latkoski and Borislav Popovski
- T2-3 PERFORMANCE OF MULTIPLE ACCESS WIRELESS NETWORKS WITH RF ENERGY HARVESTING
Hristina Chingoska, Zoran Hadzi-Velkov and Ivana Nikoloska
- T2-4 SURVEY ON STANDARDIZATION OF QOS MEASUREMENT PARAMETERS AND TECHNIQUES FOR IP NETWORKS
Marko Porjazoski
- T2-5 VoLTE AND SRVCC - DEVELOPMENT AND SPECIFICS
Konstantin Martinov, Miroslav Kotevski and Ljupco Todorovski

SESSION R: ROBOTICS

10:30 - 12:00

Претседавачи - Co-chairs: **Jovan Stefanovski and Stojce Deskovski**

- R-1 ASSISTIVE ROBOTICS AS THERAPY FOR AUTISTIC CHILDREN
Ana Tanevska, Nevena Ackovska and Vesna Kirandziska
- R-2 BRAIN-ROBOT INTERFACE WITH A BIPED ROBOT IN A TASK OF WALK AND KICK-A-BALL
Adrijan Božinovski
- R-3 AVOIDING HEAVY COMPUTATIONS IN INVERSE CALIBRATION PROCEDURE FOR 7 DOF ROBOT MANIPULATOR
Samoil Samak, Igor Dimovski, Mirjana Trompeska and Vladimir Dukovski
- R-4 DYNAMIC MODELING AND ASYMPTOTIC POINT STABILIZATION CONTROL OF TWO DIFFERENTIAL WHEELED MOBILE ROBOT
Drilon Bunjaku, Jovan Stefanovski and Mile Stankovski
- R-5 РОБОТСКА ПАКА ШТО РЕШАВА СУДОКУ
Бојана Живанова and Елизабета Лазаревска
- R-6 TRAJECTORY FOLLOWING AND OBSTACLES AVOIDANCE OF A 4-WHEELED MOBILE ROBOT'S MOVEMENT
Vesna Antoska Knights, Zoran Gacovski and Stojce Deskovski

SESSION MC: MEASUREMENT AND CONTROL
10:30 - 12:00

Претседавачи - Co-chairs: **Vladimir Katić and Vladimir Dimcev**

- MC-1 TECHNICAL REQUIREMENTS FOR CONNECTION AND MULTILEVEL INVERTERS IN DISTRIBUTED ENERGY RESOURCES
Nemanja Savić and Vladimir Katić
- MC-2 WIRELESS MEASUREMENT SYSTEM FOR ENVIRONMENTAL PARAMETERS
M. Gjorgjievska, D. Dimitrov and M. Srbinovska
- MC-3 POWER TRANSFORMER MONITORING SYSTEM SIMULATION
B.Velkovski, F. Simjanoski, X. Sulejmani, M. Srbinovska, V. Dimcev and Z. Kokolanski
- MC-4 ANALYSIS OF GROUNDING CONDUCTORS USING SPICE
Andrijana Kuhar, Lidija Ololoska-Gagoska and Leonid Grcev
- MC-5 A CONTRIBUTION TO THE METROLOGY INFRASTRUCTURE THROUGH ACCREDITED AND TRACEABLE ELECTRICAL MEASUREMENTS AND CALIBRATIONS
Marija Cundeва-Blajer, Vladimir Dimcev, Mare Srbinovska and Zivko Kokolanski

SESSION MLC: MACHINE LEARNING AND COMPUTERS
12:30 - 14:00

Претседавачи - Co-chairs: **Bastian Ringsdorf and Georgi Gicev**

- MLC-1 IMPLEMENTATION OF TWO AUTOMATED SYSTEMS FOR TRADING SHARES ON THE STOCK MARKET
Georgi Kostov, Sasho Nedelkoski and Goran Stojanovski
- MLC-2 PREDICTING DEMAND SUPPLY GAP FOR TAXI SERVICE
Zhivko Apostolovski, Filip Donchevski, Ognen Poposki, Ilin Toloski, Petar Totic, Stefan Zlatinov and Goran Stojanovski
- MLC-3 MANAGEMENT PRACTICES TO MITIGATE ADDITIONAL COSTS RESULTING FROM THE CULTURAL EFFECTS OF SD OFFSHORING PROJECTS
Oliver Sebelin
- MLC-4 MACHINE LEARNING TECHNOLOGY FOR UTILITIES: IDEAS FOR THE ELECTRICAL GRID IN THE ERA OF FLUCTUATING RENEWABLES
Bastian Ringsdorf and Jana Kajanova
- MLC-5 ESTIMATION OF ENERGY PERFORMANCE OF RESIDENTIAL BUILDINGS USING EXTENDED RELEVANCE VECTOR MACHINE
Elizabeta Lazarevska
- MLC-6 A MODIFIED MEMORY-CENTRIC APPROACH FOR NETWORK PACKET PROCESSING
Danijela Efnusheva, Marija Kalendar, Aristotel Tentov, Goce Dokoski

SESSION CA: CONTROL APPLICATIONS

12:30 - 14:00

Претседавачи - Co-chairs: **Mile Stankovski and Josif Kjosev**

- CA-1 ХАРДВЕРСКИ И СОФТВЕРСКИ АСПЕКТИ ВО ДИЗАЈНОТ КАЈ ТРИДИМЕНЗИОНАЛНИТЕ (3D) ПЕЧАТАРИ
Никола Јовановски and Јосиф Ќосев
- CA-2 ENHANCED VEHICLE HANDLING AND TRANSIENT RESPONSE THROUGH ACTIVE REAR WHEEL STEERING
Igor Gjurov
- CA-3 ФУЗИЈА НА ПОДАТОЦИ ОД СЕНЗОР ЗА ЗАБРЗУВАЊЕ И СЕНЗОР ЗА АГОЛНА БРЗИНА
Матеј Добревски and Миле Станковски
- CA-4 MODERNIZATION OF COLD ROLLING CONTROL SYSTEM
Ivana Boshkovska, Dragi Janevski, Igor Krpacovski, Marijan Milovanovic, Christophe Silvi, Regis Mienze and Mile Stankovski

SESSION AM: APPLIED MATHEMATICS

12:30 - 14:00

Претседавачи - Co-chairs: Cvetko Andreeski and Sonja Gegovska-Zajkova

- AM-1 ITERATIVE FRAMEWORK ON UPGRADING LEXICONS FOR SENTIMENT ANALYSIS
Cvetko Andreeski
- AM-2 DESIGN OPTIMIZATION OF BOOSTER TRANSFORMERS BASED ON DIFFERENTIAL EVOLUTION ALGORITHMS
Rasim Salkoski1 and Ivan Chorbev
- AM-3 NONPARAMETRIC DENSITY ESTIMATION TECHNIQUES
Biljana Stanoevska-Angelova and Katerina Hadzi-Velkova Saneva
- AM-4 COMPARATIVE STUDY OF ARIMA AND HOLT-WINTERS STATISTICAL MODELS FOR PREDICTION OF ENERGY CONSUMPTION
Marija Markovska, Aneta Buchkovska and Dimitar Taskovski
- AM-5 PROJECTING A HYDROGRAPHIC MAP OF REPUBLIC OF MACEDONIA
Vesna Andova, Sanja Atanasova, Elena Jovchevska, Martin Rizov, Ilin Tolovski and Viktorija Jordanova
- AM-6 OPERATIONAL RISK ASSESSMENT IN ELECTRONIC BANKING USING BAYESIAN NETWORKS
Maja Koceva and Sonja Gegovska-Zajkova

Вкупното време за презентација на еден труд е 15 минути (10-12 минути за презентација и 3-5 минути за дискусија и прашања).

Total time per paper presentation is 15 minutes (10-12 minutes for presentation and 3-5 minutes for discussion and questions).

Day	Time	Congress Hall	Hall 1	Hall 2	Hall 3
Thursday, 22.10.2016	09:00 - 12:00	Registrations			
	12:00 - 12:30	Opening Ceremony			
	12:30 - 13:15	Plenary Lecture 1: Prof. Dr. Ben Chen National University of Singapore Navigation and Control of Drones in GPS-Denied Environments			
	13:15 - 14:00	Plenary Lecture 2: Prof. Dr. Hiroya Fujisaki ISCA Distinguished Lecture Analysis and Modeling of Prosody of Spoken Languages			
	14:00 - 15:00	Lunch break			
	15:30 - 17:00		Telecommunications 1	Control Systems	Audio/Video/Text Processing
19:00 - 20:00	Welcome drink/finger food				
Friday, 23.10.2016	09:30 - 10:15	Plenary Lecture 3: Prof. Dr. Odej Kao TU Berlin Scheduling and Resource Management for Big Data			
	10:15 - 11:00	Plenary Lecture 4: Prof. Dr. Jose Maria Maestre University of Sevilla Model Predictive Control: Trends and Applications for a Smarter World			
	11:00 - 11:30	Coffee Break			
	11:30 - 12:00	ZTE (Practical Implementation of ZTE Smart City Solution)			
	12:00 - 12:30	SmartIS (Smart Major Dubrovnik - Case Study)			
	12:30 - 13:00	TeleLink (Smart City Transportation Solutions)			
	13:00 - 14:00	Lunch break			
	14:30 - 15:00	Makedonski Telekom (Telecom Smart Technology)			
	15:00 - 16:30	Industri papers from SEAVUS, Elektro Dizajn, Inary Solutions and SIMT			
	16:30 - 17:00	Coffee Break			
	17:00 - 18:30	Round table 1 - Smart solutions for smart city (moderator Prof. Dr. Mile Stankovski)			
20:00	Gala dinner				
Saturday, 24.10.2016	09:30 - 10:30	Plenary Talk 5: Prof. Dr. Marcel Baunach TU Graz Dependable IOT			
	10:30 - 12:00		Telecommunications 2	Robotics	Measurement and Control
	12:00 - 12:30	Coffee Break			
	12:30 - 14:00		Machine Learning and Computers	Control Applications	Applied Mathematics
	14:00 - 14:30	Closing Ceremony			
14:30 - 18:00	Trip to Vevcani (TBA)				